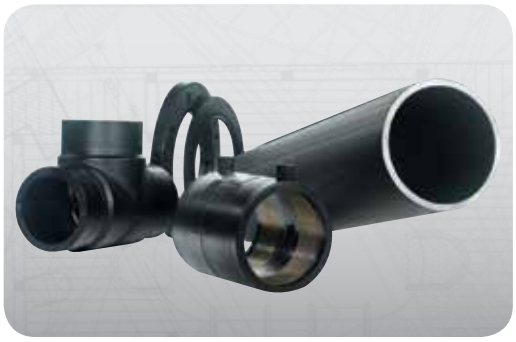
PG9-IND | MAY 2015

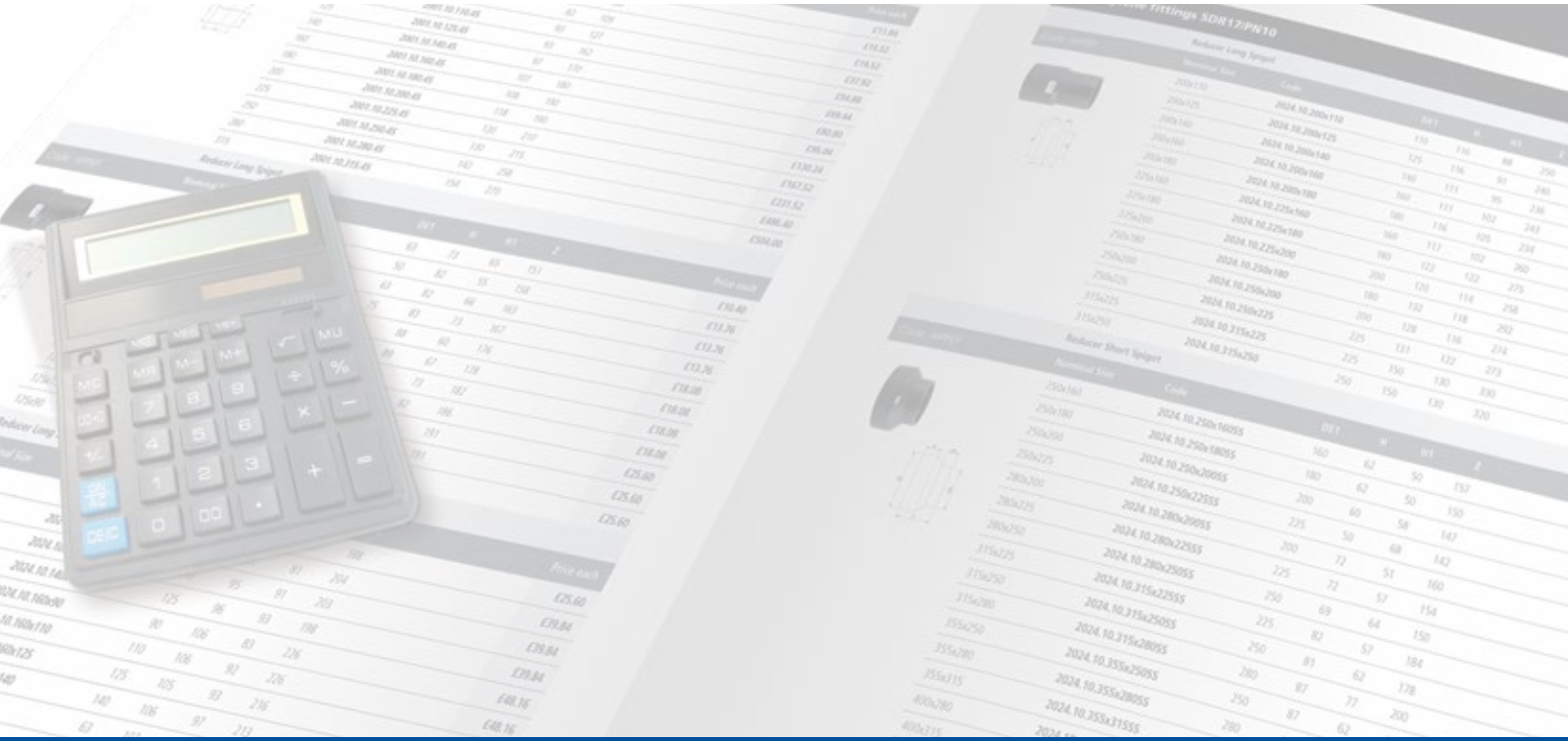
EFFAST






Plastic Pressure Systems

Product Guide



Polypipe

EFFAST Product Guide

Effast from Polypipe Terrain is a well-established brand name that is recognised throughout both the industrial process market and construction industries for its market-leading range of thermoplastic pipework systems suitable for use within industrial applications. The company now provides these components to customers all over the world and leads the way in the research and development of advanced new solutions that satisfy the specific needs of the market.

Polypipe, with its large UK based manufacturing capabilities, has developed Effast's comprehensive product portfolio such that it now offers a proven and effective solution to virtually any requirement. No matter what the project, the Effast range can offer the perfect combination of pressure pipe fittings, ball, butterfly, diaphragm and actuated valves, compression joints, adaptors and other fittings. Normally available in both metric and imperial dimensions these products are suited to many different commercial applications in such areas as food and beverage processing, chemical manufacture, water treatment and agriculture.

Outstanding performance and reliability have come to represent the hallmarks by which Polypipe's Effast products are recognised and with these products also carrying BSI Kite Mark accreditation and conforming to various other European standards they can be specified with complete confidence.

Dedicated to supporting its customers at every stage the company also complements its products and systems with a full technical information and support service, while a nationwide distribution network means that products are readily available, even when needed next day.

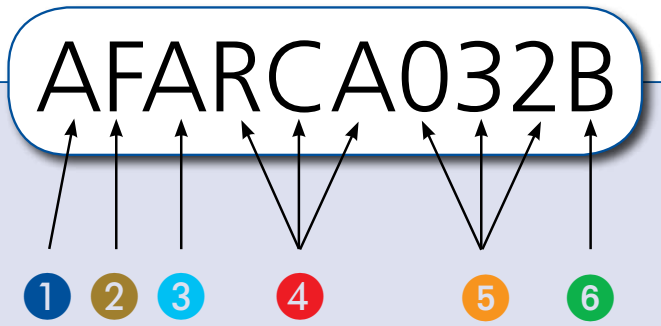
For further information please see our contact details on the back cover of this brochure.

KM60041

WRAS APPROVED PRODUCT

Contents

Effast product code guide



Material

1 A = ABS
B = Brush
C = Cleaner
E = Rubber
M = Metal
P = Polypropylene
R = PVC

Type of Fitting

2 B = Ball Valve
F = Fitting
P = Pipe/Fitting Part

Type of Fitting

3 A = Imperial
B = Universal Metric/Imperial
C = Plain/Threaded Fittings
C = Class C Pipe
D = EDPM Seals
D = Class D Pipe
E = Class E Pipe
F = Threaded
I = Metric
O = O Ring/Cements/Cleaners
R = Metal Ring Fitting
V = Viton
10= 10 Bar Pipe
16= 16 Bar Pipe

Unique Product Code

4 Example RCA = Reducing Bush

Size Guide

5 0160 = 16mm or ⅜"
0200 = 20m or ½"
0250 = 25mm or ¾"
0320 = 32mm or 1"
0400 = 40mm or 1¼"
0500 = 50mm or 1½"
0630 = 63mm or 2"
0750 = 75mm or 2½"
0900 = 90mm or 3"
1100 = 110mm or 4"
1250 = 125mm
1400 = 140mm or 5"
1600 = 160mm or 6"
2000 = 200mm
2250 = 225mm or 8"
2500 = 250mm
3150 = 315mm

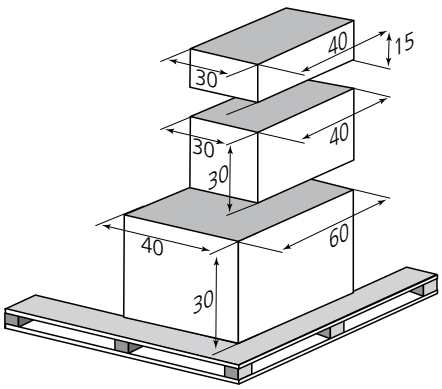
Size Guide Letter

6 A = 16mm or ⅜"
B = 20mm or ½"
C = 25mm or ¾"
D = 32mm or 1"
E = 40mm or 1¼"
F = 50mm or 1½"
G = 63mm or 2"
H = 75mm or 2½"
I = 90mm or 3"
L = 110mm or 4"
M = 125mm
N = 140mm or 5"
O = 160mm or 6"
P = 200mm
Q = 225mm or 8"
R = 315mm

Packing in boxes

EUROPALLET

24 box large
48 box medium
96 box small



BOX TYPE

S	=	small	40 x 30 x 15 cm
M	=	medium	40 x 30 x 30 cm
L	=	large	60 x 40 x 30 cm
S	=	small	0.5 kg
M	=	medium	0.6 kg
L	=	large	1.0 kg

For sales and enquiries please contact +44 (0) 1622 795200

Materials & Applications

PVCu

- Most Widely Used Plastic Material
- Large Choice of Fittings
- Excellent Chemical Resistance
- Rigid Construction

Typical Applications

- Industrial Process Systems
- Water Treatment and Chemical Dosing
- Food & Beverage
- Swimming Pools and Spas
- Cold Water Supply

ABS

- Wide Temperature Range
- High Impact Strength
- Abrasion Resistance
- Non Toxic

- Chilled Water
- Boosted Cold Water
- Plant Rooms
- Chemical & Pharmaceutical

Polypropylene

- High Impact Strength
- Good Thermal and Electrical Insulator
- Excellent Chemical Resistance
- High Temperatures (<110°C)

- Chemical Process Systems
- Metal Finishing
- Chemical Dosing

PE100

- Large Size Range
- High Impact Strength
- Excellent Abrasion Resistance
- UV Resistant
- Flexible

- Above and Below Ground Water Supply
- Power Generation
- Attenuation

All Effast materials are suitable for a number of applications. The table below details common applications and the appropriate Effast materials for that situation

Applications Guide	ABS	PVCu	PP-H (pipe)	PE100
Acids and Alkalis	✓	✓	✓	✓
A/C and Refrigeration	✓		✓	✓
Biotechnology	✓	✓	✓	
Boosted Cold Water	✓		✓	✓
Condensate	✓			
Chemical Dosing	✓	✓	✓	✓
Chemical Drainage			✓	✓
Chilled Water	✓		✓	✓
Compressed Air			✓	
De-Mineralised Water	✓	✓	✓	
Effluent Treatment	✓		✓	✓
Electro Plating	✓	✓	✓	
Film Processing	✓	✓	✓	
Food Processing & Beverages	✓			✓
Gas			✓	

Applications Guide	ABS	PVCu	PP-H (pipe)	PE100
Glycol Systems	✓			
Hot Cold Water		✓	✓	
Hot Corrosive Materials			✓	
Hot Water			✓	
Irrigation	✓	✓		✓
Marine / Brine	✓			✓
Pharmaceutical	✓	✓	✓	
Potable Water	✓	✓		✓
Pulp and Paper	✓		✓	
Semi Conductor	✓	✓	✓	
Slurries	✓			✓
Sprinklers			✓	
Swimming Pools	✓	✓		
Water& Sewage Treatments	✓	✓	✓	✓
Water Industry	✓	✓		✓

PVCu Pipe Systems

Unplasticised polyvinyl chloride (PVCu) is one of the most widely used thermoplastic materials for pipe installations.

Being odourless and tasteless it is suitable for conveying potable water and many food products. PVCu has excellent chemical resistance.

The good flow characteristics are the result of the smooth bore and has good resistance to abrasion. It is light in weight, easy to join together making PVCu a good alternative to the more traditional materials.

PVCu is resistant to most solutions of acids, alkalis, salts and solvents that can be mixed with water. Additional information in this respect can be obtained from our Technical Department.

Materials

Polypipe Effast PVCu is stabilised with compounds conforming to the EEC safety levels for vinyl chloride momomer (VCM) and the WRAS requirements for use with potable water.

Colour

PVCu products are recognised by their dark grey colour.

Chemical Resistance

The chemical resistance properties of PVCu are excellent: it is resistant to most solutions of acids, alkalis and salts and to solvents that can be mixed with water. PVCu is not resistant to aromatic and chlorinated hydrocarbons.

Standards

Individual products are in compliance with appropriate British Standards:

Fittings (inch size)	BS 4346 Part 1, BS EN 1452 Part 3
Pipe (inch size)	BS 3505/6, BS EN 1452 Part 2
Fittings (mm size)	DIN 8063, ISO 727, KIWA K504, UNI 7442/75
Pipe (mm size)	BS EN 1452 Part 2
Threaded fittings	BS 21, DIN 2999, ISO7
Solvent cement	BS 4346 Part 3

WRAS APPROVED PRODUCT

WRAS Approval

Water Regulations Advisory Scheme. Approved product for potable water

Kite Mark Licence Fittings No. KM 60041

Imperial and Metric Sizes

The following notes may be helpful to those unfamiliar with the different ways of describing metric and imperial sizes when specifying pipe or fittings.

When specifying Imperial pipe fittings and other components reference is made to the nominal size of the pipe bore in inches and fractions of an inch.

Metric Systems are specified by reference to the outside diameter of the pipe expressed in millimetres.

As a general guide the following table gives a comparison between metric and imperial sizes up to 8 inches. It is important to understand that metric sizes are not simply inch sizes which have been converted into millimetres and called metric. The actual equivalents are slightly different (except for Imperial size 21/2 inches and metric size 75mm and 5 inches and 140mm which happen to coincide exactly) and are not interchangeable.

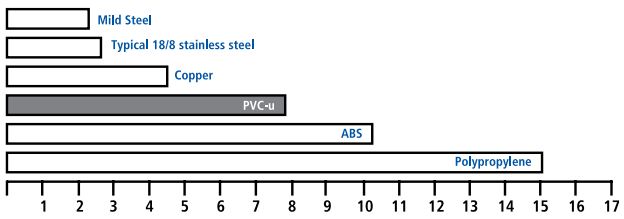
Imperial Sizes (inches)		Metric Sizes (mm)	
Nominal bore	Pipe outside dia.	Pipe outside dia.	Nominal bore
⅜"	17.1	16	10
½"	21.4	20	15
¾"	26.7	25	20
1"	33.6	32	25
1¼"	42.2	40	32
1½"	48.3	50	40
2"	60.3	63	50
2½"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

Thermal Expansion

The thermal coefficient of linear expansion for PVCu is 7.8 x 10^{-5}m/m.°C

It is necessary in certain situations to make special provision for this expansion and contraction.

Thermal expansion of PVCu is compared with other materials, in the following chart.



General Information	Temperature range
0°C – 60°C	
Imperial Solvent Weld	⅜" – 8"
Threaded	⅜" – 4"
Metric Solvent Weld	16–315mm
Threaded Adaptors	16–110mm

PVCu

General properties of PVCu

PVCu is thermally stable in the temperature range 0°C to 60°C, however at low temperatures the impact strength of PVCu decreases. It is therefore not recommended for use at very low temperatures unless there is no likelihood of the piping materials being disturbed or subjected to impact damage. PVCu is free from toxic metals thus ensuring that it is physiologically harmless for drinking water and foodstuffs applications.

Some important advantages of PVCu are:

- Extensive choice of component parts
- Wide range of applications
- Good chemical and corrosion resistance
- Safe for potable water applications
- Low friction loss
- Self extinguishing
- High mechanical strength
- Simplified installation techniques using solvent cement welding
- Approved for potable water applications

Properties of PVCu (Average values)	
Property	Value
Density	1.38 g/cm3
Tensile Strength	55 N/mm2
Elongation at Break	>30 %
Impact Strength	No crack kJ/m2 (23°C)
Modulus of Elasticity (Young's Modulus)	3000 N/mm2
Coefficient of Linear Expansion	0.08 mm/m °C
Maximum Operating Temperature	60°C
Minimum Operating Temperature	0°C
Vicat Softening Point	>76°C (VST/B 50)
Water Absorption	<4 mg/cm3
Surface Resistance Approx.	1013 Ω
Thermal Conductivity	0.140 W/m · K
Flammability	V-0 UL94
Colour	7011 Dark Grey RAL

Sample Engineering specification

All PVC pipework and fittings shall be manufactured by Effast and conform to EN 1452-1 tp 5:1999. BS 3505/6 and BS 4346 Part 1.

Extruded pipework and injection moulded fittings have WRAS accreditation for potable water supply and are available in both metric and imperial sizes

Temperature & Pressure Relationship

Temp°C	Class C		Class D		Class E	
	BAR	PSI	BAR	PSI	BAR	PSI
0	9.0	130	12.0	173	15.0	217
20	9.0	130	12.0	173	15.0	217
30	8.1	117	10.8	155	13.5	195
35	7.2	104	9.6	138	12.0	173
40	6.3	91	8.4	121	10.5	152
45	5.4	78	7.2	104	9.0	130
50	4.0	58	5.4	78	6.7	97
55	2.7	39	3.6	52	4.5	65
60	1.3	19	1.8	26	2.2	32

Pressure Ratings Fittings & Valves Imperial

Unless otherwise indicated the pressure ratings are as follows

Product	Size	Pressure Rating
Fitting Solvent Cement	½" – 6"	15 bar (217psi)
	8"	9 bar (130psi)
Fittings Threaded	⅜" – 4"	10 bar (145psi)
Valves	⅜" – 2"	16 bar (232psi)
Valves	2½" – 4"	10 bar (145psi)

All pressure ratings are at 20°C

Pressure Ratings Fittings & Valves Metric

Unless otherwise indicated the pressure ratings are as follows

Product	Size mm	Pressure Rating
Fitting Solvent Cement	16 bar (232psi)	15 bar (217psi)
Fittings Threaded	200–225	10 bar (145psi)
Valves	16 bar (232psi)	16 bar (232psi)
Valves	10 bar (145psi)	10 bar (145psi)

All pressure ratings are at 20°C

All threaded fittings are parallel threaded unless stated.
ie. BSP Female and BSP Male are parallel. BSPT = BSP taper thread

Useful Information

The following information may be helpful in understanding the specification of metric and imperial sizes and pressure ratings when selecting pipe.

When specifying imperial pipe, fittings and other components, reference is made to the nominal size of the pipe bore in inches and fractions of an inch. With metric systems, reference is made to the outside diameter and is expressed in millimetres. It is important to note that with the exception of 2½"/75mm and 5"/140mm the systems are not interchangeable.

Temperature and pressure relationship for PVCu pipes

	Class C	Class D	Class E	PN10	PN16
Temperature (°C)	bar (psi)	bar (psi)	bar (psi)	bar	bar
0	9.0 (130)	12.0 (174)	15.0 (217)	10.0	16.0
20	9.0 (130)	12.0 (174)	15.0 (217)	10.0	16.0
30	8.1 (117)	10.8 (156)	13.5 (195)	8.0	12.8
40	6.3 (91)	8.4 (121)	10.5 (152)	6.4	10.2
50	4.0 (58)	5.4 (78)	6.7 (97)	4.4	7.0
60	1.3 (18)	1.8 (26)	2.2 (31)	2.6	4.1

Imperial and metric size information

Imperial sizes		Metric sizes	
Nominal bore (inches)	Pipe outside diameter (mm)	Pipe outside diameter (mm)	Nominal bore (mm)
⅜"	17.1	16	10
½"	21.4	20	15
¾"	26.7	25	20
1"	33.6	32	25
1¼"	42.2	40	32
1½"	48.3	50	40
2"	60.3	63	50
2½"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

PVCu pressure pipes 3m lengths plain end

	Description	Product code
Code: PSPVP	**Pressure pipe class C**	
	2"	**RPCCLC0630PE3**
	2½"	**RPCCLC0750PE3**
	3"	**RPCCLC0900PE3**
	4"	**RPCCLC1100PE3**
	5"	**RPCCLC1400PE3**
	6"	**RPCCLC1600PE3**
	8"	**RPCCLC2250PE3**
Code: PSPVP	**Pressure pipe class D**	
	1¼"	**RPDCLD0400PE3**
	1½"	**RPDCLD0500PE3**
	2"	**RPDCLD0630PE3**
	3"	**RPDCLD0900PE3**
	4"	**RPDCLD1100PE3**
	6"	**RPDCLD1600PE3**
Code: PSPVP	**Pressure pipe class E**	
	½"	**RPECLE0200PE3**
	¾"	**RPECLE0250PE3**
	1"	**RPECLE0320PE3**
	1¼"	**RPECLE0400PE3**
	1½"	**RPECLE0500PE3**
	2"	**RPECLE0630PE3**
	2½"	**RPECLE0750PE3**
	3"	**RPECLE0900PE3**
	4"	**RPECLE1100PE3**
	6"	**RPECLE1600PE3**
Code: PSPVP	**Pressure pipe class 7 (machining quality max. 12 bar at 20°C)**	
	½"	**RP7CL70200PE3**
	¾"	**RP7CL70250PE3**
	1"	**RP7CL70320PE3**
	1¼"	**RP7CL70400PE3**
	1½"	**RP7CL70500PE3**
	2"	**RP7CL70630PE3**

PVCu

PVCu pressure pipes 3m lengths plain end

	Description	Product code
Code: PSPVP	**Pressure pipe 10 bar metric**	
	40mm	**RP10CL100400PE3**
	50mm	**RP10CL100500PE3**
	63mm	**RP10CL100630PE3**
	75mm	**RP10CL100750PE3**
	90mm	**RP10CL100900PE3**
	110mm	**RP10CL101100PE3**
	125mm	**RP10CL101250PE3**
	140mm	**RP10CL101400PE3**
	160mm	**RP10CL101600PE3**
	200mm	**RP10CL102000PE3**
	225mm	**RP10CL102250PE3**
	250mm	**RP10CL102500PE3**
	280mm	**RP10CL102800PE3**
	315mm	**RP10CL103150PE3**

PVCu pressure pipes 3m lengths plain end

	Description	Product code
Code: PSPVP	**Pressure pipe 16 bar metric**	
	16mm	**RP16CL160160PE3**
	20mm	**RP16CL160200PE3**
	25mm	**RP16CL160250PE3**
	32mm	**RP16CL160320PE3**
	40mm	**RP16CL160400PE3**
	50mm	**RP16CL160500PE3**
	63mm	**RP16CL160630PE3**
	75mm	**RP16CL160750PE3**
	90mm	**RP16CL160900PE3**
	110mm	**RP16CL161100PE3**
	160mm	**RP16CL161600PE3**

Average Wall Thickness (mm) for Metric Pipe

Diameter (mm)	Average Wall Thickness (mm)	
Outside diameter	**10 bar**	**16 bar**
16	–	1.2
20	–	1.5
25	1.5	1.9
32	1.6	2.4
40	1.9	3.0
50	2.4	3.7
63	3.0	4.7
75	3.6	5.6
90	4.3	6.7
110	4.2	6.6
125	4.8	7.4
140	5.4	8.3
160	6.2	9.5
180	6.9	10.7
200	7.7	11.9
225	8.6	13.4
250	9.6	14.8
280	10.7	16.6
315	12.1	18.7

Average Wall Thickness for Imperial Pipe

Diameter	Wall thickness (mm)									
Nominal size (inch)	Class C 9.0 bar			Class D 12.0 bar			Class E 15.0 bar			Class 7 12.0 bar
	Average	Min	Max	Average	Min	Max	Average	Min	Max	Average
⅜"	–	–	–	–	–	–	1.9	1.5	1.9	–
½"	–	–	–	–	–	–	2.1	1.7	2.1	4.0
¾"	–	–	–	–	–	–	2.5	1.9	2.5	4.2
1"	–	–	–	–	–	–	2.7	2.2	2.7	4.8
1¼"	–	–	–	2.7	2.2	2.7	3.2	2.7	3.2	5.2
1½"	–	–	–	3.0	2.5	3.0	3.7	3.1	3.7	5.5
2"	3.0	2.5	3.0	3.7	3.1	3.7	4.5	3.9	4.5	5.9
2½*	3.6	–	–	–	–	–	5.6	–	–	–
3"	4.1	3.5	4.1	5.3	4.6	5.3	6.5	5.7	6.6	–
4"	5.2	4.5	5.2	6.8	6.0	6.9	8.3	7.3	8.4	–
5*	6.3	5.5	6.4	8.3	7.3	8.4	10.1	9.0	10.4	–
6"	7.5	6.6	7.6	9.9	8.8	10.2	12.1	10.8	12.5	–
8"	8.8	7.8	9.0	11.6	10.3	11.9	14.1	12.6	14.5	–
10"	10.9	9.7	11.2	14.3	12.8	14.8	17.5	15.7	18.1	–
12"	12.9	11.5	13.3	17.0	15.2	17.5	20.8	18.7	21.6	–

PVCu pressure pipes 6m lengths plain end

	Description	Product code
Code: PSPVP	**Pressure pipe class C**	
	2"	**RPCCLC0630PE**
	2½"	**RPCCLC0750PE**
	3"	**RPCCLC0900PE**
	4"	**RPCCLC1100PE**
	5"	**RPCCLC1400PE**
	6"	**RPCCLC1600PE**
	8"	**RPCCLC2250PE**
Code: PSPVP	**Pressure pipe class D**	
	1¼"	**RPDCLD0400PE**
	1½"	**RPDCLD0500PE**
	2"	**RPDCLD0630PE**
	3"	**RPDCLD0900PE**
	4"	**RPDCLD1100PE**
	6"	**RPDCLD1600PE**
Code: PSPVP	**Pressure pipe class E**	
	½"	**RPECLE0200PE**
	¾"	**RPECLE0250PE**
	1"	**RPECLE0320PE**
	1¼"	**RPECLE0400PE**
	1½"	**RPECLE0500PE**
	2"	**RPECLE0630PE**
	2½"	**RPECLE0750PE**
	3"	**RPECLE0900PE**
	4"	**RPECLE1100PE**
	6"	**RPECLE1600PE**
Code: PSPVP	**Pressure pipe class 7 (machining quality max. 12 bar at 20°C)**	
	½"	**RP7CL70200PE**
	¾"	**RP7CL70250PE**
	1"	**RP7CL70320PE**
	1¼"	**RP7CL70400PE**
	1½"	**RP7CL70500PE**
	2"	**RP7CL70630PE**

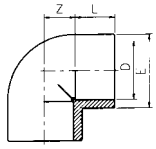
PVCu pressure pipes 6m lengths plain end

	Description	Product code
Code: PSPVP	**Pressure pipe 10 bar metric**	
	40mm	**RP10CL100400PE**
	50mm	**RP10CL100500PE**
	63mm	**RP10CL100630PE**
	75mm	**RP10CL100750PE**
	90mm	**RP10CL100900PE**
	110mm	**RP10CL101100PE**
	125mm	**RP10CL101250PE**
	140mm	**RP10CL101400PE**
	160mm	**RP10CL101600PE**
	200mm	**RP10CL102000PE**
	225mm	**RP10CL102250PE**
	250mm	**RP10CL102500PE**
	280mm	**RP10CL102800PE**
	315mm	**RP10CL103150PE**
Code: PSPVP	**Pressure pipe 16 bar metric**	
	16mm	**RP16CL160160PE**
	20mm	**RP16CL160200PE**
	25mm	**RP16CL160250PE**
	32mm	**RP16CL160320PE**
	40mm	**RP16CL160400PE**
	50mm	**RP16CL160500PE**
	63mm	**RP16CL160630PE**
	75mm	**RP16CL160750PE**
	90mm	**RP16CL160900PE**
	110mm	**RP16CL161100PE**
	160mm	**RP16CL161600PE**

PVCu solvent cement fittings

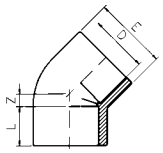
Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C. * Maximum working pressure: 9 bar (130 psi) at 20°C). For backing rings and gaskets see Accessories section

Elbow 90° plain



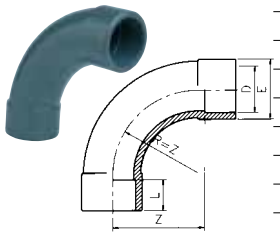
Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	RFAGOA0160	15	9	23	10	13
	½"	RFAGOA0200	17	11	27	10	20
	¾"	RFAGOA0250	20	14	33	10	35
	1"	RFAGOA0320	23	17	41	10	60
	1¼"	RFAGOA0400	27	23	51	10	90
	1½"	RFAGOA0500	31	28	61	10	135
	2"	RFAGOA0630	38	34	75	10	220
	2½"	RFAGOA0750	44	40	89	1	375
	3"	RFAGOA0900	52	48	106	1	600
	4"	RFAGOA1100	63	58	133	1	1060
	5"	RFAGOA1400	76	72	164	1	2000
	6"	RFAGOA1600	90	81	198	1	3200
	8"*	RFAGOA2250	119	115	258	1	7500

Elbow 45° plain



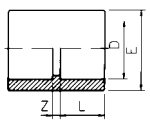
Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	RFAGYA0160	15	6	23	10	10
	½"	RFAGYA0200	17	5	27	10	17
	¾"	RFAGYA0250	20	6	33	10	30
	1"	RFAGYA0320	23	8	41	10	47
	1¼"	RFAGYA0400	27	10	50	10	77
	1½"	RFAGYA0500	31	12	61	10	115
	2"	RFAGYA0630	38	15	75	10	190
	2½"	RFAGYA0750	44	18	89	1	310
	3"	RFAGYA0900	52	21	106	1	485
	4"	RFAGYA1100	63	25	133	1	835
	5"	RFAGYA1400	76	32	164	1	1640
	6"	RFAGYA1600	90	36	198	1	2100
	8"*	RFAGYA2250	119	49	258	1	6200

Bend 90° short radius plain



Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	RFACUA0200	17	39	27	10	30
	¾"	RFACUA0250	20	49	33	10	50
	1"	RFACUA0320	23	63	41	10	92
	1¼"	RFACUA0400	27	80	50	1	165
	1½"	RFACUA0500	31	100	61	1	270
	2"	RFACUA0630	38	126	76	1	490
	2½"	RFACUA0750	44	150	90	1	990
	3"	RFACUA0900	51	180	110	1	1600
	4"	RFACUA1100	63	220	133	1	2150

Socket plain

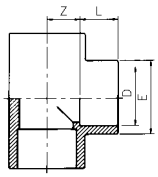


Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	RFAMAA0160	15	3	23	10	9
	½"	RFAMAA0200	17	3	27	10	15
	¾"	RFAMAA0250	20	3	33	10	23
	1"	RFAMAA0320	23	3	41	10	36
	1¼"	RFAMAA0400	27	3	50	1	60
	1½"	RFAMAA0500	31	3	61	1	85
	2"	RFAMAA0630	38	3	76	1	145
	2½"	RFAMAA0750	44	4	90	1	222
	3"	RFAMAA0900	51	5	110	1	353
	4"	RFAMAA1100	63	6	133	1	605
	5"	RFAMAA1400	76	8	161	1	1100
	6"	RFAMAA1600	90	8	198	1	1400
	8"*	RFAMAA2250	119	11	258	1	4100

PVCu solvent cement fittings

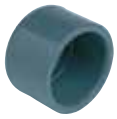
Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C. * Maximum working pressure: 9 bar (130 psi) at 20°C). For backing rings and gaskets see Accessories section

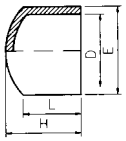
Tee 90° plain



Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	RFATIA0160	15	9	24	10	15
	½"	RFATIA0200	17	11	28	10	25
	¾"	RFATIA0250	20	14	34	10	44
	1"	RFATIA0320	23	17	42	10	75
	1¼"	RFATIA0400	27	21	51	10	120
	1½"	RFATIA0500	31	26	61	10	172
	2"	RFATIA0630	38	33	75	10	300
	2½"	RFATIA0750	44	39	89	1	495
	3"	RFATIA0900	52	47	106	1	790
	4"	RFATIA1100	63	57	133	1	1330
	5"	RFATIA1400	76	71	163	1	2550
	6"	RFATIA1600	90	81	198	1	4100
	8"*	RFATIA2250	119	114	258	1	9700

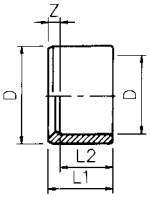
Cap plain





Code: PSPVF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	⅜"	RFACAA0160	15	26	23	10	7
	½"	RFACAA0200	17	30	27	10	10
	¾"	RFACAA0250	20	34	33	10	18
	1"	RFACAA0320	23	38	42	10	30
	1¼"	RFACAA0400	27	43	50	10	45
	1½"	RFACAA0500	31	48	61	10	65
	2"	RFACAA0630	38	56	75	10	110
	2½"	RFACAA0750	44	67	89	1	208
	3"	RFACAA0900	52	78	106	1	325
	4"	RFACAA1100	63	81	133	1	500
	5"	RFACAA1400	76	114	162	1	920
	6"	RFACAA1600	90	127	198	1	1120
	8"*	RFACAA2250	119	165	255	1	2978

Reducing bush plain

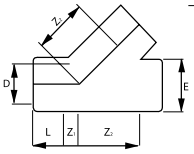


Code: PSPVF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	½" x ⅜"	RFARCA020A	17	15	2	A	10	3
	¾" x ½"	RFARCA025B	20	17	3	A	10	6
	1" x ½"	RFARCA032B	23	17	6	B	10	15
	1" x ¾"	RFARCA032C	23	20	3	A	10	10
	1¼" x 1"	RFARCA040D	27	23	4	A	10	16
	1½" x ¾"	RFARCA050C	31	20	12	B	10	45
	1½" x 1"	RFARCA050D	31	23	9	B	10	40
	1½" x 1¼"	RFARCA050E	31	27	5	A	10	30
	2" x 1"	RFARCA063D	38	23	16	B	10	83
	2" x 1¼"	RFARCA063E	38	27	12	B	10	78
	2" x 1½"	RFARCA063F	38	31	7	A	10	61
	2½" x 1½"	RFARCA075F	44	31	13	B	1	122
	2½" x 2"	RFARCA075G	44	38	6	A	1	80
	3" x 1½"	RFARCA090F	52	31	20	B	1	210
	3" x 2"	RFARCA090G	52	38	13	B	1	195
	3" x 2½"	RFARCA090H	52	44	7	A	1	140
	4" x 2"	RFARCA110G	63	38	23	B	1	372
	4" x 3"	RFARCA110I	63	52	10	A	1	275
	5" x 4"	RFARCA140L	76	63	15	B	1	510
	6" x 4"	RFARCA160L	90	63	25	B	1	830
	8" x 6"*	RFARCA225M	119	90	33	B	1	1700

PVCu solvent cement fittings

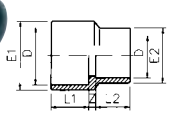
Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C. * Maximum working pressure: 9 bar (130 psi) at 20°C). For backing rings and gaskets see Accessories section

Tee 45° plain



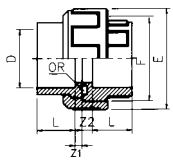
Code: PSPVF	Nominal Size	Code	L	Z1	Z2	E	Weight (GR)
	½"	RFATYA0200	17	7	29	27	36
	1"	RFATYA0320	23	8	44	42	103
	1½"	RFATYA0500	31	12	65	61	254
	2"	RFATYA0630	38	14	85	74	420

Reducing socket plain



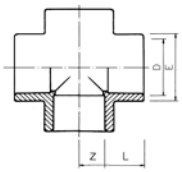
Code: PSPVF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	1¼" x 1"	RFAMRA040D	27	23	10	50	41	10	75
	1½" x 1¼"	RFAMRA050E	31	27	12	63	50	10	110
	2" x 1½"	RFAMRA063F	38	31	12	75	61	10	130
	4" x 3"	RFAMRA110I	63	51	17	133	108	1	530

Union plain. Unions up to 2" 15 bar (20°C), above 2" 10 bar (20°C)



Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	⅜"	RFABOA0160	15	3	10	¾"	34	10	30
	½"	RFABOA0200	17	3	10	1"	42	10	42
	¾"	RFABOA0250	20	3	10	1¼"	52	10	70
	1"	RFABOA0320	23	3	10	1½"	59	10	97
	1¼"	RFABOA0400	27	3	12	2"	72	10	115
	1½"	RFABOA0500	31	3	14	2¼"	79	10	216
	2"	RFABOA0630	38	3	18	2¾"	96	10	350
	2½"*	RFABOA0750	44	3	18	3½"	119	1	580
	3"*	RFABOA0900	52	5	18	4"	134	1	760
	4"*	RFABOA1100	63	5	18	5"	163	1	1340

Cross 90° plain

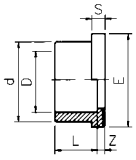


Code: PSPVF	Nominal Size	Code	L	Z	E	Weight (GR)
	1"	RFACXA0320	23	17	42	110
	1½"	RFACXA0500	31	26	61	270
	2"	RFACXA0630	38	33	75	510

PVCu solvent cement fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C. * Maximum working pressure: 9 bar (130 psi) at 20°C). For backing rings and gaskets see Accessories section

Stub flange (serrated face) plain

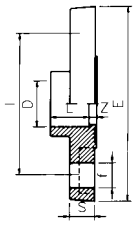


Code: PSPVF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	½"	RFAQRA0200	17	3	27	6	34	10	10
	¾"	RFAQRA0250	20	3	33	7	41	10	16
	1"	RFAQRA0320	23	3	41	7	50	10	25
	1¼"	RFAQRA0400	27	3	50	8	61	10	40
	1½"	RFAQRA0500	32	3	61	8	73	10	60
	2"	RFAQRA0630	39	3	76	9	90	10	105
	2½"	RFAQRA0750	44	3	90	10	106	1	160
	3"	RFAQRA0900	52	5	108	11	125	1	280
	4"	RFAQRA1100	63	5	133	12	150	1	445
	5"	RFAQRA1400	76	6	165	13	188	1	740
	6"	RFAQRA1600	90	7	193	13	218	1	1000
	8"*	RFAQRA2250	119	7	248	19	274	1	1700

PVCu full face flanges (drilled)

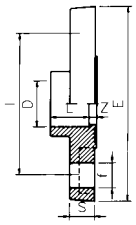
NP10/16 blanking flanges available, For gaskets see Accessories section

Drilled to BS 10 table D&E plain



Code: PSPVF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	RFAFFA0200	17	5	95	14	67	11	4	78
	¾"	RFAFFA0250	20	5	105	14	73	12	4	105
	1"	RFAFFA0320	23	5	115	14	83	14	4	143
	1½"	RFAFFA0500	32	5	152	18	98	16	4	280
	2"	RFAFFA0630	38	5	165	18	115	18	4	380
	3"	RFAFFA0900	51	7	200	18	146	20	8	685
	4"	RFAFFA110E	63	8	220	18	178	22	8	940

Drilled to BS 4504 NP10/16 plain

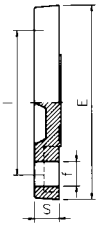


Code: PSPVF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	RFAFNA0200	17	5	95	14	65	8	4	78
	¾"	RFAFNA0250	20	5	105	14	75	9	4	105
	1"	RFAFNA0320	23	5	115	14	85	16	4	143
	1¼"	RFAFNA0400	27	5	142	18	100	17	4	220
	1½"	RFAFNA0500	32	5	152	18	110	17	4	280
	2"	RFAFNA0630	38	5	165	18	125	20	4	380
	2½"	RFAFNA0750	44	6	185	18	145	19	4	505
	3"	RFAFNA0900	51	7	200	18	160	22	8	685
	4"	RFAFNA1100	63	8	220	18	180	23	8	940

PVCu blanking flanges (drilled)

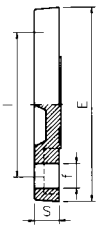
Maximum working pressure: ½" – 2" 15 bar (217 psi) at 20°C. 3" – 4" 10 bar (145 psi) at 20°C. 6" 6 bar (87 psi) at 20°C

Blanking Flange Drilled to BS 10 table D/E



Code: PSPVF	Nominal Size	Code	E	S	I	f	HOLES	Weight (GR)
	½"	**RFAFEA0200**	95	11	67	14	4	76
	¾"	**RFAFEA0250**	105	12	73	14	4	104
	1"	**RFAFEA0320**	115	14	83	14	4	140
	1¼"	**RFAFEA0400**	142	15	88	18	4	220
	1½"	**RFAFEA0500**	152	16	98	18	4	280
	2"	**RFAFEA0630**	165	18	115	18	4	370
	3"	**RFAFEA0900**	200	20	146	18	4	655
	4" D	**RFAFEA110D**	220	22	178	18	4	975
	4" E	**RFAFEA110E**	220	22	178	18	8	950
	6"	**RFAFEA1600**	285	28	235	22	8	1610

Blanking Flange Drilled to BS4504 NP10/16

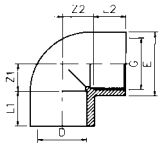


Code: PSPVF	Inches	mm	Code	E	S	I	f	HOLES	Weight (GR)
	½"	20	**RFIFCI0200**	95	11	65	14	4	76
	¾"	25	**RFIFCI0250**	105	12	75	14	4	104
	1"	32	**RFIFCI0320**	115	14	85	14	4	140
	1¼"	40	**RFIFCI0400**	142	15	100	18	4	220
	1½"	50	**RFIFCI0500**	152	16	110	18	4	280
	2"	63	**RFIFCI0630**	165	18	125	18	4	370
	2½"	75	**RFIFCI0750**	185	19	145	18	4	495
	3"	90	**RFIFCI0900**	200	20	160	18	8	655
	4"	110	**RFIFCI1100**	220	22	180	18	8	850
	—	125	**RFIFCI1250**	230	24	190	18	8	950
	5"	140	**RFIFCI1400**	250	26	210	18	8	1165
	6"	160	**RFIFCI1600**	285	28	240	22	8	1610
	—	200	**RFIFCI2000**	340	30	295	22	8	2480
	8"	225	**RFIFCI2250**	340	30	295	22	8	2480

PVCu adaptor fittings

Fittings up to 4" 15 bar (20°C)

Elbow 90° plain/BSP female threaded

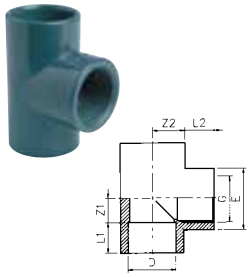


Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**RFCGOC0200**	17	15	11	12	28	10	20
	¾"	BSPF	**RFCGOC0250**	20	16	14	17	34	10	35
	1"	BSPF	**RFCGOC0320**	23	19	17	20	42	10	60
	1¼"	BSPF	**RFCGOC0400**	27	21	21	26	51	10	90
	1½"	BSPF	**RFCGOC0500**	32	21	26	36	61	10	155
	2"	BSPF	**RFCGOC0630**	39	26	33	46	75	10	265
	2½"	BSPF	**RFCGOC0750**	44	30	39	53	89	1	400
	3"	BSPF	**RFCGOC0900**	52	33	47	65	106	1	670

PVCu adaptor fittings

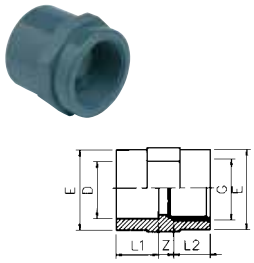
Fittings up to 4" 15 bar (20°C)

Tee 90° plain/BSP female threaded



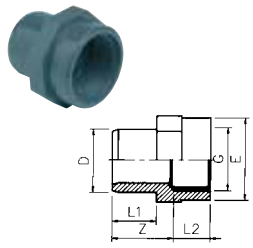
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**RFCTIC0200**	17	15	11	12	28	10	30
	¾"	BSPF	**RFCTIC0250**	19	16	14	17	34	10	45
	1"	BSPF	**RFCTIC0320**	23	19	17	20	42	10	75
	1¼"	BSPF	**RFCTIC0400**	27	21	21	26	51	10	120
	1½"	BSPF	**RFCTIC0500**	32	21	26	36	61	10	195
	2"	BSPF	**RFCTIC0630**	39	26	33	46	75	5	335
	2½"	BSPF	**RFCTIC0750**	44	30	39	53	89	1	505
	3"	BSPF	**RFCTIC0900**	52	33	47	65	106	1	810

Socket plain/BSP female threaded



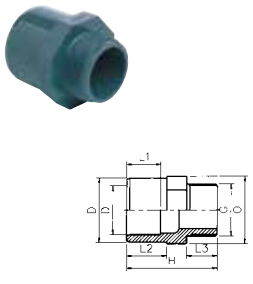
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	½"	BSPF	**RFCMAC0200**	17	15	4	28	10	18
	¾"	BSPF	**RFCMAC0250**	20	16	6	34	10	25
	1"	BSPF	**RFCMAC0320**	23	19	7	42	10	38
	1¼"	BSPF	**RFCMAC0400**	27	21	7	51	10	60
	1½"	BSPF	**RFCMAC0500**	32	21	7	61	10	95
	2"	BSPF	**RFCMAC0630**	39	26	7	75	10	165
	2½"	BSPF	**RFCMAC0750**	44	30	8	89	1	215
	3"	BSPF	**RFCMAC0900**	52	33	9	106	1	340
	4"	BSPF	**RFCMAC1100**	63	39	10	133	1	550

Spigot plain/BSP female threaded



Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	½"	BSPF	**RFCAFC0200**	17	15	28	24	10	20
	¾"	BSPF	**RFCAFC0250**	20	16	34	27	10	25
	1"	BSPF	**RFCAFC0320**	23	19	42	30	10	43
	1¼"	BSPF	**RFCAFC0400**	27	21	51	36	10	65
	1½"	BSPF	**RFCAFC0500**	32	21	58	41	10	73
	2"	BSPF	**RFCAFC0630**	39	26	72	48	10	135
	2½"	BSPF	**RFCAFC0750**	44	30	89	58	1	225

Socket plain/BSP male threaded

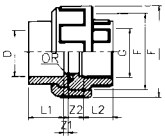


Code: PSPVF	Nominal Size	G	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	½"	BSPF	**RFCAMC0200**	17	20	15	46	30	10	15
	¾"	BSPF	**RFCAMC0250**	20	23	16	50	36	10	26
	1"	BSPF	**RFCAMC0320**	23	27	19	57	46	10	40
	1¼"	BSPF	**RFCAMC0400**	27	32	21	67	55	10	75
	1½"	BSPF	**RFCAMC0500**	32	39	21	74	65	10	113
	2"	BSPF	**RFCAMC0630**	39	44	26	84	80	10	150
	2½"	BSPF	**RFCAMC0750**	44	52	30	99	95	1	270
	3"	BSPF	**RFCAMC0900**	52	63	33	113	115	1	475
	4"	BSPF	**RFCAMC1100**	63	66	39	120	130	1	500

PVCu adaptor fittings

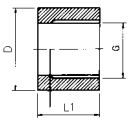
Fittings up to 4" 15 bar (20°C)

Union plain/BSP female threaded. Unions up to 2" 15 bar (20°C).
* Maximum working pressure: 10 bar (145 psi) at 20°C Supplied with EPDM O ring–for FPM O ring see Accessories section



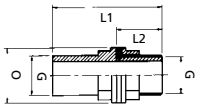
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	F	E	Pack Qty	Weight (GR)
	½"	BSPF	**RFCBOC0200**	17	15	3	11	1"	42	10	42
	¾"	BSPF	**RFCBOC0250**	20	16	3	13	1¼"	52	10	70
	1"	BSPF	**RFCBOC0320**	23	19	3	13	1½"	59	10	95
	1¼"	BSPF	**RFCBOC0400**	27	21	3	17	2"	72	10	155
	1½"	BSPF	**RFCBOC0500**	32	21	3	24	2¼"	79	10	240
	2"	BSPF	**RFCBOC0630**	39	26	3	30	2¾"	96	5	405
	2½"*	BSPF	**RFCBOC0750**	44	30	3	32	3½"	119	1	625
	3"*	BSPF	**RFCBOC0900**	52	33	5	36	4"	134	1	865
	4"*	BSPF	**RFCBOC1100**	61	39	5	40	5"	163	1	1340

Reducing bush plain/BSP female threaded



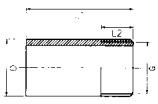
Code: PSPVF	Nominal Size	G	Code	L1	D	G	Pack Qty	Weight (GR)
	½" x ⅜"	BSPF	**RFCRCC020A**	16	½"	⅜"	10	5
	¾" x ½"	BSPF	**RFCRCC025B**	19	¾"	½"	10	8
	1" x ¾"	BSPF	**RFCRCC032C**	22	1"	¾"	10	15

Tank connector plain/BSP male threaded EPDM gasket. (½" to 4" 9 bar at 20°C)



Code: PSPVF	Nominal Size	G	Code	L1	L2	O	Pack Qty	Weight (GR)
	½"	BSPM	**RFCTCC0200**	77	42	38	10	41
	¾"	BSPM	**RFCTCC0250**	77	42	42	10	52
	1"	BSPM	**RFCTCC0320**	103	55	55	10	108
	1¼"	BSPM	**RFCTCC0400**	121	70	65	10	153
	1½"	BSPM	**RFCTCC0500**	128	73	72	10	216
	2"	BSPM	**RFCTCC0630**	154	82	93	10	370
	2½"	BSPM	**RFCTCC0750**	164	94	106	1	471
	3"*	BSPM	**RFCTCC0900**	202	110	125	1	768
	4"*	BSPM	**RFCTCC1100**	230	140	154	1	1421

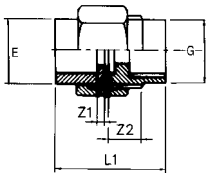
Barrel nipple plain/BSP male taper threaded . (½" to 4" 9 bar at 20°C)



Code: PSPVF	Nominal Size	G	Code	L1	L2	Pack Qty	Weight (GR)
	⅜"	BSPM	**RFCBNC0160**	42	13	10	8
	½"	BSPM	**RFCBNC0200**	50	16	10	14
	¾"	BSPM	**RFCBNC0250**	56	17	10	25
	1"	BSPM	**RFCBNC0320**	63	20	10	38
	1¼"	BSPM	**RFCBNC0400**	75	24	10	52
	1½"	BSPM	**RFCBNC0500**	88	30	10	80
	2"	BSPM	**RFCBNC0630**	88	32	10	115
	2½"	BSPM	**RFCBNC0750**	106	35	1	197
	3"*	BSPM	**RFCBNC0900**	128	39	1	300
	4"*	BSPM	**RFCBNC1100**	153	43	1	560

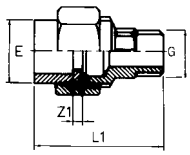
PVCu adaptor fittings
Fittings up to 4" 15 bar (20°C)

Composite union plain/BSP female brass threaded



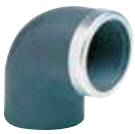
Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Z2	Pack Qty	Weight (GR)
	½"	BSPF	**RFCBFC0200**	28	45	3	8	1	165
	¾"	BSPF	**RFCBFC0250**	36	49	3	8	1	290
	1"	BSPF	**RFCBFC0320**	42	52	3	8	1	310
	1¼"	BSPF	**RFCBFC0400**	53	60	3	8	1	450
	1½"	BSPF	**RFCBFC0500**	59	68	3	9	1	490
	2"	BSPF	**RFCBFC0630**	74	81	3	10	1	950
	2½"	BSPF	**RFCBFC0750**	93	94	3	16	1	1357
	3"	BSPF	**RFCBFC0900**	105	103	5	14	1	1663

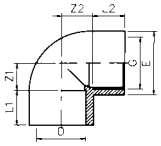
Composite union plain/BSP male taper brass threaded



Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	½"	BSPTM	**RFCBMC0200**	28	58	3	1	175
	¾"	BSPTM	**RFCBMC0250**	36	69	3	1	238
	1"	BSPTM	**RFCBMC0320**	42	72	3	1	324
	1¼"	BSPTM	**RFCBMC0400**	53	86	3	1	469
	1½"	BSPTM	**RFCBMC0500**	59	92	3	1	595
	2"	BSPTM	**RFCBMC0630**	74	109	3	1	982
	2½"	BSPTM	**RFCBMC0750**	93	127	3	1	1663
	3"	BSPTM	**RFCBMC0900**	105	139	5	1	2184

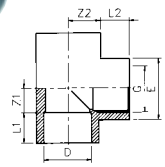
Elbow 90° plain/BSP female threaded with stainless steel reinforcing ring





Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	Pack Qty	Weight (GR)
	½"	BSPF	**RFRGOR0200**	17	15	11	12	10	24
	¾"	BSPF	**RFRGOR0250**	20	16	14	17	10	43
	1"	BSPF	**RFRGOR0320**	23	19	17	20	10	72
	1¼"	BSPF	**RFRGOR0400**	27	21	21	27	10	106
	1½"	BSPF	**RFRGOR0500**	32	21	26	37	10	175
	2"	BSPF	**RFRGOR0630**	39	26	33	46	10	289

Tee 90° plain/BSP female threaded branch with stainless steel reinforcing ring

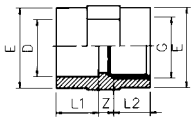


Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	Pack Qty	Weight (GR)
	½"	BSPF	**RFRTIR0200**	17	15	11	12	10	34
	¾"	BSPF	**RFRTIR0250**	20	16	14	17	10	53
	1"	BSPF	**RFRTIR0320**	23	19	17	20	10	87
	1¼"	BSPF	**RFRTIR0400**	27	21	21	27	10	136
	1½"	BSPF	**RFRTIR0500**	32	21	26	37	10	215
	2"	BSPF	**RFRTIR0630**	39	26	33	46	5	359

PVCu adaptor fittings

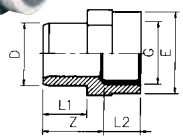
Fittings up to 4" 15 bar (20°C)

Socket plain/BSP female threaded with stainless steel reinforcing ring



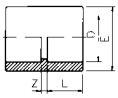
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	½"	BSPF	**RFRMAR0200**	17	15	4	28	10	22
	¾"	BSPF	**RFRMAR0250**	20	16	6	34	10	33
	1"	BSPF	**RFRMAR0320**	23	19	6	42	10	50
	1¼"	BSPF	**RFRMAR0400**	27	21	8	51	10	76
	1½"	BSPF	**RFRMAR0500**	32	21	13	61	10	115
	2"	BSPF	**RFRMAR0630**	39	26	15	75	10	189

Spigot plain/BSP female threaded with stainless steel reinforcing ring



Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	½"	BSPF	**RFRAFR0200**	17	15	28	24	10	24
	¾"	BSPF	**RFRAFR0250**	20	16	34	27	10	33
	1"	BSPF	**RFRAFR0320**	23	19	42	30	10	55
	1¼"	BSPF	**RFRAFR0400**	27	21	51	36	10	81
	1½"	BSPF	**RFRAFR0500**	32	21	58	41	10	93
	2"	BSPF	**RFRAFR0630**	39	26	72	44	10	159

Adaptor socket plain

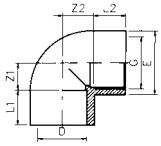


Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½" x 20	**RFBMAB0200**	16	3	27	10	16
	¾" x 25	**RFBMAB0250**	19	3	33	10	25
	1" x 32	**RFBMAB0320**	22	3	41	10	39
	1¼" x 40	**RFBMAB0400**	27	3	52	10	53
	1½" x 50	**RFBMAB0500**	32	3	61	10	101
	2" x 63	**RFBMAB0630**	39	3	75	10	178
	3" x 90	**RFBMAB0900**	52	5	10	1	381
	4" x 110	**RFBMAB1100**	67	6	133	1	750
	6" x 160	**RFBMAB1600**	89	8	198	1	1695

PVCu threaded fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Elbow 90° BSP female threaded

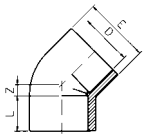


Code: PSPVF	Nominal Size	G	Code	L1-L2	Z1-Z2	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFGOF0160**	11	12	24	10	15
	½"	BSPF	**RFFGOF0200**	15	12	28	10	22
	¾"	BSPF	**RFFGOF0250**	16	17	34	10	37
	1"	BSPF	**RFFGOF0320**	19	20	42	10	60
	1¼"	BSPF	**RFFGOF0400**	21	26	51	10	95
	1½"	BSPF	**RFFGOF0500**	21	36	62	10	180
	2"	BSPF	**RFFGOF0630**	26	45	77	10	310
	2½"	BSPF	**RFFGOF0750**	30	53	89	1	425
	3"	BSPF	**RFFGOF0900**	33	65	106	1	740
	4"	BSPF	**RFFGOF1100**	39	79	129	1	1050

PVCu threaded fittings

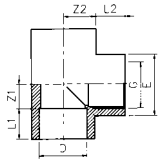
Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Elbow 45° BSP female threaded



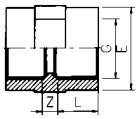
Code: PSPVF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFGYF0160**	11	8	24	10	10
	½"	BSPF	**RFFGYF0200**	15	6	28	10	18
	¾"	BSPF	**RFFGYF0250**	16	9	34	10	30
	1"	BSPF	**RFFGYF0320**	19	11	42	10	50
	1¼"	BSPF	**RFFGYF0400**	21	15	51	10	80
	1½"	BSPF	**RFFGYF0500**	21	22	62	10	155
	2"	BSPF	**RFFGYF0630**	26	26	77	10	275
	2½"	BSPF	**RFFGYF0750**	30	31	89	1	360
	3"	BSPF	**RFFGYF0900**	33	38	106	1	620
	4"	BSPF	**RFFGYF1100**	39	46	129	1	830

Tee 90° BSP female threaded



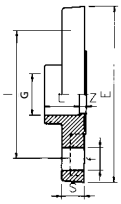
Code: PSPVF	Nominal Size	G	Code	L1-L2	Z1-Z2	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFTIF0160**	11	12	24	10	18
	½"	BSPF	**RFFTIF0200**	15	12	28	10	30
	¾"	BSPF	**RFFTIF0250**	16	17	34	10	50
	1"	BSPF	**RFFTIF0320**	19	20	42	10	75
	1¼"	BSPF	**RFFTIF0400**	21	26	51	10	120
	1½"	BSPF	**RFFTIF0500**	21	36	62	10	240
	2"	BSPF	**RFFTIF0630**	26	45	77	5	410
	2½"	BSPF	**RFFTIF0750**	30	53	89	1	540
	3"	BSPF	**RFFTIF0900**	33	65	106	1	880
	4"	BSPF	**RFFTIF1100**	39	79	129	1	1310

Socket BSP female threaded



Code: PSPVF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFMAF0160**	11	6	23	10	8
	½"	BSPF	**RFFMAF0200**	15	7	27	10	20
	¾"	BSPF	**RFFMAF0250**	16	7	33	10	25
	1"	BSPF	**RFFMAF0320**	19	8	41	10	45
	1¼"	BSPF	**RFFMAF0400**	21	8	50	10	65
	1½"	BSPF	**RFFMAF0500**	21	8	61	10	70
	2"	BSPF	**RFFMAF0630**	26	8	75	10	125
	2½"	BSPF	**RFFMAF0750**	30	9	88	1	190
	3"	BSPF	**RFFMAF0900**	33	10	106	1	290
	4"	BSPF	**RFFMAF1100**	39	11	129	1	460

Full face flange drilled to BS 4504 NP10/16 BSP female threaded

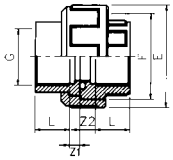


Code: PSPVF	Nominal Size	G	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	BSPF	**RFFFFF0200**	15	5	95	14	65	8	4	78
	¾"	BSPF	**RFFFFF0250**	18	5	105	14	75	9	4	105
	1"	BSPF	**RFFFFF0320**	19	5	115	14	85	16	4	143
	1¼"	BSPF	**RFFFFF0400**	21	5	142	18	100	17	4	220
	1½"	BSPF	**RFFFFF0500**	21	5	152	18	110	17	4	280
	2"	BSPF	**RFFFFF0630**	26	5	165	18	125	20	4	380
	2½"	BSPF	**RFFFFF0750**	30	6	185	18	145	22	4	520
	3"	BSPF	**RFFFFF0900**	33	7	200	18	160	22	8	735
	4"	BSPF	**RFFFFF1100**	40	8	220	18	180	23	8	940

PVCu threaded fittings

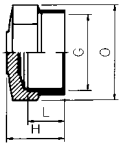
Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Union BSP female threaded



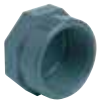
Code: PSPVF	Nominal Size	G	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFBOF0160**	11	6	14	¾"	34	10	27
	½"	BSPF	**RFFBOF0200**	15	4	11	1"	42	10	45
	¾"	BSPF	**RFFBOF0250**	16	6	13	1¼"	52	10	72
	1"	BSPF	**RFFBOF0320**	19	6	13	1½"	59	10	100
	1¼"	BSPF	**RFFBOF0400**	21	8	17	2"	72	10	160
	1½"	BSPF	**RFFBOF0500**	21	13	24	2¼"	79	10	264
	2"	BSPF	**RFFBOF0630**	26	15	30	2¾"	96	5	455
	2½"*	BSPF	**RFFBOF0750**	30	17	32	3½"	119	1	635
	3"*	BSPF	**RFFBOF0900**	33	23	36	4"	134	1	905
	4"*	BSPF	**RFFBOF1100**	39	27	40	5"	163	1	1355

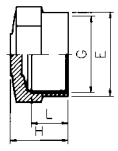
Plug BSP male threaded



Code: PSPVF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
	⅜"	BSPM	**RFFTAF0160**	11	23	19	10	8
	½"	BSPM	**RFFTAF0200**	15	29	24	10	10
	¾"	BSPM	**RFFTAF0250**	16	30	30	10	15
	1"	BSPM	**RFFTAF0320**	19	33	36	10	25
	1¼"	BSPM	**RFFTAF0400**	21	39	46	10	40
	1½"	BSPM	**RFFTAF0500**	21	39	50	10	45
	2"	BSPM	**RFFTAF0630**	26	43	65	10	80
	2½"	BSPM	**RFFTAF0750**	30	51	80	1	137
	3"	BSPM	**RFFTAF0900**	33	56	95	1	210
	4"	BSPM	**RFFTAF1100**	39	63	120	1	340

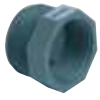
Cap BSP female threaded

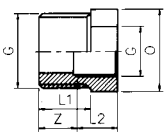




Code: PSPVF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
	⅜"	BSPF	**RFFCAF0160**	11	22	23	10	7
	½"	BSPF	**RFFCAF0200**	15	21	28	10	15
	¾"	BSPF	**RFFCAF0250**	16	23	34	10	17
	1"	BSPF	**RFFCAF0320**	19	26	42	10	20
	1¼"	BSPF	**RFFCAF0400**	21	29	51	10	35
	1½"	BSPF	**RFFCAF0500**	21	32	61	10	50
	2"	BSPF	**RFFCAF0630**	26	37	75	10	80
	2½"	BSPF	**RFFCAF0750**	30	50	89	10	190
	3"	BSPF	**RFFCAF0900**	33	53	103	10	270
	4"	BSPF	**RFFCAF1100**	39	59	130	10	420

Reducing bush BSP male threaded/BSP female threaded



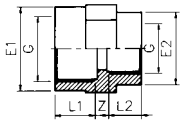


Code: PSPVF	Nominal Size	Code	L1	L2	Z	O	Pack Qty	Weight (GR)
	¾" x ½"	**RFFRCF025B**	16	15	13	30	10	13
	1" x ¾"	**RFFRCF032C**	19	16	15	36	10	20
	1¼" x 1"	**RFFRCF040D**	21	19	16	46	10	35
	1½" x 1¼"	**RFFRCF050E**	21	21	14	50	10	37
	2" x 1½"	**RFFRCF063F**	26	21	18	65	10	67
	2½" x 2"	**RFFRCF075G**	30	26	21	80	1	135
	3" x 2½"	**RFFRCF090H**	33	30	20	95	1	160
	4" x 3"	**RFFRCF110I**	39	33	24	120	1	380

PVCu threaded fittings

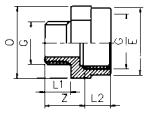
Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Reducing piece BSP female threaded/BSP female threaded



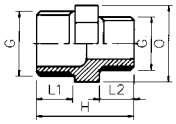
Code: PSPVF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	½" x ⅜"	**RFFMRF020A**	15	11	6	28	23	10	17
	¾" x ½"	**RFFMRF025B**	16	15	7	34	27	10	25
	1" x ¾"	**RFFMRF032C**	19	16	7	42	33	10	40
	1¼" x 1"	**RFFMRF040D**	21	19	8	51	41	10	62
	1½" x 1¼"	**RFFMRF050E**	21	21	8	58	50	10	72
	2" x 1½"	**RFFMRF063F**	26	21	8	72	61	10	115
	2½" x 2"	**RFFMRF075G**	30	26	8	89	75	1	128
	3" x 2½"	**RFFMRF090H**	33	30	9	103	88	1	286
	4" x 3"	**RFFMRF110I**	39	33	10	130	106	1	436

Reducing piece BSP female threaded/BSP male threaded



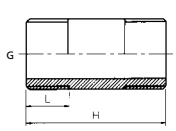
Code: PSPVF	Nominal Size	Code	L1	L2	Z	O	E	Pack Qty	Weight (GR)
	½" x ⅜"	**RFFMGF020A**	11	15	22	30	28	10	16
	¾" x ½"	**RFFMGF025B**	15	16	24	36	34	10	22
	1" x ¾"	**RFFMGF032C**	16	19	26	46	42	10	37
	1¼" x 1"	**RFFMGF040D**	19	21	30	55	51	10	59
	1½" x 1¼"	**RFFMGF050E**	21	21	33	60	58	10	75
	2" x 1½"	**RFFMGF063F**	21	26	34	75	72	10	110
	2½" x 2"	**RFFMGF075G**	26	30	38	90	89	1	190
	3" x 2½"	**RFFMGF090H**	30	33	44	105	103	1	262
	4" x 3"	**RFFMGF110I**	33	39	48	130	130	1	350

Reducing nipple BSP male threaded/BSP male threaded



Code: PSPVF	Nominal Size	Code	L1	L2	H	O	Pack Qty	Weight (GR)
	½" x ⅜"	**RFFNRF020A**	15	11	38	24	10	10
	¾" x ½"	**RFFNRF025B**	16	15	43	30	10	17
	1" x ¾"	**RFFNRF032C**	19	16	47	36	10	25
	1¼" x 1"	**RFFNRF040D**	21	19	56	46	10	42
	1½" x 1¼"	**RFFNRF050E**	21	21	58	50	10	48
	2" x 1½"	**RFFNRF063F**	26	21	62	65	10	80
	2½" x 2"	**RFFNRF075G**	30	26	73	80	1	138
	3" x 2½"	**RFFNRF090H**	33	30	82	95	1	208
	4" x 3"	**RFFNRF110I**	39	33	90	120	1	340

Barrel nipple BSP male taper threaded

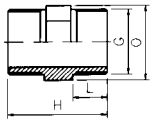


Code: PSPVF	Nominal Size	G	Code	L	H	Pack Qty	Weight (GR)
	⅜"	BSPT	**RFFBAF0160**	14	44	10	11
	½"	BSPT	**RFFBAF0200**	16	50	10	13
	¾"	BSPT	**RFFBAF0250**	19	56	10	20
	1"	BSPT	**RFFBAF0320**	21	62	10	30
	1¼"	BSPT	**RFFBAF0400**	24	75	10	51
	1½"	BSPT	**RFFBAF0500**	32	87	10	83
	2"	BSPT	**RFFBAF0630**	29	87	10	119
	2½"	BSPT	**RFFBAF0750**	30	105	1	169
	3"	BSPT	**RFFBAF0900**	37	128	1	243
	4"	BSPT	**RFFBAF1100**	42	156	1	485

PVCu threaded fittings

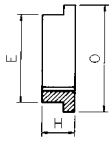
Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Hexagon nipple BSP male threaded/BSP male threaded



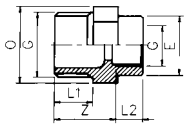
Code: PSPVF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
	⅜"	BSPM	**RFFNIF0160**	11	33	22	10	9
	½"	BSPM	**RFFNIF0200**	15	42	24	10	10
	¾"	BSPM	**RFFNIF0250**	16	44	30	10	18
	1"	BSPM	**RFFNIF0320**	19	50	36	10	30
	1¼"	BSPM	**RFFNIF0400**	21	58	46	10	45
	1½"	BSPM	**RFFNIF0500**	21	58	50	10	50
	2"	BSPM	**RFFNIF0630**	26	66	65	10	90
	2½"	BSPM	**RFFNIF0750**	30	78	80	1	140
	3"	BSPM	**RFFNIF0900**	33	85	95	1	220
	4"	BSPM	**RFFNIF1100**	39	96	120	1	345

Backnut BSP female threaded



Code: PSPVF	Nominal Size	G	Code	E	H	O	Pack Qty	Weight (GR)
	½"	BSPF	**RFFNUF0200**	28	13	38	10	13
	¾"	BSPF	**RFFNUF0250**	33	14	43	10	16
	1"	BSPF	**RFFNUF0320**	46	16	56	10	30
	1¼"	BSPF	**RFFNUF0400**	50	18	65	10	35
	1½"	BSPF	**RFFNUF0500**	60	19	72	10	45
	2"	BSPF	**RFFNUF0630**	80	21	94	10	90
	2½"	BSPF	**RFFNUF0750**	95	23	105	1	180
	3"	BSPF	**RFFNUF0900**	110	27	125	1	235
	4"	BSPF	**RFFNUF1100**	140	31	154	1	350

Reducing piece BSP male threaded/BSP female threaded

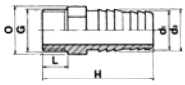


Code: PSPVF	Nominal Size	Code	L1	L2	Z	E	O	Pack Qty	Weight (GR)
	½" x ⅜"	**RFFRIF020A**	15	11	24	23	24	10	12
	¾" x ⅜"	**RFFRIF025A**	16	11	25	23	30	10	16
	¾" x ½"	**RFFRIF025B**	16	15	26	28	30	10	20
	1" x ⅜"	**RFFRIF032A**	19	11	28	23	36	10	25
	1" x ½"	**RFFRIF032B**	19	15	29	28	36	10	26
	1" x ¾"	**RFFRIF032C**	19	16	30	34	36	10	26
	1¼" x ½"	**RFFRIF040B**	21	15	33	28	46	10	42
	1¼" x ¾"	**RFFRIF040C**	21	16	33	34	46	10	43
	1¼" x 1"	**RFFRIF040D**	21	19	33	42	46	10	46
	1½" x ¾"	**RFFRIF050C**	21	16	34	34	50	10	46
	1½" x 1"	**RFFRIF050D**	21	19	34	42	50	10	50
	1½" x 1¼"	**RFFRIF050E**	21	21	34	51	55	10	60
	2" x 1"	**RFFRIF063D**	26	19	37	42	65	10	85
	2" x 1¼"	**RFFRIF063E**	26	21	37	51	65	10	85
	2" x 1½"	**RFFRIF063F**	26	21	37	58	65	10	87
	2½" x 1¼"	**RFFRIF075E**	30	21	43	51	80	1	140
	2½" x 1½"	**RFFRIF075F**	30	21	43	58	80	1	138
	2½" x 2"	**RFFRIF075G**	30	26	43	72	80	1	142
	3" x 1½"	**RFFRIF090F**	33	21	47	58	95	1	200
	3" x 2"	**RFFRIF090G**	33	26	47	72	95	1	205
	3" x 2½"	**RFFRIF090H**	33	30	47	89	95	1	215
	4" x 2"	**RFFRIF110G**	39	26	53	72	120	1	325
	4" x 2½"	**RFFRIF110H**	39	30	53	89	120	1	330
	4" x 3"	**RFFRIF110I**	39	33	53	103	120	1	350

PVCu threaded fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For gaskets see Accessories section

Hose adaptor BSP male threaded/spigot serrated

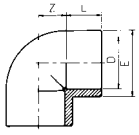


Code: PSPVF	Nominal Size	Code	L	H	D1	D2	O	Pack Qty	Weight (GR)
	⅜" x 16	**RFFPGF016A**	12	64	16	18	19	1	15
	½" x 20	**RFFPGF020B**	15	70	20	22	24	1	20
	¾" x 25	**RFFPGF025C**	17	76	25	27	30	1	30
	1" x 32	**RFFPGF032D**	20	80	32	34	36	1	50
	1¼" x 40	**RFFPGF040E**	22	92	40	42	46	1	70
	1½" x 50	**RFFPGF050F**	23	99	50	52	50	1	118
	2" x 63	**RFFPGF063G**	26	118	60	63	65	1	190

PVCu solvent cement fittings metric

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Elbow 90° plain

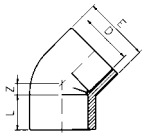


Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	**RFIGOI0160**	14	9	23	10	13
	20	**RFIGOI0200**	16	11	27	10	20
	25	**RFIGOI0250**	19	14	33	10	35
	32	**RFIGOI0320**	22	17	41	10	60
	40	**RFIGOI0400**	26	23	50	10	90
	50	**RFIGOI0500**	31	28	61	10	135
	63	**RFIGOI0630**	38	34	75	5	220
	75	**RFIGOI0750**	44	40	89	1	375
	90	**RFIGOI0900**	51	48	106	1	600
	110	**RFIGOI1100**	61	58	129	1	1060
	125	**RFIGOI1250**	69	66	145	1	1350
	140	**RFIGOI1400**	76	72	164	1	2000
	160	**RFIGOI1600**	86	81	188	1	3200
	200*	**RFIGOI2000**	106	102	232	1	5850
	225*	**RFIGOI2250**	119	115	258	1	7500
	250*	**RFIGOI2500**	131	188	287	1	12480
	280*	**RFIGOI2800**	147	210	325	1	17000
	315*	**RFIGOI3150**	164	236	359	1	23370

PVCu solvent cement fittings metric

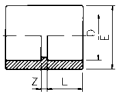
Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Elbow 45° plain



Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	**RFIGYI0160**	14	6	23	10	10
	20	**RFIGYI0200**	16	11	27	10	17
	25	**RFIGYI0250**	19	6	33	10	30
	32	**RFIGYI0320**	22	8	41	10	47
	40	**RFIGYI0400**	26	10	50	10	77
	50	**RFIGYI0500**	31	12	61	10	115
	63	**RFIGYI0630**	38	15	75	10	190
	75	**RFIGYI0750**	44	18	89	1	310
	90	**RFIGYI0900**	51	21	106	1	485
	110	**RFIGYI1100**	61	25	128	1	835
	125	**RFIGYI1250**	69	27	145	1	1080
	140	**RFIGYI1400**	76	32	164	1	1640
	160	**RFIGYI1600**	86	36	184	1	2100
	200*	**RFIGYI2000**	106	43	232	1	5000
	225*	**RFIGYI2250**	119	49	258	1	6200
	250*	**RFIGYI2500**	131	58	286	1	7700
	280*	**RFIGYI2800**	146	62	320	1	10460
	315*	**RFIGYI3150**	164	66	359	1	15500

Socket plain

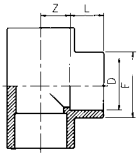


Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	**RFIMAI0160**	14	3	23	10	9
	20	**RFIMAI0200**	16	3	27	10	15
	25	**RFIMAI0250**	19	3	33	10	23
	32	**RFIMAI0320**	22	3	41	10	36
	40	**RFIMAI0400**	26	3	50	10	60
	50	**RFIMAI0500**	31	3	61	10	85
	63	**RFIMAI0630**	38	3	75	10	145
	75	**RFIMAI0750**	44	4	88	1	222
	90	**RFIMAI0900**	51	5	106	1	353
	110	**RFIMAI1100**	61	6	129	1	605
	125	**RFIMAI1250**	69	7	145	1	840
	140	**RFIMAI1400**	76	8	161	1	1100
	160	**RFIMAI1600**	86	8	182	1	1400
	200	**RFIMAI2000**	106	10	227	1	2600
	225*	**RFIMAI2250**	119	11	258	1	4100
	250*	**RFIMAI2500**	131	11	272	1	6000
	280*	**RFIMAI2800**	146	10	320	1	7630
	315*	**RFIMAI3150**	164	12	355	1	9780

PVCu solvent cement fittings metric

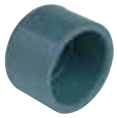
Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

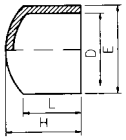
Tee 90° plain



Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	RFITII0160	14	9	24	10	15
	20	RFITII0200	16	11	28	10	25
	25	RFITII0250	19	14	34	10	44
	32	RFITII0320	22	17	42	10	75
	40	RFITII0400	26	21	51	10	120
	50	RFITII0500	31	26	61	10	172
	63	RFITII0630	38	33	75	5	300
	75	RFITII0750	44	39	89	1	495
	90	RFITII0900	51	47	106	1	790
	110	RFITII1100	61	57	129	1	1330
	125	RFITII1250	69	67	146	1	2100
	140	RFITII1400	76	71	163	1	2550
	160	RFITII1600	86	81	188	1	4100
	200*	RFITII2000	106	102	232	1	7200
	225*	RFITII2250	119	114	258	1	9700
	250*	RFITII2500	131	128	286	1	13250
	280*	RFITII2800	146	144	319	1	17840
	315*	RFITII3150	164	162	360	1	25300

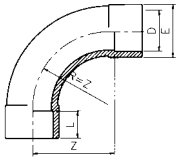
Cap plain





Code: PSPVF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	16	RFICAI0160	14	26	23	10	7
	20	RFICAI0200	16	30	27	10	10
	25	RFICAI0250	19	34	33	10	18
	32	RFICAI0320	22	38	42	10	30
	40	RFICAI0400	26	43	50	10	45
	50	RFICAI0500	31	48	61	10	65
	63	RFICAI0630	38	56	75	10	110
	75	RFICAI0750	44	67	89	1	208
	90	RFICAI0900	51	78	106	1	325
	110	RFICAI1100	61	81	128	1	500
	125	RFICAI1250	69	103	145	1	670
	140	RFICAI1400	76	114	162	1	920
	160*	RFICAI1600	86	127	181	1	1120
	200*	RFICAI2000	106	145	227	1	1680
	225*	RFICAI2250	120	165	255	1	2978

Bend 90° short radius plain

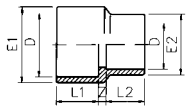


Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	20	RFICUI0200	16	40	27	1	30
	25	RFICUI0250	19	50	33	1	50
	32	RFICUI0320	22	64	41	1	92
	40	RFICUI0400	26	80	50	1	165
	50	RFICUI0500	31	100	61	1	270
	63	RFICUI0630	38	126	76	1	490
	75	RFICUI0750	44	150	90	1	990
	90	RFICUI0900	51	180	110	1	1600
	110	RFICUI1100	61	220	132	1	2150

PVCu solvent cement fittings metric

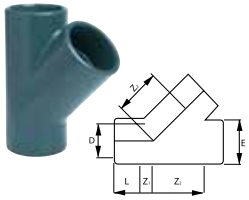
Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Reducing socket plain



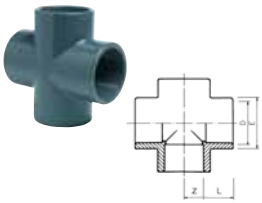
Code: PSPVF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	20 x 16	RFIMRI020A	16	14	6	25	23	10	15
	25 x 20	RFIMRI025B	19	16	6	32	28	10	25
	32 x 25	RFIMRI032C	22	19	6	40	33	10	35
	40 x 32	RFIMRI040D	26	22	10	50	41	10	75
	50 x 40	RFIMRI050E	31	26	12	63	50	10	110
	63 x 40	RFIMRI063E	38	26	17	75	50	10	140
	63 x 50	RFIMRI063F	38	31	12	75	61	10	130
	75 x 63	RFIMRI075G	44	38	18	90	75	1	295
	90 x 75	RFIMRI090H	51	44	16	100	88	1	525
	110 x 90	RFIMRI110I	61	51	17	125	106	1	530
	125 x 110	RFIMRI125L	69	61	17	140	129	1	580
	140 x 110	RFIMRI140L	76	61	18	160	129	1	905

Tee 45° plain



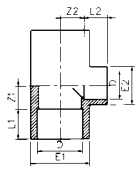
Code: PSPVF	Nominal Size	Code	L	Z1	Z2	E	Weight (GR)
	20	RFITYI0200	16	7	29	27	36
	25	RFITYI0250	19	7	36	33	59
	32	RFITYI0320	22	8	44	42	103
	40	RFITYI0400	26	10	54	50	125
	50	RFITYI0500	31	12	65	61	254
	63	RFITYI0630	38	14	80	74	420
	75	RFITYI0750	44	18	101	91	513
	90	RFITYI0900	51	20	122	106	1100
	110	RFITYI1100	61	27	149	133	1950

Cross 90° plain



Code: PSPVF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	RFICXI0200	16	11	28	30
	25	RFICXI0250	19	14	34	60
	32	RFICXI0320	22	17	42	110
	40	RFICXI0400	26	21	51	180
	50	RFICXI0500	31	26	61	270
	63	RFICXI0630	38	33	75	510

Tee 90° reduced on branch plain

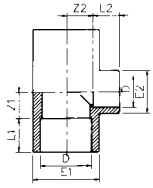


Code: PSPVF	Nominal Size	Code	L1	L2	Z1	Z2	E1	E2	Weight (GR)
	20 x 16	RFITRI020A	16	14	11	11	28	24	26
	25 x 16	RFITRI025A	19	14	14	14	34	28	40
	25 x 20	RFITRI025B	19	16	14	14	34	28	42
	32 x 16	RFITRI032A	22	14	17	17	42	24	68
	32 x 20	RFITRI032B	22	16	17	17	42	28	69
	32 x 25	RFITRI032C	22	19	17	17	42	34	70
	40 x 16	RFITRI040A	26	14	21	21	51	23	100
	40 x 20	RFITRI040B	26	16	21	21	51	28	105
	40 x 25	RFITRI040C	26	19	21	21	51	34	107

PVCu solvent cement fittings metric

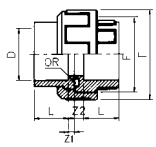
Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Tee 90° reduced on branch plain



Code: PSPVF	Nominal Size	Code	L1	L2	Z1	Z2	E1	E2	Weight (GR)
	40 x 32	**RFITRI040D**	26	22	21	21	51	42	112
	50 x 20	**RFITRI050B**	31	16	26	26	61	28	155
	50 x 25	**RFITRI050C**	31	19	26	26	61	34	157
	50 x 32	**RFITRI050D**	31	22	26	26	61	42	162
	50 x 40	**RFITRI050E**	31	26	26	26	61	51	168
	63 x 25	**RFITRI063C**	38	19	33	33	75	34	270
	63 x 32	**RFITRI063D**	38	22	33	33	75	42	275
	63 x 40	**RFITRI063E**	38	26	33	33	75	51	277
	63 x 50	**RFITRI063F**	38	31	33	33	75	61	278
	75 x 40	**RFITRI075E**	44	26	39	39	89	51	465
	75 x 50	**RFITRI075F**	44	31	39	39	89	61	465
	75 x 63	**RFITRI075G**	44	38	39	39	89	75	478
	90 x 50	**RFITRI090F**	51	31	47	47	106	61	703
	90 x 63	**RFITRI090G**	51	38	47	47	106	75	713
	90 x 75	**RFITRI090H**	51	44	47	47	106	89	730
	110 x 50	**RFITRI110F**	61	31	57	57	129	61	1250
	110 x 63	**RFITRI110G**	61	38	57	57	130	75	1265
	110 x 75	**RFITRI110H**	61	44	57	57	130	89	1260
	110 x 90	**RFITRI110I**	61	51	57	57	130	106	1295
	160 x 90	**RFITRI160I**	86	51	82	82	188	106	3750
	160 x 110	**RFITRI160L**	86	61	82	82	188	129	3800
	160 x 140	**RFITRI160N**	86	76	82	82	184	163	3940

Union plain. Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C). Supplied with EPDM O ring–for FPM O ring see Accessories section

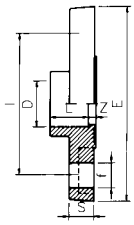


Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	16	**RFIBOI0160**	14	3	10	¾"	34	10	30
	20	**RFIBOI0200**	16	3	10	1"	42	10	42
	25	**RFIBOI0250**	19	3	10	1¼"	52	10	70
	32	**RFIBOI0320**	22	3	10	1½"	59	10	97
	40	**RFIBOI0400**	26	3	12	2"	72	10	115
	50	**RFIBOI0500**	31	3	14	2¼"	79	10	216
	63	**RFIBOI0630**	38	3	18	2¾"	96	10	350
	75*	**RFIBOI0750**	44	3	18	3½"	119	1	580
	90*	**RFIBOI0900**	51	5	18	4"	134	1	760
	110*	**RFIBOI1100**	61	5	18	5"	163	1	1340

PVCu solvent cement fittings metric

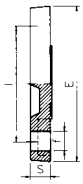
Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Full faced flange drilled to BS4504 NP10/16 plain



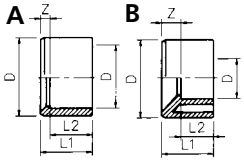
Code: PSPVF	Nominal Size	Code	L	Z	E	I	f	HOLES	S	Weight (GR)
	20	**RFIFFI0200**	16	5	95	65	14	4	11	78
	25	**RFIFFI0250**	19	5	105	75	14	4	12	105
	32	**RFIFFI0320**	22	5	115	85	14	4	14	143
	40	**RFIFFI0400**	26	5	142	100	18	4	15	220
	50	**RFIFFI0500**	31	5	152	110	18	4	16	280
	63	**RFIFFI0630**	38	5	165	125	18	4	18	380
	75	**RFIFFI0750**	44	6	185	145	18	4	19	505
	90	**RFIFFI0900**	51	7	200	160	18	8	20	685
	110	**RFIFFI1100**	61	8	220	180	18	8	22	940

Blanking flange drilled to BS4504 NP10/16. Operating pressure show at 20°C



Code: PSPVF	Nominal Size	Code	E	S	I	f	HOLES	Weight (GR)
	20	**RFIFCI0200**	95	11	65	14	4	76
	25	**RFIFCI0250**	105	12	75	14	4	104
	32	**RFIFCI0320**	115	14	85	14	4	140
	40	**RFIFCI0400**	142	15	100	18	4	220
	50	**RFIFCI0500**	152	16	110	18	4	280
	63	**RFIFCI0630**	165	18	125	18	4	370
	75	**RFIFCI0750**	185	19	145	18	4	495
	90	**RFIFCI0900**	200	20	160	18	8	655
	110	**RFIFCI1100**	220	22	180	18	8	850
	125	**RFIFCI1250**	230	24	190	18	8	950
	140	**RFIFCI1400**	250	26	210	18	8	1165
	160	**RFIFCI1600**	285	28	240	22	8	1610
	200	**RFIFCI2000**	340	30	295	22	8	2480
	225	**RFIFCI2250**	340	30	295	22	8	2480

Reducing bush plain

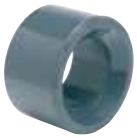


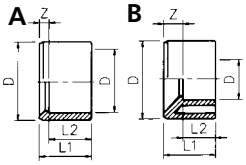
Code: PSPVF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	20 x 16	**RFIRCI020A**	**16**	14	2	A	10	3
	25 x 16	**RFIRCI025A**	**19**	14	5	B	10	10
	25 x 20	**RFIRCI025B**	**19**	16	3	A	10	6
	32 x 16	**RFIRCI032A**	**22**	14	8	B	10	15
	32 x 20	**RFIRCI032B**	**22**	16	6	B	10	15
	32 x 25	**RFIRCI032C**	**22**	19	3	A	10	10
	40 x 20	**RFIRCI040B**	**26**	16	10	B	10	25
	40 x 25	**RFIRCI040C**	**26**	19	7	B	10	30
	40 x 32	**RFIRCI040D**	**26**	22	4	A	10	16

PVCu solvent cement fittings metric

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Reducing bush plain



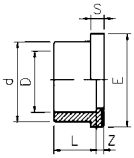


Code: PSPVF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	50 x 25	**RFIRCI050C**	31	19	12	B	10	45
	50 x 32	**RFIRCI050D**	31	22	9	B	10	40
	50 x 40	**RFIRCI050E**	31	26	5	A	10	30
	63 x 32	**RFIRCI063D**	38	22	16	B	10	83
	63 x 40	**RFIRCI063E**	38	26	12	B	10	78
	63 x 50	**RFIRCI063F**	38	31	7	A	10	61
	75 x 40	**RFIRCI075E**	44	26	18	B	1	120
	75 x 50	**RFIRCI075F**	44	31	13	B	1	122
	75 x 63	**RFIRCI075G**	44	38	6	A	1	80
	90 x 50	**RFIRCI090F**	51	31	20	B	1	210
	90 x 63	**RFIRCI090G**	51	38	13	B	1	195
	90 x 75	**RFIRCI090H**	51	44	7	A	1	140
	110 x 63	**RFIRCI110G**	61	38	23	B	1	372
	110 x 75	**RFIRCI110H**	61	44	17	B	1	370
	110 x 90	**RFIRCI110I**	61	51	10	A	1	275
	125 x 75	**RFIRCI125H**	69	44	25	B	1	412
	125 x 90	**RFIRCI125I**	69	51	18	B	1	450
	125 x 110	**RFIRCI125L**	69	61	8	A	1	275
	140 x 90	**RFIRCI140I**	76	51	25	B	1	550
	140 x 110	**RFIRCI140L**	76	61	15	B	1	510
	140 x 125	**RFIRCI140M**	76	69	7	A	1	320
	160 x 110	**RFIRCI160L**	86	61	25	B	1	820
	160 x 125	**RFIRCI160M**	86	69	17	B	1	725
	160 x 140	**RFIRCI160N**	86	76	10	A	1	555
	200 x 160*	**RFIRCI200O**	96	86	10	A	1	710
	225 x 160*	**RFIRCI225O**	119	86	33	B	1	1700
	225 x 200*	**RFIRCI225P**	119	106	13	A	1	1360
	250 x 160*	**RFIRCI250O**	132	87	45	B	1	3050
	250 x 200*	**RFIRCI250P**	132	97	35	A	1	3500
	250 x 225*	**RFIRCI250Q**	132	107	25	A	1	2150
	280 x 225*	**RFIRCI280Q**	146	119	27	B	1	2630
	315 x 200*	**RFIRCI315P**	165	107	58	B	1	8650
	315 x 225*	**RFIRCI315Q**	165	120	45	B	1	8100
	315 x 250*	**RFIRCI315R**	165	132	33	B	1	5080

PVCu solvent cement fittings metric

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). * Maximum working pressure: 10 Bar (145 psi) at 20°C

Stub flange (serrated face) plain

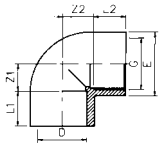


Code: PSPVF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	20	**RFIQRI0200**	16	3	27	6	34	10	10
	25	**RFIQRI0250**	19	3	33	7	41	10	16
	32	**RFIQRI0320**	22	3	41	7	50	10	25
	40	**RFIQRI0400**	26	3	50	8	61	10	40
	50	**RFIQRI0500**	31	3	61	8	73	10	60
	63	**RFIQRI0630**	38	3	76	9	90	10	105
	75	**RFIQRI0750**	44	3	90	10	106	1	160
	90	**RFIQRI0900**	51	5	107	11	125	1	280
	110	**RFIQRI1100**	61	5	131	12	150	1	445
	125	**RFIQRI1250**	74	4	146	12	168	1	540
	140	**RFIQRI1400**	78	6	163	13	188	1	740
	160	**RFIQRI1600**	86	7	185	13	213	1	1000
	200*	**RFIQRI2000**	106	7	232	18	254	1	2000
	225*	**RFIQRI2250**	119	7	248	19	274	1	1700
	250*	**RFIQRI2500**	131	9	279	20	308	1	2300
	280*	**RFIQRI2800**	147	15	307	32	327	1	3650
	315*	**RFIQRI3150**	165	16	346	32	377	1	4950

PVCu adaptor fittings metric

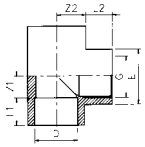
Fittings up to 110mm 16 bar (20°C)

Elbow 90°plain/BSP female threaded



Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	16 x ⅜"	BSPF	**RFPGOP016A**	14	11	9	12	23	10	13
	20 x ½"	BSPF	**RFPGOP020B**	16	15	11	12	28	10	20
	25 x ¾"	BSPF	**RFPGOP025C**	19	16	14	17	34	10	35
	32 x 1"	BSPF	**RFPGOP032D**	22	19	17	20	42	10	60
	40 x 1¼"	BSPF	**RFPGOP040E**	26	21	21	26	51	10	90
	50 x 1½"	BSPF	**RFPGOP050F**	31	21	26	36	61	10	155
	63 x 2"	BSPF	**RFPGOP063G**	38	26	33	45	75	10	265
	75 x 2½"	BSPF	**RFPGOP075H**	44	30	39	53	89	1	400
	90 x 3"	BSPF	**RFPGOP090I**	51	33	47	65	106	1	670
	110 x 4"	BSPF	**RFPGOP110L**	61	39	57	79	129	1	1055

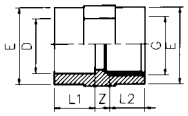
Tee 90° plain/BSP female threaded branch



Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	16 x ⅜"	BSPF	**RFPTIP016A**	14	11	9	12	23	10	17
	20 x ½"	BSPF	**RFPTIP020B**	16	15	11	12	28	10	30
	25 x ¾"	BSPF	**RFPTIP025C**	19	16	14	17	34	10	45
	32 x 1"	BSPF	**RFPTIP032D**	22	19	17	20	42	10	75
	40 x 1¼"	BSPF	**RFPTIP040E**	26	21	21	26	51	10	120
	50 x 1½"	BSPF	**RFPTIP050F**	31	21	26	36	61	10	195
	63 x 2"	BSPF	**RFPTIP063G**	38	26	33	45	75	5	335
	75 x 2½"	BSPF	**RFPTIP075H**	44	30	39	53	89	1	505
	90 x 3"	BSPF	**RFPTIP090I**	51	33	47	65	106	1	810
	110 x 4"	BSPF	**RFPTIP110L**	61	39	57	79	129	1	1325

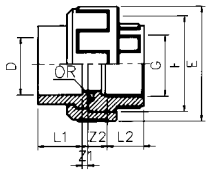
PVCu adaptor fittings metric
Fittings up to 110mm 16 bar (20°C)

Socket plain/BSP female threaded



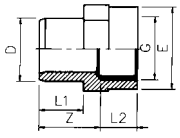
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	16 x ⅜"	BSPF	**RFPMAP016A**	14	11	6	23	10	9
	20 x ½"	BSPF	**RFPMAP020B**	17	15	4	28	10	18
	25 x ¾"	BSPF	**RFPMAP025C**	20	16	6	34	10	25
	32 x 1"	BSPF	**RFPMAP032D**	23	19	7	42	10	38
	40 x 1¼"	BSPF	**RFPMAP040E**	28	21	7	51	10	60
	50 x 1½"	BSPF	**RFPMAP050F**	32	21	7	61	10	95
	63 x 2"	BSPF	**RFPMAP063G**	39	26	7	75	10	165
	75 x 2½"	BSPF	**RFPMAP075H**	44	30	8	89	1	215
	90 x 3"	BSPF	**RFPMAP090I**	51	33	9	106	1	340
	110 x 4"	BSPF	**RFPMAP110L**	61	39	10	129	1	550

Union plain/BSP female threaded



Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	F	E	Pack Qty	Weight (GR)
	16 x ⅜"	BSPF	**RFPBOP016A**	14	11	3	14	¾"	34	10	30
	20 x ½"	BSPF	**RFPBOP020B**	16	15	3	11	1"	42	10	42
	25 x ¾"	BSPF	**RFPBOP025C**	19	16	3	13	1¼"	52	10	70
	32 x 1"	BSPF	**RFPBOP032D**	22	19	3	13	1½"	59	10	95
	40 x 1¼"	BSPF	**RFPBOP040E**	26	21	3	17	2"	72	10	155
	50 x 1½"	BSPF	**RFPBOP050F**	31	21	3	24	2¼"	79	10	240
	63 x 2"	BSPF	**RFPBOP063G**	38	26	3	30	2¾"	96	10	405
	75 x 2½"*	BSPF	**RFPBOP075H**	44	30	3	32	3½"	119	1	625
	90 x 3"*	BSPF	**RFPBOP090I**	51	33	5	36	4"	134	1	865
	110 x 4"*	BSPF	**RFPBOP110L**	61	39	5	40	5"	163	1	1340

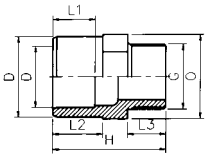
Spigot plain/BSP female threaded



Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	16 x ⅜"	BSPF	**RFPAFP016A**	14	12	23	22	10	16
	20 x ½"	BSPF	**RFPAFP020B**	16	15	28	24	10	20
	20 x ¾"	BSPF	**RFPAFP020C**	16	16	34	24	10	25
	25 x ½"	BSPF	**RFPAFP025B**	19	15	28	27	10	20
	25 x ¾"	BSPF	**RFPAFP025C**	19	16	34	27	10	25
	25 x 1"	BSPF	**RFPAFP025D**	19	19	42	27	10	40
	32 x ¾"	BSPF	**RFPAFP032C**	22	16	34	30	10	32
	32 x 1"	BSPF	**RFPAFP032D**	22	19	42	30	10	43
	40 x 1"	BSPF	**RFPAFP040D**	26	19	42	36	10	50
	40 x 1¼"	BSPF	**RFPAFP040E**	26	21	51	36	10	65
	50 x 1½"	BSPF	**RFPAFP050F**	31	21	58	41	10	73
	50 x 2"	BSPF	**RFPAFP050G**	31	26	72	41	10	80
	63 x 2"	BSPF	**RFPAFP063G**	38	26	72	48	10	135
	75 x 2"	BSPF	**RFPAFP075G**	44	26	72	53	1	175
	75 x 2½"	BSPF	**RFPAFP075H**	44	30	89	58	1	225
	75 x 3"	BSPF	**RFPAFP075I**	44	33	103	58	1	295
	90 x 2½"	BSPF	**RFPAFP090H**	51	30	89	65	1	275
	90 x 3"	BSPF	**RFPAFP090I**	51	33	103	65	1	310
	90 x 4"	BSPF	**RFPAFP090L**	51	39	130	65	1	450
	110 x 3"	BSPF	**RFPAFP110I**	61	33	103	76	1	440
	110 x 4"	BSPF	**RFPAFP110L**	61	39	130	76	1	480

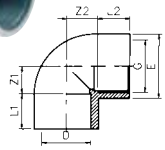
PVCu adaptor fittings metric
Fittings up to 110mm 16 bar (20°C)

Socket or spigot plain/BSP male threaded



Code: PSPVF	Nominal Size	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	12 x 16 x ⅜"	RFPAMP012A	12	14	11	36	22	10	9
	16 x 20 x ⅜"	RFPAMP016A	14	16	11	40	24	10	10
	16 x 20 x ½"	RFPAMP016B	14	16	15	43	24	10	11
	20 x 25 x ⅜"	RFPAMP020A	16	19	11	43	30	10	15
	20 x 25 x ½"	RFPAMP020B	16	19	15	46	30	10	15
	20 x 25 x ¾"	RFPAMP020C	16	19	16	47	30	10	18
	25 x 32 x ½"	RFPAMP025B	19	22	15	49	36	10	25
	25 x 32 x ¾"	RFPAMP025C	19	22	16	50	36	10	26
	25 x 32 x 1"	RFPAMP025D	19	22	19	53	36	10	30
	32 x 40 x ¾"	RFPAMP032C	22	26	16	54	46	10	35
	32 x 40 x 1"	RFPAMP032D	22	26	19	57	46	10	40
	32 x 40 x 1¼"	RFPAMP032E	22	26	21	60	46	10	45
	40 x 50 x 1"	RFPAMP040D	26	31	19	64	55	10	68
	40 x 50 x 1¼"	RFPAMP040E	26	31	21	67	55	10	75
	40 x 50 x 1½"	RFPAMP040F	26	31	21	67	55	10	77
	50 x 63 x 1¼"	RFPAMP050E	31	38	21	74	65	10	110
	50 x 63 x 1½"	RFPAMP050F	31	38	21	74	65	10	113
	50 x 63 x 2"	RFPAMP050G	31	38	26	78	65	10	120
	63 x 75 x 1½"	RFPAMP063F	38	44	21	80	80	1	160
	63 x 75 x 2"	RFPAMP063G	38	44	26	84	80	1	150
	63 x 75 x 2½"	RFPAMP063H	38	44	30	91	80	1	170
	75 x 90 x 2"	RFPAMP075G	44	52	26	94	95	1	270
	75 x 90 x 2½"	RFPAMP075H	44	52	30	99	95	1	270
	75 x 90 x 3"	RFPAMP075I	44	52	33	102	95	1	280
	90 x 110 x 2½"	RFPAMP090H	51	61	30	110	115	1	460
	90 x 110 x 3"	RFPAMP090I	51	61	33	113	115	1	475
	90 x 110 x 4"	RFPAMP090L	51	61	39	118	115	1	485
	110 x 125 x 3"	RFPAMP110I	61	66	33	115	130	1	475
	110 x 125 x 4"	RFPAMP110L	61	66	39	120	130	1	500

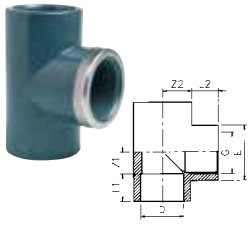
Elbow 90° Plain/BSP Female with Stainless Steel Reinforcing Ring



Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	20 x ½"	BSPF	RFRGER0200	16	15	11	12	28	10	24
	25 x ¾"	BSPF	RFRGER0250	19	16	14	17	34	10	43
	32 x 1"	BSPF	RFRGER0320	22	19	17	20	42	10	72
	40 x 1¼"	BSPF	RFRGER0400	26	21	21	26	51	10	106
	50 x 1½"	BSPF	RFRGER0500	31	21	26	36	61	10	175
	63 x 2"	BSPF	RFRGER0630	38	26	33	45	75	10	289

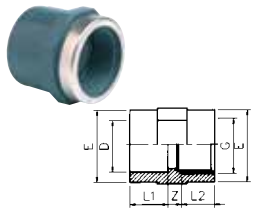
PVCu adaptor fittings metric
Fittings up to 110mm 16 bar (20°C)

Tee 90° plain/BSP female threaded branch with stainless steel reinforcing ring



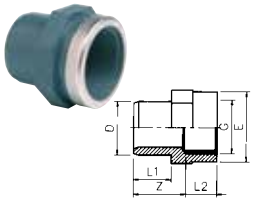
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	20 x ½"	BSPF	**RFRTER0200**	16	15	11	12	28	10	34
	25 x ¾"	BSPF	**RFRTER0250**	19	16	14	17	34	10	53
	32 x 1"	BSPF	**RFRTER0320**	22	19	17	20	42	10	87
	40 x 1¼"	BSPF	**RFRTER0400**	27	21	21	26	51	10	136
	50 x 1½"	BSPF	**RFRTER0500**	32	21	26	36	61	10	215
	63 x 2"	BSPF	**RFRTER0630**	39	26	33	45	75	5	359

Socket plain/BSP female threaded with stainless steel reinforcing ring



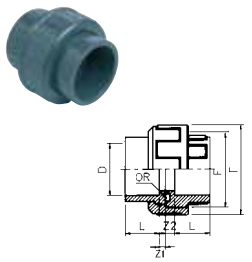
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	20 x ½"	BSPF	**RFRMER0200**	16	15	4	28	10	22
	25 x ¾"	BSPF	**RFRMER0250**	19	16	6	34	10	33
	32 x 1"	BSPF	**RFRMER0320**	22	19	6	42	10	50
	40 x 1¼"	BSPF	**RFRMER0400**	27	21	8	51	10	76
	50 x 1½"	BSPF	**RFRMER0500**	32	21	13	61	10	115
	63 x 2"	BSPF	**RFRMER0630**	39	26	15	75	10	189

Spigot plain/BSP female threaded with stainless steel reinforcing ring



Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	20 x ½"	BSPF	**RFRAER0200**	16	15	28	24	10	24
	25 x ¾"	BSPF	**RFRAER0250**	19	16	34	27	10	33
	32 x 1"	BSPF	**RFRAER0320**	22	19	42	30	10	55
	40 x 1¼"	BSPF	**RFRAER0400**	27	21	51	36	10	81
	50 x 1½"	BSPF	**RFRAER0500**	32	21	58	41	10	93
	63 x 2"	BSPF	**RFRAER0630**	39	26	72	44	10	159

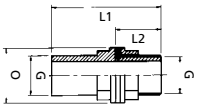
Union plain Unions up to 63mm 15 bar (20°C), above 63mm 10 bar (20°C)



Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Weight (GR)
	½" x 20	**RFBBOB0200**	16	3	10	1"	42	42
	¾" x 25	**RFBBOB0250**	19	3	10	1¼"	52	70
	1" x 32	**RFBBOB0320**	22	3	10	1½"	59	97
	1¼" x 40	**RFBBOB0400**	26	3	12	2"	72	155
	1½" x 50	**RFBBOB0500**	31	3	14	2¼"	79	216
	2" x 63	**RFBBOB0630**	38	3	18	2¾"	100	350
	3" x 90*	**RFBBOB0900**	51	5	18	4"	134	760
	4" x 110*	**RFBBOB1100**	61	5	18	5"	163	1340

PVCu adaptor fittings metric
Fittings up to 110mm 16 bar (20°C)

Tank Connector Metric/Imperial

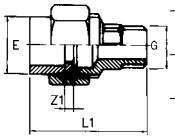


Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	20 x ½"	BSPF	**RFITCI0200**	77	42	38	10	10	41
	25 x ¾"	BSPF	**RFITCI0250**	77	42	42	10	10	52
	32 x 1"	BSPF	**RFITCI0320**	103	55	55	10	10	108
	40 x 1 ¼"	BSPF	**RFITCI0400**	121	70	65	10	10	153
	50 x 1 ½"	BSPF	**RFITCI0500**	128	73	72	10	10	216
	63 x 2"	BSPF	**RFITCI0630**	154	82	93	10	10	370
	90 x 3"	BSPF	**RFITCI0900**	202	110	125	1	1	768
	110 x 4"	BSPF	**RFITCI1100**	230	140	154	1	1	1421

Adaptor Bush Metric Plain/BSP

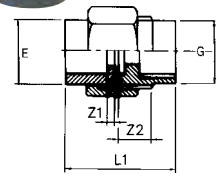
Code: PSPVF	Nominal Size	G	Code	Pack Qty	Weight (GR)
	25 x ½"		**RGRRCG025B**	10	8
	32 x ¾"		**RGRRCG032C**	10	10
	40 x 1"		**RGRRCG040D**	10	17
	50 x 1 ¼"		**RGRRCG050E**	10	30
	63 x 1 ½"		**RGRRCG063F**	10	72
	75 x 2"		**RGRRCG075G**	1	105
	90 x 2 ½"		**RGRRCG090H**	1	154
	110 x 3"		**RGRRCG110I**	1	300

Compsite Union Plain Metric/BSP Male Brass Taper Threaded



Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	20 x ½"	BSPTM	**RGRBNG020B**	28	58	3	1	175
	25 x ¾"	BSPTM	**RGRBNG025C**	36	69	3	1	238
	32 x 1"	BSPTM	**RGRBNG032D**	42	72	3	1	324
	40 x 1 ¼"	BSPTM	**RGRBNG040E**	53	86	3	1	469
	50 x 1 ½"	BSPTM	**RGRBNG050F**	59	92	3	1	595
	63 x 2"	BSPTM	**RGRBNG063G**	74	109	3	1	982
	90 x 3"	BSPTM	**RGRBNG090I**	105	139	5	1	2184

Compsite Union Plain Metric/BSP Female Brass Threaded

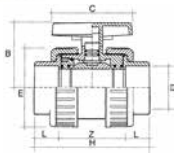


Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Z2	Pack Qty	Weight (GR)
	20 x ½"	BSPF	**RGRBBG020B**	28	45	3	8	1	165
	25 x ¾"	BSPF	**RGRBBG025C**	36	49	3	8	1	290
	32 x 1"	BSPF	**RGRBBG032D**	42	52	3	8	1	310
	40 x 1 ¼"	BSPF	**RGRBBG040E**	53	60	3	8	1	450
	50 x 1 ½"	BSPF	**RGRBBG050F**	59	68	3	9	1	490
	63 x 2"	BSPF	**RGRBBG063G**	74	81	3	10	1	950
	90 x 3"	BSPF	**RGRBBG090I**	105	103	5	14	1	1663

PVCu manual Ball Valves–Industrial

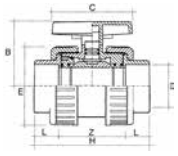
PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve Plain Sockets EPDM Seals



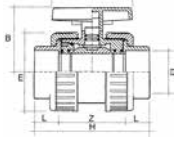
Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	**RBA22A0160**	50	51	16	46	78	65	16	140
	½"	**RBA22A0200**	50	51	17	46	78	65	16	140
	¾"	**RBA22A0250**	60	58	20	52	90	70	16	200
	1"	**RBA22A0320**	68	65	23	60	104	82	16	300
	1¼"	**RBA22A0400**	80	76	27	68	120	92	16	450
	1½"	**RBA22A0500**	94	88	31	78	140	105	16	690
	2"	**RBA22A0630**	115	104	38	93	169	123	16	1150
	2½"	**RBA22A0750**	168	137	44	139	227	168	10	3100
	3"	**RBA22A0900**	168	138	51	139	242	168	10	3250
	4"	**RBA22A1100**	210	166	63	160	282	190	10	5500

Double Union Ball Valve Plain Sockets EPDM Seals Metric



Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	16	**RBI22I0160**	50	51	16	46	78	65	16	140
	20	**RBI22I0200**	50	51	16	46	78	65	16	140
	25	**RBI22I0250**	60	58	19	52	90	70	16	200
	32	**RBI22I0320**	68	65	22	60	104	82	16	300
	40	**RBI22I0400**	80	76	26	68	120	92	16	450
	50	**RBI22I0500**	94	88	31	78	140	105	16	690
	63	**RBI22I0630**	115	104	38	93	169	123	16	1150
	75	**RBI22I0750**	168	137	44	139	227	168	10	3100
	90	**RBI22I0900**	168	138	51	139	242	168	10	3250
	110	**RBI22I1100**	210	166	61	160	282	190	10	5500

Double Union Ball Valve BSP Female Threaded Sockets EPDM Seals

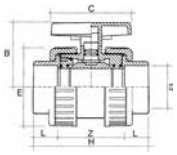


Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	BSPF	**RBF22F0160**	50	51	16	46	78	65	16	140
	½"	BSPF	**RBF22F0200**	50	51	16	46	78	65	16	140
	¾"	BSPF	**RBF22F0250**	60	58	19	52	90	70	16	200
	1"	BSPF	**RBF22F0320**	68	65	22	60	104	82	16	300
	1¼"	BSPF	**RBF22F0400**	80	76	24	68	116	92	16	450
	1½"	BSPF	**RBF22F0500**	94	88	24	78	126	105	16	690
	2"	BSPF	**RBF22F0630**	115	104	28	93	149	123	16	1150
	2½"	BSPF	**RBF22F0750**	168	137	33	139	205	168	10	3050
	3"	BSPF	**RBF22F0900**	168	138	36	139	212	168	10	3200
	4"	BSPF	**RBF22F1100**	210	166	42	160	244	190	10	5400

PVCu manual Ball Valves–Industrial

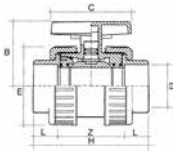
PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve Plain Sockets FPM Seals



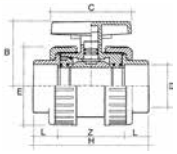
Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	**RBA23A0160**	50	51	16	46	78	65	16	140
	½"	**RBA23A0200**	50	51	17	46	78	65	16	140
	¾"	**RBA23A0250**	60	58	20	52	90	70	16	200
	1"	**RBA23A0320**	68	65	23	60	104	82	16	300
	1¼"	**RBA23A0400**	80	76	27	68	120	92	16	450
	1½"	**RBA23A0500**	94	88	31	78	140	105	16	690
	2"	**RBA23A0630**	115	104	38	93	169	123	16	1150
	2½"	**RBA23A0750**	168	137	44	139	227	168	10	3100
	3"	**RBA23A0900**	168	138	51	139	242	168	10	3250
	4"	**RBA23A1100**	210	166	63	160	282	190	10	5500

Double Union Ball Valve Plain Sockets FPM Seals Metric



Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	16	**RBI23I0160**	50	51	16	46	78	65	16	140
	20	**RBI23I0200**	50	51	16	46	78	65	16	140
	25	**RBI23I0250**	60	58	19	52	90	70	16	200
	32	**RBI23I0320**	68	65	22	60	104	82	16	300
	40	**RBI23I0400**	80	76	26	68	120	92	16	450
	50	**RBI23I0500**	94	88	31	78	140	105	16	690
	63	**RBI23I0630**	115	104	38	93	169	123	16	1150
	75	**RBI23I0750**	168	137	44	139	227	168	10	3100
	90	**RBI23I0900**	168	138	51	139	242	168	10	3250
	110	**RBI23I1100**	210	166	61	160	282	190	10	5500

Double Union Ball Valve BSP Female Threaded Sockets FPM Seals

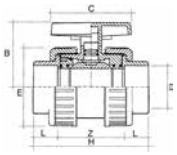


Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	BSPF	**RBF23F0160**	50	51	16	46	78	65	16	140
	½"	BSPF	**RBF23F0200**	50	51	16	46	78	65	16	140
	¾"	BSPF	**RBF23F0250**	60	58	19	52	90	70	16	200
	1"	BSPF	**RBF23F0320**	68	65	22	60	104	82	16	300
	1¼"	BSPF	**RBF23F0400**	80	76	24	68	116	92	16	450
	1½"	BSPF	**RBF23F0500**	94	88	24	78	126	105	16	690
	2"	BSPF	**RBF23F0630**	115	104	28	93	149	123	16	1150
	2½"	BSPF	**RBF23F0750**	168	137	33	139	205	168	10	3050
	3"	BSPF	**RBF23F0900**	168	138	36	139	212	168	10	3200
	4"	BSPF	**RBF23F1100**	210	166	42	160	244	190	10	5400

PVCu manual Ball Valves–Economy

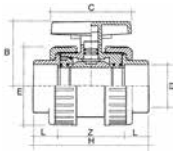
PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve Plain Sockets EPDM Seals



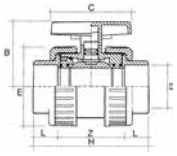
Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	**RBA21A0160**	50	51	16	46	78	65	16	140
	½"	**RBA21A0200**	50	51	17	46	78	65	16	140
	¾"	**RBA21A0250**	60	58	20	52	90	70	16	200
	1"	**RBA21A0320**	68	65	23	60	104	82	16	300
	1¼"	**RBA21A0400**	80	76	27	68	120	92	16	450
	1½"	**RBA21A0500**	94	88	31	78	140	105	16	690
	2"	**RBA21A0630**	115	104	38	93	169	123	16	1150
	2½"	**RBA21A0750**	168	137	44	139	227	168	10	3100
	3"	**RBA21A0900**	168	138	51	139	242	168	10	3250
	4"	**RBA21A1100**	210	166	63	160	282	190	10	5500

Double Union Ball Valve Plain Sockets EPDM Seals Metric



Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	16	**RBI21I0160**	50	51	16	46	78	65	16	140
	20	**RBI21I0200**	50	51	16	46	78	65	16	140
	25	**RBI21I0250**	60	58	19	52	90	70	16	200
	32	**RBI21I0320**	68	65	22	60	104	82	16	300
	40	**RBI21I0400**	80	76	26	68	120	92	16	450
	50	**RBI21I0500**	94	88	31	78	140	105	16	690
	63	**RBI21I0630**	115	104	38	93	169	123	16	1150
	75	**RBI21I0750**	168	137	44	139	227	168	10	3100
	90	**RBI21I0900**	168	138	51	139	242	168	10	3250
	110	**RBI21I1100**	210	166	61	160	282	190	10	5500

Double Union Ball Valve BSP Female Threaded Sockets EPDM Seals

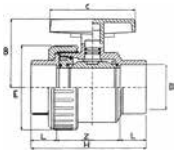


Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	BSPF	**RBF21F0160**	50	51	16	46	78	65	16	140
	½"	BSPF	**RBF21F0200**	50	51	16	46	78	65	16	140
	¾"	BSPF	**RBF21F0250**	60	58	19	52	90	70	16	200
	1"	BSPF	**RBF21F0320**	68	65	22	60	104	82	16	300
	1¼"	BSPF	**RBF21F0400**	80	76	24	68	116	92	16	450
	1½"	BSPF	**RBF21F0500**	94	88	24	78	126	105	16	690
	2"	BSPF	**RBF21F0630**	115	104	28	93	149	123	16	1150
	2½"	BSPF	**RBF21F0750**	168	137	33	139	205	168	10	3050
	3"	BSPF	**RBF21F0900**	168	138	36	139	212	168	10	3200
	4"	BSPF	**RBF21F1100**	210	166	42	160	244	190	10	5400

PVCu manual Ball Valves–Economy

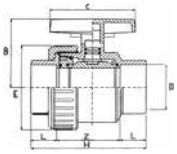
PN = Maximum working pressure (bar) at 20°C

Single Union Ball Valve Plain Sockets EPDM Seals



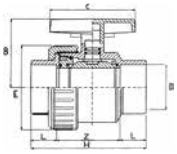
Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	**RBA11A0160**	50	51	16	46	78	65	16	140
	½"	**RBA11A0200**	50	51	17	46	78	65	16	140
	¾"	**RBA11A0250**	60	58	20	52	90	70	16	200
	1"	**RBA11A0320**	68	65	23	60	104	82	16	300
	1¼"	**RBA11A0400**	80	76	27	68	120	92	16	450
	1½"	**RBA11A0500**	94	88	31	78	140	105	16	690
	2"	**RBA11A0630**	115	104	38	93	169	123	16	1150
	2½"	**RBA11A0750**	168	137	44	139	227	168	10	3100
	3"	**RBA11A0900**	168	138	51	139	242	168	10	3250
	4"	**RBA11A1100**	210	166	63	160	282	190	10	5500

Single Union Ball Valve Plain Sockets EPDM Seals



Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	16	**RBI11I0160**	50	51	16	46	78	65	16	140
	20	**RBI11I0200**	50	51	16	46	78	65	16	140
	25	**RBI11I0250**	60	58	19	52	90	70	16	200
	32	**RBI11I0320**	68	65	22	60	104	82	16	300
	40	**RBI11I0400**	80	76	26	68	120	92	16	450
	50	**RBI11I0500**	94	88	31	78	140	105	16	690
	63	**RBI11I0630**	115	104	38	93	169	123	16	1150
	75	**RBI11I0750**	168	137	44	139	227	168	10	3100
	90	**RBI11I0900**	168	138	51	139	242	168	10	3250
	110	**RBI11I1100**	210	166	61	160	282	190	10	5500

Single Union Ball Valve BSP Female Threaded Sockets EPDM Seals

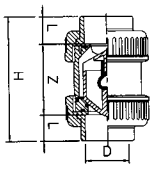


Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	BSPF	**RBF11F0160**	50	51	16	46	78	65	16	140
	½"	BSPF	**RBF11F0200**	50	51	16	46	78	65	16	140
	¾"	BSPF	**RBF11F0250**	60	58	19	52	90	70	16	200
	1"	BSPF	**RBF11F0320**	68	65	22	60	104	82	16	300
	1¼"	BSPF	**RBF11F0400**	80	76	24	68	116	92	16	450
	1½"	BSPF	**RBF11F0500**	94	88	24	78	126	105	16	690
	2"	BSPF	**RBF11F0630**	115	104	28	93	149	123	16	1150
	2½"	BSPF	**RBF11F0750**	168	137	33	139	205	168	10	3050
	3"	BSPF	**RBF11F0900**	168	138	36	139	212	168	10	3200
	4"	BSPF	**RBF11F1100**	210	166	42	160	244	190	10	5400

PVCu check valves

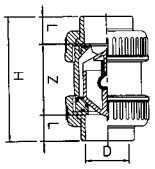
Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

Check Valve Plain Sockets with Stainless Steel Spring EPDM Seals



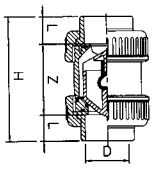
Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	**RBA30A0160**	16	46	78	110
	½"	**RBA30A0200**	17	46	78	110
	¾"	**RBA30A0250**	20	52	90	180
	1"	**RBA30A0320**	23	60	104	250
	1¼"	**RBA30A0400**	27	68	120	380
	1½"	**RBA30A0500**	31	78	140	600
	2"	**RBA30A0630**	38	93	169	1000
	2½"	**RBA30A0750**	44	139	227	2800
	3"	**RBA30A0900**	51	139	242	3000
	4"	**RBA30A1100**	61	160	282	4500

Check Valve Plain Sockets with Stainless Steel Spring EPDM Seals Metric



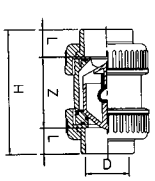
Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	**RBI30I0160**	16	46	78	110
	20	**RBI30I0200**	16	46	78	110
	25	**RBI30I0250**	19	52	90	180
	32	**RBI30I0320**	22	60	104	250
	40	**RBI30I0400**	26	68	120	380
	50	**RBI30I0500**	31	78	140	600
	63	**RBI30I0630**	38	93	169	1000
	75	**RBI30I0750**	44	139	227	2800
	90	**RBI30I0900**	51	139	242	3000
	110	**RBI30I1100**	61	160	282	4500

Check Valve BSP Female Threaded Sockets with Stainless Steel Spring EPDM Seals



Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
	⅜"	BSPF	**RBF30F0160**	16	46	78	110
	½"	BSPF	**RBF30F0200**	16	46	78	110
	¾"	BSPF	**RBF30F0250**	19	52	90	180
	1"	BSPF	**RBF30F0320**	22	60	104	250
	1¼"	BSPF	**RBF30F0400**	24	68	116	380
	1½"	BSPF	**RBF30F0500**	24	78	126	600
	2"	BSPF	**RBF30F0630**	28	93	149	1000
	2½"	BSPF	**RBF30F0750**	33	139	205	2800
	3"	BSPF	**RBF30F0900**	36	139	212	3000
	4"	BSPF	**RBF30F1100**	61	160	282	4500

Check Valve Plain Sockets with Stainless Steel FPM Seals

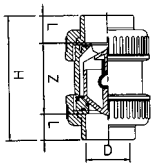


Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	**RBA32A0160**	16	46	78	110
	½"	**RBA32A0200**	17	46	78	110
	¾"	**RBA32A0250**	20	52	90	180
	1"	**RBA32A0320**	23	60	104	250
	1¼"	**RBA32A0400**	27	68	120	380
	1½"	**RBA32A0500**	31	78	140	600
	2"	**RBA32A0630**	38	93	169	1000
	2½"	**RBA32A0750**	44	139	227	2800
	3"	**RBA32A0900**	51	139	242	3000
	4"	**RBA32A1100**	61	160	282	4500

PVCu check valves

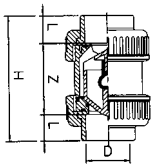
Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

Check Valve Plain Sockets with PTFE Coated Spring EPDM Seals



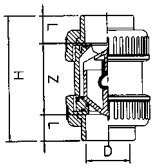
Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	**RBA31A0160**	16	46	78	110
	½"	**RBA31A0200**	17	46	78	110
	¾"	**RBA31A0250**	20	52	90	180
	1"	**RBA31A0320**	23	60	104	250
	1¼"	**RBA31A0400**	27	68	120	380
	1½"	**RBA31A0500**	31	78	140	600
	2"	**RBA31A0630**	38	93	169	1000
	2½"	**RBA31A0750**	44	139	227	2800
	3"	**RBA31A0900**	51	139	242	3000

Check Valve Plain Sockets with PTFE Coated Spring EPDM Seals Metric



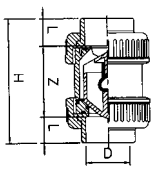
Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	**RBI31I0160**	16	46	78	110
	20	**RBI31I0200**	16	46	78	110
	25	**RBI31I0250**	19	52	90	180
	32	**RBI31I0320**	22	60	104	250
	40	**RBI31I0400**	26	68	120	380
	50	**RBI31I0500**	31	78	140	600
	63	**RBI31I0630**	38	93	169	1000
	75	**RBI31I0750**	44	139	227	2800
	90	**RBI31I0900**	51	139	242	3000

Check Valve BSP Female Threaded Sockets with PTFE Coated Spring EPDM Seals



Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
	⅜"	BSPF	**RBF31F0160**	16	46	78	110
	½"	BSPF	**RBF31F0200**	16	46	78	110
	¾"	BSPF	**RBF31F0250**	19	52	90	180
	1"	BSPF	**RBF31F0320**	22	60	104	250
	1¼"	BSPF	**RBF31F0400**	24	68	116	380
	1½"	BSPF	**RBF31F0500**	24	78	126	600
	2"	BSPF	**RBF31F0630**	28	93	149	1000
	2½"	BSPF	**RBF31F0750**	33	139	205	2800
	3"	BSPF	**RBF31F0900**	36	139	212	3000

Check Valve Plain Sockets with PTFE Coated Spring FPM Seals

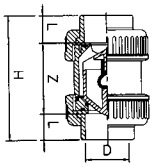


Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	**RBA34A0160**	16	46	78	110
	½"	**RBA34A0200**	17	46	78	110
	¾"	**RBA34A0250**	20	52	90	180
	1"	**RBA34A0320**	23	60	104	250
	1¼"	**RBA34A0400**	27	68	120	380
	1½"	**RBA34A0500**	31	78	140	600
	2"	**RBA34A0630**	38	93	169	1000
	2½"	**RBA34A0750**	44	139	227	2800
	3"	**RBA34A0900**	51	139	242	3000

PVCu check valves

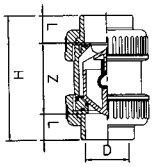
Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

Check Valve Plain Sockets with PTFE Coated Spring FPM Seals Metric



Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	**RBI34I0160**	16	46	78	110
	20	**RBI34I0200**	16	46	78	110
	25	**RBI34I0250**	19	52	90	180
	32	**RBI34I0320**	22	60	104	250
	40	**RBI34I0400**	26	68	120	380
	50	**RBI34I0500**	31	78	140	600
	63	**RBI34I0630**	38	93	169	1000
	75	**RBI34I0750**	44	139	227	2800
	90	**RBI34I0900**	51	139	242	3000

Check Valve BSP Female Threaded Sockets with PTFE Coated Spring FPM Seals

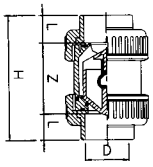


Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
	⅜"	BSPF	**RBF34F0160**	16	46	78	110
	½"	BSPF	**RBF34F0200**	16	46	78	110
	¾"	BSPF	**RBF34F0250**	19	52	90	180
	1"	BSPF	**RBF34F0320**	22	60	104	250
	1¼"	BSPF	**RBF34F0400**	24	68	116	380
	1½"	BSPF	**RBF34F0500**	24	78	126	600
	2"	BSPF	**RBF34F0630**	28	93	149	1000
	2½"	BSPF	**RBF34F0750**	33	139	205	2800
	3"	BSPF	**RBF34F0900**	36	139	212	3000

PVCu air release valves

Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

Air Release Valve Plain Sockets with EPDM Seals

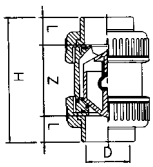


Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	**RBA33A0160**	16	46	78	110
	½"	**RBA33A0200**	17	46	78	110
	¾"	**RBA33A0250**	20	52	90	180
	1"	**RBA33A0320**	23	60	104	250
	1¼"	**RBA33A0400**	27	68	120	380
	1½"	**RBA33A0500**	31	78	140	600
	2"	**RBA33A0630**	38	93	169	1000
	2½"	**RBA33A0750**	44	139	227	2800
	3"	**RBA33A0900**	51	139	242	3000
	4"	**RBA33A1100**	61	160	282	4500

PVCu air release valves

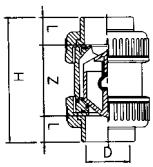
Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

Air Release Valve Plain Sockets with EPDM Seals Metric



Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	**RBI33I0160**	16	46	78	110
	20	**RBI33I0200**	16	46	78	110
	25	**RBI33I0250**	19	52	90	180
	32	**RBI33I0320**	22	60	104	250
	40	**RBI33I0400**	26	68	120	380
	50	**RBI33I0500**	31	78	140	600
	63	**RBI33I0630**	38	93	169	1000
	75	**RBI33I0750**	44	139	227	2800
	90	**RBI33I0900**	51	139	242	3000
	110	**RBI33I1100**	61	160	282	4500

Air Release Valve BSP Female Threaded Sockets with EPDM Seals

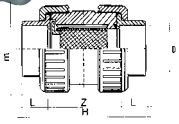


Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
	⅜"	BSPF	**RBF33F0160**	16	46	78	110
	½"	BSPF	**RBF33F0200**	16	46	78	110
	¾"	BSPF	**RBF33F0250**	19	52	90	180
	1"	BSPF	**RBF33F0320**	22	60	104	250
	1¼"	BSPF	**RBF33F0400**	24	68	116	380
	1½"	BSPF	**RBF33F0500**	24	78	126	600
	2"	BSPF	**RBF33F0630**	28	93	149	1000
	2½"	BSPF	**RBF33F0750**	33	139	205	2800
	3"	BSPF	**RBF33F0900**	36	139	212	3000
	4"	BSPF	**RBF33F1100**	61	160	282	4500

PVCu in line strainers

Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

In Line Strainer Plain Sockets with EPDM Seals

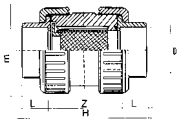


Code: PSPRA	Nominal Size	Code	L	Z	H	E	PN	Weight (GR)
	½"	**RBA35A0200**	17	46	78	50	16	110
	¾"	**RBA35A0250**	20	52	90	60	16	180
	1"	**RBA35A0320**	23	60	104	68	16	250
	1¼"	**RBA35A0400**	27	68	120	80	16	380
	1½"	**RBA35A0500**	31	78	140	94	16	600
	2"	**RBA35A0630**	38	93	169	115	16	1000

PVCu in line strainers

Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi), for valves 75–110 (2½"–4") 10 bar (145 psi) at 20°C

In Line Strainer Plain Sockets with EPDM Seals Metric

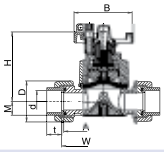


Code: PSPRA	Nominal Size	Code	L	Z	H	E	PN	Weight (GR)
	20	**RBI35I0200**	16	46	78	50	16	110
	25	**RBI35I0250**	19	52	90	60	16	180
	32	**RBI35I0320**	22	60	104	68	16	250
	40	**RBI35I0400**	26	68	120	80	16	380
	50	**RBI35I0500**	31	78	140	94	16	600
	63	**RBI35I0630**	38	93	169	115	16	1000

PVCu diaphragm valves

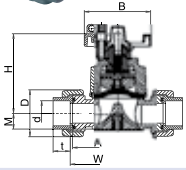
Maximum working pressure: 10 bar (145 psi) at 20°C

Diaphragm Valve Plain Sockets EPDM Seals



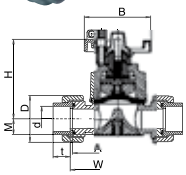
Code: PSPRA	Nominal Size	Code	M	H	B	D	W	A	t
	½"	**RBA40A0200**	17	100	86	43	96	90	16
	¾"	**RBA40A0250**	17	100	86	53	114	108	19
	1"	**RBA40A0320**	21	107	86	60	122	116	22
	1¼"	**RBA40A0400**	33	144	136	74	142	136	26
	1½"	**RBA40A0500**	33	144	136	83	160	154	31
	2"	**RBA40A0630**	40.3	170	136	103	190	184	38

Diaphragm Valve Plain Sockets EPDM Seals Metric



Code: PSPRA	Nominal Size	Code	M	H	B	D	W	A	t
	20	**RBI40I0200**	17	100	86	43	96	90	16
	25	**RBI40I0250**	17	100	86	53	114	108	19
	32	**RBI40I0320**	21	107	86	60	122	116	22
	40	**RBI40I0400**	33	144	136	74	142	136	26
	50	**RBI40I0500**	33	144	136	83	160	154	31
	63	**RBI40I0630**	40.3	170	136	103	190	184	38

Diaphragm Valve BSP Female Threaded Sockets EPDM Seals



Code: PSPRA	Nominal Size		Code	M	H	B	D	W	A	t
	½"	BSPF	**RBF40F0200**	17	100	86	43	96	90	16
	¾"	BSPF	**RBF40F0250**	17	100	86	53	114	108	19
	1"	BSPF	**RBF40F0320**	21	107	86	60	122	116	22
	1¼"	BSPF	**RBF40F0400**	33	144	136	74	142	136	26
	1½"	BSPF	**RBF40F0500**	33	144	136	83	160	154	31
	2"	BSPF	**RBF40F0630**	40.3	170	136	103	190	184	38

PVCu 3 way ball valves

Maximum working pressure: 10 bar (145 psi) at 20°C

3 Way Ball Valve L Port EPDM O Rings Plain Ends

Code: PSAQU	Nominal Size	Code	D
	25	**RBI80L0250**	25
	32	**RBI80L0320**	32
	50	**RBI80L0500**	50
	63	**RBI80L0630**	63

3 Way Ball Valve T Port EPDM O Rings Plain Ends

Code: PSAQU	Nominal Size	Code	D
	25	**RBI81T0250**	25
	32	**RBI81T0320**	32
	50	**RBI81T0500**	50
	63	**RBI81T0630**	63

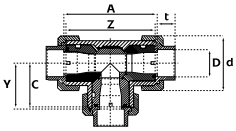
3 Way Ball Valve T Port Plain BS EPDM O Rings Plain Ends

Code: PSAQU	Nominal Size	Code	D
	¾"	**RBA82T0250**	¾"
	1"	**RBA82T0320**	1"
	1½"	**RBA82T0500**	1½"
	2"	**RBA82T0630**	2"

3 Way Ball Valve L Port Plain BS EPDM O Rings Plain Ends

Code: PSAQU	Nominal Size	Code	D
	¾"	**RBA83L0250**	¾"
	1"	**RBA83L0320**	1"
	1½"	**RBA83L0500**	1½"
	2"	**RBA83L0630**	2"

3 Way Ball Valve L Port Plain Sockets EPDM Seals

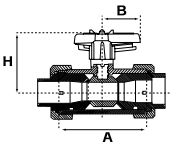


Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
	¾"	**RBA60A0250**	120	126	20	70	82	52	63	60	10
	1"	**RBA60A0320**	120	127	23	70	82	52	64	60	10
	1½"	**RBA60A0500**	162	171	32	101	108	73	86	81	10
	2"	**RBA60A0630**	181	193	39	122	117	85	97	91	10

PVCu 3 way ball valves

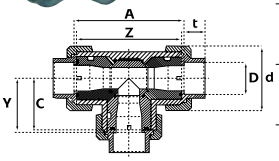
Maximum working pressure: 10 bar (145 psi) at 20°C

3 Way Ball Valve L Port Plain Sockets EPDM Seals Metric



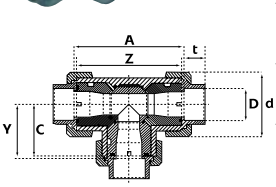
Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
	25	**RBI60I0250**	120	126	20	70	82	52	63	60	10
	32	**RBI60I0320**	120	127	23	70	82	52	64	60	10
	50	**RBI60I0500**	162	171	32	101	108	73	86	81	10
	63	**RBI60I0630**	181	193	39	122	117	85	97	91	10

3 Way Ball Valve T Port Plain Sockets EPDM Seals



Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
	¾"	**RBA65A0250**	120	126	20	70	82	52	63	60	10
	1"	**RBA65A0320**	120	127	23	70	82	52	64	60	10
	1½"	**RBA65A0500**	162	171	32	101	108	73	86	81	10
	2"	**RBA65A0630**	181	193	39	122	117	85	97	91	10

3 Way Ball Valve T Port Plain Sockets EPDM Seals

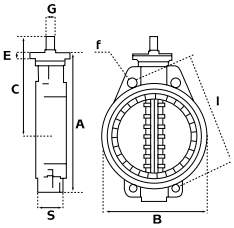


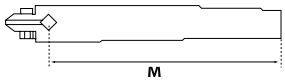
Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
	25	**RBI65I0250**	120	126	20	70	82	52	63	60	10
	32	**RBI65I0320**	120	127	23	70	82	52	64	60	10
	50	**RBI65I0500**	162	171	32	101	108	73	86	81	10
	63	**RBI65I0630**	181	193	39	122	117	85	97	91	10

PVCu butterfly valves–economy/industrial

Maximum working pressure: 63—140mm (2"—5"): 10 bar (145 psi) at 20°C

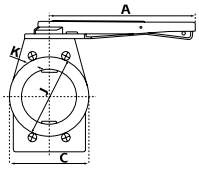
Butterfly Valve–Economy Hand Operated EPDMSeals

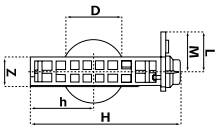


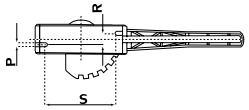


Code: PSPVV	mm	Inches	Code	A	B	C	E	S	G	f	I	M	Weight (GR)
	75	2½"	**RBA15A0750**	130	165	110	28	45	10	18	125	228	1770
	90	3"	**RBA15A0900**	233	130	123	31	57	11	18	160	240	2050
	110	4"	**RBA15A1100**	253	152	143	31	58	11	18	180	240	2290
	125	—	**RBA15A1250**	264	170	148	31	62	11	18	190	240	2700
	140	5"	**RBA15A1400**	284	185	159	31	63	11	18	210	240	2960
	160	6"	**RBA15A1600**	312	216	169	31	73	14	22	240	340	3730
	225	8"	**RBA15A2250**	370	273	200	31	83	14	22	295	340	5700

Butterfly Valve–Industrial Hand Operated EPDM Seals

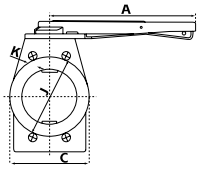


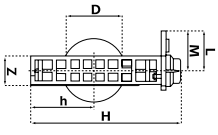


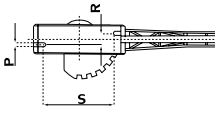


Code: PSPRA	mm	Inches	Code	A	D	C	H	h	K	L	M	Z	P	R	S	PN
	90	3"	**RBA50A0900**	270	75	133	260	105	19	113	78	49	9	10	89	10
	110	4"	**RBA50A1100**	270	92	155	289	120	19	113	78	56	11	10	89	10
	140	5"	**RBA50A1400**	270	117	190	324	130	22	113	78	64	11	10	131	10
	160	6"	**RBA50A1600**	380	134	216	353	150	22	141	94	70	11	16	166	6
	225	8"	**RBA50A2250**	380	210	274	425	180	22	141	94	71	11	22	166	6

Butterfly Valve–Industrial Hand Operated FPM Seals







Code: PSPRA	mm	Inches	Code	A	D	C	H	h	K	L	M	Z	P	R	S	PN
	90	3"	**RBA51A0900**	270	75	133	260	105	19	113	78	49	9	10	89	10
	110	4"	**RBA51A1100**	270	92	155	289	120	19	113	78	56	11	10	89	10
	140	5"	**RBA51A1400**	270	117	190	324	130	22	113	78	64	11	10	131	10
	160	6"	**RBA51A1600**	380	134	216	353	150	22	141	94	70	11	16	166	6
	225	8"	**RBA51A2250**	380	210	274	425	180	22	141	94	71	11	22	166	6

PVCu butterfly valves–economy/industrial

Maximum working pressure: Maximum working pressure: 63-140mm (2"-5") 10 Bar (145PSI) at 20°C and 160-315mm (6 and 8") 6 Bar (90PSI) at 20°C

Butterfly Valve–Complete EDPM O rings

Code: PSAQU	mm	Inches	Code	D	Box	Weight (GR)
	75	2½"	**RBB15B0750**	1	1	4950
	90	3"	**RBB15B0900**	1	1	6225
	110	4"	**RBB15B1100**	1	1	7340
	125		**RBB15B1250**	1	1	8167
	140	5"	**RBB15B1400**	1	1	9227
	160	6"	**RBB15B1600**	1	1	13839
	200-225	8"	**RBB15B2000**	1	1	14740
	250		**RBB15B2500**	1	1	16454
	315		**RBB15B3150**	1	1	21214

Butterfly Valve–Complete FPM O rings

Code: PSAQU	mm	Inches	Code	D	Box	Weight (GR)
	75	2½"	**RBV15V0750**	1	1	4950
	90	3"	**RBV15V0900**	1	1	6225
	110	4"	**RBV15V1100**	1	1	7340
	125		**RBV15V1250**	1	1	8167
	140	5"	**RBV15V1400**	1	1	9227
	160	6"	**RBV15V1600**	1	1	13839
	200-225	8"	**RBV15V2000**	1	1	14740
	250		**RBV15V2500**	1	1	16454
	315		**RBV15V3150**	1	1	21214

Wafer check valves

Maximum working pressure: Maximum working pressure: 63-140mm (2"-5") 10 Bar (145PSI) at 20°C and 160-315mm (6 and 8") 6 Bar (90PSI) at 20°C

Wafer Check Valve EPDM Seals

Code: PSPRA	mm	Inches	Code
	63	2"	**RBA71A0630**
	75	2½"	**RBA71A0750**
	90	3"	**RBA71A0900**
	110	4"	**RBA71A1100**
	140	5"	**RBA71A1400**
	160	6"	**RBA71A1600**
	225	8"	**RBA71A2250**

Wafer Check Valve with Stainless Steel Return Spring EPDM Seals

Code: PSPRA	mm	Inches	Code
	63	2"	**RBA72A0630**
	75	2½"	**RBA72A0750**
	90	3"	**RBA72A0900**
	110	4"	**RBA72A1100**
	140	5"	**RBA72A1400**
	160	6"	**RBA72A1600**
	225	8"	**RBA72A2250**

PVCu Electrically Actuated Double Union Ball Valves
(220–240 volt) (110 volt)

Electrically actuated double union ball valve–plain sockets EPDM seals

Code: PSPVV	Nominal Size	Code
	½"	RBA24A0200
	¾"	RBA24A0250
	1"	RBA24A0320
	1¼"	RBA24A0400
	1½"	RBA24A0500
	2"	RBA24A0630
	2½"	RBA24A0750
	3"	RBA24A0900
	4"	RBA24A1100

Electrically actuated double union ball valve–plain sockets FPM seals

Code: PSPVV	Nominal Size	Code
	½"	RBA25A0200
	¾"	RBA25A0250
	1"	RBA25A0320
	1¼"	RBA25A0400
	1½"	RBA25A0500
	2"	RBA25A0630
	2½"	RBA25A0750
	3"	RBA25A0900
	4"	RBA25A1100

Electrically actuated double union ball valve–plain sockets EPDM seals

Code: PSPVV	Nominal Size	Code
	20	RBI24I0200
	25	RBI24I0250
	32	RBI24I0320
	40	RBI24I0400
	50	RBI24I0500
	63	RBI24I0630
	75	RBI24I0750
	90	RBI24I0900
	110	RBI24I1100

Electrically actuated double union ball valve–plain sockets FPM seals

Code: PSPVV	Nominal Size	Code
	20	RBI25I0200
	25	RBI25I0250
	32	RBI25I0320
	40	RBI25I0400
	50	RBI25I0500
	63	RBI25I0630
	75	RBI25I0750
	90	RBI25I0900
	110	RBI25I1100

PVCu Pneumatically Actuated Double Union Ball Valves Fail Safe Closed

Plain Sockets EPDM Seals

Code: PSPVV	Nominal Size	Code
	½"	RBA26A0200
	¾"	RBA26A0250
	1"	RBA26A0320
	1¼"	RBA26A0400
	1½"	RBA26A0500
	2"	RBA26A0630
	2½"	RBA26A0750
	3"	RBA26A0900
	4"	RBA26A1100

FPM seals

Code: PSPVV	Nominal Size	Code
	½"	RBA27A0200
	¾"	RBA27A0250
	1"	RBA27A0320
	1¼"	RBA27A0400
	1½"	RBA27A0500
	2"	RBA27A0630
	2½"	RBA27A0750
	3"	RBA27A0900
	4"	RBA27A1100

Plain Sockets EPDM Seals

Code: PSPVV	Nominal Size	Code
	20	RBI26I0200
	25	RBI26I0250
	32	RBI26I0320
	40	RBI26I0400
	50	RBI26I0500
	63	RBI26I0630
	75	RBI26I0750
	90	RBI26I0900
	110	RBI26I1100

FPM seals

Code: PSPVV	Nominal Size	Code
	20	RBI27I0200
	25	RBI27I0250
	32	RBI27I0320
	40	RBI27I0400
	50	RBI27I0500
	63	RBI27I0630
	75	RBI27I0750
	90	RBI27I0900
	110	RBI27I1100

PVCu actuated butterfly valves EDPM

Electrically Actuated Butterfly Valve EDPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI90I0750**
	90	**RBI90I0900**
	110	**RBI90I1100**
	125	**RBI90I1250**
	140	**RBI90I1400**
	160	**RBI90I1600**
	200-225	**RBI90I2250**
	315	**RBI90I3150**

Electrically Actuated Butterfly Valve FPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI91I0750**
	90	**RBI91I0900**
	110	**RBI91I1100**
	125	**RBI91I1250**
	140	**RBI91I1400**
	160	**RBI91I1600**
	200-225	**RBI91I2250**
	315	**RBI91I3150**

Pneumatic Single Acting/Spring Return Butterfly Valve EDPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI92I0750**
	90	**RBI92I0900**
	110	**RBI92I1100**
	125	**RBI92I1250**
	140	**RBI92I1400**
	160	**RBI92I1600**
	200-225	**RBI92I2250**

Pneumatic Single Acting/Spring Return Butterfly Valve FPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI93I0750**
	90	**RBI93I0900**
	110	**RBI93I1100**
	125	**RBI93I1250**
	140	**RBI93I1400**
	160	**RBI93I1600**
	200-225	**RBI93I2250**

PVCu actuated butterfly valves EDPM

Pneumatic Double Acting Butterfly Valve EDPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI94I0750**
	90	**RBI94I0900**
	110	**RBI94I1100**
	125	**RBI94I1250**
	140	**RBI94I1400**
	160	**RBI94I1600**
	200-225	**RBI94I2250**

Pneumatic Double Acting Butterfly Valve FPM

Code: PSAQU	Nominal Size	Code
	63-75	**RBI95I0750**
	90	**RBI95I0900**
	110	**RBI95I1100**
	125	**RBI95I1250**
	140	**RBI95I1400**
	160	**RBI95I1600**
	200-225	**RBI95I2250**

Diaphragm valves

Diaphragm Valves Pneumatically Actuated (please specify when ordering "Normally Open" or "Normally Closed")

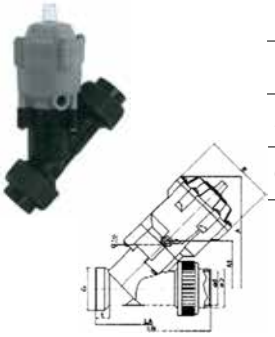
Code: PSAQU	Nominal Size	Code	DN	A	A 1	B	od	oD	G	LA
	20	**RBI46I0200**	15	85	31	63	20	43	G. 1	90
	25	**RBI46I0250**	20	135	33	105	25	60	G. 11/2	116
	32	**RBI46I0320**	25	135	33	105	32	60	G. 11/2	116
	40	**RBI46I0400**	32	222	79	151	40	83	G. 21/4	154
	50	**RBI46I0500**	40	222	79	151	50	83	G. 21/4	154
	63	**RBI46I0630**	50	234	90	161	63	103	G. 33/4	182

Diaphragm Valves Manually Operated

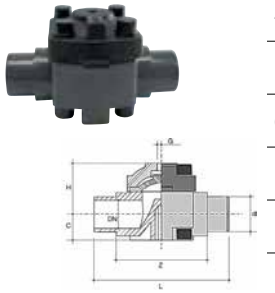
Code: PSAQU	Nominal Size	Code	DN	A	A 1	B	od	oD	G	LA
	20	**RBI47I0200**	15	85	31	63	20	43	G. 1	90
	25	**RBI47I0250**	20	135	33	105	25	60	G. 11/2	116
	32	**RBI47I0320**	25	135	33	105	32	60	G. 11/2	116
	40	**RBI47I0400**	32	222	79	151	40	83	G. 21/4	154
	50	**RBI47I0500**	40	222	79	151	50	83	G. 21/4	154
	63	**RBI47I0630**	50	234	90	161	63	103	G. 33/4	182

Diaphragm valves

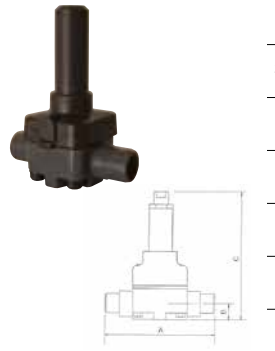
Angle Seat Globe Valves Plastic

Code: PSAQU	Nominal Size	Code	A	A 1	B	∅d	∅D	G	LA	LB
	20	**RBI45I0200**				19.5	G. 1	123.8		178.57
	25	**RBI45I0250**				24.5	G. 11/2	158.0		216.66
	32	**RBI45I0320**				31.5	G. 11/2	162.0		216.66
	63	**RBI45I0630**				62.5	G. 23/4	235.0		290.00

Diaphragm Valve

Code: PSAQU	Nominal Size	Code	dmm	DN	Box	C	G	H	L	Z	Weight (GR)
	40	**RBI41I0400**	40	32	40	38	1/4	73	204	150	1.100
	50	**RBI41I0500**	50	40	50	36	1/4	73	192	130	1.150
	63	**RBI41I0630**	63	50	63	45	1/4	80	224	148	1.700
	1" x 1¼"	**RBA41A032E**	1" x 1¼"			38	1/4	73	204	150	1.100
	1¼"	**RBA41A040E**	1¼" x 1¼"			38	1/4	73	204	150	1.100

Pressure Relief Valve (operates between 0.5 and 6.5 bar) EPDM Seals

Code: PSAQU	Nominal Size	Code	A	B	C
	½" - 20mm	**RBAPRV0200**	148	26	164
	¾" - 25mm	**RBAPRV0250**	148	26	164
	1" - 32mm	**RBAPRV0320**	148	26	164
	1¼" - 40mm	**RBAPRV0400**	203	40	240
	1½" - 50mm	**RBAPRV0500**	203	40	240
	2" - 63mm	**RBAPRV0630**	254	40	240

Up-rated spring available to increase maximum pressure to 10 bar. Add to the list price as stated above.

- Available in PVCu, ABS, PVCc, PP and PVDF.
- Diaphragms available in natural rubber, EDPM and FPM (Viton)
- Bi-Directional Design
- No metal parts in contact with line media
- Can be preset
- Can be installed in any position
- Also works as a Pressure Sustaining Valve
- Minimum set pressure 0.5 Bar (7 PSI) and maximum set pressure 6.8 Bar (100 PSI)
- Easily adjusted on site
- Connections Male Spigot: PVCu Imperial or Metric, ABS - Imperial, PVCc Metric, PP Metric, PVDF Metric.
- Mounting inserts provided in base as standard

EFFAST

ABS Pipe Systems

ABS (Acrylonitrile Butadiene Styrene) is highly rated as a thermoplastic pipework system and is used in many applications such as food and beverage processing as well as water and sewerage treatment and many other industries.

ABS has good chemical resistance with high impact strength.

ABS is non toxic and conforms to the toxicological requirements of the British Plastic Federation, British Industrial Biological Research Association Code of Practice for food usage 45/5.

It also fulfils the EEC requirements for plastic materials in contact with foodstuffs.

ABS systems are lightweight, rigid and easy to install using a solvent cement.

Colour

ABS products are recognised by their light grey colour.

Chemical Resistance

Polypipe Effast ABS has good resistance to most diluted inorganic acids, salts, animal fats and oils and organic acids. It is not resistant to organic solvents, alcohol, petrol, acetic acid or vegetable oils. Recommendations can be given by our Technical Department regarding the resistance of ABS to specific chemicals.

Standards

Individual products are in compliance with appropriate British Standards:

Fittings (inch size)	BS 5392 Part 1
Pipe (inch size)	BS 5391
Threaded fittings	BS 21, DIN 2999, ISO7
Solvent Cement	BS 4346 Part 3

Imperial and Metric Sizes

The following notes may be helpful to those unfamiliar with the different ways of describing metric and imperial sizes when specifying pipe or fittings.

When specifying Imperial pipe fittings and other components reference is made to the nominal size of the pipe bore in inches and fractions of an inch.

Metric Systems are specified by reference to the outside diameter of the pipe expressed in millimetres.

As a general guide the following table gives a comparison between metric and imperial sizes up to 8 inches. It is important to understand that metric sizes are not simply inch sizes which have been converted into millimetres and called metric. The actual equivalents are slightly different (except for Imperial size 21/2 inches and metric size 75mm and 5 inches and 140mm which happen to coincide exactly) and are not interchangeable.

Imperial Sizes (inches)		Metric Sizes (mm)	
Nominal bore	Pipe outside dia.	Pipe outside dia.	Nominal bore
⅜"	17.1	16	10
½"	21.4	20	15
¾"	26.7	25	20
1"	33.6	32	25
1¼"	42.2	40	32
1½"	48.3	50	40
2"	60.3	63	50
2½"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

Temperature and Pressure

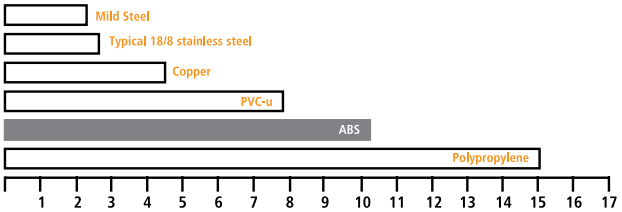
It is suitable for use over a wide temperature range from -40°C to +60°C at pressures up to 15 bar. Please consult the temperature/pressure relationship chart for specific ratings. It is important to remember that if the temperature is increased above 20°C then the pressure must be reduced.

ABS in sub-zero temperatures

ABS Pipe systems are suitable for temperatures as low as -40°C, however it is necessary as with any other pipeline to take preventative measures to ensure the pipeline fluid does not freeze, as freezing would cause subsequent damage to the system.

Thermal expansion

The thermal coefficient of linear expansion for ABS is 10.1 x 10^{-5}m/m.°C. It is necessary in certain situations to make special provision for this expansion and contraction. Thermal expansion of ABS is compared with other materials, in the following chart.



General Information

-40°C to +60°C

Temperature range

Size range

Imperial Solvent weld	½" – 8"
Threaded	½" – 4"

WRAS Approval

Water Regulations Advisory Scheme. Approved product for potable water

Kite Mark Licence Fittings No. KM 60041

ABS

Pressure Ratings Fittings & Valves Imperial

Unless otherwise indicated the pressure ratings are as follows

PRODUCT	SIZE	PRESSURE RATING
Fitting Solvent Cement	½" – 6"	15 bar (217psi)
8"	9 bar (130psi)	
Fittings Threaded	⅜" – 4"	10 bar (145psi)
Valves	⅜" – 2"	16 bar (232psi)
Valves	2½" – 4"	10 bar (145psi)

All pressure ratings are at 20°C

All threaded fittings are parallel thread unless otherwise stated.
ie: BSP Female and BSP Male are Parallel
BSPT = Tapered Thread

Pressure Ratings Fittings & Valves Metric

Unless otherwise indicated the pressure ratings are as follows

PRODUCT	SIZE MM	PRESSURE RATING
Fitting Solvent Cement	16–160	16 bar (232psi)
200–225	10 bar (145psi)	
Valves	20–63	16 bar (232psi)
Valves	75–110	10 bar (145psi)

All pressure ratings are at 20°C

Temperature & Pressure Relationship

Temp°C	Class C		Class D		Class E	
	BAR	PSI	BAR	PSI	BAR	PSI
0	9.0	130	12.0	173	15.0	217
20	9.0	130	12.0	173	15.0	217
30	8.1	117	10.8	155	13.5	195
35	7.2	104	9.6	138	12.0	173
40	6.3	91	8.4	121	10.5	152
45	5.4	78	7.2	104	9.0	130
50	4.0	58	5.4	78	6.7	97
55	2.7	39	3.6	52	4.5	65
60	1.3	19	1.8	26	2.2	32

Sample Engineering specification

All ABS pipework and fittings shall be manufactured by EFFAST and conform to BS 5391, BS 5392 Part 1. Extruded pipework and injection moulded fittings have WRAS accreditation for potable water supply and are available in imperial sizes.

Useful Information

The following information may be helpful in understanding the specification of metric and imperial sizes and pressure ratings when selecting pipe.

When specifying imperial pipe, fittings and other components, reference is made to the nominal size of the pipe bore in inches and fractions of an inch. With metric systems, reference is made to the outside diameter and is expressed in millimetres. It is important to note that with the exception of 2½"/75mm and 5"/140mm the systems are not interchangeable.

Temperature and pressure relationship for ABS pipes

	Class C	Class E
Temperature (°C)	**bar (psi)**	**bar (psi)**
–40	9.0 (130)	15.0 (217)
–20	9.0 (130)	15.0 (217)
0	9.0 (130)	15.0 (217)
20	9.0 (130)	15.0 (217)
30	8.1 (117)	13.5 (195)
40	6.3 (91)	10.5 (152)
50	4.5 (65)	7.5 (108)
60	2.7 (39)	4.5 (65)

Imperial and metric size information

Imperial sizes		Metric sizes	
Nominal bore (inches)	**Pipe outside diameter (mm)**	**Pipe outside diameter (mm)**	**Nominal bore (mm)**
⅜"	17.1	16	10
½"	21.4	20	15
¾"	26.7	25	20
1"	33.6	32	25
1¼"	42.2	40	32
1½"	48.3	50	40
2"	60.3	63	50
2½"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

ABS pressure pipes 3m lengths
plain end

	Description	Product code
Code: PSABP	**Pressure pipe class C**	
	1"	**APCCLC03203**
	1¼"	**APCCLC04003**
	1½"	**APCCLC05003**
	2"	**APCCLC06303**
	2½"	**APCCLC07503**
	3"	**APCCLC09003**
	4"	**APCCLC11003**
	6"	**APCCLC16003**
	8"	**APCCLC22503**

ABS pressure pipes 3m lengths
plain end

	Description	Product code
Code: PSABP	**Pressure pipe class E**	
	½"	**APECLE02003**
	¾"	**APECLE02503**
	1"	**APECLE03203**
	1¼"	**APECLE04003**
	1½"	**APECLE05003**
	2"	**APECLE06303**
	3"	**APECLE09003**
	4"	**APECLE11003**
Code: PSABP	**Pressure pipe class T** (machining quality max. 12 bar at 20°C)	
	½"	**APTCLT02003**
	¾"	**APTCLT02503**
	1"	**APTCLT03203**
	1¼"	**APTCLT04003**
	1½"	**APTCLT05003**
	2"	**APTCLT06303**

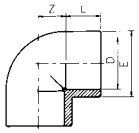
ABS pressure pipes 6m lengths
plain end

	Description	Product code
Code: PSABP	**Pressure pipe class C**	
	1"	**APCCLC0320**
	1¼"	**APCCLC0400**
	1½"	**APCCLC0500**
	2"	**APCCLC0630**
	2½"	**APCCLC0750**
	3"	**APCCLC0900**
	4"	**APCCLC1100**
	6"	**APCCLC1600**
	8"	**APCCLC2250**
Code: PSABP	**Pressure pipe class E**	
	½"	**APECLE0200**
	¾"	**APECLE0250**
	1"	**APECLE0320**
	1¼"	**APECLE0400**
	1½"	**APECLE0500**
	2"	**APECLE0630**
	3"	**APECLE0900**
	4"	**APECLE1100**
Code: PSABP	**Pressure pipe class T** (machining quality max. 12 bar at 20°C)	
	½"	**APTCLT0200**
	¾"	**APTCLT0250**
	1"	**APTCLT0320**
	1¼"	**APTCLT0400**
	1½"	**APTCLT0500**
	2"	**APTCLT0630**

ABS solvent cement fittings

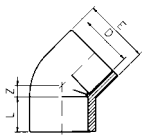
* Maximum working pressure: 9 bar (130 psi) at 20°C. For backing rings and gaskets see Accessories section

Elbow 90° Plain



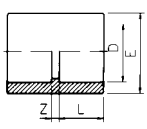
Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFAGOA0200	17	11	27	10	13
	¾"	AFAGOA0250	20	14	33	10	20
	1"	AFAGOA0320	23	17	41	10	35
	1¼"	AFAGOA0400	27	22	51	10	56
	1½"	AFAGOA0500	32	26	61	10	117
	2"	AFAGOA0630	37	34	75	10	222
	2½"	AFAGOA0750	44	39	90	1	301
	3"	AFAGOA0900	52	45	107	1	509
	4"	AFAGOA1100	63	59	133	1	948
	5"	AFAGOA1400	79	68	164	1	1543
	6"	AFAGOA1600	93	85	198	1	2961
	8"*	AFAGOA2250	116	116	258	1	6567

Elbow 45° Plain



Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFAGYA0200	17	5	27	10	12
	¾"	AFAGYA0250	20	6	33	10	18
	1"	AFAGYA0320	23	8	41	10	31
	1¼"	AFAGYA0400	27	10	52	10	47
	1½"	AFAGYA0500	32	12	61	10	97
	2"	AFAGYA0630	39	15	75	10	176
	2½"	AFAGYA0750	44	18	90	1	231
	3"	AFAGYA0900	52	21	107	1	390
	4"	AFAGYA1100	63	25	133	1	649
	6"	AFAGYA1600	90	36	198	1	2306
	8"*	AFAGYA2250	112	52	253	1	3820

Socket Plain

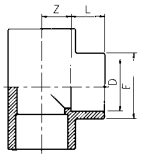


Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFAMAA0200	17	3	27	10	11
	¾"	AFAMAA0250	20	3	33	10	16
	1"	AFAMAA0320	23	3	41	10	25
	1¼"	AFAMAA0400	27	3	52	10	39
	1½"	AFAMAA0500	32	3	61	10	74
	2"	AFAMAA0630	37	3	75	10	132
	2½"	AFAMAA0750	44	4	90	1	164
	3"	AFAMAA0900	52	5	107	1	283
	4"	AFAMAA1100	67	6	133	1	526
	5"	AFAMAA1400	76	8	164	1	833
	6"	AFAMAA1600	90	8	198	1	1294
	8"*	AFAMAA2250	120	10	253	1	3391

ABS solvent cement fittings

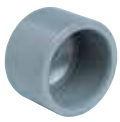
* Maximum working pressure: 9 bar (130 psi) at 20°C. For backing rings and gaskets see Accessories section

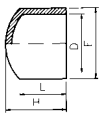
Tee 90° Plain



Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFATIA0200	17	11	27	10	17
	¾"	AFATIA0250	20	14	33	10	27
	1"	AFATIA0320	23	17	41	10	50
	1¼"	AFATIA0400	27	21	52	10	79
	1½"	AFATIA0500	32	26	61	10	116
	2"	AFATIA0630	37	33	75	5	284
	2½"	AFATIA0750	44	39	90	1	394
	3"	AFATIA0900	52	45	107	1	657
	4"	AFATIA1100	63	62	133	1	1131
	5"	AFATIA1400	76	71	164	1	2032
	6"	AFATIA1600	93	86	198	1	3755
	8"*	AFATIA2250	116	116	258	1	8453

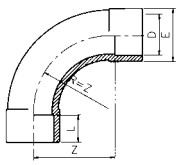
Cap Plain





Code: PSABF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	½"	AFACAA0200	17	37	27	10	9
	¾"	AFACAA0250	20	31	33	10	12
	1"	AFACAA0320	23	35	41	10	21
	1¼"	AFACAA0400	27	42	52	10	30
	1½"	AFACAA0500	32	47	61	10	59
	2"	AFACAA0630	39	48	75	10	104
	2½"	AFACAA0750	44	59	90	1	137
	3"	AFACAA0900	52	81	107	1	235
	4"	AFACAA1100	63	99	133	1	397
	6"	AFACAA1600	90	132	191	1	1021
	8"*	AFACAA2250	119	165	255	1	2311

Bend 90° Short Radius Plain

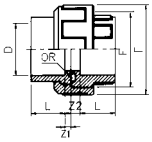


Code: PSABF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	½"	AFACUA0200	17	40	30	10	55
	¾"	AFACUA0250	20	50	36	10	55
	1"	AFACUA0320	23	64	44	10	90
	1¼"	AFACUA0400	27	80	54	1	156
	1½"	AFACUA0500	32	100	63	1	256
	2"	AFACUA0630	39	126	78	1	445
	2½"	AFACUA0750	44	150	94	1	777
	3"	AFACUA0900	51	180	113	1	1361
	4"	AFACUA1100	63	220	133	1	2150

ABS solvent cement fittings

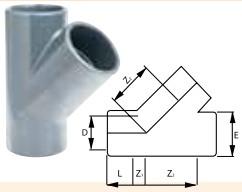
* Maximum working pressure: 9 bar (130 psi) at 20°C. For backing rings and gaskets see Accessories section

Union Plain



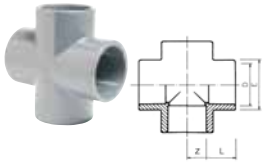
Code: PSABF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	½"	**AFABOA0200**	17	3	10	1"	42	10	31
	¾"	**AFABOA0250**	20	3	10	1¼"	52	10	49
	1"	**AFABOA0320**	23	3	10	1½"	59	10	67
	1¼"	**AFABOA0400**	27	3	12	2"	72	10	115
	1½"	**AFABOA0500**	32	3	14	2¼"	79	10	164
	2"	**AFABOA0630**	39	3	18	2¾"	96	10	288
	2½"*	**AFABOA0750**	44	3	18	3½"	119	1	434
	3"*	**AFABOA0900**	52	5	18	4"	134	1	599
	4"*	**AFABOA1100**	63	5	18	5"	163	1	876

Tee 45° plain



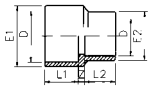
Code: PSABF	Nominal Size	Code	L	Z	E			Pack Qty	Weight (GR)
	1"	**AFATYA0320**	23	8	44	42		10	82
	1½"	**AFATYA0500**	31	12	65	61		10	203
	2"	**AFATYA0630**	38	14	85	74		10	336

Cross 90° Plain



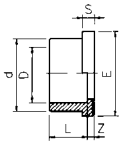
Code: PSABF	Nominal Size	Code	L	Z	E			Pack Qty	Weight (GR)
	1"	**AFACXA0320**	23	17	42			10	110
	1½"	**AFACXA0500**	31	26	61			10	270
	2"	**AFACXA0630**	38	33	75			10	510

Reducing Socket Plain



Code: PSABF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	1¼" x 1"	**AFAMRA040D**	27	23	5	51	42	10	49
	1½" x 1¼"	**AFAMRA050E**	32	27	5	61	52	10	84
	2" x 1½"	**AFAMRA063F**	39	32	5	75	62	10	155
	4" x 3"	**AFAMRA110I**	63	52	4	130	108	1	524

Stub Flange (Serrated Face) Plain

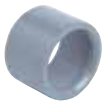


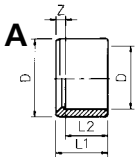
Code: PSABF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	½"	**AFAQRA0200**	17	3	27	6	34	10	8
	1"	**AFAQRA0320**	23	3	41	7	50	10	18
	1½"	**AFAQRA0500**	32	3	61	8	73	10	50
	2"	**AFAQRA0630**	39	3	76	9	90	10	91
	2½"	**AFAQRA0750**	44	3	90	10	106	1	118
	3"	**AFAQRA0900**	52	5	108	11	125	1	209
	4"	**AFAQRA1100**	63	5	134	12	155	1	330
	5"	**AFAQRA1400**	76	5	165	13	188	1	563
	6"	**AFAQRA1600**	90	6	197	14	218	1	816
	8"*	**AFAQRA2250**	119	7	248	19	274	1	1580

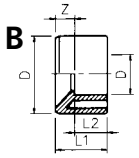
ABS solvent cement fittings

* Maximum working pressure: 9 bar (130 psi) at 20°C. For backing rings and gaskets see Accessories section

Reducing Bush Plain





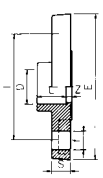


Code: PSABF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	¾" x ½"	AFARCA025B	20	17	3	A	10	6
	1" x ½"	AFARCA032B	20	17	6	B	10	16
	1" x ¾"	AFARCA032C	23	20	3	A	10	10
	1¼" x 1"	AFARCA040D	27	23	4	A	10	20
	1½" x ¾"	AFARCA050C	32	20	12	B	10	39
	1½" x 1"	AFARCA050D	32	23	9	B	10	42
	1½" x 1¼"	AFARCA050E	32	27	5	A	10	22
	2" x 1"	AFARCA063D	39	23	16	B	10	69
	2" x 1¼"	AFARCA063E	39	27	12	B	10	71
	2" x 1½"	AFARCA063F	39	32	7	A	10	54
	2½" x 1½"	AFARCA075F	45	31	14	B	1	93
	2½" x 2"	AFARCA075G	44	39	5	A	1	95
	3" x 1½"	AFARCA090F	52	32	20	B	1	169
	3" x 2"	AFARCA090G	52	39	13	B	1	143
	3" x 2½"	AFARCA090H	52	44	8	A	1	96
	4" x 2"	AFARCA110G	63	39	24	B	1	336
	4" x 3"	AFARCA110I	63	52	11	A	1	258
	5" x 4"	AFARCA140L	77	65	12	A	1	415
	6" x 4"	AFARCA160L	90	63	27	B	1	745
	8" x 6"*	AFARCA225M	118	91	27	B	1	1559

PVCu full face flanges (drilled)

For gaskets see Accessories section

Full Face Flange Drilled to BS 10 Table E Plain



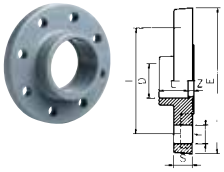
Code: PSABF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	AFAFFA0200	17	4	95	14	65	8	4	70
	¾"	AFAFFA0250	20	4	105	14	73	9	4	105
	1"	AFAFFA0320	23	4	115	14	83	16	4	145
	1½"	AFAFFA0500	32	4	152	18	98	17	4	270
	2"	AFAFFA0630	38	4	165	18	115	20	4	380
	3"	AFAFFA0900	51	7	200	18	146	22	4	526
	4"	AFAFFA110E	61	5	220	18	178	23	8	663

ABS

PVCu full face flanges (drilled)

For gaskets see Accessories section

Full Face Flange Drilled to BS 4504 NP10/16 Plain

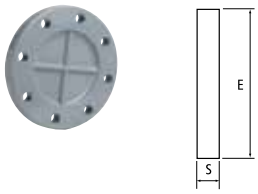


Code: PSABF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	**AFAFNA0200**	17	4	95	14	65	8	4	70
	¾"	**AFAFNA0250**	20	4	105	14	73	9	4	105
	1"	**AFAFNA0320**	23	4	115	14	85	16	4	145
	1¼"	**AFAFNA0400**	27	4	142	18	100	17	4	220
	1½"	**AFAFNA0500**	32	4	152	18	110	17	4	270
	2"	**AFAFNA0630**	38	4	165	18	125	20	4	380
	2½"	**AFAFNA0750**	44	4	185	18	145	19	4	465
	3"	**AFAFNA0900**	51	7	200	18	160	22	8	524
	4"	**AFAFNA1100**	61	5	220	18	180	23	8	666

ABS blanking flanges

Maximum working pressure: 2" 15 bar (217 psi) at 20°C For gaskets see Accessories section

Blanking Flange Drilled to BS4504 NP10/16



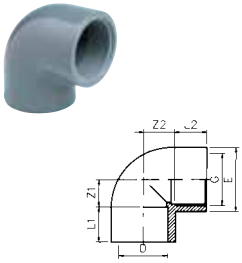
Code: PSABF	Nominal Size	Code	E	S	I	f	HOLES	Weight (GR)
	2"	**AFIFCI0630**	165	18	125	18	4	300
	3"	**AFIFCI0900**	200	20	160	18	8	524
	4"	**AFIFCI1100**	220	22	180	18	8	660
	6"	**AFIFCI1600**	285	28	240	22	8	1610

Prices shown are for one item excluding VAT

ABS adaptor fittings

Maximum working pressure: 9 bar (130 psi) at 20°C . For gaskets see Accessories section

Elbow 90° Plain/BSP Female Threaded



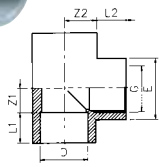
Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFCGOC0200**	17	15	11	12	28	10	16
	¾"	BSPF	**AFCGOC0250**	20	16	14	17	34	10	28
	1"	BSPF	**AFCGOC0320**	23	19	17	20	42	10	49
	1¼"	BSPF	**AFCGOC0400**	27	21	21	27	51	10	76
	1½"	BSPF	**AFCGOC0500**	32	21	26	37	61	10	163
	2"	BSPF	**AFCGOC0630**	39	26	33	46	75	10	308
	3"	BSPF	**AFCGOC0900**	51	35	47	66	106	1	549

Prices shown are for one item excluding VAT

ABS adaptor fittings

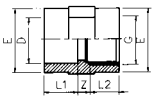
Maximum working pressure: 9 bar (130 psi) at 20°C . For gaskets see Accessories section

Tee 90° Plain/BSP Female Threaded



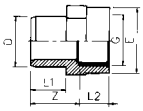
Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFCTIC0200**	17	15	11	12	28	10	25
	¾"	BSPF	**AFCTIC0250**	20	16	14	17	34	10	38
	1"	BSPF	**AFCTIC0320**	23	19	17	20	42	10	69
	1¼"	BSPF	**AFCTIC0400**	27	21	21	27	51	10	106
	1½"	BSPF	**AFCTIC0500**	32	21	26	37	61	10	213
	2"	BSPF	**AFCTIC0630**	39	26	33	46	75	5	380
	3"	BSPF	**AFCTIC0900**	51	36	47	66	106	1	674

Socket Plain/BSP Female Threaded



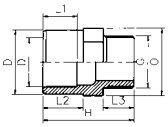
Code: PSABF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFCMAC0200**	17	15	4	28	10	15
	¾"	BSPF	**AFCMAC0250**	20	16	6	34	10	22
	1"	BSPF	**AFCMAC0320**	23	19	6	42	10	37
	1¼"	BSPF	**AFCMAC0400**	27	21	8	51	10	60
	1½"	BSPF	**AFCMAC0500**	32	21	13	61	10	104
	2"	BSPF	**AFCMAC0630**	39	26	15	89	10	161
	3"	BSPF	**AFCMAC0900**	52	33	9	106	1	343

Adaptor Plain Male Spigot/BSP Female Threaded



Code: PSABF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	½"	BSPF	**AFCAFC0200**	17	15	28	24	10	19
	¾"	BSPF	**AFCAFC0250**	20	16	34	27	10	27
	1"	BSPF	**AFCAFC0320**	23	19	42	30	10	43
	1¼"	BSPF	**AFCAFC0400**	27	21	51	36	10	68
	1½"	BSPF	**AFCAFC0500**	32	21	58	41	10	73
	2"	BSPF	**AFCAFC0630**	39	25	72	48	10	115

Adaptor Female Plain/BSP Male Threaded



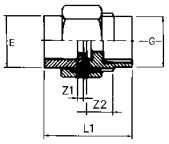
Code: PSABF	Nominal Size	G	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	½"	BSPM	**AFCAMC0200**	17	19	15	46	30	10	16
	¾"	BSPM	**AFCAMC0250**	20	22	16	50	36	10	28
	1"	BSPM	**AFCAMC0320**	23	27	19	57	46	10	48
	1¼"	BSPM	**AFCAMC0400**	27	32	21	66	55	10	54
	1½"	BSPM	**AFCAMC0500**	32	39	21	74	65	10	113
	2"	BSPM	**AFCAMC0630**	39	44	25	84	80	10	184
	3"	BSPM	**AFCAMC0900**	52	61	33	113	115	1	356
	4"	BSPM	**AFCAMC1100**	63	66	39	120	130	1	454

Prices shown are for one item excluding VAT

ABS adaptor fittings

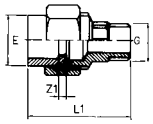
Maximum working pressure: 9 bar (130 psi) at 20°C . For gaskets see Accessories section

Composite Union Plain/BSP Female Brass Threaded



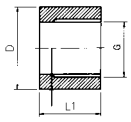
Code: PSABF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	½"	BSPT	**AFCBFC0200**	28	58	3	1	175
	¾"	BSPT	**AFCBFC0250**	36	69	3	1	238
	1"	BSPT	**AFCBFC0320**	42	72	3	1	324
	1¼"	BSPT	**AFCBFC0400**	53	86	3	1	469
	1½"	BSPT	**AFCBFC0500**	59	92	3	1	595
	2"	BSPT	**AFCBFC0630**	74	109	3	1	982
	2½"	BSPT	**AFCBFC0750**	93	127	3	1	1663
	3"	BSPT	**AFCBFC0900**	105	139	5	1	2184

Composite Union Plain/BSP Taper Male Brass Threaded



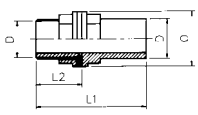
Code: PSABF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	½"	BSPT	**AFCBMC0200**	28	58	3	1	175
	¾"	BSPT	**AFCBMC0250**	36	69	3	1	238
	1"	BSPT	**AFCBMC0320**	42	72	3	1	324
	1¼"	BSPT	**AFCBMC0400**	53	86	3	1	469
	1½"	BSPT	**AFCBMC0500**	59	92	3	1	595
	2"	BSPT	**AFCBMC0630**	74	109	3	1	982
	2½"	BSPT	**AFCBMC0750**	93	127	3	1	1663
	3"	BSPT	**AFCBMC0900**	105	139	5	1	2184

Reducing Bush Plain/BSP Female Threaded



Code: PSABF	Nominal Size	G	Code	L1	D	G	Pack Qty	Weight (GR)
	½" x ⅜"	BSPF	**AFCRCC020A**	16	½"	⅜"	10	2
	¾" x ½"	BSPF	**AFCRCC025B**	19	¾"	½"	10	5
	1" x ¾"	BSPF	**AFCRCC032C**	22	1"	¾"	10	9

Tank Connector Plain/BSP Male Threaded EPDM Gasket



Code: PSABF	Nominal Size		Code	L	d	F	E	Pack Qty	Weight (GR)
	½"	BSPM	**AFCTCC0200**	77	42	38		10	31
	¾"	BSPM	**AFCTCC0250**	77	42	42		10	37
	1"	BSPM	**AFCTCC0320**	103	55	55		10	71
	1¼"	BSPM	**AFCTCC0400**	121	70	65		10	112
	1½"	BSPM	**AFCTCC0500**	128	73	72		10	168
	2"	BSPM	**AFCTCC0630**	154	85	93		10	317
	2½"	BSPM	**AFCTCC0750**	164	88	106		1	358
	3"	BSPM	**AFCTCC0900**	202	112	125		1	674
	4"	BSPM	**AFCTCC1100**	230	130	154		1	1214

Prices shown are for one item excluding VAT

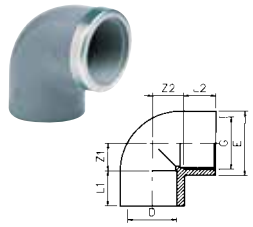
ABS adaptor fittings

Maximum working pressure: 9 bar (130 psi) at 20°C . For gaskets see Accessories section

Barrel Nipple Plain/BSP Male Taper Threaded

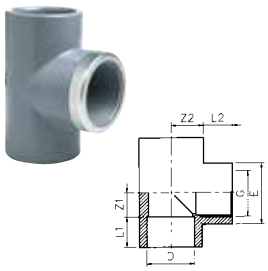
Code: PSABF	Nominal Size	G	Code	L1	L2	Pack Qty	Weight (GR)
	½"	BSPT	**AFCBNC0200**	50	17	10	14
	¾"	BSPT	**AFCBNC0250**	56	16	10	25
	1"	BSPT	**AFCBNC0320**	63	20	10	38
	1¼"	BSPT	**AFCBNC0400**	75	24	10	52
	1½"	BSPT	**AFCBNC0500**	88	30	10	80
	2"	BSPT	**AFCBNC0630**	88	32	10	115
	2½"	BSPT	**AFCBNC0750**	106	35	1	197
	3"	BSPT	**AFCBNC0900**	128	39	1	300
	4"	BSPT	**AFCBNC1100**	153	43	1	560

Elbow 90° Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring



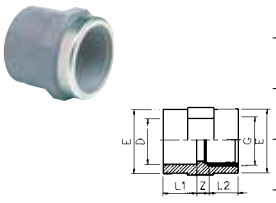
Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPT	**AFRGER0200**	17	15	11	12	28	10	20
	¾"	BSPF	**AFRGER0250**	20	16	14	17	34	10	36
	1"	BSPF	**AFRGER0320**	23	19	17	20	42	10	61
	1¼"	BSPF	**AFRGER0400**	27	21	21	27	51	10	92
	1½"	BSPF	**AFRGER0500**	32	21	26	37	61	10	183
	2"	BSPF	**AFRGER0630**	39	26	33	46	75	10	332

Tee 90° Plain/BSP Female Threaded Branch with Stainless Steel Reinforcing Ring



Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPT	**AFRTER0200**	17	15	11	12	28	10	29
	¾"	BSPF	**AFRTER0250**	20	16	14	17	34	10	46
	1"	BSPF	**AFRTER0320**	23	19	17	20	42	10	81
	1¼"	BSPF	**AFRTER0400**	27	21	21	27	51	10	122
	1½"	BSPF	**AFRTER0500**	32	21	26	37	61	10	233
	2"	BSPF	**AFRTER0630**	39	26	33	46	75	5	404

Socket Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring



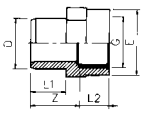
Code: PSABF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFRMER0200**	17	15	4	28	10	19
	¾"	BSPF	**AFRMER0250**	20	16	6	34	10	30
	1"	BSPF	**AFRMER0320**	23	19	6	42	10	49
	1¼"	BSPF	**AFRMER0400**	27	21	8	51	10	76
	1½"	BSPF	**AFRMER0500**	32	21	13	61	10	124
	2"	BSPF	**AFRMER0630**	39	26	15	89	10	185

Prices shown are for one item excluding VAT

ABS adaptor fittings

Maximum working pressure: 9 bar (130 psi) at 20°C . For gaskets see Accessories section

Adaptor Plain Male Spigot/BSP Female Threaded with Stainless Steel Reinforcing Ring



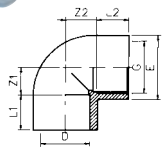
Code: PSABF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	½"	BSPF	**AFRAER0200**	17	15	28	24	10	23
	¾"	BSPF	**AFRAER0250**	20	16	34	27	10	35
	1"	BSPF	**AFRAER0320**	23	19	42	30	10	55
	1¼"	BSPF	**AFRAER0400**	27	21	51	36	10	84
	1½"	BSPF	**AFRAER0500**	32	21	58	41	10	93
	2"	BSPF	**AFRAER0630**	39	25	72	48	10	139

Prices shown are for one item excluding VAT

ABS threaded fittings

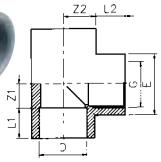
For gaskets see Accessories section

Elbow 90° BSP Female Threaded



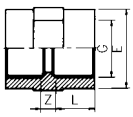
Code: PSABF	Nominal Size	G	Code	L1/L2	Z1/Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFFGOF0200**	**15**	12	28	10	15
	¾"	BSPF	**AFFGOF0250**	**16**	17	34	10	27
	1"	BSPF	**AFFGOF0320**	**19**	20	42	10	48
	1¼"	BSPF	**AFFGOF0400**	**21**	26	51	10	75
	1½"	BSPF	**AFFGOF0500**	**21**	36	62	10	162
	2"	BSPF	**AFFGOF0630**	**26**	45	77	10	306

Tee 90° BSP Female Threaded



Code: PSABF	Nominal Size	G	Code	L1/L2	Z1/Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFFTIF0200**	15	12	28	10	23
	¾"	BSPF	**AFFTIF0250**	16	17	34	10	36
	1"	BSPF	**AFFTIF0320**	19	20	42	10	67
	1¼"	BSPF	**AFFTIF0400**	21	26	51	10	104
	1½"	BSPF	**AFFTIF0500**	21	36	62	10	210
	2"	BSPF	**AFFTIF0630**	26	45	77	5	376

Socket BSP Female Threaded



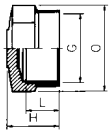
Code: PSABF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFFMAF0200**	15	7	27	10	16
	¾"	BSPF	**AFFMAF0250**	16	7	33	10	20
	1"	BSPF	**AFFMAF0320**	19	8	41	10	36
	1¼"	BSPF	**AFFMAF0400**	21	8	50	10	52
	1½"	BSPF	**AFFMAF0500**	21	8	61	10	56
	2"	BSPF	**AFFMAF0630**	26	8	75	10	100

Prices shown are for one item excluding VAT

ABS threaded fittings

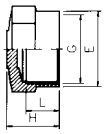
For gaskets see Accessories section

Plug BSP Male Threaded



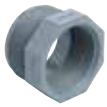
Code: PSABF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
	½"	BSPM	**AFFTAF0200**	15	29	24	10	8
	¾"	BSPM	**AFFTAF0250**	16	30	30	10	12
	1"	BSPM	**AFFTAF0320**	19	33	36	10	20
	1¼"	BSPM	**AFFTAF0400**	21	39	46	10	32
	1½"	BSPM	**AFFTAF0500**	21	39	50	10	36
	2"	BSPM	**AFFTAF0630**	26	43	65	10	64

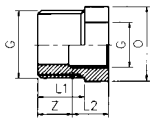
Cap BSP Female Threaded



Code: PSABF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
	½"	BSPF	**AFFCAF0200**	15	21	28	10	12
	¾"	BSPF	**AFFCAF0250**	16	23	34	10	14
	1"	BSPF	**AFFCAF0320**	19	26	42	10	16
	1¼"	BSPF	**AFFCAF0400**	21	29	51	10	28
	1½"	BSPF	**AFFCAF0500**	21	32	61	10	40
	2"	BSPF	**AFFCAF0630**	26	37	75	10	64
	3"	BSPF	**AFFCAF0900**	33	53	103	1	216

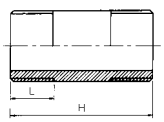
Reducing Bush BSP Male Threaded/BSP Female Threaded





Code: PSABF	Nominal Size	Code	L1	L2	Z	O	Pack Qty	Weight (GR)
	¾" x ½"	**AFFRCF025B**	16	15	13	30	10	10
	1" x ¾"	**AFFRCF032C**	19	16	14	36	10	16
	1¼" x 1"	**AFFRCF040D**	21	19	16	46	10	28
	1½" x 1¼"	**AFFRCF050E**	21	21	14	55	10	30
	2" x 1½"	**AFFRCF063F**	25	21	18	65	10	54
	2½" x 2"	**AFFRCF075G**	30	25	20	80	1	108
	3" x 2½"	**AFFRCF090H**	33	30	20	95	1	128
	4" x 3"	**AFFRCF110I**	39	33	24	120	1	304

Barrel Nipple BSP Male Taper Threaded



Code: PSABF	Nominal Size	G	Code	L	H	Pack Qty	Weight (GR)
	½"	BSPT	**AFFBAF0200**	16	50	10	10
	¾"	BSPT	**AFFBAF0250**	19	56	10	16
	1"	BSPT	**AFFBAF0320**	21	62	10	24
	1¼"	BSPT	**AFFBAF0400**	24	75	10	41
	1½"	BSPT	**AFFBAF0500**	32	87	10	66
	2"	BSPT	**AFFBAF0630**	29	87	10	95
	2½"	BSPT	**AFFBAF0750**	30	105	1	135
	3"	BSPT	**AFFBAF0900**	37	128	1	194
	4"	BSPT	**AFFBAF1100**	42	156	1	388

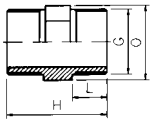
Prices shown are for one item excluding VAT

ABS

ABS threaded fittings

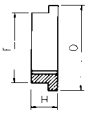
For gaskets see Accessories section

Hexagon Nipple BSP Male Threaded



Code: PSABF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
	½"	BSPM	**AFFNIF0200**	15	42	24	10	8
	¾"	BSPM	**AFFNIF0250**	16	44	30	10	14
	1"	BSPM	**AFFNIF0320**	19	50	36	10	24
	1¼"	BSPM	**AFFNIF0400**	21	58	46	10	36
	1½"	BSPM	**AFFNIF0500**	21	58	50	10	40
	2"	BSPM	**AFFNIF0630**	26	66	65	10	72

Backnut BSP Female Threaded



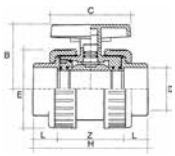
Code: PSABF	Nominal Size	G	Code	E	H	O	Pack Qty	Weight (GR)
	½"	BSPF	**AFFNUF0200**	28	13	38	10	10
	¾"	BSPF	**AFFNUF0250**	33	14	43	10	13
	1"	BSPF	**AFFNUF0320**	46	16	56	10	24
	1¼"	BSPF	**AFFNUF0400**	50	18	65	10	28
	1½"	BSPF	**AFFNUF0500**	60	19	72	10	36
	2"	BSPF	**AFFNUF0630**	80	21	94	10	72
	2½"	BSPF	**AFFNUF0750**	95	23	105	1	144
	3"	BSPF	**AFFNUF0900**	110	27	125	1	188
	4"	BSPF	**AFFNUF1100**	140	31	154	1	280

Prices shown are for one item excluding VAT

ABS manual ball valves–industrial

PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve Plain Sockets EPDM Seals



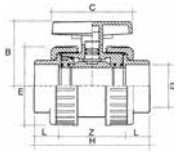
Code: PSABV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	**ABA22A0160**	50	51	16	46	78	65	16	112
	½"	**ABA22A0200**	50	51	17	46	78	65	16	112
	¾"	**ABA22A0250**	60	58	20	52	90	70	16	160
	1"	**ABA22A0320**	68	65	23	60	104	82	16	240
	1¼"	**ABA22A0400**	80	76	27	68	120	92	16	360
	1½"	**ABA22A0500**	94	88	31	78	140	105	16	552
	2"	**ABA22A0630**	115	104	38	93	169	123	16	920
	2½"	**ABA22A0750**	168	137	44	139	227	168	10	2480
	3"	**ABA22A0900**	168	138	51	139	242	168	10	2680
	4"	**ABA22A1100**	210	166	63	160	282	190	10	4400

Prices shown are for one item excluding VAT

ABS manual ball valves–industrial

PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve Plain Sockets FPM Seals



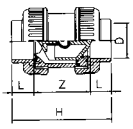
Code: PSABV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	ABA23A0160	50	51	16	46	78	65	16	112
	½"	ABA23A0200	50	51	17	46	78	65	16	112
	¾"	ABA23A0250	60	58	20	52	90	70	16	160
	1"	ABA23A0320	68	65	23	60	104	82	16	240
	1¼"	ABA23A0400	80	76	27	68	120	92	16	360
	1½"	ABA23A0500	94	88	31	78	140	105	16	552
	2"	ABA23A0630	115	104	38	93	169	123	16	920
	2½"	ABA23A0750	168	137	44	139	227	168	10	2480
	3"	ABA23A0900	168	138	51	139	242	168	10	2680
	4"	ABA23A1100	210	166	63	160	282	190	10	4400

Prices shown are for one item excluding VAT

ABS check valves

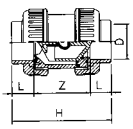
Maximum working pressure for valves 16–63 (½"–2") 16 bar (232 psi)

Check Valve Plain Sockets Stainless Steel Spring EPDM Seals



Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	ABA30A0160	16	46	78	88
	½"	ABA30A0200	17	46	78	88
	¾"	ABA30A0250	20	52	90	144
	1"	ABA30A0320	23	60	104	200
	1¼"	ABA30A0400	27	68	120	304
	1½"	ABA30A0500	31	78	140	480
	2"	ABA30A0630	38	93	169	800

Check Valve Plain Sockets PTFE Coated Spring EPDM Seals



Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	ABA31A0160	16	46	78	88
	½"	ABA31A0200	17	46	78	88
	¾"	ABA31A0250	20	52	90	144
	1"	ABA31A0320	23	60	104	200
	1¼"	ABA31A0400	27	68	120	304
	1½"	ABA31A0500	31	78	140	480
	2"	ABA31A0630	38	93	169	800

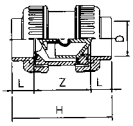
Prices shown are for one item excluding VAT

ABS

ABS air release valves

NP10/16 blanking flanges available, For gaskets see Accessories section

Air Release Valve Plain Sockets with EPDM Seals



Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	ABA33A0160	16	46	78	88
	½"	ABA33A0200	17	46	78	88
	¾"	ABA33A0250	20	52	90	144
	1"	ABA33A0320	23	60	104	200
	1¼"	ABA33A0400	27	68	120	304
	1½"	ABA33A0500	31	78	140	480
	2"	ABA33A0630	38	93	169	800

Prices shown are for one item excluding VAT # Refer to metric equivalent

ABS Electrically Actuated Double Union Ball Valves

(220 — 240 Volt) (110 Volt)

Plain Sockets EPDM Seals

Code: PSABV	Nominal Size	Code
	½"	ABA24A0200
	¾"	ABA24A0250
	1"	ABA24A0320
	1¼"	ABA24A0400
	1½"	ABA24A0500
	2"	ABA24A0630
	2½"	ABA24A0750
	3"	ABA24A0900
	4"	ABA24A1100

FPM Seals

Code: PSABV	Nominal Size	Code
	½"	ABA25A0200
	¾"	ABA25A0250
	1"	ABA25A0320
	1¼"	ABA25A0400
	1½"	ABA25A0500
	2"	ABA25A0630
	2½"	ABA25A0750
	3"	ABA25A0900
	4"	ABA25A1100

Prices shown are for one item excluding VAT

ABS pneumatically actuated double union ball valves fail safe closed

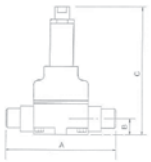
Plain Sockets EPDM Seals

Code: PSABV	Nominal Size	Code
	½"	**ABA26A0200**
	¾"	**ABA26A0250**
	1"	**ABA26A0320**
	1¼"	**ABA26A0400**
	1½"	**ABA26A0500**
	2"	**ABA26A0630**
	2½"	**ABA26A0750**
	3"	**ABA26A0900**
	4"	**ABA26A1100**

ABS pneumatically actuated double union ball valves

Code: PSABV	Nominal Size	Code
	½"	**ABA27A0200**
	¾"	**ABA27A0250**
	1"	**ABA27A0320**
	1¼"	**ABA27A0400**
	1½"	**ABA27A0500**
	2"	**ABA27A0630**
	2½"	**ABA27A0750**
	3"	**ABA27A0900**
	4"	**ABA27A1100**

Pressure Relief Valve (operates between 0.5 and 6.5 bar) EPDM Seals



Code: PSAQU	Nominal Size	Code	A	B	C
	½" - 20mm	**ABAPRV0200**	148	26	164
	¾" - 25mm	**ABAPRV0250**	148	26	164
	1" - 32mm	**ABAPRV0320**	148	26	164
	1¼" - 40mm	**ABAPRV0400**	203	40	240
	1½" - 50mm	**ABAPRV0500**	203	40	240
	2" - 63mm	**ABAPRV0630**	254	40	240

Up-rated spring available to increase maximum pressure to 10 bar. Add to the list price as stated above.

- Available in PVCu, ABS, PVCc, PP and PVDF.
- Diaphragms available in natural rubber, EDPM and FPM (Viton)
- Bi-Directional Design
- No metal parts in contact with line media
- Can be preset
- Can be installed in any position
- Also works as a Pressure Sustaining Valve
- Minimum set pressure 0.5 Bar (7 PSI) and maximum set pressure 6.8 Bar (100 PSI)
- Easily adjusted on site
- Connections Male Spigot: PVCu Imperial or Metric, ABS - Imperial, PVCc Metric, PP Metric, PVDF Metric.
- Mounting inserts provided in base as standard

Prices shown are for one item excluding VAT

ABS

EFFAST Polypropylene

Polypropylene Pipe Systems

Polypipe Effast has developed a range of polypropylene valves and fittings and will continue to increase the range of products. Polypropylene pipe work systems are widely used in industrial processing applications, because of its good characteristics. Polypropylene offers good resistance to abrasion, good thermal properties and is suitable for working at higher temperatures than PVCu and ABS.

Colour

Polypropylene material is beige-grey in colour.

Chemical Resistance

Polypropylene has good chemical resistance. It is resistant to acids, alkalis, salts and to a number of organic solvents.

Standards

Individual products are in compliance with appropriate British and European Standards:

Fittings	DIN 16962
Threaded fittings	BS 21, DIN 2999, ISO 7

Pressure Rating

Maximum 10 bar at 20°C unless otherwise stated.

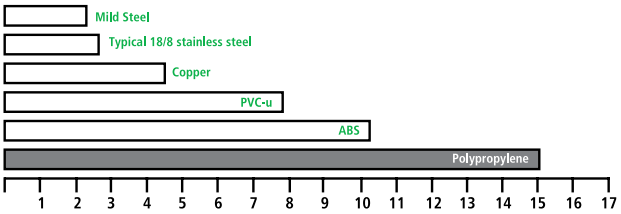
PP-H in sub-zero temperatures

PP-H Pipe systems are suitable for temperatures as low as -10°C, however it is necessary as with any other pipeline to take preventative measures to ensure the pipeline fluid does not freeze, as freezing would cause subsequent damage to the system.

Thermal expansion

The thermal coefficient of linear expansion for PP-H is 15 x 10^{-5}m/m.°C

It is necessary in certain situations to make special provision for this expansion and contraction. Thermal expansion of PP-H is compared with other materials, in the following chart.



General Information

Temperature range

-10°C to +110°C

Socket fusion welding

The Effast Polypropylene range is connected by socket fusion welding.

Socket fusion welding in dimensions of 20mm to 110mm, however special reinforcement collars will be required for 16mm joints.
The principle of socket fusion welding is constant however small differences in technique may occur on machinery from different suppliers. It is important to note that only like materials can be joined.
Below are details of the socket fusion process and illustrations to show the process.
During the process strict adherence to the safety protocols should be given at all times.

Preparing the equipment.

It is possible to use hand held socket fusion machines when joining materials in dimensions from 20mm to 63mm, however a bench top machine is preferred if any quantity of joints is required. The equipment should be clean and in good working order before any operation takes place. Careful attention should be given when following the tool set up as shown in the machine protocols. After the tool set up is completed the heater should be allowed to heat for 10 to 15 minutes, until the joining tools have reached their required temperature. A digital thermometer should be used to check the temperature before welding commences. It should be noted that during operation the welding area should be protected from draughts, dust and adverse weather conditions likely to corrupt the joint integrity.

Preparing the pipe and fittings.

The pipe in all cases should be cut with a sharp set of pipe cutters suitable for cutting plastic piping, as this will provide a square end suitable for socket fusion welding. It is important to ensure both the pipes and the fittings are clean and free from oil, water and grit before heating takes place. The pipe is peeled to remove the oxidised layer of material caused by UV radiation from the joint area. After the pipe is peeled, both the interior of the fitting and the peeled area of the pipe may be wiped with an alcohol wipe. Ensure there are no scrapings or chips of material attached to the pipe.

Technical Information.

The socket fusion of PP requires temperatures between 250 and 270 degrees Celsius on the heating tool before joining can be undertaken. Joining is determined by depth and shear pressure as the two preheated parts are brought together, one inside the other. The necessary times relevant to the joining process are; heating time, change over time, fixing time and cooling time. These are shown in the table.

The welding process.

After the set up and preparation has been completed in line with the machine instructions guide. The newly prepared pipes and fittings can be introduces to the heat source ensuring that both the pipe and the fitting are entered to the correct depth. They are then allowed to heat for the pre determined time. A bead of molten material should be visible forming on both the pipe and the fitting as heating takes place. When the time has elapsed, the pipe and fitting can be removed from the heat source. A change over time is shown on the table, this should be adhered to. The two parts should be joined together ensuring that the pipe is entered to the stop point inside the fitting. The joint should be held in position, and then allowed to cool in line with the correct table of parameters. A uniform double weld bead should be visible around the neck of the fitting, and a single weld bead should be evident inside the fitting. Testing can take place 1 hour after the last weld is complete.

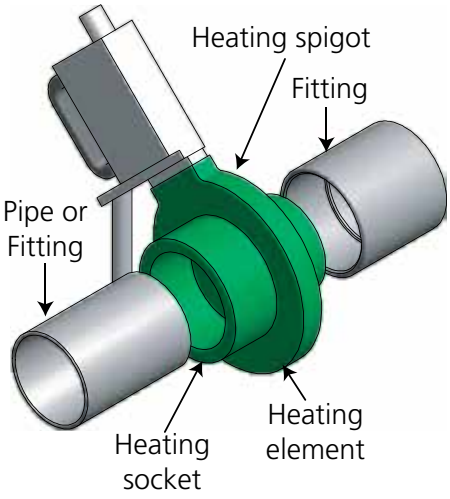
Heating times for socket fusion joints in PP. (DVS 2207, part 11)

Pipe od in mm	Min wall thickness in mm	Heating time in secs	Change over time in secs max	Cooling time in mins
20	2.5	5	4	2
25	2.7	7		
32	3.0	8		
40	3.7	12	6	4
50	4.6	18		
63	3.6	24		
75	4.3	30	8	6
90	5.1	40		
110	6.3	50	10	8

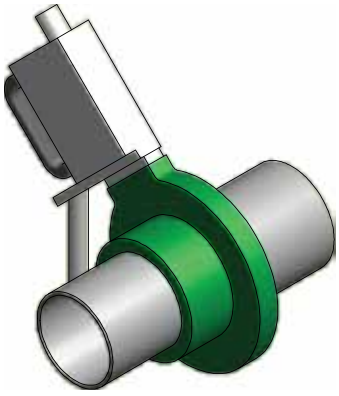
Jointing methods

The Effast Polypropylene range is jointed by socket fusion however there are two further jointing techniques. For reference only the images below detail the socket fusion and also butt fusion and electro fusion techniques.

Socket fusion



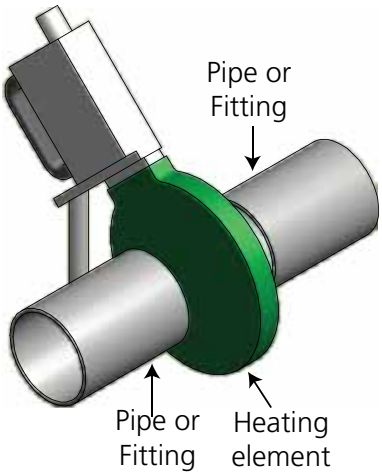
Individual parts



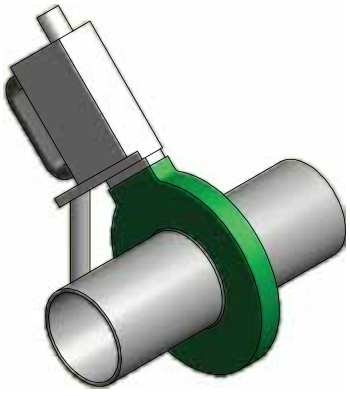
Heating

Finished joint

Butt fusion



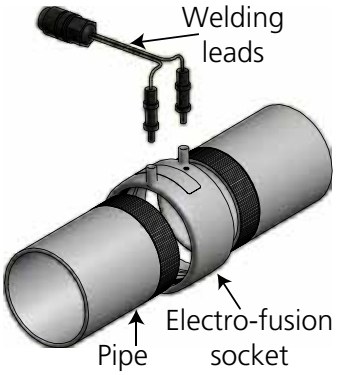
Individual parts



Heating

Finished joint

Electro fusion



Individual parts

Heating

Finished joint

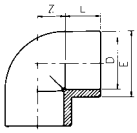
Polypropylene

Polypropylene pressure pipes 5m lengths plain end

Code: PSPPP	Nominal Size	Code	SDR17 PN10
	20	PPI0CLI00200	17
	25	PPI0CLI00250	17
	32	PPI0CLI00320	17
	40	PPI0CLI00400	17
	50	PPI0CLI00500	17
	63	PPI0CLI00630	17
	75	PPI0CLI00750	17
	90	PPI0CLI00900	17
	110	PPI0CLI01100	17

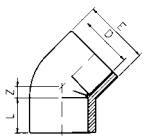
Polypropylene socket fusion fittings

Socket Fusion Elbow 90° Plain



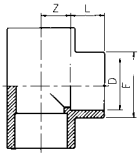
Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFIGOI0200	16	11	29	17
	25	PFIGOI0250	18	14	36	28
	32	PFIGOI0320	20	18	43	45
	40	PFIGOI0400	22	22	53	70
	50	PFIGOI0500	25	27	66	130
	63	PFIGOI0630	30	32	82	230
	75	PFIGOI0750	73	42	92	280
	90	PFIGOI0900	86	51	110	500
	110	PFIGOI1100	105	64	134	865

Socket Fusion Elbow 45° Plain



Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFIGYI0200	16	5	29	15
	25	PFIGYI0250	18	6	36	24
	32	PFIGYI0320	20	8	43	36
	40	PFIGYI0400	22	10	53	58
	50	PFIGYI0500	25	12	66	92
	63	PFIGYI0630	30	14	82	170
	75	PFIGYI0750	50	20	91	215
	90	PFIGYI0900	61	26	110	355
	110	PFIGYI1100	71	30	134	615

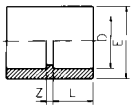
Socket Fusion Tee 90° Plain



Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFITII0200	16	11	29	20
	25	PFITII0250	18	14	36	37
	32	PFITII0320	20	18	43	58
	40	PFITII0400	22	22	53	92
	50	PFITII0500	25	27	66	146
	63	PFITII0630	30	32	82	280
	75	PFITII0750	73	42	92	350
	90	PFITII0900	86	51	110	600
	110	PFITII1100	105	64	134	1030

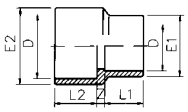
Polypropylene socket fusion fittings

Socket Fusion Coupler Plain



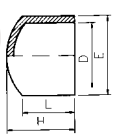
Code: PSPPF	Nominal Size	Code	Z	L	E	Weight (GR)
	20	**PFIMAI0200**	3	16	29	12
	25	**PFIMAI0250**	4	18	36	18
	32	**PFIMAI0320**	3	20	43	28
	40	**PFIMAI0400**	4	22	53	42
	50	**PFIMAI0500**	4	25	66	65
	63	**PFIMAI0630**	4	30	82	104
	75	**PFIMAI0750**	69	7	92	168
	90	**PFIMAI0900**	81	10	110	301
	110	**PFIMAI1100**	96	13	134	425

Socket Fusion Reducing Socket Plain



Code: PSPPF	Nominal Size	Code	L1	L2	Z	E1	E2	Weight (GR)
	25 x 20	**PFIMRI025B**	16	18	6	29	36	11
	32 x 20	**PFIMRI032B**	16	20	6	29	43	15
	32 x 25	**PFIMRI032C**	18	20	6	36	43	18
	40 x 25	**PFIMRI040C**	18	22	10	36	53	23
	40 x 32	**PFIMRI040D**	20	22	10	43	53	25
	50 x 32	**PFIMRI050D**	20	25	12	43	66	48
	50 x 40	**PFIMRI050E**	22	25	12	53	66	53
	63 x 32	**PFIMRI063D**	20	30	18	43	82	71
	63 x 40	**PFIMRI063E**	22	30	17	53	82	78
	63 x 50	**PFIMRI063F**	25	30	13	66	82	80
	75X63	**PFIMRI075G**	33	28		63	75	112
	90X63	**PFIMRI090G**	53	27		63	90	180
	90X75	**PFIMRI090H**	36	34		75	90	156
	110X90	**PFIMRI110I**	48	35		90	110	274

Socket Fusion Cap Plain

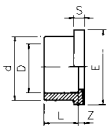


Code: PSPPF	Nominal Size	Code	L	H	E	Weight (GR)
	20	**PFICAI0200**	16	27	29	9
	25	**PFICAI0250**	18	30	36	13
	32	**PFICAI0320**	20	34	43	22
	40	**PFICAI0400**	22	38	53	33
	50	**PFICAI0500**	25	44	66	52
	63	**PFICAI0630**	30	51	82	86
	75	**PFICAI0750**	34	55	92	139
	90	**PFICAI0900**	38	65	110	252
	100	**PFICAI1100**	44	75	134	412

Polypropylene

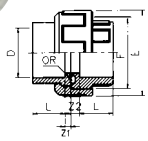
Polypropylene socket fusion fittings

Socket Fusion Stub Flange (Serrated) Plain



Code: PSPPF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	20	PFIQRI0200	16	3	27	6	34	10	7
	25	PFIQRI0250	18	3	33	7	41	10	11
	32	PFIQRI0320	20	3	41	7	51	10	15
	40	PFIQRI0400	22	3	50	8	61	10	24
	50	PFIQRI0500	25	3	61	8	73	10	34
	63	PFIQRI0630	30	3	76	9	90	10	60
	75	PFIQRI0750	26	36	90	10	106		103
	90	PFIQRI0900	22	43	108	11	125		143
	110	PFIQRI1100	38	50	131	12	150		225

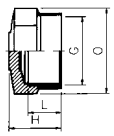
Socket Fusion Union Plain. Supplied with EPDM O ring–for FPM O ring see Accessories section



Code: PSPPF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	20	PFIBOI0200	16	3	11	1"	42	10	38
	25	PFIBOI0250	18	3	13	1¼"	52	10	58
	32	PFIBOI0320	20	3	15	1½"	59	10	80
	40	PFIBOI0400	22	7	16	2"	72	10	118
	50	PFIBOI0500	25	3	26	2¼"	79	10	170
	63	PFIBOI0630	30	11	25	2¾"	96	10	285

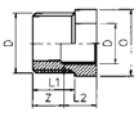
Threaded fittings PPH fiberglass reinforced

Plug



Code: PSPPF	Nominal Size	Code	L	H	O	Weight (GR)
	½"	PFFTAF0200	15.0	29	24	10
	¾"	PFFTAF0250	16.3	30	30	15
	1"	PFFTAF0320	19.1	33	36	25
	1¼"	PFFTAF0400	21.4	39	46	40
	1½"	PFFTAF0500	21.4	39	50	45
	2"	PFFTAF0630	25.7	43	65	80

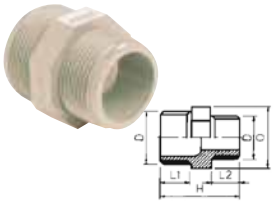
Reducing Bush



Code: PSPPF	Nominal Size	Code	L1	L2	Z	O	Weight (GR)
	¾"x ½"	PFFRCF025B	16.3	15.0	13.3	30	13
	1"x ¾"	PFFRCF032C	19.1	16.3	14.8	36	20
	1¼"x 1"	PFFRCF040D	21.4	19.1	16.3	46	35
	1½"x 1¼"	PFFRCF050E	21.4	21.4	14.0	55	37
	2"x 1½"	PFFRCF063F	25.7	21.4	18.3	65	67

Threaded fittings PPH fiberglass reinforced

Reducing Nipple



Code: PSPPF	Nominal Size	Code	L1	L2	H	O	Weight (GR)
	¾" x ½"	PFFNRF025B	13.3	15.0	43	30	17
	1" x ¾"	PFFNRF032C	19.1	16.3	47	36	26
	1¼" x 1"	PFFNRF040D	21.4	21.4	56	46	42
	1½" x 1¼"	PFFNRF050E	21.4	21.4	58	50	48
	2" x 1½"	PFFNRF063F	25.7	21.4	62	65	81

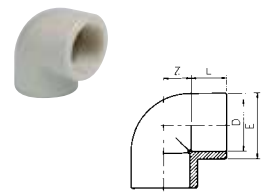
Nipple

Code: PSPPF	Nominal Size	Code	L	H	O	Weight (GR)
	½"	PFFNIF0200	11	32	19	11
	¾"	PFFNIF0250	11	42	24	9
	1"	PFFNIF0320	15	42	30	11
	1¼"	PFFNIF0400	16	50	36	18
	1½"	PFFNIF0500	19	58	36	28
	2"	PFFNIF0630	21	58	50	46

Adaptor Socket

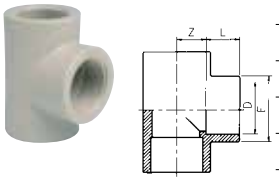
Code: PSPPF	Nominal Size	Code	L1	L2	Z	E	O	Weight (GR)
	20 x ½"	PFPMAP020B	16.5	15	6	28	32	15
	25 x ¾"	PFPMAP025C	18.5	16	7	34	36	20
	32 x 1"	PFPMAP032D	20.5	19	7	43.5	46	32
	40 x 1¼"	PFPMAP040E	22.5	22	7	50	55	50
	50 x 1½"	PFPMAP050F	25.5	22	9	60	65	80
	63 x 2"	PFPMAP063G	30.5	26	9	78	80	140

90° Elbow



Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	½"	PFFGOF0200	16	11	29	17
	¾"	PFFGOF0250	18	14	36	28
	1"	PFFGOF0320	20	18	43	45
	1¼"	PFFGOF0400	22	22	53	70
	1½"	PFFGOF0500	25	27	66	130
	2"	PFFGOF0630	30	32	82	230

90° Tee

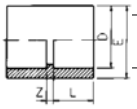


Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	½"	PFFTIF0200	16	11	29	20
	¾"	PFFTIF0250	18	14	36	37
	1"	PFFTIF0320	20	18	43	58
	1¼"	PFFTIF0400	22	22	53	92
	1½"	PFFTIF0500	25	27	66	146
	2"	PFFTIF0630	30	32	82	280

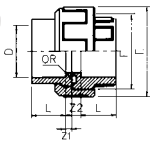
Polypropylene

Threaded fittings PPH fiberglass reinforced

Socket

Code: PSPPF	Nominal Size	Code	Z	L	E	Weight (GR)
 	½"	PFFMAF0200	3	16.5	30.5	12
	¾"	PFFMAF0250	3.5	18.5	36	18
	1"	PFFMAF0320	3	20.5	43.5	28
	1¼"	PFFMAF0400	4	22.5	53.5	42
	1½"	PFFMAF0500	4	25.5	66	65
	2"	PFFMAF0630	4	30	82	104

Threaded Union with O-Ring with EDPM O ring can also be supplied with FPM O ring

Code: PSPPF	Nominal Size	Code	L	Z1	Z2	F	E	Weight (GR)
 	½"	PFFBOF0200	16	3	11	1"	42	38
	¾"	PFFBOF0250	18	3	13	1¼"	52	58
	1"	PFFBOF0320	20	3	15	1½"	59	80
	1¼"	PFFBOF0400	22	7	16	2"	72	118
	1½"	PFFBOF0500	25	3	26	2¼"	79	170
	2"	PFFBOF0630	30	11	25	2¾"	96	285

Polypropylene adaptor fittings

For dimensions see PVCu equivalent–PVCu Section

Composite Union Plain/BSP Femaie Brass Threaded

Code: PSPPF	mm x Inches	Code
	20 x ½"	PFCBFC0200
	25 x ¾"	PFCBFC0250
	32 x 1"	PFCBFC0320
	40 x 1¼"	PFCBFC0400
	50 x 1½"	PFCBFC0500
	63 x 2"	PFCBFC0630

Composite Union Plain/BSP Male Taper Brass Threaded

Code: PSPPF	mm x Inches	Code
	20 x ½"	PFCBMC0200
	25 x ¾"	PFCBMC0250
	32 x 1"	PFCBMC0320
	40 x 1¼"	PFCBMC0400
	50 x 1½"	PFCBMC0500
	63 x 2"	PFCBMC0630

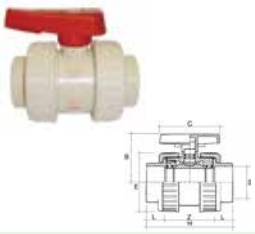
Polypropylene manual ball valves

PN = Maximum working pressure (bar) at 20°C

Manual EDPM Ball Valves

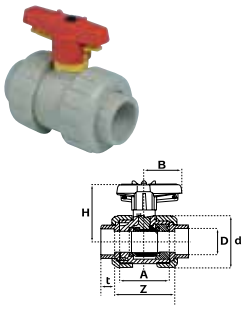
Code: PSAQU	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	20	**PBI22I0200**	50	51	16	46	78	65	16	63
	25	**PBI22I0250**	60	58	19	52	90	70	16	125
	32	**PBI22I0320**	68	65	22	60	104	82	16	170
	40	**PBI22I0400**	80	76	26	68	120	92	16	250
	50	**PBI22I0500**	94	88	31	78	140	105	16	425
	63	**PBI22I0630**	115	104	38	93	169	123	16	710

Manual FPM Ball Valves



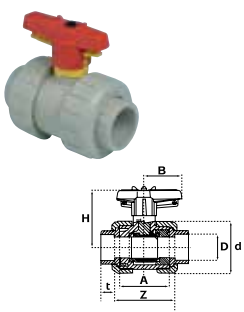
Code: PSAQU	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	20	**PBI23I0200**	50	51	16	46	78	65	16	63
	25	**PBI23I0250**	60	58	19	52	90	70	16	125
	32	**PBI23I0320**	68	65	22	60	104	82	16	170
	40	**PBI23I0400**	80	76	26	68	120	92	16	250
	50	**PBI23I0500**	94	88	31	78	140	105	16	425
	63	**PBI23I0630**	115	104	38	93	169	123	16	710

Double Union Ball Valve with Locking Handle Fusion Sockets EPDM Seals



Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	PN
	16	**PBI12I0160**	62	68	17	53	72	40	10
	20	**PBI12I0200**	62	68	17	53	72	40	10
	25	**PBI12I0250**	70	76	20	63	79	52	10
	32	**PBI12I0320**	74	81	23	70	82	52	10
	40	**PBI12I0400**	84	90	27	85	100	64	10
	50	**PBI12I0500**	95	104	32	101	108	73	10
	63	**PBI12I0630**	109	121	39	122	117	85	10
	75	**PBI12I0750**	137	148	45	155	144	110	10
	90	**PBI12I0900**	163	183	56	188	163	132	10
	110	**PBI12I1100**	163	176	64	188	163	132	6

Double Union Ball Valve with Locking Handle BSP Female Threaded Sockets EPDM Seals

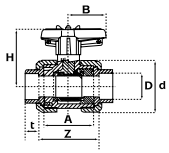


Code: PSPRA	Nominal Size	G	Code	A	Z	t	d	H	B	PN
	⅜"	BSPF	**PBF12F0160**	62	68	17	53	72	40	10
	½"	BSPF	**PBF12F0200**	62	68	17	53	72	40	10
	¾"	BSPF	**PBF12F0250**	70	76	20	63	79	52	10
	1"	BSPF	**PBF12F0320**	74	81	23	70	82	52	10
	1¼"	BSPF	**PBF12F0400**	84	90	27	85	100	64	10
	1½"	BSPF	**PBF12F0500**	95	104	32	101	108	73	10
	2"	BSPF	**PBF12F0630**	109	121	39	122	117	85	10
	2½"	BSPF	**PBF12F0750**	137	148	45	155	144	110	10
	3"	BSPF	**PBF12F0900**	163	183	56	188	163	132	10

Polypropylene

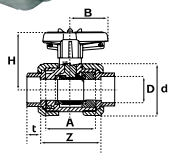
Polypropylene manual ball valves
PN = Maximum working pressure (bar) at 20°C

Double Union Ball Valve with Locking Handle Fusion Sockets FPM Seals



Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	PN
	16	**PBI13I0160**	62	68	17	53	72	40	10
	20	**PBI13I0200**	62	68	17	53	72	40	10
	25	**PBI13I0250**	70	76	20	63	79	52	10
	32	**PBI13I0320**	74	81	23	70	82	52	10
	40	**PBI13I0400**	84	90	27	85	100	64	10
	50	**PBI13I0500**	95	104	32	101	108	73	10
	63	**PBI13I0630**	109	121	39	122	117	85	10
	75	**PBI13I0750**	137	148	45	155	144	110	10
	90	**PBI13I0900**	163	183	56	188	163	132	10
	110	**PBI13I1100**	163	176	64	188	163	132	6

Double Union Ball Valve with Locking Handle BSP Female Threaded Sockets FPM Seals



Code: PSPRA	Nominal Size	G	Code	A	Z	t	d	H	B	PN	Weight (GR)
	⅜"	BSPF	**PBF13F0160**	62	68	17	53	72	40	10	78
	½"	BSPF	**PBF13F0200**	62	68	17	53	72	40	10	105
	¾"	BSPF	**PBF13F0250**	70	76	20	63	79	52	10	143
	1"	BSPF	**PBF13F0320**	74	81	23	70	82	52	10	220
	1¼"	BSPF	**PBF13F0400**	84	90	27	85	100	64	10	280
	1½"	BSPF	**PBF13F0500**	95	104	32	101	108	73	10	380
	2"	BSPF	**PBF13F0630**	109	121	39	122	117	85	10	505
	2½"	BSPF	**PBF13F0750**	137	148	45	155	144	110	10	685
	3"	BSPF	**PBF13F0900**	163	183	56	188	163	132	10	940

Polypropylene check valves
For dimensions see PVCu equivalent–PVCu Section

Fusion Sockets EPDM Seals

Code: PSPPV	Nominal Size	Code
	20	**PBI30I0200**
	25	**PBI30I0250**
	32	**PBI30I0320**
	40	**PBI30I0400**
	50	**PBI30I0500**
	63	**PBI30I0630**

Polypropylene check valves

For dimensions see PVCu equivalent–PVCu Section

Fusion Sockets FPM Seals

Code: PSAQU	Nominal Size	Code
	20	**PBI32I0200**
	25	**PBI32I0250**
	32	**PBI32I0320**
	40	**PBI32I0400**
	50	**PBI32I0500**
	63	**PBI32I0630**

Butterfly valves

For dimensions see PVCu equivalent–PVCu Section

PP–Butterfly Valve with lever handle inch/metric EPDM seals

Code: PSPRA	Inches	mm	Code
	3"	90	**PBA50A0900**
	4"	110	**PBA50A1100**
	5"	140	**PBA50A1400**
	6"	160	**PBA50A1600**
	8"	225	**PBA50A2250**

PP–Butterfly Valve with lever handle inch/metric FPM seals

Code: PSPRA	Inches	mm	Code
	3"	90	**PBA51A0900**
	4"	110	**PBA51A1100**
	5"	140	**PBA51A1400**
	6"	160	**PBA51A1600**
	8"	225	**PBA51A2250**

Polypropylene

EFFAST PE100 Pressure Systems

Effast PE100 high density polyethylene pressure pipe system is a fast and reliable solution to the challenges presented by the requirements of modern supply systems. Utilising the benefits of polyethylene jointing technologies and excellent chemical resistance, Effast PE100 pressure pipe system can be used across a wide range of applications including:

- Water supply and distribution
- Water treatment
- Cooling water
- Pressurised waste water systems
- Transportation of chemicals

Features and Benefits

PE100 pressure pipe offers all of the benefits commonly associated with plastic systems in a wide range of sizes.

- Sizes available

- SDR 17 (10 bar) 32mm to 1200mm
- SDR 11 (16 bar) 20mm to 630mm

- Operating temperature -40°C to +60°C subject to pressure requirement
- Comprehensive system includes full range of pipes and fittings
- Prefabrication service is available
- Fusion weld or mechanical installation
- Excellent impact resistance
- Excellent chemical resistance

Technical data	PE 100
Density, g/cm3, ISO 1183	0.960
Yield stress, MPa, DIN EN ISO 527	23
Elongation at yield %, DIN EN ISO 527	9
Elongation at break, %, DIN EN ISO 527	600
Tensile modulus of elasticity, MPa, DIN EN ISO 527	1100
Impact strength, kJ/m2, DIN EN ISO 179	no break
Notched impact strength, kJ/m2, DIN EN ISO 2039-1	30
Shore hardness, D, ISO 868	61
Mean coefficient of linear thermal expansion, K1, DIN 53752	1.8-44
Thermal conductivity, W/m–K, DIN 52612	0.38
Dielectric strength, kV/mm, VDE 0303-21	22
Surface resistivity, ohm, DIN IEC 167	$1x10^{14}$
Fire behaviour, DN 4102	B2
Physiologically safe as per BfR	yes
Chemical resistance according to DIN 8075 Supplement	fulfilled
Temperature range, C°	-40°C to +60°C

Methods of Jointing

General requirements

The welding area is to be protected from harmful weather, e.g. moisture, wind, intense sunlight, and temperatures below 5 °C.

When an even, appropriate welding temperature can be maintained for the pipe walls, then welding is possible at any outside temperature. This may involve:

• Preheating • Protective shelter • Heating up.

In direct sunlight, cover the weld area in advance, to allow temperature differences in unevenly warmed pipe to equalize. In strong wind, close off the extreme ends of the pipe segments to prevent cooling the weld during the welding process.

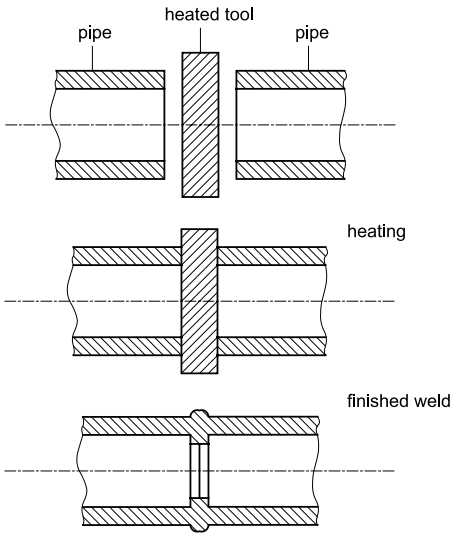
Welding methods

To achieve a permanent bond with Effast PE100 pipes and fittings, we recommend the processes that have proven themselves in practice:

• butt welding • electro fusion welding.

Butt welding

Before butt welding, the two surfaces to be welded are heated to welding temperature by a heating plate. It is then removed and the two plasticized surfaces are pressed together to form a weld.



Heated tool butt welding

Weld preparation

The pipeline components are laid out axially before being clamped into the welding machine. The part to be welded on must be free to move along the axis, with the help of adjustable pulleys if necessary.

With a planer, machine off the surfaces to be bonded, after they have been clamped into place. If swarf happens to fall into the pipe, use a clean tool to remove it. A hand must never touch the surfaces planed for welding.

After planning, check that the surfaces are parallel. Any gap remaining must be no greater than the maximum in table.

Check that any mismatch of the pipe ends is smaller than 10 % of the pipe wall thickness. If not, the wall thicknesses are to be matched around the weld by machining.

Maximum gap before welding	
Pipe diameter (mm)	Max. gap (mm)
≤355	0.5
400 to 630	1.0
630 to 800	1.3
800 to 1200	1.5

Welding process

The heating plate is heated to welding temperature and placed between the surfaces to be welded. They are pressed against the heated tool with the correct matching pressure. The temperature is monitored with a rapidly registering surface thermometer.

The force for matching or welding can be calculated from the weld surface and the specific pressure.

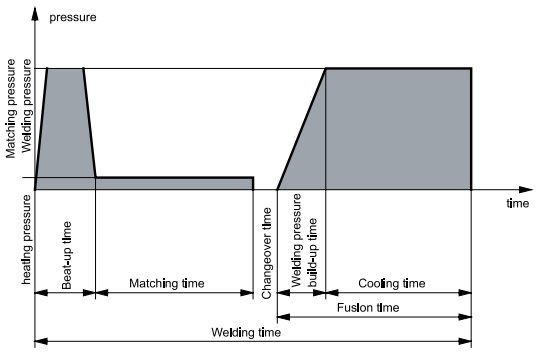
Usually the welding machine manufacturers give pressure values in table form, since most machines work with hydraulics, not with measured forces. To this pressure value, add the drag pressure from the movement of the work piece. The latter is influenced by friction of machine parts and the weight of the pipes and fittings to be welded.

Bead-up time is completed only after a bead has formed completely around both ends to be welded. The heating time begins at this point, and the pressure is reduced to nearly zero.

After heating, the fusion surfaces are detached from the heating plate without damage or contamination. The time for detaching the fusion surfaces, removing the heating plate, and bringing the fusion surfaces into contact with each other is called the changeover time. It should be kept as short as possible.

The weld surfaces should be brought into contact gently, at extremely low speed. Then pressure is slowly increased, then maintained until cooling is complete.

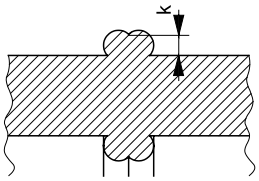
Never accelerate weld cooling or apply coolant to the area. For pipe walls 20 mm or more in thickness, an even cooling for a better weld can be achieved by covering the weld area during the cooling phase. After welding a double bead must go completely around the weld.



Steps in heated tool butt welding

Recommended values for butt welding, PE100 pipes and fittings					
	Matching[2]	Heat up[3]	Changeover	Welding[4]	
Wall thickness	Heat up time starts	Heat up time	Changeover time	Weld pressure build-up time	Cooling time
mm	mm	s	s	(max. time)	s
up to 4.5	0.5	45	5	5	6
4.5–7	1.0	45–70	5–6	5–6	6–10
7–12	1.5	70–120	6–8	6–8	10–16
12–19	2.0	120–190	8–10	8–11	16–24
19–26	2.5	190–260	10–12	11–14	24–32
26–37	3.0	260–370	12–16	14–19	32–45
37–50	3.5	370–500	16–20	19–25	45–60
50–70	4.0	500–700	20–25	25–35	60–80

[1] For outdoors temperature about 20°C and moderate air movement
[2] Height of bead on the heated tool at the end of the matching time (matching at < 0.15 N/mm2)
[3] Heated tool temperature is 210 ± 10°C. heat up time = 10 x wall thickness (heat soak at ≤ 0.02 N/mm2)
[4] Cooling time at welding pressure (p = 0.15 ± 0.01 N/mm2)

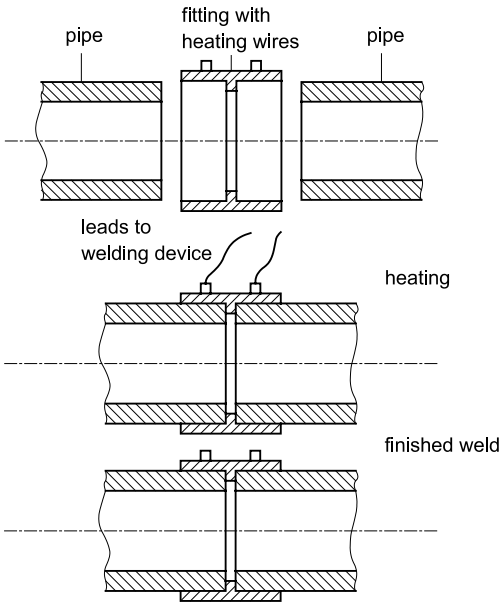


Double bead welded.

If the bead is to be removed, it should be done before the weld is entirely cooled down. Machining the bead off the cold weld runs the risk of causing dents. With brittle materials like PVC and PVDF it can cause chipping.

Electro fusion welding

The surfaces to be welded, i.e. the pipe outer surface and the socket inside surface, are heated to welding temperature and fused by electric current, through the resistance of wires within the socket.



Electro fusion welding

Weld surface preparation

For a good electro fusion weld, clean surfaces are an important factor. The pipe surfaces must be shaved in the weld area. Then the burr on the inner edge must be removed and the outer edge rounded. Effast PE100 electrofusion fittings are supplied in protective bags and should only be removed from the bag at time of use. Do not touch the inside of the electrofusion fitting at any time.

In the weld area, the pipe may be out of the round by no more than 1.5 %. Otherwise clamps for this purpose can be used to force roundness.

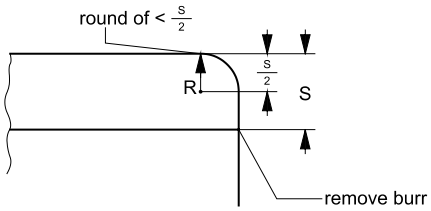
When the fitting goes on to the pipe ends, keep it straight along the axis and avoid forcing. This prevents displacing and damaging the resistance wire.

Welding process

The welding device must match the fitting used. Settings on the device are selected before welding, according to the pipe diameter and nominal pressure. The required welding information is provided in three ways. Dependent on the functionality of the welding machine, programming is possible using -

• Smart System self programming technology • Barcode
• Manual progamming of values

Welding cables connect device and fitting. Fusion is carried out automatically and weld is left at rest until the cooling time has elapsed.



Preparing pipe ends

PE100

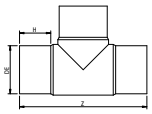
Polyethylene Pressure Pipe SDR17/PN10

	Pressure pipe PN10		
Code: HPPEE	**øD**	**Code**	**Z**
	32mm	**2000.10.32.60**	1.82
	40mm	**2000.10.40.60**	2.27
	50mm	**2000.10.50.60**	2.84
	63mm	**2000.10.63.60**	3.58
	75mm	**2000.10.75.60**	4.26
	90mm	**2000.10.90.60**	5.11
	110mm	**2000.10.110.60**	6.25
	125mm	**2000.10.125.60**	7.10
	140mm	**2000.10.140.60**	7.95
	160mm	**2000.10.160.60**	9.09
	180mm	**2000.10.180.60**	10.23
	200mm	**2000.10.200.60**	11.36
	225mm	**2000.10.225.60**	12.78
	250mm	**2000.10.250.60**	14.20
	280mm	**2000.10.280.60**	15.91
	315mm	**2000.10.315.60**	17.90
	355mm	**2000.10.355.60**	20.17
	400mm	**2000.10.400.60**	22.73
	450mm	**2000.10.450.60**	25.57
	500mm	**2000.10.500.60**	28.41
	560mm	**2000.10.560.60**	31.82
	630mm	**2000.10.630.60**	35.80

For Sizes above 630mm please enquire

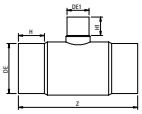
Polyethylene fittings SDR17/PN10

Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z
	63	**2004.10.63.90**	68	229
	75	**2004.10.75.90**	72	256
	90	**2004.10.90.90**	82	303
	110	**2004.10.110.90**	92	336
	125	**2004.10.125.90**	91	356
	140	**2004.10.140.90**	96	390
	160	**2004.10.160.90**	104	423
	180	**2004.10.180.90**	105	450
	200	**2004.10.200.90**	117	502
	225	**2004.10.225.90**	120	538
	250	**2004.10.250.90**	131	595
	280	**2004.10.280.90**	126	653
	315	**2004.10.315.90**	151	700
	355	**2004.10.355.90**	164	790
	400	**2004.10.400.90**	180	890
	450	**2004.10.450.90**	195	984
	500	**2004.10.500.90**	215	1090
	560	**2004.10.560.90**	235	1200
	630	**2004.10.630.90**	253	1330

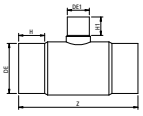
Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	90	**2004.10.90X50.90**	50	81	57	302
	90	**2004.10.90X63.90**	63	81	71	302
	110	**2004.10.110x50.90**	50	90	57	335
	110	**2004.10.110X63.90**	63	90	70	335
	110	**2004.10.110X90.90**	90	90	82	335
	125	**2004.10.125x63.90**	63	90	70	358
	125	**2004.10.125x90.90**	90	90	82	358
	140	**2004.10.140x63.90**	63	97	72	390
	140	**2004.10.140x90.90**	90	95	84	390
	160	**2004.10.160X63.90**	63	104	72	424
	160	**2004.10.160X90.90**	90	104	84	424
	160	**2004.10.160X110.90**	110	104	92	424
	160	**2004.10.160x125.90**	125	104	91	424
	180	**2004.10.180x90.90**	90	105	82	450
	180	**2004.10.180x110.90**	110	105	92	450
	180	**2004.10.180x125.90**	125	105	92	448
	200	**2004.10.200X63.90**	63	116	84	500
	200	**2004.10.200x90.90**	90	116	84	500
	200	**2004.10.200x110.90**	110	116	92	500
	200	**2004.10.200x160.90**	160	116	104	500

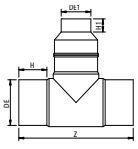
Polyethylene fittings SDR17/PN10

Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	200	**2004.10.200x180.90**	180	116	106	500
	225	**2004.10.225x90.90**	90	120	84	538
	225	**2004.10.225x125.90**	125	120	91	538
	225	**2004.10.225x160.90**	160	120	105	538
	225	**2004.10.225x180.90**	180	120	106	540
	250	**2004.10.250x110.90**	110	130	92	596
	250	**2004.10.250x160.90**	160	130	106	596
	315	**2004.10.315x110.90**	110	152	92	703
	315	**2004.10.315x160.90**	160	152	105	703
	315	**2004.10.315x180.90**	180	152	106	703
	315	**2004.10.315x200.90**	200	152	116	703
	315	**2004.10.315x225.90**	225	152	120	703
	355	**2004.10.355x110.90**	110	170	90	674
	355	**2004.10.355x160.90**	160	170	102	674
	355	**2004.10.355x225.90**	225	170	120	674
	400	**2004.10.400x110.90**	110	190	90	755
	400	**2004.10.400x160.90**	160	190	102	755
	400	**2004.10.400x225.90**	225	190	125	755
	560	**2004.10.560x250.90**	250	235	132	960

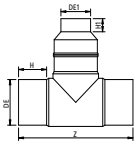
Assembled Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	75x63	**2004.10.75x63.90**	63	72	65	256
	90x75	**2004.10.90x75.90**	75	82	73	303
	110x75	**2004.10.110x75.90**	75	92	73	336
	125x75	**2004.10.125x75.90**	75	91	73	356
	125x110	**2004.10.125x110.90**	110	91	90	356
	140x110	**2004.10.140x110.90**	110	96	91	390
	140x125	**2004.10.140x125.90**	125	96	93	390
	160x140	**2004.10.160x140.90**	140	104	97	423
	180x110	**2004.10.180x110.90**	110	105	86	450
	180x140	**2004.10.180x140.90**	140	105	94	450
	180x160	**2004.10.180x160.90**	160	105	105	450
	200x140	**2004.10.200x140.90**	140	117	95	502
	200x180	**2004.10.200x180.90**	180	117	105	502
	250x200	**2004.10.250x200.90**	200	131	116	595
	250x225	**2004.10.250x225.90**	225	131	122	595
	280x200	**2004.10.280x200.90**	200	126	51	653
	280x225	**2004.10.280x225.90**	225	126	57	653
	280x250	**2004.10.280x250.90**	250	126	64	653
	315x250	**2004.10.315x250.90**	250	151	130	700
	315x280	**2004.10.315x280.90**	280	151	72•	700

Polyethylene fittings SDR17/PN10

Assembled Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	355x250	**2004.10.355x250.90**	250	164	62•	790
	355x280	**2004.10.355x280.90**	280	164	56•	790
	355x315	**2004.10.355x315.90**	315	164	78•	790
	400x280	**2004.10.400x280.90**	280	180	73•	890
	400x315	**2004.10.400x315.90**	315	180	83•	890
	400x355	**2004.10.400x355.90**	355	180	92•	890
	450x315	**2004.10.450x315.90**	315	195	76•	984
	450x355	**2004.10.450x355.90**	355	195	92•	984
	450x400	**2004.10.450x400.90**	400	195	99•	984
	500x355	**2004.10.500x355.90**	355	215	95•	1090
	500x400	**2004.10.500x400.90**	400	215	96•	1090
	500x450	**2004.10.500x450.90**	450	215	63•	1090
	560x400	**2004.10.560x400.90**	400	235	98•	1200
	560x450	**2004.10.560x450.90**	450	235	65•	1200
	560x500	**2004.10.560x500.90**	500	235	67•	1200
	630x450	**2004.10.630x450.90**	450	253	68•	1330
	630x500	**2004.10.630x500.90**	500	253	61•	1330
	630x560	**2004.10.630x560.90**	560	253	65•	1330

Large Diameter Reduced Tee 90° Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	355x90	**2004.10.355x90.90**	90	230	200	700
	355x110	**2004.10.355x110.90**	110	230	200	700
	355x125	**2004.10.355x125.90**	125	230	200	700
	355x140	**2004.10.355x140.90**	140	230	200	700
	355x160	**2004.10.355x160.90**	160	230	200	700
	355x180	**2004.10.355x180.90**	180	230	200	700
	400x90	**2004.10.400x90.90**	90	230	200	700
	400x110	**2004.10.400x110.90**	110	230	200	700
	400x125	**2004.10.400x125.90**	125	230	200	700
	400x140	**2004.10.400x140.90**	140	230	200	700
	400x160	**2004.10.400x160.90**	160	230	200	700

Reduced Tee 90° Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	400x180	**2004.10.400x180.90**	180	230	200	700
	450x90	**2004.10.450x90.90**	90	230	200	700
	450x110	**2004.10.450x110.90**	110	230	200	700
	450x125	**2004.10.450x125.90**	125	230	200	700
	450x140	**2004.10.450x140.90**	140	230	200	700
	450x160	**2004.10.450x160.90**	160	230	200	700
	450x180	**2004.10.450x180.90**	180	230	200	700
	450x200	**2004.10.450x200.90**	200	230	200	720
	500x90	**2004.10.500x90.90**	90	230	200	700

• Short Spigot

Polyethylene fittings SDR17/PN10

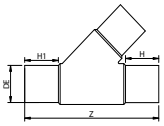
Reduced Tee 90° Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	500x110	**2004.10.500x110.90**	110	230	200	700
	500x125	**2004.10.500x125.90**	125	230	200	700
	500x140	**2004.10.500x140.90**	140	230	200	700
	500x160	**2004.10.500x160.90**	160	230	200	700
	500x180	**2004.10.500x180.90**	180	230	200	700
	500x200	**2004.10.500x200.90**	200	230	200	720
	500x225	**2004.10.500x225.90**	225	230	200	730

Long Cross Spigot

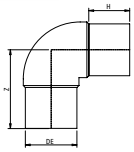
Code: HPPEF	Nominal Size	Code	H	Z
	110	**2005.10.110**	92	338
	125	**2005.10.125**	89	350
	160	**2005.10.160**	104	423

Tee 45° Long Spigot



Code: HPPEF	Nominal Size	Code	H1	H	Z
	63	**2004.10.63.45**	68	81	287
	75	**2004.10.75.45**	71	88	310
	90	**2004.10.90.45**	80	90	355
	110	**2004.10.110.45**	88	103	397
	125	**2004.10.125.45**	87	120	448
	140	**2004.10.140.45**	100	110	495
	160	**2004.10.160.45**	104	119	530

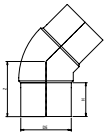
Elbow 90° Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z	DE
	63	**2001.10.63.90**	68	112	63
	75	**2001.10.75.90**	73	126	75
	90	**2001.10.90.90**	82	148	90
	110	**2001.10.110.90**	91	163	110
	125	**2001.10.125.90**	90	175	125
	140	**2001.10.140.90**	97	188	140
	160	**2001.10.160.90**	104	206	160
	180	**2001.10.180.90**	106	210	180
	200	**2001.10.200.90**	116	250	200
	225	**2001.10.225.90**	122	268	225
	250	**2001.10.250.90**	130	290	250
	280	**2001.10.280.90**	126	310	280
	315	**2001.10.315.90**	153	333	315
	450	**2001.10.450.90**			
	630	**2001.10.630.90**			
	800	**2001.10.800.90**			
	1000	**2001.10.1000.90**			

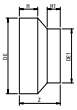
Polyethylene fittings SDR17/PN10

Elbow 45° Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z
	63	**2001.10.63.45**	69	95
	75	**2001.10.75.45**	73	100
	90	**2001.10.90.45**	82	109
	110	**2001.10.110.45**	93	127
	125	**2001.10.125.45**	93	162
	140	**2001.10.140.45**	97	170
	160	**2001.10.160.45**	107	180
	180	**2001.10.180.45**	108	190
	200	**2001.10.200.45**	118	190
	225	**2001.10.225.45**	120	210
	250	**2001.10.250.45**	130	215
	280	**2001.10.280.45**	142	258
	315	**2001.10.315.45**	154	270

Reducer Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	75x63	**2024.10.75x63**	63	73	65	151
	90x50	**2024.10.90x50**	50	82	55	158
	90x63	**2024.10.90x63**	63	82	66	163
	90x75	**2024.10.90x75**	75	83	73	167
	110x50	**2024.10.110x50**	50	88	60	176
	110x63	**2024.10.110x63**	63	89	67	178
	110x75	**2024.10.110x75**	75	88	73	182
	110x90	**2024.10.110x90**	90	88	82	186
	125x63	**2024.10.125x63**	63	90	66	191
	125x75	**2024.10.125x75**	75	91	73	191
	125x90	**2024.10.125x90**	90	91	81	189
	125x110	**2024.10.125x110**	110	90	90	188
	140x90	**2024.10.140x90**	90	95	81	204
	140x110	**2024.10.140x110**	110	95	91	203
	140x125	**2024.10.140x125**	125	96	93	198
	160x90	**2024.10.160x90**	90	106	83	226
	160x110	**2024.10.160x110**	110	106	92	226
	160x125	**2024.10.160x125**	125	105	93	216
	160x140	**2024.10.160x140**	140	106	97	213
	180x63	**2024.10.180x63**	63	107	68	226
	180x110	**2024.10.180x110**	110	105	86	227
	180x125	**2024.10.180x125**	125	110	90	240
	180x140	**2024.10.180x140**	140	106	94	218
	180x160	**2024.10.180x160**	160	105	105	220
	200x90	**2024.10.200x90**	90	116	83	250

Polyethylene fittings SDR17/PN10

Reducer Long Spigot

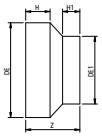
Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	200x110	**2024.10.200x110**	110	116	88	250
	200x125	**2024.10.200x125**	125	116	91	240
	200x140	**2024.10.200x140**	140	111	95	236
	200x160	**2024.10.200x160**	160	111	102	243
	200x180	**2024.10.200x180**	180	116	105	234
	225x160	**2024.10.225x160**	160	117	102	260
	225x180	**2024.10.225x180**	180	122	122	275
	225x200	**2024.10.225x200**	200	120	114	258
	250x180	**2024.10.250x180**	180	132	118	292
	250x200	**2024.10.250x200**	200	128	116	274
	250x225	**2024.10.250x225**	225	131	122	273
	315x225	**2024.10.315x225**	225	150	130	330
	315x250	**2024.10.315x250**	250	150	130	320

Reducer Short Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	250x160	**2024.10.250x160SS**	160	62	50	157
	250x180	**2024.10.250x180SS**	180	62	50	150
	250x200	**2024.10.250x200SS**	200	60	58	147
	250x225	**2024.10.250x225SS**	225	50	68	142
	280x200	**2024.10.280x200SS**	200	72	51	160
	280x225	**2024.10.280x225SS**	225	72	57	154
	280x250	**2024.10.280x250SS**	250	69	64	150
	315x225	**2024.10.315x225SS**	225	82	57	184
	315x250	**2024.10.315x250SS**	250	81	62	178
	315x280	**2024.10.315x280SS**	280	87	77	200
	355x250	**2024.10.355x250SS**	250	87	62	195
	355x280	**2024.10.355x280SS**	280	45	56	129
	355x315	**2024.10.355x315SS**	315	88	78	188
	400x280	**2024.10.400x280SS**	280	96	73	226
	400x315	**2024.10.400x315SS**	315	97	83	218
	400x355	**2024.10.400x355SS**	355	97	92	208
	450x315	**2024.10.450x315SS**	315	65	76	206
	450x355	**2024.10.450x355SS**	355	64	92	203
	450x400	**2024.10.450x400SS**	400	64	99	188
	500x355	**2024.10.500x355SS**	355	63	81	211
	500x400	**2024.10.500x400SS**	400	62	96	210
	500x450	**2024.10.500x450SS**	450	63	63	166
	560x400	**2024.10.560x400SS**	400	60	98	240
	560x450	**2024.10.560x450SS**	450	60	65	187
	560x500	**2024.10.560x500SS**	500	57	67	165

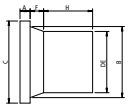
Polyethylene fittings SDR17/PN10

Reducer Short Spigot



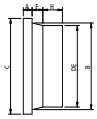
Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	630x450	**2024.10.630x450SS**	450	60	68	234
	630x500	**2024.10.630x500SS**	500	62	61	192
	630x560	**2024.10.630x560SS**	560	64	65	188
	710x560	**2024.10.710x560SS**	560	60	34	155
	710x630	**2024.10.710x630SS**	630	66	62	160
	800x710	**2024.10.800x710SS**	710	62	62	160
	900x500	**2024.10.900x500SS**	800	62	62	160
	1000x900	**2024.10.1000x900SS**	900	50	56	156
	1200x1000	**2024.10.1200x1000SS**	1000	58	45	171

Stub Flange Long Spigot



Code: HPPEF	Nominal Size	Code	H	F	C	C•
	63	**2012.10.63**	63	20	75	102
	75	**2012.10.75**	73	22	89	122
	90	**2012.10.90**	82	24	105	138
	110	**2012.10.110**	90	30	125	158
	125	**2012.10.125**	102	22	134	158
	140	**2012.10.140**	102	30	155	187
	160	**2012.10.160**	106	33	175	212
	180	**2012.10.180**	108	37	180	212
	200	**2012.10.200**	119	46	232	268
	225	**2012.10.225**	115	39	235	268
	250	**2012.10.250**	122	46	285	320
	280	**2012.10.280**	140	30	291	320
	315	**2012.10.315**	157	32	335	370
	355	**2012.10.355**	167	36	373	430
	400	**2012.10.400**	182	49	427	480

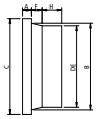
Stub Flange Short Spigot



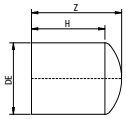
Code: HPPEF	Nominal Size	Code	H	F	B	C
	63	**2012.10.63SS**	23	20	75	102
	75	**2012.10.75SS**	25	22	89	122
	90	**2012.10.90SS**	25	24	105	138
	110	**2012.10.110SS**	25	30	125	158
	125	**2012.10.125SS**	30	22	132	158
	140	**2012.10.140SS**	30	30	155	187
	160	**2012.10.160SS**	25	33	175	212
	180	**2012.10.180SS**	30	37	184	212
	200	**2012.10.200SS**	52	44	232	269
	225	**2012.10.225SS**	32	43	235	268
	250	**2012.10.250SS**	38	46	285	320
	280	**2012.10.280SS**	64	30	291	320
	315	**2012.10.315SS**	68	41	335	370
	355	**2012.10.355SS**	52	41	373	430

Polyethylene fittings SDR17/PN10

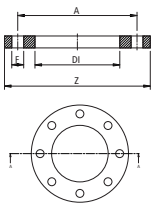
Stub Flange Short Spigot

Code: HPPEF	Nominal Size	Code	H	F	B	C
 	400	**2012.10.400SS**	46	43	427	475
	450	**2012.10.450SS**	63	35	514	585
	500	**2012.10.500SS**	30	35	530	594
	560	**2012.10.560SS**	54	42	615	685
	630	**2012.10.630SS**	30	35	642	695
	710	**2012.10.710SS**	35	40	737	800
	800	**2012.10.800SS**	30	40	840	904
	900	**2012.10.900SS**	28	54	944	1000
	1000	**2012.10.1000SS**	40	40	1045	1105
	1200	**2012.10.1200SS**	35	50	1250	1330

End Cap Long Spigot

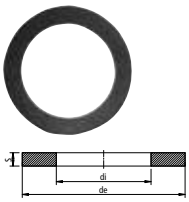
Code: HPPEF	Nominal Size	Code	H	Z
 	63	**2030.10.63**	71	82
	75	**2030.10.75**	81	89
	90	**2030.10.90**	82	93
	110	**2030.10.110**	96	105
	125	**2030.10.125**	89	98
	140	**2030.10.140**	104	112
	160	**2030.10.160**	122	130
	180	**2030.10.180**	103	125
	200	**2030.10.200**	132	152
	225	**2030.10.225**	120	142
	250	**2030.10.250**	124	155
	280	**2030.10.280**	136	154
	315	**2030.10.315**	160	195

Zinc Coated Steel Backing Ring

Code: HPPEF	Nominal Size	Code	DN	A	Z	DI	F
 	200	**2016.10.200**	200	295	340	235	22
	225	**2016.10.225**	200	295	340	238	22
	250	**2016.10.250**	250	350	395	288	22
	280	**2016.10.280**	250	350	395	294	22
	315	**2016.10.315**	300	400	445	338	22
	355	**2016.10.355**	350	460	505	376	22
	400	**2016.10.400**	400	515	565	430	26
	450	**2016.10.450**	500	620	670	517	26
	500	**2016.10.500**	500	620	670	533	26
	560	**2016.10.560**	600	725	780	618	30
	630	**2016.10.630**	600	725	780	645	30
	710	**2016.10.710**	700	840	895	740	30
	800	**2016.10.800**	800	950	1015	843	33
	900	**2016.10.900**	900	1050	1115	947	33
	1000	**2016.10.1000**	1000	1160	1230	1050	36
	1200	**2016.10.1200**	1200	1380	1455	1260	39

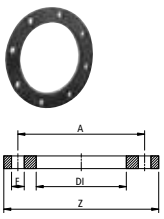
Polyethylene fittings SDR17/PN10

EDPM Gasket (for water use only)



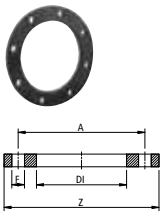
Code: HPPEF	Nominal Size	Code	DN	S	de	di
	25	**2014.10.25**	20	3	-	-
	32	**2014.10.32**	25	3	71	30
	40	**2014.10.40**	32	3	82	37
	50	**2014.10.50**	40	3	92	46
	63	**2014.10.63**	50	3	107	57
	75	**2014.10.75**	65	3	127	68
	90	**2014.10.90**	80	3	142	81
	110	**2014.10.110**	100	3	162	99
	125	**2014.10.125**	100	3	162	112
	140	**2014.10.140**	125	3	192	125
	160	**2014.10.160**	150	3	218	143
	180	**2014.10.180**	150	3	218	161
	200	**2014.10.200**	200	3	273	178
	225	**2014.10.225**	200	3	273	200
	250	**2014.10.250**	250	3	328	222
	280	**2014.10.280**	250	3	328	249
	315	**2014.10.315**	300	3	378	280
	355	**2014.10.355**	350	3	438	315
	400	**2014.10.400**	400	3	489	355
	450	**2014.10.450**	500	3	594	399
	500	**2014.10.500**	500	3	594	443
	560	**2014.10.560**	600	3	695	496
	630	**2014.10.630**	600	3	695	557
	710	**2014.10.710**	700	3	810	628
	800	**2014.10.800**	800	3	917	707
	900	**2014.10.900**	900	3	1017	795
	1000	**2014.10.1000**	1000	3	1124	883
	1200	**2014.10.1200**	1200	3	1341	1060

PP Coated Steel Flange



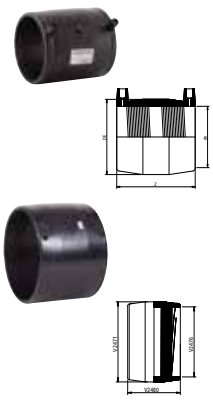
Code: HPPEF	Nominal Size	Code	DN	A	Z	DI	F
	25	**2015.10.25**	20	75	106	34	14
	32	**2015.10.32**	25	85	116	42	14
	40	**2015.10.40**	32	100	141	51	18
	50	**2015.10.50**	40	110	151	62	18
	63	**2015.10.63**	50	125	166	78	18
	75	**2015.10.75**	65	145	186	92	18
	90	**2015.10.90**	80	160	201	108	18
	110	**2015.10.110**	100	180	221	128	18
	125	**2015.10.125**	100	180	221	135	18
	140	**2015.10.140**	125	210	251	158	18
	160	**2015.10.160**	150	240	286	178	22

Polyethylene fittings SDR17/PN10

	PP Coated Steel Flange						
Code: HPPEF	**Nominal Size**	**Code**	**DN**	**A**	**Z**	**DI**	**F**
	180	**2015.10.180**	150	240	286	188	22
	200	**2015.10.200**	200	295	341	235	22
	225	**2015.10.225**	200	295	341	238	22
	250	**2015.10.250**	250	350	406	288	22
	280	**2015.10.280**	250	350	406	294	22
	315	**2015.10.315**	300	400	460	338	22

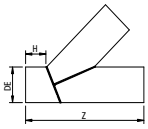
Electrofusion fittings SDR17/PN10

Electrofusion Coupler

Code: HPPEL	Nominal Size	Code	DE	Z
	90	**2010.10.90**	104	132
	110	**2010.10.110**	128	152
	125	**2010.10.125**	142	158
	140	**2010.10.140**	160	166
	160	**2010.10.160**	182	176
	180	**2010.10.180**	206	181
	200	**2010.10.200**	229	202
	225	**2010.10.225**	254	202
	250	**2010.10.250**	287	218
	280	**2010.10.280**	320	230
	315	**2010.10.315**	355	250
	355	**2010.10.355**	405	289
	400	**2010.10.400**	458	330
	450	**2010.10.450**	509	383
	500	**2010.10.500**	562	403
	560	**2010.10.560**	624	455
	630	**2010.10.630**	712	505
	710	**2010.10.710**	811	500
	800	**2010.10.800**	915	500
	900	**2010.10.900**	1013	520
	1000	**2010.10.1000**	1135	535
	1200	**2010.10.1200**	1350	570

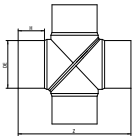
Fabricated fittings SDR17/PN10

45° Fabricated Tee



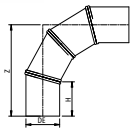
Code: HPPEF	Nominal Size	Code	H	Z
	180	**2004.10.180.45.F**	200	720
	200	**2004.10.200.45.F**	200	740
	225	**2004.10.225.45.F**	220	860
	250	**2004.10.225.45.F**	250	960
	280	**2004.10.280.45.F**	250	1050
	315	**2004.10.315.45.F**	250	1150
	355	**2004.10.355.45.F**	250	1290
	400	**2004.10.400.45.F**	250	1405
	450	**2004.10.450.45.F**	270	1520
	500	**2004.10.500.45.F**	300	1625

Fabricated Cross



Code: HPPEF	Nominal Size	Code	H	Z
	180	**2005.10.180.F**	105	450
	200	**2005.10.200.F**	117	502
	225	**2005.10.225.F**	120	538
	250	**2005.10.250.F**	131	595
	280	**2005.10.280.F**	126	653
	315	**2005.10.315.F**	151	700
	355	**2005.10.355.F**	230	1000
	400	**2005.10.400.F**	230	1000
	450	**2005.10.450.F**	230	1040
	500	**2005.10.500.F**	230	1060
	560	**2005.10.560.F**	350	1260
	630	**2005.10.630.F**	350	1330

90° Fabricated Bend



Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.10.355.90.F**	300	737
	400	**2001.10.400.90.F**	300	794
	450	**2001.10.450.90.F**	300	867
	500	**2001.10.500.90.F**	300	912
	560	**2001.10.560.90.F**	350	1040
	630	**2001.10.630.90.F**	350	1123
	710	**2001.10.710.90.F**	600	1638
	800	**2001.10.800.90.F**	600	1683
	900	**2001.10.900.90.F**	600	1733
	1000	**2001.10.1000.90.F**	600	1783

Fabricated fittings SDR17/PN10

60° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.10.355.60.F**	300	512
	400	**2001.10.400.60.F**	300	530
	450	**2001.10.450.60.F**	300	557
	500	**2001.10.500.60.F**	300	589
	560	**2001.10.560.60.F**	350	679
	630	**2001.10.630.60.F**	350	711
	710	**2001.10.710.60.F**	600	1094
	800	**2001.10.800.60.F**	600	1120
	900	**2001.10.900.60.F**	600	1148
	1000	**2001.10.1000.60.F**	600	1177

45° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.10.355.45.F**	300	476
	400	**2001.10.400.45.F**	300	491
	450	**2001.10.450.45.F**	300	514
	500	**2001.10.500.45.F**	300	539
	560	**2001.10.560.45.F**	350	623
	630	**2001.10.630.45.F**	350	650
	710	**2001.10.710.45.F**	600	1018
	800	**2001.10.800.45.F**	600	1036
	900	**2001.10.900.45.F**	600	1057
	1000	**2001.10.1000.45.F**	600	1078

30° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.10.355.30.F**	300	400
	400	**2001.10.400.30.F**	300	410
	450	**2001.10.450.30.F**	300	420
	500	**2001.10.500.30.F**	300	430
	560	**2001.10.560.30.F**	350	500
	630	**2001.10.630.30.F**	350	520
	710	**2001.10.710.30.F**	600	790
	800	**2001.10.800.30.F**	600	820
	900	**2001.10.900.30.F**	600	840
	1000	**2001.10.1000.30.F**	600	870

PE100

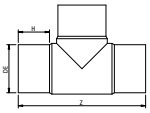
Pressure pipe SDR11/PN16

	Pressure pipe PN16	
Code: HPPEE	**Size**	**Product code**
	20mm	**2000.16.20.60**
	25mm	**2000.16.25.60**
	32mm	**2000.16.32.60**
	40mm	**2000.16.40.60**
	50mm	**2000.16.50.60**
	63mm	**2000.16.63.60**
	75mm	**2000.16.75.60**
	90mm	**2000.16.90.60**
	110mm	**2000.16.110.60**
	125mm	**2000.16.125.60**
	140mm	**2000.16.140.60**
	160mm	**2000.16.160.60**
	180mm	**2000.16.180.60**
	200mm	**2000.16.200.60**
	225mm	**2000.16.225.60**
	250mm	**2000.16.250.60**
	280mm	**2000.16.280.60**
	315mm	**2000.16.315.60**
	355mm	**2000.16.355.60**
	400mm	**2000.16.400.60**
	450mm	**2000.16.450.60**
	500mm	**2000.16.500.60**
	560mm	**2000.16.560.60**
	630mm	**2000.16.630.60**

For Sizes above 630mm please enquire

Polyethylene fittings SDR11/PN16

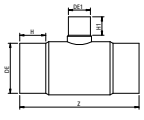
Tee 90º Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z
	25	**2004.16.25.90**	46	140
	32	**2004.16.32.90**	50	147
	40	**2004.16.40.90**	55	171
	50	**2004.16.50.90**	56	180
	63	**2004.16.63.90**	68	229
	75	**2004.16.75.90**	72	256
	90	**2004.16.90.90**	82	303
	110	**2004.16.110.90**	92	336
	125	**2004.16.125.90**	91	356
	140	**2004.16.140.90**	96	390
	160	**2004.16.160.90**	104	423
	180	**2004.16.180.90**	105	450
	200	**2004.16.200.90**	117	502
	225	**2004.16.225.90**	120	538
	250	**2004.16.250.90**	131	595
	280	**2004.16.280.90**	126	653
	315	**2004.16.315.90**	151	700
	355	**2004.16.355.90**	164	790
	400	**2004.16.400.90**	180	890
	450	**2004.16.450.90**	195	984
	500	**2004.16.500.90**	215	1090
	560	**2004.16.560.90**	235	1200
	630	**2004.16.630.90**	253	1330

For Sizes above 630mm please enquire

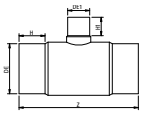
Reduced Tee 90º Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	90x50	**2004.16.90x50.90**	50	81	57	302
	90x63	**2004.16.90x63.90**	63	81	71	302
	110x50	**2004.16.110x50.90**	50	90	57	335
	110x63	**2004.16.110x63.90**	63	90	70	335
	110x90	**2004.16.110x90.90**	90	90	82	335
	125x63	**2004.16.125x63.90**	63	90	70	358
	125x90	**2004.16.125x90.90**	90	90	82	358
	140x63	**2004.16.140x63.90**	63	97	72	390
	140x90	**2004.16.140x90.90**	90	95	84	390
	160x63	**2004.16.160x63.90**	63	104	72	424
	160x90	**2004.16.160x90.90**	90	104	84	424
	160x110	**2004.16.160x110.90**	110	104	92	424
	160x125	**2004.16.160x125.90**	125	104	91	424
	180x63	**2004.16.180x63.90**	63	105	64	450
	180x90	**2004.16.180x90.90**	90	105	82	450
	180x110	**2004.16.180x110.90**	110	105	92	450

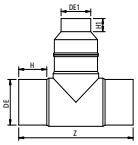
Polyethylene fittings SDR11/PN16

Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	180x125	**2004.16.180x125.90**	125	105	92	448
	200x63	**2004.16.200x63.90**	63	116	84	500
	200x90	**2004.16.200x90.90**	90	116	84	500
	200x110	**2004.16.200x110.90**	110	116	92	500
	200x160	**2004.16.200x160.90**	160	116	104	500
	200x180	**2004.16.200x180.90**	180	116	106	500
	225x90	**2004.16.225x90.90**	90	120	84	538
	225x125	**2004.16.225x125.90**	125	120	91	538
	225x160	**2004.16.225x160.90**	160	120	105	538
	225x180	**2004.16.225x180.90**	180	120	106	540
	250x110	**2004.16.250x110.90**	110	130	92	596
	250x160	**2004.16.250x160.90**	160	130	106	596
	315x110	**2004.16.315x110.90**	110	152	92	703
	315x160	**2004.16.315x160.90**	160	152	105	703
	315x180	**2004.16.315x180.90**	180	152	106	703
	315x200	**2004.16.315x200.90**	200	152	116	703
	315x225	**2004.16.315x225.90**	225	152	120	703
	355x110	**2004.16.355x110.90**	110	170	90	674
	355x160	**2004.16.355x160.90**	160	170	102	674
	355x225	**2004.16.355x225.90**	225	170	120	674
	400x110	**2004.16.400x110.90**	110	190	90	755
	400x160	**2004.16.400x160.90**	160	190	102	755
	400x225	**2004.16.400x225.90**	225	190	125	755
	500x250	**2004.16.500x250.90**	250	215	132	-
	560x250	**2004.16.560x250.90**	250	235	132	960

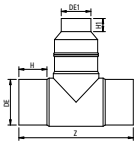
Assembled Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	50x25	**2004.16.50x25.90**	25	56	44	180
	50x32	**2004.16.50x32.90**	32	56	48	180
	50x40	**2004.16.50x40.90**	40	56	50	180
	63x25	**2004.16.63x25.90**	25	68	44	229
	63x32	**2004.16.63x32.90**	32	68	49	229
	63x40	**2004.16.63x40.90**	40	68	52	229
	63x50	**2004.16.63x50.90**	50	68	57	229
	75x32	**2004.16.75x32.90**	32	68	46	256
	75x40	**2004.16.75x40.90**	40	72	49	256
	75x50	**2004.16.75x50.90**	50	72	57	256
	75x63	**2004.16.75x63.90**	63	72	65	256
	90x75	**2004.16.90x75.90**	75	82	73	303
	110x75	**2004.16.110x75.90**	75	92	73	336
	125x75	**2004.16.125x75.90**	75	91	73	356
	125x110	**2004.16.125x110.90**	110	91	90	356
	140x110	**2004.16.140x110.90**	110	96	91	390

Polyethylene fittings SDR11/PN16

Assembled Reduced Tee 90° Long Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	140x125	**2004.16.140x125.90**	125	96	93	390
	160x140	**2004.16.160x140.90**	140	104	97	423
	180x110	**2004.16.180x110.90**	110	105	86	450
	180x140	**2004.16.180x140.90**	140	105	94	450
	180x160	**2004.16.180x160.90**	160	105	105	450
	200x140	**2004.16.200x140.90**	140	117	95	502
	200x180	**2004.16.200x180.90**	180	117	105	502
	225x200	**2004.16.225x200.90**	200	120	114	538
	250x200	**2004.16.250x200.90**	200	131	116	595
	250x225	**2004.16.250x225.90**	225	131	122	595
	280x200	**2004.16.280x200.90**	200	126	51	653
	280x225	**2004.16.280x225.90**	225	126	57	653
	280x250	**2004.16.280x250.90**	250	126	64	653
	315x250	**2004.16.315x250.90**	250	151	130	700
	315x280	**2004.16.315x280.90**	280	151	72•	700
	355x250	**2004.16.355x250.90**	250	164	62•	790
	355x280	**2004.16.355x280.90**	280	164	56•	790
	355x315	**2004.16.355x315.90**	315	164	78•	790
	400x280	**2004.16.400x280.90**	280	180	73•	890
	400x315	**2004.16.400x315.90**	315	180	83•	890
	400x355	**2004.16.400x355.90**	355	180	92•	890
	450x315	**2004.16.450x315.90**	315	195	76•	984
	450x355	**2004.16.450x355.90**	355	195	92•	984
	450x400	**2004.16.450x400.90**	400	195	99•	984
	500x355	**2004.16.500x355.90**	355	215	95•	1090
	500x400	**2004.16.500x400.90**	400	215	96•	1090
	500x450	**2004.16.500x450.90**	450	215	63•	1090
	560x400	**2004.16.560x400.90**	400	235	98•	1200
	560x450	**2004.16.560x450.90**	450	235	65•	1200
	560x500	**2004.16.560x500.90**	500	235	67•	1200
	630x450	**2004.16.630x450.90**	450	253	68•	1330
	630x500	**2004.16.630x500.90**	500	253	61•	1330
	630x560	**2004.16.630x560.90**	560	253	65•	1330

Large Diameter Reduced Tee 90° Short Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	355x90	**2004.16.355x90.90**	90	230	200	700
	355x110	**2004.16.355x110.90**	110	230	200	700
	355x125	**2004.16.355x125.90**	125	230	200	700
	355x140	**2004.16.355x140.90**	140	230	200	700
	355x160	**2004.16.355x160.90**	160	230	200	700
	355x180	**2004.16.355x180.90**	180	230	200	700
	400x90	**2004.16.400x90.90**	90	230	200	700
	400x110	**2004.16.400x110.90**	110	230	200	700

• Short Spigot

Polyethylene fittings SDR11/PN16

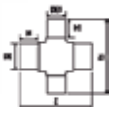
Large Diameter Reduced Tee 90° Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	400x125	**2004.16.400x125.90**	125	230	200	700
	400x140	**2004.16.400x140.90**	140	230	200	700
	400x160	**2004.16.400x160.90**	160	230	200	700
	400x180	**2004.16.400x180.90**	180	230	200	700
	450x90	**2004.16.450x90.90**	90	230	200	700
	450x110	**2004.16.450x110.90**	110	230	200	700
	450x125	**2004.16.450x125.90**	125	230	200	700
	450x140	**2004.16.450x140.90**	140	230	200	700
	450x160	**2004.16.450x160.90**	160	230	200	700
	450x180	**2004.16.450x180.90**	180	230	200	700
	450x200	**2004.16.450x200.90**	200	230	200	720
	500x90	**2004.16.500x90.90**	90	230	200	700
	500x110	**2004.16.500x110.90**	110	230	200	700
	500x125	**2004.16.500x125.90**	125	230	200	700
	500x140	**2004.16.500x140.90**	140	230	200	700
	500x160	**2004.16.500x160.90**	160	230	200	700
	500x180	**2004.16.500x180.90**	180	230	200	700
	500x200	**2004.16.500x200.90**	200	230	200	720
	500x225	**2004.16.500x225.90**	225	230	200	730

Long Cross Spigot

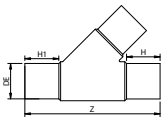
Code: HPPEF	Nominal Size	Code	H	Z
	63	**2005.16.63**	68	229
	75	**2005.16.75**	73	257
	90	**2005.16.90**	82	303
	110	**2005.16.110**	92	338
	125	**2005.16.125**	89	350
	160	**2005.16.160**	104	423

Reduced Long Cross Spigot



Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z	Z!
	110x63	**2005.16.110x63**	63	92	70	338	298
	110x90	**2005.16.110x90**	90	92	83	338	326
	125x90	**2005.16.125x90**	90	92	83	357	343
	160x90	**2005.16.160x90**	90	104	93	423	403

Tee 45° Long Spigot

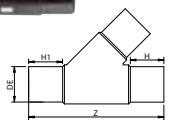


Code: HPPEF	Nominal Size	Code	H1	H	Z
	63	**2004.16.63.45**	68	81	287
	75	**2004.16.75.45**	71	88	310
	90	**2004.16.90.45**	80	90	355
	110	**2004.16.110.45**	88	103	397
	125	**2004.16.125.45**	87	120	448
	140	**2004.16.140.45**	100	110	495
	160	**2004.16.160.45**	104	119	530

• Short Spigot

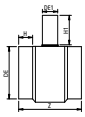
Polyethylene fittings SDR11/PN16

Tee 45° Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z
	200	**2004.16.200.45**	200	830
	225	**2004.16.225.45**	220	880
	280	**2004.16.280.45**	250	1000
	315	**2004.16.315.45**	250	1100
	355	**2004.16.355.45**	250	1280
	400	**2004.16.400.45**	250	1380

Large Diameter Reduced Tee 90° Short Spigot



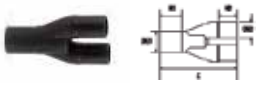
Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	560x90	**2004.16.560x90.90SS**	90	120	200	480
	560x110	**2004.16.560x110.90SS**	110	120	200	480
	560x125	**2004.16.560x125.90SS**	125	120	200	480
	560x140	**2004.16.560x140.90SS**	140	120	200	480
	560x160	**2004.16.560x160.90SS**	160	120	200	480
	560x180	**2004.16.560x180.90SS**	180	120	200	480
	560x200	**2004.16.560x200.90SS**	200	110	200	480
	630x90	**2004.16.630x90.90SS**	90	130	200	530
	630x110	**2004.16.630x110.90SS**	110	130	200	530
	630x125	**2004.16.630x125.90SS**	125	130	200	530
	630x140	**2004.16.630x140.90SS**	140	130	200	530
	630x160	**2004.16.630x160.90SS**	160	130	200	530
	630x180	**2004.16.630x180.90SS**	180	130	200	530
	630x200	**2004.16.630x200.90SS**	200	130	200	530
	630x225	**2004.16.630x225.90SS**	225	110	200	530
	710x90	**2004.16.710x90.90SS**	90	130	200	530
	710x110	**2004.16.710x110.90SS**	110	130	200	530
	710x125	**2004.16.710x125.90SS**	125	130	200	530
	710x140	**2004.16.710x140.90SS**	140	130	200	530
	710x160	**2004.16.710x160.90SS**	160	130	200	530
	710x180	**2004.16.710x180.90SS**	180	130	200	530
	710x200	**2004.16.710x200.90SS**	200	130	200	530
	710x225	**2004.16.710x225.90SS**	225	110	200	530
	710x250	**2004.16.710x250.90SS**	250	100	200	530
	800x90	**2004.16.800x90.90SS**	90	120	200	540
	800x110	**2004.16.800x110.90SS**	110	120	200	540
	800x125	**2004.16.800x125.90SS**	125	120	200	540
	800x140	**2004.16.800x140.90SS**	140	120	200	540
	800x160	**2004.16.800x160.90SS**	160	120	200	540
	800x180	**2004.16.800x180.90SS**	180	120	200	540
	800x200	**2004.16.800x200.90SS**	200	120	200	540
	800x225	**2004.16.800x225.90SS**	225	110	200	540
	800x250	**2004.16.800x250.90SS**	250	110	200	540
	900x90	**2004.16.900x90.90SS**	90	130	200	540
	900x110	**2004.16.900x110.90SS**	110	130	200	540

Polyethylene fittings SDR11/PN16

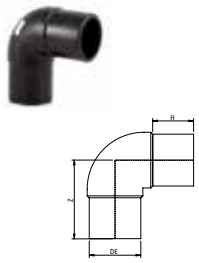
Large Diameter Reduced Tee 90° Short Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	900x125	**2004.16.900x125.90SS**	125	130	200	540
	900x140	**2004.16.900x140.90SS**	140	130	200	540
	900x160	**2004.16.900x160.90SS**	160	130	200	540
	900x180	**2004.16.900x180.90SS**	180	130	200	540

Long Y Spigot

Code: HPPEF	Nominal Size	Code	DE2	H1	H2	Z
	32X25	**2006.16.32x25**	25	44	41	156
	40X32	**2006.16.40x32**	32	50	44	165
	50X40	**2006.16.50x40**	40	55	50	186

Elbow 90° Long Spigot

Code: HPPEF	Nominal Size	Code	H	Z	DE
	25	**2001.16.25.90**	47	68	25
	32	**2001.16.32.90**	50	74	32
	40	**2001.16.40.90**	56	88	40
	50	**2001.16.50.90**	57	90	50
	63	**2001.16.63.90**	68	112	63
	75	**2001.16.75.90**	73	126	75
	90	**2001.16.90.90**	82	148	90
	110	**2001.16.110.90**	91	163	110
	125	**2001.16.125.90**	90	175	125
	140	**2001.16.140.90**	97	188	140
	160	**2001.16.160.90**	104	206	160
	180	**2001.16.180.90**	106	210	180
	200	**2001.16.200.90**	116	250	200
	225	**2001.16.225.90**	122	268	225
	250	**2001.16.250.90**	130	290	250
	280	**2001.16.280.90**	126	310	280
	315	**2001.16.315.90**	153	333	315

Elbow 45° Long Spigot

Code: HPPEF	Nominal Size	Code	H	Z
	32	**2001.16.32.45**	50	70
	40	**2001.16.40.45**	58	78
	50	**2001.16.50.45**	59	84
	63	**2001.16.63.45**	69	95
	75	**2001.16.75.45**	73	100
	90	**2001.16.90.45**	82	109
	110	**2001.16.110.45**	93	127
	125	**2001.16.125.45**	93	162
	140	**2001.16.140.45**	97	170
	160	**2001.16.160.45**	107	180
	180	**2001.16.180.45**	108	190
	200	**2001.16.200.45**	118	190

Polyethylene fittings SDR11/PN16

Elbow 45° Long Spigot

Code: HPPEF	Nominal Size	Code	H	Z
	225	**2001.16.225.45**	120	210
	250	**2001.16.250.45**	130	215
	280	**2001.16.280.45**	142	258
	315	**2001.16.315.45**	154	270

Reducer Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	25x20	**2024.16.25x20**	20	40	40	86
	32x20	**2024.16.32x20**	20	40	38	90
	32x25	**2024.16.32x25**	25	43	35	90
	40x20	**2024.16.40x20**	20	48	39	101
	40x25	**2024.16.40x25**	25	50	42	101
	40x32	**2024.16.40x32**	32	49	45	101
	50x25	**2024.16.50x25**	25	56	44	115
	50x32	**2024.16.50x32**	32	56	48	115
	50x40	**2024.16.50x40**	40	54	50	110
	63x25	**2024.16.63x25**	25	64	44	133
	63x32	**2024.16.63x32**	32	66	49	134
	63x40	**2024.16.63x40**	40	65	52	131
	63x50	**2024.16.63x50**	50	66	57	136
	75x32	**2024.16.75x32**	32	70	46	142
	75x40	**2024.16.75x40**	40	72	49	140
	75x50	**2024.16.75x50**	50	73	57	145
	75x63	**2024.16.75x63**	63	73	65	151
	90x50	**2024.16.90x50**	50	82	55	158
	90x63	**2024.16.90x63**	63	82	66	163
	90x75	**2024.16.90x75**	75	83	73	167
	110x50	**2024.16.110x50**	50	88	60	176
	110x63	**2024.16.110x63**	63	89	67	178
	110x75	**2024.16.110x75**	75	88	73	182
	110x90	**2024.16.110x90**	90	88	82	186
	125x63	**2024.16.125x63**	63	90	66	191
	125x75	**2024.16.125x75**	75	91	73	191
	125x90	**2024.16.125x90**	90	91	81	189
	125x110	**2024.16.125x110**	110	90	90	188
	140x90	**2024.16.140x90**	90	95	81	204
	140x110	**2024.16.140x110**	110	95	91	203
	140x125	**2024.16.140x125**	125	96	93	198
	160x90	**2024.16.160x90**	90	106	83	226
	160x110	**2024.16.160x110**	110	106	92	226
	160x125	**2024.16.160x125**	125	105	93	216
	160x140	**2024.16.160x140**	140	106	97	213
	180x63	**2024.16.180x63**	63	107	68	226
	180x110	**2024.16.180x110**	110	105	86	227

Polyethylene fittings SDR11/PN16

Reducer Long Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	180x125	**2024.16.180x125**	125	110	90	240
	180x140	**2024.16.180x140**	140	106	94	218
	180x160	**2024.16.180x160**	160	105	105	220
	200x90	**2024.16.200x90**	90	116	83	250
	200x110	**2024.16.200x110**	110	116	88	250
	200x125	**2024.16.200x125**	125	116	91	240
	200x140	**2024.16.200x140**	140	111	95	236
	200x160	**2024.16.200x160**	160	111	102	243
	200x180	**2024.16.200x180**	180	116	105	234
	225x110	**2024.16.225x110**	110	124	86	260
	225x160	**2024.16.225x160**	160	117	102	260
	225x180	**2024.16.225x180**	180	122	122	275
	225x200	**2024.16.225x200**	200	120	114	258
	250x180	**2024.16.250x180**	180	132	118	292
	250x200	**2024.16.250x200**	200	128	116	274
	250x225	**2024.16.250x225**	225	131	122	273
	315x225	**2024.16.315x225**	225	150	130	330
	315x250	**2024.16.315x250**	250	150	130	320

Reducer Short Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	250x160	**2024.16.250x160SS**	160	62	50	157
	250x180	**2024.16.250x180SS**	180	62	50	150
	250x200	**2024.16.250x200SS**	200	60	58	147
	250x225	**2024.16.250x225SS**	225	50	68	142
	280x200	**2024.16.280x200SS**	200	72	51	160
	280x225	**2024.16.280x225SS**	225	72	57	154
	280x250	**2024.16.280x250SS**	250	69	64	150
	315x225	**2024.16.315x225SS**	225	82	57	184
	315x250	**2024.16.315x250SS**	250	81	62	178
	315x280	**2024.16.315x280SS**	280	87	77	200
	355x225	**2024.16.355x225SS**	225	92	57	208
	355x250	**2024.16.355x250SS**	250	87	62	195
	355x280	**2024.16.355x280SS**	280	45	56	129
	355x315	**2024.16.355x315SS**	315	88	78	188
	400x280	**2024.16.400x280SS**	280	96	73	226
	400x315	**2024.16.400x315SS**	315	97	83	218
	400x355	**2024.16.400x355SS**	355	97	92	208
	450x250	**2024.16.450x250SS**	250	62	62	220
	450x315	**2024.16.450x315SS**	315	65	76	206
	450x355	**2024.16.450x355SS**	355	64	92	203
	450x400	**2024.16.450x400SS**	400	64	99	188
	500x355	**2024.16.500x355SS**	355	63	81	211
	500x400	**2024.16.500x400SS**	400	62	96	210

Polyethylene fittings SDR11/PN16

Reducer Short Spigot

Code: HPPEF	Nominal Size	Code	DE1	H	H1	Z
	500x450	**2024.16.500x450SS**	450	63	63	166
	560x400	**2024.16.560x400SS**	400	60	98	240
	560x450	**2024.16.560x450SS**	450	60	65	187
	560x500	**2024.16.560x500SS**	500	57	67	165
	630x450	**2024.16.630x450SS**	450	60	68	234
	630x500	**2024.16.630x500SS**	500	62	61	192
	630x560	**2024.16.630x560SS**	560	64	65	188
	710x560	**2024.16.710x560SS**	560	60	34	155
	710x630	**2024.16.710x630SS**	630	66	62	160

Stub Flange Long Spigot

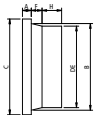
Code: HPPEF	Nominal Size	Code	H	F	B	C
	25	**2012.16.25**	46	13	33	58
	32	**2012.16.32**	56	15	40	68
	40	**2012.16.40**	56	12	50	78
	50	**2012.16.50**	52	23	61	88
	63	**2012.16.63**	63	20	75	102
	75	**2012.16.75**	73	22	89	122
	90	**2012.16.90**	82	24	105	138
	110	**2012.16.110**	90	30	125	158
	125	**2012.16.125**	102	22	134	158
	140	**2012.16.140**	102	30	155	187
	160	**2012.16.160**	106	33	175	212
	180	**2012.16.180**	108	37	180	212
	200	**2012.16.200**	119	46	232	268
	225	**2012.16.225**	115	39	235	268
	250	**2012.16.250**	122	46	285	320
	280	**2012.16.280**	140	30	291	320
	315	**2012.16.315**	157	32	335	370
	355	**2012.16.355**	167	36	373	430
	400	**2012.16.400**	182	49	427	480

Stub Flange Short Spigot

Code: HPPEF	Nominal Size	Code	H	F	B	C
	63	**2012.16.63SS**	23	20	75	102
	75	**2012.16.75SS**	25	22	89	122
	90	**2012.16.90SS**	25	24	105	138
	110	**2012.16.110SS**	25	30	125	158
	125	**2012.16.125SS**	30	22	132	158
	140	**2012.16.140SS**	30	30	155	187
	160	**2012.16.160SS**	25	33	175	212
	180	**2012.16.180SS**	30	37	184	212
	200	**2012.16.200SS**	52	44	232	269
	225	**2012.16.225SS**	32	43	235	268

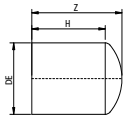
Polyethylene fittings SDR11/PN16

Stub Flange Short Spigot



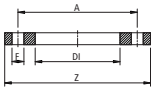
Code: HPPEF	Nominal Size	Code	H	F	C	C•
	250	**2012.16.250SS**	38	46	285	320
	280	**2012.16.280SS**	64	30	291	320
	315	**2012.16.315SS**	68	41	335	370
	355	**2012.16.355SS**	52	41	373	430
	400	**2012.16.400SS**	46	43	427	475
	450	**2012.16.450SS**	63	35	514	585
	500	**2012.16.500SS**	30	35	530	594
	560	**2012.16.560SS**	54	42	615	685
	630	**2012.16.630SS**	30	35	642	695
	710	**2012.16.710SS**	35	40	737	800
	800	**2012.16.800SS**	30	40	840	904
	900	**2012.16.900SS**	28	54	944	1000
	1000	**2012.16.1000SS**	40	40	1045	1105
	1200	**2012.16.1200SS**	35	50	1250	1330

End Cap Long Spigot



Code: HPPEF	Nominal Size	Code	H	Z
	20	**2030.16.20**	48	54
	25	**2030.16.25**	48	54
	32	**2030.16.32**	52	58
	40	**2030.16.40**	60	65
	50	**2030.16.50**	59	75
	63	**2030.16.63**	71	82
	75	**2030.16.75**	81	89
	90	**2030.16.90**	82	93
	110	**2030.16.110**	96	105
	125	**2030.16.125**	89	98
	140	**2030.16.140**	104	112
	160	**2030.16.160**	122	130
	180	**2030.16.180**	103	125
	200	**2030.16.200**	132	152
	225	**2030.16.225**	120	142
	250	**2030.16.250**	124	155
	280	**2030.16.280**	136	154
	315	**2030.16.315**	160	195

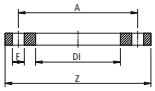
Zinc Coated Steel Backing Ring - PN10/16

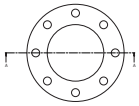


Code: HPPEF	Nominal Size	Code	DN	A	Z	DI	F
	25	**2016.16.25**	20	75	105	34	14
	32	**2016.16.32**	25	85	115	42	14
	40	**2016.16.40**	32	100	140	51	18
	50	**2016.16.50**	40	110	150	62	18
	63	**2016.16.63**	50	125	165	78	18
	75	**2016.16.75**	65	145	185	92	18

Polyethylene fittings SDR11/PN16

Zinc Coated Steel Backing Ring - PN10/16





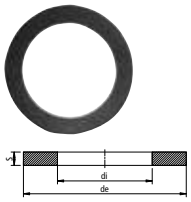
Code: HPPEF	Nominal Size	Code	DN	A	Z	DI	F
	90	**2016.16.90**	80	160	200	108	18
	110	**2016.16.110**	100	180	220	128	18
	125	**2016.16.125**	100	180	220	135	18
	140	**2016.16.140**	125	210	250	158	18
	160	**2016.16.160**	150	240	285	178	22
	180	**2016.16.180**	150	240	285	188	22
	200	**2016.16.200**	200	295	340	235	22
	225	**2016.16.225**	200	295	340	238	22
	250	**2016.16.250**	250	355	405	288	26
	280	**2016.16.280**	250	355	405	294	26
	315	**2016.16.315**	300	410	460	338	26
	355	**2016.16.355**	350	470	520	376	26
	400	**2016.16.400**	400	525	580	430	30
	450	**2016.16.450**	500	650	715	517	33
	500	**2016.16.500**	500	650	715	533	33
	560	**2016.16.560**	600	770	840	618	36
	630	**2016.16.630**	600	770	840	645	36
	710	**2016.16.710**	710	840	910	740	36
	800	**2016.16.800**	800	950	1025	843	39
	900	**2016.16.900**	900	1050	1125	947	39
	1000	**2016.16.1000**	1000	1170	1255	1050	42
	1200	**2016.16.1200**	1100	1270	1355	1125	42

EDPM Gasket (for water use only)

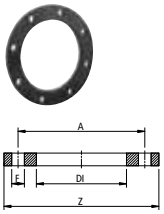
Code: HPPEF	Nominal Size	Code	DN	S	de	di
	25	**2014.16.25**	20	3	61	22
	32	**2014.16.32**	25	3	71	28
	40	**2014.16.40**	32	3	82	35
	50	**2014.16.50**	40	3	92	43
	63	**2014.16.63**	50	3	107	53
	75	**2014.16.75**	65	3	127	63
	90	**2014.16.90**	80	3	142	76
	110	**2014.16.110**	100	3	162	92
	125	**2014.16.125**	100	3	162	104
	140	**2014.16.140**	125	3	192	117
	160	**2014.16.160**	150	3	218	133
	180	**2014.16.180**	150	3	218	149
	200	**2014.16.200**	200	3	273	166
	225	**2014.16.225**	200	3	273	186
	250	**2014.16.250**	250	3	329	207
	280	**2014.16.280**	250	3	329	231
	315	**2014.16.315**	300	3	384	260
	355	**2014.16.355**	350	3	444	293
	400	**2014.16.400**	400	3	495	329

Polyethylene fittings SDR11/PN16

EDPM Gasket (for water use only)

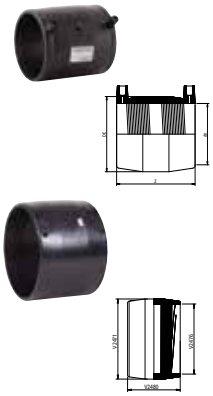
Code: HPPEF	Nominal Size	Code	DN	S	de	di
	450	**2014.16.450**	500	3	617	370
	500	**2014.16.500**	500	3	617	411
	560	**2014.16.560**	600	3	734	460
	630	**2014.16.630**	600	3	734	518
	710	**2014.16.710**	700	3	804	583
	800	**2014.16.800**	800	3	911	657
	900	**2014.16.900**	900	3	1011	739
	1000	**2014.16.1000**	1000	3	1128	820
	1200	**2014.16.1200**	1200	3	1060	-

PP Coated Steel Flange

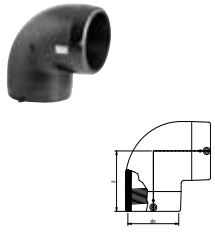
Code: HPPEF	Nominal Size	Code	DN	A	Z	DI	F
	32	**2015.16.32**	25	85	116	42	14
	40	**2015.16.40**	32	100	141	51	18
	50	**2015.16.50**	40	110	151	62	18
	63	**2015.16.63**	50	125	166	78	18
	75	**2015.16.75**	65	145	186	92	18
	90	**2015.16.90**	80	160	201	108	18
	110	**2015.16.110**	100	180	221	128	18
	125	**2015.16.125**	100	180	221	135	18
	140	**2015.16.140**	125	210	251	158	18
	160	**2015.16.160**	150	240	286	178	22
	180	**2015.16.180**	150	240	286	188	22
	200	**2015.16.200**	200	295	341	235	22
	225	**2015.16.225**	200	295	341	238	22
	250	**2015.16.250**	250	350	406	288	22
	280	**2015.16.280**	250	350	406	294	22
	315	**2015.16.315**	300	400	460	338	22
	355	**2015.16.355**	350	460	520	376	22
	400	**2015.16.400**	400	515	580	430	26

Electrofusion Fittings SDR11/PN16

Electrofusion Coupler

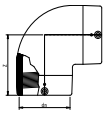
Code: HPPEL	Nominal Size	Code	DE	Z
	20	**2010.16.20**	33	70
	25	**2010.16.25**	38	70
	32	**2010.16.32**	44	88
	40	**2010.16.40**	54	94
	50	**2010.16.50**	62	99
	63	**2010.16.63**	81	116
	75	**2010.16.75**	95	120
	90	**2010.16.90**	113	128
	110	**2010.16.110**	138	150
	125	**2010.16.125**	153	156
	140	**2010.16.140**	173	166
	160	**2010.16.160**	198	188
	180	**2010.16.180**	223	190
	200	**2010.16.200**	246	219
	225	**2010.16.225**	277	225
	250	**2010.16.250**	310	237
	280	**2010.16.280**	346	250
	315	**2010.16.315**	377	264
	355	**2010.16.355**	437	300
	400	**2010.16.400**	476	352
	450	**2010.16.450**	536	422
	500	**2010.16.500**	599	457
	560	**2010.16.560**	697	496
	630	**2010.16.630**	778	503
	710	**2010.16.710**	855	525
	800	**2010.16.800**	950	525

Electrofusion 90° Elbow

Code: HPPEL	Nominal Size	Code	Z
	20	**2051.16.20.90**	50
	25	**2051.16.25.90**	52
	32	**2051.16.32.90**	57
	40	**2051.16.40.90**	65
	50	**2051.16.50.90**	77
	63	**2051.16.63.90**	94
	75	**2051.16.75.90**	97.4
	90	**2051.16.90.90**	122
	110	**2051.16.110.90**	141
	125	**2051.16.125.90**	149
	140	**2051.16.140.90**	164

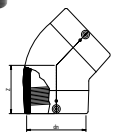
Electrofusion Fittings SDR11/PN16

Electrofusion 90° Elbow



Code: HPPEL	Nominal Size	Code	Z
	160	**2051.16.160.90**	180
	180	**2051.16.180.90**	213
	200	**2051.16.200.90**	233
	225	**2051.16.225.90**	253
	250	**2051.16.250.90**	315
	315	**2051.16.315.90**	383

Electrofusion 45° Elbow

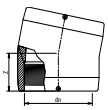


Code: HPPEL	Nominal Size	Code	Z
	20*	**2002.16.20.45**	52
	25	**2002.16.25.45**	52
	32	**2002.16.32.45**	42
	40	**2002.16.40.45**	53
	50	**2002.16.50.45**	60
	63	**2002.16.63.45**	68
	75	**2002.16.75.45**	77
	90	**2002.16.90.45**	95
	110	**2002.16.110.45**	112
	125	**2002.16.125.45**	120
	140	**2002.16.140.45**	123
	160	**2002.16.160.45**	136
	180	**2002.16.180.45**	160
	200	**2002.16.200.45**	180
	225	**2002.16.225.45**	203
	250	**2002.16.250.45**	233
	315	**2002.16.315.45**	275

Electrofusion 22.5° Elbow

Code: HPPEL	Nominal Size	Code	Z
	90	**2002.16.90.225**	95
	125	**2002.16.125.225**	110
	180	**2002.16.180.225**	142
	250	**2002.16.250.225**	159
	315	**2002.16.315.225**	185

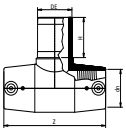
Electrofusion 11.25° Elbow



Code: HPPEL	Nominal Size	Code	Z
	90	**2002.16.90.1125**	85
	125	**2002.16.125.1125**	110
	180	**2002.16.180.1125**	140
	250	**2002.16.250.1125**	140
	315	**2002.16.315.1125**	170

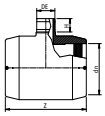
Electrofusion Fittings SDR11/PN16

Electrofusion 90° Tee



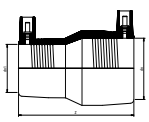
Code: HPPEL	Nominal Size	Code	DE	H	Z
	20	**2052.16.20.90**	20	44	90
	25	**2052.16.25.90**	25	46	100
	32	**2052.16.32.90**	32	50	116
	40	**2052.16.40.90**	40	56	130
	50	**2052.16.50.90**	50	56	150
	63	**2052.16.63.90**	63	70	175
	75	**2052.16.75.90**	75	69	188
	90	**2052.16.90.90**	90	82	209
	110	**2052.16.110.90**	110	90	250
	125	**2052.16.125.90**	125	90	265
	140	**2052.16.140.90**	140	90	290
	160	**2052.16.160.90**	160	100	318
	180	**2052.16.180.90**	180	103	336
	200	**2052.16.200.90**	200	114	395
	225	**2052.16.225.90**	225	113	393
	250	**2052.16.250.90**	250	130	470
	315	**2052.16.315.90**	315	150	558

Electrofusion 90° Reducing Tee



Code: HPPEL	Nominal Size	Code	DE	H	Z
	140x110	**2052.16.140X110.90**	110	90	290
	160x110	**2052.16.160X110.90**	110	90	318
	180x90	**2052.16.180X90.90**	90	80	335
	180x125	**2052.16.180X125.90**	125	87	335
	200x90	**2052.16.200X90.90**	90	82	395
	200x125	**2052.16.200X125.90**	125	90	395
	225x110	**2052.16.225X110.90**	110	90	393
	225x160	**2052.16.225X160.90**	160	100	393
	250x125	**2052.16.250X125.90**	125	90	470
	250x180	**2052.16.250X180.90**	180	105	470
	315x125	**2052.16.315X125.90**	125	92	558
	315x180	**2052.16.315X180.90**	180	105	558

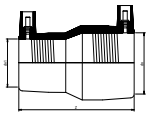
Electrofusion Reducer



Code: HPPEL	Nominal Size	Code	DN1	Z
	25x20	**2053.16.25x20**	20	83
	32x20	**2053.16.32x20**	20	84
	32x25	**2053.16.32x25**	25	84
	40x20	**2053.16.40x20**	20	120
	40x25	**2053.16.40x25**	25	108
	40x32	**2053.16.40x32**	32	108
	50x25	**2053.16.50x25**	25	135
	50x32	**2053.16.50x32**	32	120
	50x40	**2053.16.50x40**	40	113

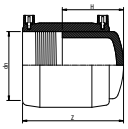
Electrofusion Fittings SDR11/PN16

Electrofusion Reducer



Code: HPPEL	Nominal Size	Code	DN1	Z
	63x25	**2053.16.63x25**	25	146
	63x32	**2053.16.63x32**	32	146
	63x40	**2053.16.63x40**	40	144
	63x50	**2053.16.63x50**	50	128
	75x50	**2053.16.75x50**	50	150
	75x63	**2053.16.75x63**	63	143
	90x50	**2053.16.90x50**	50	179
	90x63	**2053.16.90x63**	75	163
	110x63	**2053.16.110x63**	63	210
	110x90	**2053.16.110x90**	90	178
	125x63	**2053.16.125x63**	63	223
	125x90	**2053.16.125x90**	90	195
	125x110	**2053.16.125x110**	110	160
	160x90	**2053.16.160x90**	90	253
	160x110	**2053.16.160x110**	110	245
	160x125	**2053.16.160x125**	125	236
	180x125	**2053.16.180x125**	125	240
	200x160	**2053.16.200x160**	160	270
	200x180	**2053.16.200x180**	180	243
	225x160	**2053.16.225x160**	160	309
	315x160	**2053.16.315x160**	160	457
	315x200	**2053.16.315x200**	200	408

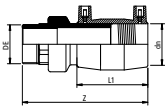
Electrofusion Cap



Code: HPPEL	Nominal Size	Code	H	Z
	20	**2031.16.20**	53	88
	25	**2031.16.25**	54	89
	32	**2031.16.32**	58	102
	40	**2031.16.40**	65	112
	50	**2031.16.50**	75	124
	63	**2031.16.63**	82	140
	75	**2031.16.75**	89	149
	90	**2031.16.90**	93	157
	110	**2031.16.110**	105	180
	125	**2031.16.125**	98	176
	140	**2031.16.140**	112	194
	160	**2031.16.160**	130	224
	180	**2031.16.180**	125	220
	200	**2031.16.200**	152	261
	225	**2031.16.225**	142	254
	250	**2031.16.250**	155	273
	280	**2031.16.280**	156	281
	315	**2031.16.315**	195	327

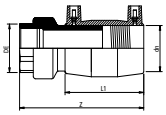
Electrofusion Fittings SDR11/PN16

Electrofusion Transition Coupler PE/Brass Threaded Male



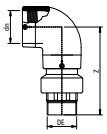
Code: HPPEL	Nominal Size	Code	DE″	L1	Z
	20x1/2"	**2057.16.20x05**	1/2	70	124
	25x3/4"	**2057.16.25x075**	3/4	70	127
	32x1″	**2057.16.32X1**	1	88	151
	40x1 1/4″	**2057.16.40x125**	1 1/4	94	169
	50x1 11/2″	**2057.16.50x15**	1 1/2	99	175
	63x2″	**2057.16.63x2**	2	116	201
	75x2 1/2"	**2057.16.75x25**	2 1/2	120	223
	90x3"	**2057.16.90x3**	3	128	241
	110x4"	**2057.16.110x4**	4	150	277

Electrofusion Transition Coupler PE/Brass Threaded Female



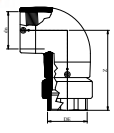
Code: HPPEL	Nominal Size	Code	DE″	L1	Z
	20x1/2"	**2058.16.20x05**	1/2	70	111
	25x3/4"	**2058.16.25x075**	3/4	70	116
	32x1"	**2058.16.32x1**	1	88	134
	40x1 1/4"	**2058.16.40x125**	1 1/4	94	147
	50x1 1/2"	**2058.16.50x15**	1 1/2	99	153
	63x2"	**2058.16.63x2**	2	116	179
	75x2 1/2"	**2058.16.75x25**	2 1/2	120	199
	90x3"	**2058.16.90x3**	3	128	213
	110x4"	**2058.16.110x4**	4	150	240

Electrofusion Elbow 90º PE/Brass Threaded Male



Code: HPPEL	Nominal Size	Code	DE″	Z
	20x1/2"	**2003.16.20.90**	1/2	103
	25x3/4"	**2003.16.25.90**	3/4	105
	32x1"	**2003.16.32.90**	1	122
	40x1 1/4"	**2003.16.40.90**	1 1/4	138
	50x1 1/2"	**2003.16.50.90**	1 1/2	153
	63x2"	**2003.16.63.90**	2	178
	75x2 1/2"	**2003.16.75.90**	2 1/2	194
	90x3"	**2003.16.90.90**	3	227
	110X4"	**2003.16.110.90**	4	264

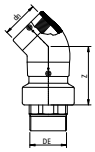
Electrofusion Elbow 90º PE/Brass Threaded Female



Code: HPPEL	Nominal Size	Code	DE″	Z
	20x1/2"	**2003.16.20.90F**	1/2	90
	25x3/4"	**2003.16.25.90F**	3/4	95
	32x1"	**2003.16.32.90F**	1	105
	40x1 1/4"	**2003.16.40.90F**	1 1/4	115
	50x1 1/2"	**2003.16.50.90F**	1 1/2	132
	63x2"	**2003.16.63.90F**	2	156
	75x2 1/2"	**2003.16.75.90F**	2 1/2	170
	90x3"	**2003.16.90.90F**	3	199
	110x4"	**2003.16.110.90F**	4	228

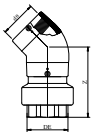
Electrofusion Fittings SDR11/PN16

Electrofusion Elbow 45° PE/Brass Threaded Male



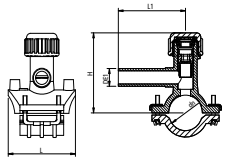
Code: HPPEL	Nominal Size	Code	DE"	Z
	20x1/2"	**2003.16.20.45**	1/2	105
	25x3/4"	**2003.16.25.45**	3/4	108
	32x1"	**2003.16.32.45**	1	113
	40x1 1/4"	**2003.16.40.45**	1 1/4	139
	50x1 1/2"	**2003.16.50.45**	1 1/2	149
	63x2"	**2003.16.63.45**	2	175
	75x2 1/2"	**2003.16.75.45**	2 1/2	204
	90x3"	**2003.16.90.45**	3	236
	110x4"	**2003.16.110.45**	4	278

Electrofusion Elbow 45° PE/Brass Threaded Female



Code: HPPEL	Nominal Size	Code	DE"	Z
	20x1/2"	**2003.16.20.45F**	1/2	92
	25x3/4"	**2003.16.25.45F**	3/4	95
	32x1"	**2003.16.32.45F**	1	90
	40x1 1/4"	**2003.16.40.45F**	1 1/4	103
	50x1 1/2"	**2003.16.50.45F**	1 1/2	115
	63x2"	**2003.16.63.45F**	2	130
	75x2 1/2"	**2003.16.75.45F**	2 1/2	150
	90x3"	**2003.16.90.45F**	3	172
	110x4"	**2003.16.110.45F**	4	199

Tapping Tee

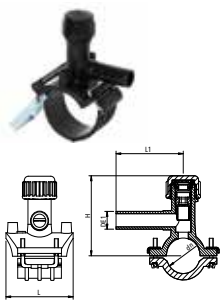


Code: HPPEL	Nominal Size	Code	DE1	ø Hole	H	L1	L
	40x20	**2055.16.40x20**	20	18	110	100	100
	40x25	**2055.16.40x25**	25	18	110	100	100
	40x32	**2055.16.40x32**	32	18	110	100	100
	50x20	**2055.16.50x20**	20	18	115	100	100
	50x25	**2055.16.50x25**	25	18	115	100	100
	50x32	**2055.16.50x32**	32	18	115	100	100
	63x20	**2055.16.63x20**	20	18	121.5	100	100
	63x25	**2055.16.63x25**	25	18	121.5	100	100
	63x32	**2055.16.63x32**	32	18	121.5	100	100
	63x40 •	**2055.16.63x40**	40	24	154	100	120
	63x50	**2055.16.63x50**	50	18	170.5	100	100
	63x63	**2055.16.63x63**	63	18	170.5	100	100
	75x20	**2055.16.75x20**	20	18	127.5	100	100
	75x25	**2055.16.75x25**	25	18	127.5	100	100
	75x32	**2055.16.75x32**	32	18	127.5	100	100
	75x40 •	**2055.16.75x40**	40	24	161.5	105	116
	75x50	**2055.16.75x50**	50	18	207.5	140	120
	75x63	**2055.16.75x63**	63	18	212.5	180	120
	90x20	**2055.16.90x20**	20	18	142	100	100
	90x25	**2055.16.90x25**	25	18	142	100	100

• with Belt

Electrofusion Fittings SDR11/PN16

Tapping Tee

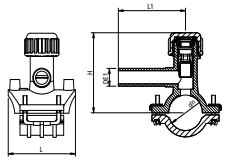


Code: HPPEL	Nominal Size	Code	DE1	ø Hole	H	L1	L
	90x32	**2055.16.90x32**	32	18	142	100	100
	90x40 •	**2055.16.90x40**	40	24	169	105	116
	90x50 •	**2055.16.90x50**	50	44	254	136	116
	90x63 •	**2055.16.90x63**	63	44	254	136	116
	110x20	**2055.16.110x20**	20	18	152	100	100
	110x25	**2055.16.110x25**	25	18	152	100	100
	110x32	**2055.16.110x32**	32	18	152	100	100
	110x40•	**2055.16.110x40**	40	24	179	105	116
	110x50•	**2055.16.110x50**	50	44	264	136	116
	110x63•	**2055.16.110x63**	63	44	264	136	116
	125x20	**2055.16.125x20**	20	18	159.5	100	100
	125x25	**2055.16.125x25**	25	18	159.5	100	100
	125x32	**2055.16.125x32**	32	18	159.5	100	100
	125x40•	**2055.16.125x40**	40	24	186.5	105	116
	125x50•	**2055.16.125x50**	50	44	271.5	136	116
	125x63•	**2055.16.125x63**	63	44	271.5	136	116
	140x20•	**2055.16.140x20**	20	24	194	105	116
	140x25•	**2055.16.140x25**	25	24	194	105	116
	140x32•	**2055.16.140x32**	32	24	194	105	116
	140x40•	**2055.16.140x40**	40	24	194	105	116
	140x50•	**2055.16.140x50**	50	44	279	136	116
	140x63•	**2055.16.140x63**	63	44	279	136	116
	160x20	**2055.16.160x20**	20	18	187	100	100
	160x25	**2055.16.160x25**	25	18	187	100	100
	160x32	**2055.16.160x32**	32	18	187	100	100
	160x40•	**2055.16.160x40**	40	24	204	105	116
	160x50•	**2055.16.160x50**	50	44	289	136	116
	160x63•	**2055.16.160x63**	63	44	289	136	116
	180x20	**2055.16x180x20**	20	18	197	100	100
	180x25	**2055.16.180x25**	25	18	197	100	100
	180x32	**2055.16.180x32**	32	18	197	100	100
	180x40	**2055.16.180x40**	40	24	214	105	116
	180x50•	**2055.16.180x50**	50	44	299	136	116
	180x63•	**2055.16.180x63**	63	44	299	136	116
	200x20•	**2055.16.200x20**	20	24	224	105	116
	200x25•	**2055.16.200x25**	25	24	224	105	116
	200x32•	**2055.16.200x32**	32	24	224	105	116
	200x40•	**2055.16.200x40**	40	44	224	136	150
	200x50•	**2055.16.200x50**	50	44	309	136	150
	200x63•	**2055.16.200x63**	63	44	309	136	150
	225x20•	**2055.16.225x20**	20	24	244	105	150
	225x25•	**2055.16.225x25**	25	24	244	105	150
	225x32•	**2055.16.225x32**	32	24	244	105	150

• with Belt

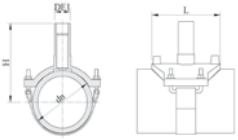
Electrofusion Fittings SDR11/PN16

Tapping Tee



Code: HPPEL	Nominal Size	Code	DE1	ø Hole	H	L1	L
	225x40•	**2055.16.225x40**	40	44	244	105	150
	225x50•	**2055.16.225x50**	50	44	321.5	136	150
	225x63•	**2055.16.225x63**	63	44	321.5	136	150
	250x20•	**2055.16.250x20**	20	24	256.5	105	150
	250x25•	**2055.16.250x25**	25	24	256.5	105	150
	250x32•	**2055.16.250x32**	32	24	256.5	105	150
	250x40•	**2055.16.250x40**	40	44	256.5	105	150
	250x50•	**2055.16.250x50**	50	44	334	136	150
	250x63•	**2055.16.250x63**	63	44	334	136	150
	280x20•	**2055.16.280x20**	20	24	271.5	105	150
	280x25•	**2055.16.280x25**	25	24	271.5	105	150
	280x32•	**2055.16.280x32**	32	24	271.5	105	150
	280x40•	**2055.16.280x40**	40	44	271.5	105	150
	280x50•	**2055.16.280x50**	50	44	349	136	150
	280x63•	**2055.16.280x63**	63	44	349	136	150
	315x20•	**2055.16.315x20**	20	24	289	105	150
	315x25•	**2055.16.315x25**	25	24	289	105	150
	315x32•	**2055.16.315x32**	32	24	289	105	150
	315x40•	**2055.16.315x40**	40	44	289	105	150
	315x50•	**2055.16.315x50**	50	44	366.5	135	150
	315x63•	**2055.16.315x63**	63	44	366.5	135	150

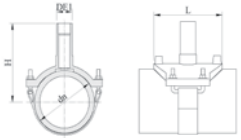
Branch Saddle



Code: HPPEL	Nominal Size	Code	DE1	H	L
	40x20	**2054.16.40x20**	20	103	100
	40x25	**2054.16.40x25**	25	103	100
	40x32	**2054.16.40x32**	32	103	100
	40x40	**2054.16.40x40**	40	103	100
	50x20	**2054.16.50x20**	20	108	100
	50x25	**2054.16.50x25**	25	108	100
	50x32	**2054.16.50x32**	32	108	100
	50x40	**2054.16.50x40**	40	108	100
	63x20	**2054.16.63x20**	20	114.5	100
	63x25	**2054.16.63x25**	25	114.5	100
	63x32	**2054.16.63x32**	32	114.5	100
	63x40	**2054.16.63x40**	40	114.5	100
	63x50	**2054.16.63x50**	50	141.5	100
	63x63	**2054.16.63x63**	63	141.5	100
	75x20	**2054.16.75x20**	20	120.5	100
	75x25	**2054.16.75x25**	25	120.5	100
	75x32	**2054.16.75x32**	32	120.5	100
	75x40	**2054.16.75x40**	40	120.5	100
	75x50•	**2054.16.75x50**	50	130	141
	75x63•	**2054.16.75x63**	63	130	141

• with Belt

Electrofusion Fittings SDR11/PN16

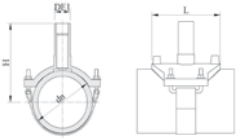


	Branch Saddle				
Code: HPPEL	**Nominal Size**	**Code**	**DE1**	**H**	**L**
	90x20•	**2054.16.90x20**	20	137.5	141
	90x25•	**2054.16.90x25**	25	137.5	141
	90x32•	**2054.16.90x32**	32	137.5	141
	90x40•	**2054.16.90x40**	40	137.5	141
	90x50•	**2054.16.90x50**	50	137.5	141
	90x63•	**2054.16.90x63**	63	147.5	141
	110x20•	**2054.16.110x20**	20	147.5	141
	110x25•	**2054.16.110x25**	25	147.5	141
	110x32•	**2054.16.110x32**	32	147.5	141
	110x40•	**2054.16.110x40**	40	147.5	141
	110x50•	**2054.16.110x50**	50	147.5	141
	110x63•	**2054.16.110x63**	63	157.5	141
	125x20•	**2054.16.125x20**	20	155	141
	125x25•	**2054.16.125x25**	25	155	141
	125x32•	**2054.16.125x32**	32	155	141
	125x40•	**2054.16.125x40**	40	155	141
	125x50•	**2054.16.125x50**	50	155	141
	125x63•	**2054.16.125x63**	63	165	141
	140x20•	**2054.16.140x20**	20	162.5	141
	140x25•	**2054.16.140x25**	25	162.5	141
	140x32•	**2054.16.140x32**	32	162.5	141
	140x40•	**2054.16.14040**	40	162.5	141
	140x50•	**2054.16.140x50**	50	162.5	141
	140x63•	**2054.16.140x63**	63	172.5	141
	160x20•	**2054.16.160x20**	20	172.5	141
	160x25•	**2054.16.160x25**	25	172.5	141
	160x32•	**2054.16.160x32**	32	172.5	141
	160x40•	**2054.16.160x40**	40	172.5	141
	160x50•	**2054.16.160x50**	50	172.5	141
	160x63•	**2054.16.160x63**	63	182.5	141
	180x20•	**2054.16.180x20**	20	182.5	141
	180x25•	**2054.16.180x25**	25	182.5	141
	180x32•	**2054.16.180x32**	32	182.5	141
	180x40•	**2054.16.180x40**	40	182.5	141
	180x50•	**2054.16.180x50**	50	182.5	141
	180x63•	**2054.16.180x63**	63	192.5	141
	200x20•	**2054.16.200x20**	20	192.5	141
	200x25•	**2054.16.200x25**	25	192.5	141
	200x32•	**2054.16.200x32**	32	192.5	141
	200x40•	**2054.16.200x40**	40	192.5	141
	200x50•	**2054.16.200x50**	50	192.5	141
	200x63•	**2054.16.200x63**	63	202.5	141
	225x20•	**2054.16.225x20**	20	205	141

• with Belt

Electrofusion Fittings SDR11/PN16

Branch Saddle



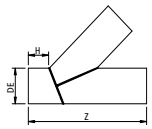
Code: HPPEL

Nominal Size	Code	DE1	H	L
225x25•	**2054.16.225X25**	25	205	141
225x32•	**2054.16.225X32**	32	205	141
225x40•	**2054.16.225X40**	40	205	141
225x50•	**2054.16.225X50**	50	205	141
225x63•	**2054.16.225X63**	63	215	141
250x20•	**2054.16.250X20**	20	217.5	141
250x25•	**2054.16.250X25**	25	217.5	141
250x32•	**2054.16.250X32**	32	217.5	141
250x40•	**2054.16.250X40**	40	217.5	141
250x50•	**2054.16.250X50**	50	217.5	141
250x63•	**2054.16.250X63**	63	227.5	141
280x20•	**2054.16.280X20**	20	232.5	141
280x25•	**2054.16.280X25**	25	232.5	141
280x32•	**2054.16.280X32**	32	232.5	141
280x40•	**2054.16.280X40**	40	232.5	141
280x50•	**2054.16.280X50**	50	232.5	141
280x63•	**2054.16.280X63**	63	242.5	141
315x20•	**2054.16.315X20**	20	250	141
315x25•	**2054.16.315X25**	25	250	141
315x32•	**2054.16.315X32**	32	250	141
315x40•	**2054.16.315X40**	40	250	141
315x50•	**2054.16.315X50**	50	250	141
315x63•	**2054.16.315X63**	63	260	141

• with Belt

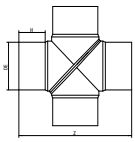
Fabricated Fittings SDR11/PN16

45° Fabricated Tee



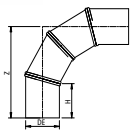
Code: HPPEF	Nominal Size	Code	H	Z
	180	**2004.16.180.45.F**	200	720
	200	**2004.16.200.45.F**	200	740
	225	**2004.16.225.45.F**	220	860
	250	**2004.16.250.45.F**	250	960
	280	**2004.16.280.45.F**	250	1050
	315	**2004.16.315.45.F**	250	1150
	355	**2004.16.355.45.F**	250	1290
	400	**2004.16.400.45.F**	250	1405
	450	**2004.16.450.45.F**	270	1520
	500	**2004.16.500.45.F**	300	1625

Fabricated Cross



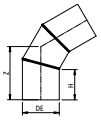
Code: HPPEF	Nominal Size	Code	H	Z
	180	**2005.16.180.F**	105	450
	200	**2005.16.200.F**	117	502
	225	**2005.16.225.F**	120	538
	250	**2005.16.250.F**	131	595
	280	**2005.16.280.F**	126	653
	315	**2005.16.315.F**	151	700
	355	**2005.16.355.F**	230	1000
	400	**2005.16.400.F**	230	1000
	450	**2005.16.450.F**	230	1040
	500	**2005.16.500F**	230	1060
	560	**2005.16.560.F**	350	1260
	630	**2005.16.630.F**	350	1330

90° Fabricated Bend



Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.16.355.90.F**	300	737
	400	**2001.16.400.90.F**	300	794
	450	**2001.16.450.90.F**	300	867
	500	**2001.16.500.90.F**	300	912
	560	**2001.16.560.90.F**	350	1040
	630	**2001.16.630.90.F**	350	1123
	710	**2001.16.710.90.F**	600	1638
	800	**2001.16.800.90.F**	600	1683
	900	**2001.16.900.90.F**	600	1733
	1000	**2001.16.1000.90.F**	600	1783

60° Fabricated Bend



Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.16.355.60.F**	300	512
	400	**2001.16.400.60.F**	300	530
	450	**2001.16.450.60.F**	300	557
	500	**2001.16.500.60.F**	300	589

Fabricated Fittings SDR11/PN16

60° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	560	**2001.16.560.60.F**	350	679
	630	**2001.16.630.60.F**	350	711
	710	**2001.16.710.60.F**	600	1094
	800	**2001.16.800.60.F**	600	1120
	900	**2001.16.900.60.F**	600	1148
	1000	**2001.16.1000.60.F**	600	1177

45° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.16.355.45.F**	300	476
	400	**2001.16.400.45.F**	300	491
	450	**2001.16.450.45.F**	300	514
	500	**2001.16.500.45.F**	300	539
	560	**2001.16.560.45.F**	350	623
	630	**2001.16.630.45.F**	350	650
	710	**2001.16.710.45.F**	600	1018
	800	**2001.16.800.45.F**	600	1036
	900	**2001.16.900.45.F**	600	1057
	1000	**2001.16.1000.45.F**	600	1078

30° Fabricated Bend

Code: HPPEF	Nominal Size	Code	H	Z
	355	**2001.16.355.30.F**	300	400
	400	**2001.16.400.30.F**	300	410
	450	**2001.16.450.30.F**	300	420
	500	**2001.16.500.30.F**	300	430
	560	**2001.16.560.30.F**	350	500
	630	**2001.16.630.30.F**	350	520
	710	**2001.16.710.30.F**	600	790
	800	**2001.16.800.30.F**	600	820
	900	**2001.16.900.30.F**	600	840
	1000	**2001.16.1000.30.F**	600	870

Accessories

PE 100 Welding Machines

Code: HPPEL	Nominal Size	Code	H	Z

The IPlast electrofusion welding machines ensure reliability and security in accordance with welding standards.
Three different machines, which between them, can weld from 20mm up to 1200mm fittings.
All machines are manufactured to be compact and portable with features including scanners for bar code reading, large graphic displays, USB port for weld records, IP54 protection and continuous use

		2060.IPLAST.30		
		2060.IPLAST.60		
		2060.IPLAST.105		

Pipe Cutter

Code: HDPEF	Nominal Size	Code	H	Z

	R3 - 6mm - 63mm	**9500.663T**		
	R4 - 50mm - 140mm	**9500.50140T**		
	R5 – 100mm -160mm	**9500.100160T**		

Pipe Scraper

Code: HDPEF	Nominal Size	Code	H	Z

		9507T		

Cleaning & Anti-Static Wipes

Code: HPPEL	Nominal Size	Code	H	Z

		9518T		

PE100

Clamp saddles

Code: PSAQU

Clamp Saddles				
Nominal Size	Code	D	PN	Bolts
20 x ½"	SEP010020B	20 x ½"	6	2
25 x ½"	SEP010025B	25 x ½"	6	2
25 x ¾"	SEP010025C	25 x ¾"	6	2
32 x ½"	SEP010032B	32 x ½"	6	2
32 x ¾"	SEP010032C	32 x ¾"	6	2
32 x 1"	SEP010032D	32 x 1"	6	2
40 x ½"	SEP010040B	40 x ½"	6	2
40 x ¾"	SEP010040C	40 x ¾"	6	2
40 x 1"	SEP010040D	40 x 1"	6	2
50 x ½"	SEP010050B	50 x ½"	6	2
50 x ¾"	SEP010050C	50 x ¾"	6	2
50 x 1"	SEP010050D	50 x 1"	6	2
63 x ½"	SEP010063B	63 x ½"	6	6
63 x ¾"	SEP010063C	63 x ¾"	6	6
63 x 1"	SEP010063D	63 x 1"	6	4
63 x 1¼"	SEP010063E	63 x 1¼"	6	6
63 x 1½"	SEP010063F	63 x 1½"	6	6
75 x ½"	SEP010075B	75 x ½"	6	6
75 x ¾"	SEP010075C	75 x ¾"	6	6
75 x 1"	SEP010075D	75 x 1"	6	4
75 x 1¼"	SEP010075E	75 x 1¼"	6	6
75 x 1½"	SEP010075F	75 x 1½"	6	6
75 x 2"	SEP010075G	75 x 2"	6	4
90 x ½"	SEP010090B	90 x ½"	6	6
90 x ¾"	SEP010090C	90 x ¾"	6	6
90 x 1"	SEP010090D	90 x 1"	6	4
90 x 1¼"	SEP010090E	90 x 1¼"	6	6
90 x 1½"	SEP010090F	90 x 1½"	6	6
90 x 2"	SEP010090G	90 x 2"	6	4
110 x ½"	SEP010110B	110 x ½"	6	6
110 x ¾"	SEP010110C	110 x ¾"	6	6
110 x 1"	SEP010110D	110 x 1"	6	4
110 x 1¼"	SEP010110E	110 x 1¼"	6	6
110 x 1½"	SEP010110F	110 x 1½"	6	6
110 x 2"	SEP010110G	110 x 2"	6	4
110 x 3"	SEP010110I	110 x 3"	6	4
125 x ½"	SEP010125B	125 x ½"	6	4
125 x ¾"	SEP010125C	125 x ¾"	6	4
125 x 1"	SEP010125D	125 x 1"	6	4
125 x 1¼"	SEP010125E	125 x 1¼"	6	4
125 x 1½"	SEP010125F	125 x 1½"	6	4
125 x 2"	SEP010125G	125 x 2"	6	4
125 x 2½"	SEP010125H	125 x 2½"	6	4
125 x 3"	SEP010125I	125 x 3"	6	4

Clamp saddles

Clamp saddles

Clamp Saddles				
Code: PSAQU	**Nominal Size**	**Code**	**D**	**PN**	**Bolts**
	125 x 4"	**SEP010125L**	125 x 4"	6	4
	140 x ¾"	**SEP010140C**	140 x ¾"	6	6
	140 x 1"	**SEP010140D**	140 x 1"	6	6
	140 x 1¼"	**SEP010140E**	140 x 1¼"	6	6
	140 x 1½"	**SEP010140F**	140 x 1½"	6	6
	140 x 2"	**SEP010140G**	140 x 2"	6	6
	140 x 3"	**SEP010140I**	140 x 3"	6	6
	140 x 4"	**SEP010140L**	140 x 4"	6	6
	160 x ½"	**SEP010160B**	160 x ½"	6	6
	160 x ¾"	**SEP010160C**	160 x ¾"	6	6
	160 x 1"	**SEP010160D**	160 x 1"	6	6
	160 x 1¼"	**SEP010160E**	160 x 1¼"	6	6
	160 x 1½"	**SEP010160F**	160 x 1½"	6	6
	160 x 2"	**SEP010160G**	160 x 2"	6	6
	160 x 2½"	**SEP010160H**	160 x 2½"	6	6
	160 x 3"	**SEP010160I**	160 x 3"	6	6
	160 x 4"	**SEP010160L**	160 x 4"	6	6
	200 x ¾"	**SEP010200C**	200 x ¾"	6	6
	200 x 1"	**SEP010200D**	200 x 1"	6	6
	200 x 1¼"	**SEP010200E**	200 x 1¼"	6	6
	200 x 1½"	**SEP010200F**	200 x 1½"	6	6
	200 x 2"	**SEP010200G**	200 x 2"	6	6
	200 x 3"	**SEP010200I**	200 x 3"	6	6
	200 x 4"	**SEP010200L**	200 x 4"	6	6
	225 x ½"	**SEP010225B**	225 x ½"	6	6
	225 x ¾"	**SEP010225C**	225 x ¾"	6	6
	225 x 1"	**SEP010225D**	225 x 1"	6	6
	225 x 1¼"	**SEP010225E**	225 x 1¼"	6	6
	225 x 1½"	**SEP010225F**	225 x 1½"	6	6
	225 x 2"	**SEP010225G**	225 x 2"	6	6
	225 x 3"	**SEP010225I**	225 x 3"	6	6
	225 x 4"	**SEP010225L**	225 x 4"	6	6
	250 x 1"	**SEP010250D**	250 x 1"	6	6
	250 x 1¼"	**SEP010250E**	250 x 1¼"	6	6
	250 x 1½"	**SEP010250F**	250 x 1½"	6	6
	250 x 2"	**SEP010250G**	250 x 2"	6	6
	250 x 3"	**SEP010250I**	250 x 3"	6	6
	250 x 4"	**SEP010250L**	250 x 4"	6	6
	315 x 1"	**SEP010315D**	315 x 1"	6	6
	315 x 1¼"	**SEP010315E**	315 x 1¼"	6	6
	315 x 1½"	**SEP010315F**	315 x 1½"	6	6
	315 x 2"	**SEP010315G**	315 x 2"	6	6
	315 x 3"	**SEP010315I**	315 x 3"	6	6
	315 x 4"	**SEP010315L**	315 x 4"	6	6

Clamp saddles reinforced

Clamp Saddles Reinforced

Code: PSAQU	Nominal Size	Code	D	PN	Bolts
	20 x ½"	**SEP011020B**	20 x ½"	6	2
	25 x ½"	**SEP011025B**	25 x ½"	6	2
	25 x ¾"	**SEP011025C**	25 x ¾"	6	2
	32 x ½"	**SEP011032B**	32 x ½"	6	2
	32 x ¾"	**SEP011032C**	32 x ¾"	6	2
	40 x ½"	**SEP011040B**	40 x ½"	6	2
	40 x ¾"	**SEP011040C**	40 x ¾"	6	2
	40 x 1"	**SEP011040D**	40 x 1"	6	2
	50 x ½"	**SEP011050B**	50 x ½"	6	2
	50 x ¾"	**SEP011050C**	50 x ¾"	6	2
	50 x 1"	**SEP011050D**	50 x 1"	6	2
	63 x ½"	**SEP011063B**	63 x ½"	6	6
	63 x ¾"	**SEP011063C**	63 x ¾"	6	6
	63 x 1"	**SEP011063D**	63 x 1"	6	4
	63 x 1¼"	**SEP011063E**	63 x 1¼"	6	6
	63 x 1½"	**SEP011063F**	63 x 1½"	6	6
	75 x ½"	**SEP011075B**	75 x ½"	6	6
	75 x ¾"	**SEP011075C**	75 x ¾"	6	6
	75 x 1"	**SEP011075D**	75 x 1"	6	4
	75 x 1¼"	**SEP011075E**	75 x 1¼"	6	6
	75 x 1½"	**SEP011075F**	75 x 1½"	6	6
	75 x 2"	**SEP011075G**	75 x 2"	6	4
	90 x ½"	**SEP011090B**	90 x ½"	6	6
	90 x ¾"	**SEP011090C**	90 x ¾"	6	6
	90 x 1"	**SEP011090D**	90 x 1"	6	4
	90 x 1¼"	**SEP011090E**	90 x 1¼"	6	6
	90 x 1½"	**SEP011090F**	90 x 1½"	6	6
	90 x 2"	**SEP011090G**	90 x 2"	6	4
	110 x ½"	**SEP011110B**	110 x ½"	6	6
	110 x ¾"	**SEP011110C**	110 x ¾"	6	6
	110 x 1"	**SEP011110D**	110 x 1"	6	4
	110 x 1¼"	**SEP011110E**	110 x 1¼"	6	6
	110 x 1½"	**SEP011110F**	110 x 1½"	6	6
	110 x 2"	**SEP011110G**	110 x 2"	6	4
	110 x 3"	**SEP011110I**	110 x 3"	6	4
	125 x ½"	**SEP011125B**	125 x ½"	6	4
	125 x ¾"	**SEP011125C**	125 x ¾"	6	4
	125 x 1"	**SEP011125D**	125 x 1"	6	4
	125 x 1¼"	**SEP011125E**	125 x 1¼"	6	4
	125 x 1½"	**SEP011125F**	125 x 1½"	6	4
	125 x 2"	**SEP011125G**	125 x 2"	6	4
	125 x 2½"	**SEP011125H**	125 x 2½"	6	4
	125 x 3"	**SEP011125I**	125 x 3"	6	4

Clamp saddles reinforced

Clamp saddles reinforced

Clamp Saddles Reinforced				
Code: PSAQU	**Nominal Size**	**Code**	**D**	**PN**	**Bolts**
	125 x 4"	**SEP011125L**	125 x 4"	6	4
	140 x ¾"	**SEP011140C**	140 x ¾"	6	6
	140 x 1"	**SEP011140D**	140 x 1"	6	6
	140 x 1¼"	**SEP011140E**	140 x 1¼"	6	6
	140 x 1½"	**SEP011140F**	140 x 1½"	6	6
	140 x 2"	**SEP011140G**	140 x 2"	6	6
	140 x 3"	**SEP011140I**	140 x 3"	6	6
	140 x 4"	**SEP011140L**	140 x 4"	6	6
	160 x ½"	**SEP011160B**	160 x ½"	6	6
	160 x ¾"	**SEP011160C**	160 x ¾"	6	6
	160 x 1"	**SEP011160D**	160 x 1"	6	6
	160 x 1¼"	**SEP011160E**	160 x 1¼"	6	6
	160 x 1½"	**SEP011160F**	160 x 1½"	6	6
	160 x 2"	**SEP011160G**	160 x 2"	6	6
	160 x 2½"	**SEP011160H**	160 x 2½"	6	6
	160 x 3"	**SEP011160I**	160 x 3"	6	6
	160 x 4"	**SEP011160L**	160 x 4"	6	6
	200 x ¾"	**SEP011200C**	200 x ¾"	6	6
	200 x 1"	**SEP011200D**	200 x 1"	6	6
	200 x 1¼"	**SEP011200E**	200 x 1¼"	6	6
	200 x 1½"	**SEP011200F**	200 x 1½"	6	6
	200 x 2"	**SEP011200G**	200 x 2"	6	6
	200 x 3"	**SEP011200I**	200 x 3"	6	6
	200 x 4"	**SEP011200L**	200 x 4"	6	6
	225 x ½"	**SEP011225B**	225 x ½"	6	6
	225 x ¾"	**SEP011225C**	225 x ¾"	6	6
	225 x 1"	**SEP011225D**	225 x 1"	6	6
	225 x 1¼"	**SEP011225E**	225 x 1¼"	6	6
	225 x 1½"	**SEP011225F**	225 x 1½"	6	6
	225 x 2"	**SEP011225G**	225 x 2"	6	6
	225 x 3"	**SEP011225I**	225 x 3"	6	6
	225 x 4"	**SEP011225L**	225 x 4"	6	6
	250 x 1"	**SEP011250D**	250 x 1"	6	6
	250 x 1¼"	**SEP011250E**	250 x 1¼"	6	6
	250 x 1½"	**SEP011250F**	250 x 1½"	6	6
	250 x 2"	**SEP011250G**	250 x 2"	6	6
	250 x 3"	**SEP011250I**	250 x 3"	6	6
	250 x 4"	**SEP011250L**	250 x 4"	6	6
	315 x 1"	**SEP011315D**	315 x 1"	6	6
	315 x 1¼"	**SEP011315E**	315 x 1¼"	6	6
	315 x 1½"	**SEP011315F**	315 x 1½"	6	6
	315 x 2"	**SEP011315G**	315 x 2"	6	6
	315 x 3"	**SEP011315I**	315 x 3"	6	6
	315 x 4"	**SEP011315L**	315 x 4"	6	6

EFFAST

Flowmeter, Plastice Design Variable Area Principle

Construction

- Male threads moulded into the ends of the metering tube allow for easy mounting of unions.
- The O-ring seals ensure reliable sealing between metering tube and union without radial forces, which could lead to bursting of the tube.
- Floats are available in stainless steel 1.4571, PP or PVDF (depending on flow medium and measuring range).
- The scale on the metering tube can be suited to the medium and is available e.g. in l/h, m^3/h or %.
- Dovetail sections moulded into the metering tube allow for easy mounting of adjustable flow indicators, limit switches and a continuous readout transmitter

Features

- The plastic flowmeters operate according to the variable area principle, whereby the float can move freely within the metering tube.
- Type series 800 is suitable for volumetric flow measurement of inert and corrosive gases and liquids.

Advantages

- High accuracy, simple handling
- Impact resistance, corrosion resistance.
- Over 500 standard scales and over 3000 special scales are available and further scales are available on request.
- Clear and large size scale.

Working Pressure	
Metering tubes with plastic unions	PN 10
Metring tubes with metal unions	**PN 11**

Design	
Float material	Working medium
PP	Liquids and gases
PP with magnet	Liquids and gases
St. steel 1.4571	Liquids
St. steel 1.4571 with magnet	Liquids
PP	Gases
PP with magnet	Gases
PVDF	Liquids and gases
PVDF	Liquids and gases

Body configuration
Straight through

Connection
Threaded spigots/Socket/BS

Tube material	
Polysulphone	temperature range 0-100C°

Material of O rings	
O-rings Viton	FPM
O-rings Ethylene-Propylene	EPDM

Design	
Polyvinylchloride	PVC
Polypropylene	PP
Malleable iron	GT
St. st. 1.4571	VA
Polyvinyldenfluoride	PVDF

Note:

When ordering, the flow ranges should be stated as follows:

Liquid media l/h

Diameter: mm

Required information:

The following data are necessary:

1. Type of medium
2. Concentration of medium (%)
3. Required flow range (l/h, m^3/h, kg/h)
4. Working pressure, relative or absolute (bar)
5. Temperature of medium (°C)
6. Viscosity of medium (if available)
7. Specific gravity of medium (if available)
8. Float with or without magnet

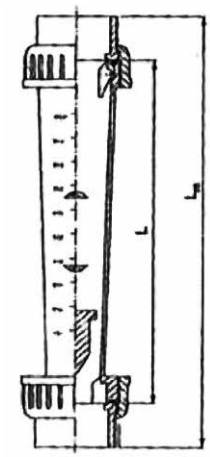
Variable area flowmeters (VAF)

Flowmeters

Flowmeter with Transparent PVCu Body and PVDF Float Debitmeters

Code: PSAQU	Code	Description	DN	Type
	**HDRFLU016A**	PVC 16 1.5-15	16/1.5-15	T100
	HDRFLU016B	PVC 16mm–mm range 2.5-25	16/2.5-25	T100
	HDRFLU016C	PVC 16mm–mm range 5-50	16/5-50	T100
	HDRFLU016D	PVC 16mm–mm range 10-100	16/10-100	T100
	HDRFLU020A	PVC 20mm–mm range 8-80	20/8-80	T100
	HDRFLU020B	PVC 20mm–mm range 15-150	20/15-150	T100
	HDRFLU020C	PVC 20mm–mm range 20-200	20/20-200	T100
	HDRFLU032AE	PVC 32mm–mm range 15-150	32/15-150	T100
	HDRFLU032BC	PVC 32mm–mm range 30-300	32/30-300	T100
	HDRFLU032CC	PVC 32mm–mm range 50-500	32/50-500	T100
	HDRFLU032DC	PVC 32mm–mm range 100-1000	32/100-1000	T100
	HDRFLU032C	PVC 32mm–mm range 50-500	32/50-500	T300
	HDRFLU032D	PVC 32mm–mm range 100-1000	32/100-1000	T300
	HDRFLU040A	PVC 40mm–mm range 150-1500	40/150-1500	T300
	HDRFLU040B	PVC 40mm–mm range 250-2500	40/250-2500	T300
	HDRFLU050A	PVC 50mm–mm range 200-2000	50/200-2000	T300
	HDRFLU050B	PVC 50mm–mm range 300-3000	50/300-3000	T300
	HDRFLU050C	PVC 50mm–mm range 600-6000	50/600-6000	T300
	HDRFLU063B	PVC 63mm–mm range 600-6000	63/600-6000	T300
	HDRFLU063C	PVC 63mm–mm range 1000-10000	63/1000-10000	T300
	HDRFLU063D	PVC 63mm–mm range 1500-15000	63/1500-15000	T300

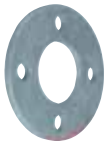
Dimensions

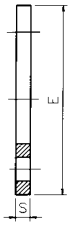
	Description	DN	L	Lm
	1.5–15	10	165	
	2.5–25			
	5–50			
	10–100			
	8–80	15	185	
	15–150			
	20–200			
	15–150	25	200	
	30–300			
	50–500			
	100–1000			
	50–500	25	350	400
	100–1000			
	150–1500	32	350	408
	250–2500			
	200–2000	40	350	418
	300–3000			
	600–6000			
	600–6000	50	350	432
	1000–10000			
	1500–15000			

SCALE FOR H2O (Suitable also for demineralized H2O) PVC pipe (max 60°C)–PVC floater

Backing rings

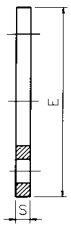
Galvanised Mild Steel Drilled to BS10 Table D/E





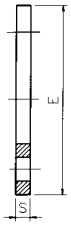
Code: PSFAC	Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
	½"	—	**MTABEA0200**	95	28	6	67	4	M12x55	210
	¾"	—	**MTABEA0250**	102	34	6	73	4	M12x60	230
	1"	—	**MTABEA0320**	115	42	6	83	4	M12x60	290
	1¼"	—	**MTABEA0400**	120	51	6	87	4	M12x70	290
	1½"	—	**MTABEA0500**	134	62	6	98	4	M12x75	370
	2"	—	**MTABEA0630**	152	78	8	115	4	M16x80	590
	2½"	—	**MTABEA0750**	165	92	8	127	4	M16x85	1480
	3"	—	**MTABEA0900**	185	110	8	145	4	M16x90	1060
	4"D	—	**MTABEA110D**	216	138	8	178	4	M16x95	1210
	4"E	—	**MTABEA110E**	216	138	8	178	8	M16x95	1190
	5"	—	**MTABEA1400**	254	167	10	210	8	M16x110	2070
	6"	—	**MTABEA1600**	290	196	10	235	8	M20x120	2160
	8"	—	**MTABEA2250**	337	250	10	292	8	M20x150	3507

Galvanised Mild Steel Drilled to BS4504 NP10/16



Code: PSFAC	Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
	½"	20	**MTIBNI0200**	95	28	6	65	4	M12x55	350
	¾"	25	**MTIBNI0250**	105	34	6	75	4	M12x60	410
	1"	32	**MTIBNI0320**	115	42	6	85	4	M12x60	490
	1¼"	40	**MTIBNI0400**	140	51	6	100	4	M16x70	730
	1½"	50	**MTIBNI0500**	150	62	6	110	4	M16x75	820
	2"	63	**MTIBNI0630**	165	78	8	125	4	M16x80	1220
	2½"	75	**MTIBNI0750**	185	92	8	145	4	M16x85	1480
	3"	90	**MTIBNI0900**	200	110	8	160	8	M16x90	1500
	4"	—	**MTIBNI1100**	220	136	8	180	8	M16x95	1680
	—	110	**MTIBNI1100M**	220	133	8	180	8	M16x95	1680
	5"	140	**MTIBNI1400**	250	165	10	210	8	M16x110	1940
	6"	—	**MTIBNI1600**	285	196	10	240	8	M20x120	2700
	—	160	**MTIBNI1600M**	285	188	10	240	8	M20x120	2700
	—	200	**MTIBNI2000**	340	235	10	295	12	M20x120	3125
	8"	225	**MTIBNI2250 NP16 only**	340	250	10	295	12	M20x150	3230
		250	**MTIBNI2500M**							
		315	**MTIBNI3150M**							

Galvanised Mild Steel Drilled to ASA150

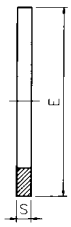


Code: PSFAC	Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
	½"	—	**MTABAA0200**	89	28	6	60	4	M12x55	190
	¾"	—	**MTABAA0250**	99	34	6	70	4	M12x60	230
	1"	—	**MTABAA0320**	108	42	6	80	4	M12x60	290
	1¼"	—	**MTABAA0400**	118	51	6	90	4	M12x70	300
	1½"	—	**MTABAA0500**	127	62	6	98	4	M12x75	360
	2"	—	**MTABAA0630**	152	78	8	121	4	M16x80	790
	2½"	—	**MTABAA0750**	177	92	9	142	4	M16x85	1205
	3"	—	**MTABAA0900**	190	110	8	152	4	M16x90	1240
	4"	—	**MTABAA1100**	229	138	8	190	8	M16x95	1560
	—	110	**MTABAA1100M**	229	133	8	190	8	M16x95	1560
	6"	—	**MTABAA1600**	280	196	10	241	8	M20x120	2730
	—	160	**MTABAA1600M**	280	188	10	241	8	M20x120	2730
	8"	—	**MTABAA2250**	343	250	10	298	8	M20x150	3340

Accessories

PVCu backing rings

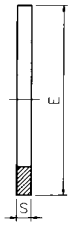
PVCu Backing Ring Drilled to BS4504 NP10/16



Code: PSFAC	mm	In	Code	d	E	S	P.C.D	Holes	Bolts	Weight (GR)
	20	½"	**RFIFLI0200**	28	95	11	65	4	M12x55	55
	25	¾"	**RFIFLI0250**	34	105	12	75	4	M12x60	85
	32	1"	**RFIFLI0320**	42	115	14	85	4	M12x60	120
	40	1¼"	**RFIFLI0400**	51	140	15	100	4	M16x70	175
	50	1½"	**RFIFLI0500**	62	150	16	110	4	M16x75	210
	63	2"	**RFIFLI0630**	78	165	18	125	4	M16x80	300
	75	2½"	**RFIFLI0750**	92	185	19	145	4	M16x90	355
	90	3"	**RFIFLI0900**	110	200	20	160	8	M16x90	430
	110	—	**RFIFLI1100**	133	220	22	180	8	M16x95	520
	125	—	**RFIFLI1250**	149	230	24	190	8	M16x100	585
	140	5"	**RFIFLI1400**	167	250	26	210	8	M16x110	700
	160	—	**RFIFLI1600**	190	285	28	240	8	M20x120	960
	200	—	**RFIFLI2000**	235	340	30	295	8	M20x130	1230
	225	—	**RFIFLI2250**	250	340	30	295	8	M20x150	1150

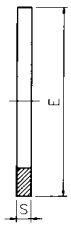
Gaskets

Flat Gaskets for Full Face Flanges Drilled to BS10 Table D/E EPDM



Code: PSFAC	Nominal Size	Code	E	S	HOLES	Weight (GR)
	1"	**EPAGFA0320**	114	3	4	35
	1¼"	**EPAGFA0400**	120	3	4	40
	1½"	**EPAGFA0500**	135	3	4	55
	2"	**EPAGFA0630**	156	3	4	57
	2½"	**EPAGFA0750**	165	3	4	56
	3"	**EPAGFA0900**	186	3	4	99
	4E"	**EPAGFA110E**	219	3	8	114
	6"	**EPAGFA1600**	279	3	8	160
	8"	**EPAGFA2250**	340	3	8	162

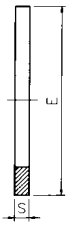
Flat Gaskets for Full Face Flanges Drilled to BS4504 NP10/16 EPDM



Code: PSFAC	Nominal Size		Code	E	S	HOLES
	½"	20	**EPIGFI0200**	95	3	4
	¾"	25	**EPIGFI0250**	101	3	4
	1"	32	**EPIGFI0320**	114	3	4
	1¼"	40	**EPIGFI0400**	120	3	4
	1½"	50	**EPIGFI0500**	135	3	4
	2"	63	**EPIGFI0630**	156	3	4
	2½"	75	**EPIGFI0750**	176	3	4
	3"	90	**EPIGFI0900**	186	3	8
	4"	110	**EPIGFI1100**	219	3	8
	6"	160	**EPIGFI1600**	279	3	8
	8"	225	**EPIGFI2250**	340	3	12

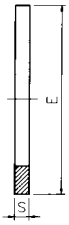
Gaskets

Flat Gaskets for Stub Flanges

Code: PSFAC	Inches	mm	Code	E	S	Weight (GR)
 	½"	20	**EPAGSA0200**	30	3	20
	¾"	25	**EPAGSA0250**	41	3	21
	1"	32	**EPAGSA0320**	50	3	26
	1¼"	40	**EPAGSA0400**	61	3	29
	1½"	50	**EPAGSA0500**	73	3	34
	2"	63	**EPAGSA0630**	90	3	35
	2½"	75	**EPAGSA0750**	106	3	38
	3"	90	**EPAGSA0900**	125	3	40
	4"	110	**EPAGSA1100**	150	4	43
	—	125	**EPAGSA1250**	168	4	47
	5"	140	**EPAGSA1400**	188	4	59
	6"	160	**EPAGSA1600**	213	4	73
	—	200	**EPAGSA2000**	254	4	80
	8"	225	**EPAGSA2250**	274	4	88
		250	**EPAGSA2500**			
		315	**EPAGSA3150**			

EPDM gaskets for tank connectors

EPDM Gaskets for Tank Connectors

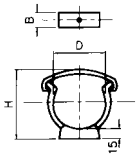
Code: PSFAC	Nominal Size	Code
 	½"	**EPATCA0200**
	¾"	**EPATCA0250**
	1"	**EPATCA0320**
	1¼"	**EPATCA0400**
	1½"	**EPATCA0500**
	2"	**EPATCA0630**
	2½"	**EPATCA0750**
	3"	**EPATCA0900**
	4"	**EPATCA1100**

Accessories

Pipe clips, clamps and brackets

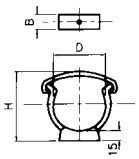
Central fixing hole 5.5mm diameter

Pipe Bracket with Safety Clip



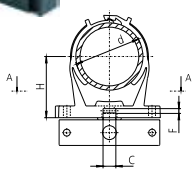
Code: PSFAC	Nominal Size	Code	L	Z	E	f	I	S	Pack Qty	Weight (GR)
	⅜"	**RFABCA0160**	13	34					100	3
	½"	**RFABCA0200**	14	39					100	5
	¾"	**RFABCA0250**	14	45					100	7
	1"	**RFABCA0320**	15	52					100	10
	1¼"	**RFABCA0400**	16	61					100	14
	1½"	**RFABCA0500**	17	67					100	20
	2"	**RFABCA0630**	18	80					100	25
	2½"	**RFABCA0750**	19	96					50	33
	3"	**RFABCA0900**	20	110					50	49
	4"	**RFABCA1100**	25	135					10	74
	5"	**RFABCA1400**	27	164					10	95
	6"	**RFABCA1600**	30	196					10	184

Pipe Bracket with Safety Clip



Code: PSFAC	Nominal Size	Code	B	H					Pack Qty	Weight (GR)
	16	**RFIBCI0160**	13	33					100	3
	20	**RFIBCI0200**	14	38					100	5
	25	**RFIBCI0250**	14	44					100	7
	32	**RFIBCI0320**	15	51					100	10
	40	**RFIBCI0400**	16	60					100	14
	50	**RFIBCI0500**	17	71					100	20
	63	**RFIBCI0630**	18	84					100	25
	75	**RFIBCI0750**	19	97					10	33
	90	**RFIBCI0900**	20	113					10	49
	110	**RFIBCI1100**	23	134					10	74
	125	**RFIBCI1250**	25	145					10	95
	140	**RFIBCI1400**	27	167					10	135
	160	**RFIBCI1600**	30	190					10	184

Universal Pipe Clamp

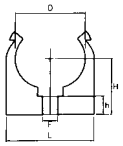


Code: PSFAC	mm	In	Code	H	H1	A	B	C	D	E	F	G	I	Pack Qty	Weight (GR)
	20	½"	**PFBPTB0200**	27.0	6.0	56.0	14.0	9.0	6.5	11.0	3.5	41.0	6.5	100	10
	25	¾"	**PFBPTB0250**	30.0	10.0	61.0	16.0	9.0	6.5	11.0	3.5	46.0	6.5	100	13
	32	1"	**PFBPTB0320**	31.5	11.5	67.0	16.0	9.0	6.5	11.0	3.5	52.0	6.5	100	15
	40	1¼"	**PFBPTB0400**	37.0	14.0	80.0	17.5	9.0	6.5	11.0	3.5	64.0	6.5	100	23
	50	1½"	**PFBPTB0500**	41.0	15.0	84.5	20.0	9.0	6.5	11.0	3.5	70.0	6.5	100	29
	63	2"	**PFBPTB0630**	49.0	15.0	96.5	24.0	9.0	6.5	11.0	3.5	80.0	6.5	100	41
	75	2½"	**PFBPTB0750**	70.0	15.0	126.0	26.0	12.0	8.5	14.0	4.3	106.0	8.5	20	69
	90	3"	**PFBPTB0900**	80.0	20.0	137.0	26.0	12.0	8.5	14.0	4.3	117.0	8.5	20	85

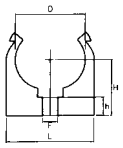
Pipe clips, clamps and brackets

Central fixing hole 5.5mm diameter

Pipe Bracket

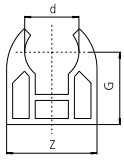
Code: PSFAC	Nominal Size	Code	L	H	h	F	Pack Qty	Weight (GR)
 	½"	**PFAPTA0200**	25	22	12	4	100	3
	¾"	**PFAPTA0250**	31	26	12	4	100	4
	1"	**PFAPTA0320**	39	30	12	4	100	6
	1¼"	**PFAPTA0400**	49	33	12	4	100	10
	1½"	**PFAPTA0500**	61	41	15	4	100	20
	2"	**PFAPTA0630**	75	47	15	4	100	30

Pipe Bracket

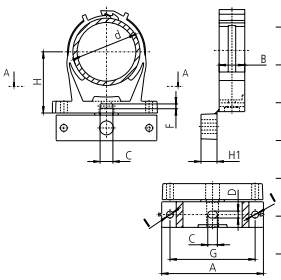
Code: PSFAC	Nominal Size	Code	L	H	h	F	Pack Qty	Weight (GR)
 	20	**PFIPTI0200**	25	22	12	4	100	3
	25	**PFIPTI0250**	31	26	12	4	100	4
	32	**PFIPTI0320**	39	30	12	4	100	6
	40	**PFIPTI0400**	49	33	12	4	100	10
	50	**PFIPTI0500**	61	41	15	4	100	20
	63	**PFIPTI0630**	75	47	15	4	100	30

Pipe hanger for PVC, PP, PVDF and PE pipes

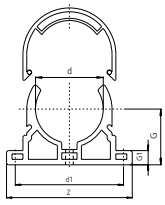
Type A

Nominal Size	mm	Code	d	d1	d2	d3	d4	Z	G
			10.0	3.2	3.1	7.0	—	16.0	14.5
			12.0	4.2	4.2	8.0	—	19.0	17.0

Universal Clip

Nominal Size	mm	Code	H	H1	A	B	C	D	E	F	G	I
	20-23		27.0	6.0	56.0	14.0	9.0	6.5	11.0	3.5	41.0	6.5
	25-28		30.0	10.0	61.0	16.0	9.0	6.5	11.0	3.5	46.0	6.5
	31-35		31.5	11.5	67.0	16.0	9.0	6.5	11.0	3.5	52.0	6.5
	39-43		37.0	14.0	80.0	17.5	9.0	6.5	11.0	3.5	64.0	6.5
	47-51		41.0	15.0	84.5	20.0	9.0	6.5	11.0	3.5	70.0	6.5
	60-65		49.0	15.0	96.5	24.0	9.0	6.5	11.0	3.5	80.0	6.5
	72-80		70.0	15.0	126.0	26.0	12.0	8.5	14.0	4.3	106.0	8.5
	87-95		80.0	20.0	137.0	26.0	12.0	8.5	14.0	4.3	117.0	8.5

Type B

Nominal Size	mm	Code	d	d1	d2	d3	d4	Z	G
	20-23		110	8.5	7.0	19.0	167.0	189.0	80.0
	25-28		125	8.5	7.0	19.0	185.0	207.0	105.0
	31-35		140	8.5	8.0	19.0	204.0	226.0	114.0
	39-43		160	8.5	8.0	19.0	228.0	250.0	124.0
	47-51		200	8.5	8.5	19.0	287.0	311.0	158.0
	60-65		225	8.5	8.5	19.0	325.0	344.0	170.5

Accessories

Pipe hanger spacing for horizontal piping

PVC–Pipes PN 10 + PN 16

d mm	20°C	30°C	40°C	50°C	60°C
16	80	70	50	continuous support	
20	90	80	60		
25	95	85	65	55	40
32	105	90	70	60	45
40	120	110	90	70	55
50	140	130	110	85	65
63	150	140	120	95	70
75	165	155	135	110	80
90	180	170	150	125	95
110	200	190	170	145	115
125	210	200	185	160	125
140	225	215	195	170	140
160	240	230	210	185	155
200	255	240	225	200	170
225	270	260	240	215	185

PP–Pipes PN 10

d mm	20°C	30°C	40°C	50°C	60°C	80°C	100°C
16	75	70	70	65	65	55	40
20	80	75	70	70	65	60	45
25	85	85	85	80	75	70	50
32	100	95	95	90	85	75	55
40	110	110	105	100	95	85	60
50	125	120	115	110	105	90	70
63	140	135	130	125	120	105	80
75	155	150	145	135	130	115	85
90	165	165	155	150	145	125	95
110	185	180	175	165	160	140	105
125	200	190	185	180	170	150	110
140	210	205	195	190	180	155	115
160	225	225	210	200	190	165	125
180	240	240	225	215	200	170	130
200	250	250	235	225	215	185	135
225	265	260	250	240	230	200	145

PE–Pipes PN 10

d mm	20°C	30°C	40°C	50°C	60°C
20	75	70	65	65	60
25	80	80	75	70	65
32	90	90	85	80	75
40	100	100	95	90	85
50	115	110	105	100	95
63	130	125	120	115	105
75	140	135	130	125	115
90	155	150	145	135	130
110	170	165	160	150	140
125	185	175	170	160	150
140	195	185	180	170	155
160	210	200	190	180	170
200	235	220	210	200	186
225	250	235	220	210	200
225	270	260	240	215	185

PVDF–Pipes PN 10

d mm	20°C	30°C	40°C	50°C	60°C	80°C	100°C
16	85	80	75	70	65	60	55
20	95	90	80	75	70	65	60
25	100	95	90	85	80	75	70
32	110	100	95	90	85	80	75
40	125	115	110	100	95	90	80
50	140	130	120	115	110	100	95
63	150	140	130	120	115	105	100
75	165	155	140	130	125	115	110
90	180	165	155	145	135	125	120
110	200	185	175	160	150	140	130
125	210	195	185	170	160	150	140
140	225	210	195	180	170	160	150
160	240	225	210	195	185	170	160
200	255	240	225	210	200	185	175
225	270	255	240	225	215	200	190

Solvent cement and PTFE tape

Solvent Cement for PVCu†

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	**RTORCO0500**	12	560

Solvent Cement for PVCu
Quick, thixotropic rigid PVCu cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Suitable for diameters <315mm and 16 bar.

Dri-fast Solvent Cement for PVCu†

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	250ml tin	**RTORDO0250**	20	310
	500ml tin	**RTORDO0500**	12	620

Dri-fast utilises a special solvent formula that reduces drying times. Dri-fast is also suitable for use in damp or wet conditions.

Dri-fast Solvent Cement
Very fast, blue thixotropic rigid PVCu and ABS cement.
For joining pipes, sockets and fittings with interference fit and loose fit (gap filling) in pressure and drainage systems. Excellent for Swimming pools, Spa's and applications under humid conditions. Suitable for diameters <160mm and 6 bar.

Solvent Cement for ABS†

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	**ATOACO0500**	12	540

Solvent Cement for ABS
Quick thixotropic ABS cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Suitable for diameters <315mm and 10 bar.

Cleaning Fluid for PVCu and ABS *

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	**CTORMO0500**	12	560

Cleaning Fluid
Effast MEK cleaner should be used for de-greasing and preparation of PVCu and ABS pipes and fittings prior to jointing with the relevant Effast cement.

Accessories

Solvent cement and PTFE tape

HCR 36 Chemically Resistant Solvent Cement†

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	**RTOHCR36**	12	

Solvent Cement for Chemical Applications – HCR-36

Low-viscosity rigid PVCu cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Also suitable for PVCc max 60C. Especially for joints demanding a high chemical resistance. Suitable for diameters <160mm and 10 bar.

Indication of chemicals which require HCR-36 cement and cleaner.

Sulphuric Acid at concentrations >70%
Hydrochloric Acid at concentrations >25%
Nitric Acid at concentrations >20%
Lyes (caustic soda) at concentrations >35%
Fluoric Acid any concentration
Sodium Hypochlorite: active chlorine content >7.5%

HCR 36 Cleaner*

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	**CTOHCR36**	12	

Cleaning Fluid for Chemical Applications – HCR-36

Cleaner for rigid PVCu, PVCc and ABS.
Cleaner should be used for de-greasing and preparation of PVCu, PVCc and ABS pipes and fittings prior to jointing with HCR-36 cement.

Indication of chemicals which require HCR-36 cement and cleaner.

Sulphuric Acid at concentrations >70%
Hydrochloric Acid at concentrations >25%
Nitric Acid at concentrations >20%
Lyes (caustic soda) at concentrations >35%
Fluoric Acid any concentration
Sodium Hypochlorite: active chlorine content >7.5%

Brushes for Solvent Cement

Code: PSPVF	Nominal Size	Code	L	Z	F	Weight (GR)
	25mm	**BTOBRO0250**				10
	50mm	**BTOBRO0500**				25

PTFE Tape

Code: PSPVF	Nominal Size	Code	L	Z	F	Weight (GR)
	12mm	**PTOPTFE12**				10

† **Cure Times**

Curing times may vary depending on surface area, product quantity used, humidity level and ambient temperature. If possible leave for 24 hours. More details available on request.

* **Chemical Resistance**

The chemical resistance of joints depends on gap width, drying time, pressure applied, temperature, type and concentration of the product. In general, the joint can be stated to have the same chemical resistance as the material itself, with the exception of a very limited number of very aggressive chemicals, such as concentrated organic acids, lyes and powerful oxidants.

PVCu and ABS valve spares

PVCu Valve Nut

Code: PSFAC	Inches	mm	Code	Pack Qty
	½"	20	**RBAGHA0200**	1
	¾"	25	**RBAGHA0250**	1
	1"	32	**RBAGHA0320**	1
	1¼"	40	**RBAGHA0400**	1
	1½"	50	**RBAGHA0500**	1
	2"	63	**RBAGHA0630**	1
	2½"	75	**RBAGHA0750**	1
	3"	90	**RBAGHA0900**	1
	4"	110	**RBAGHA1100**	1

ABS Valve Nut

Code: PSFAC	Inches	mm	Code	Pack Qty
	½"	20	**ABAGHA0200**	1
	¾"	25	**ABAGHA0250**	1
	1"	32	**ABAGHA0320**	1
	1¼"	40	**ABAGHA0400**	1
	1½"	50	**ABAGHA0500**	1
	2"	63	**ABAGHA0630**	1
	2½"	75	**ABAGHA0750**	1
	3"	90	**ABAGHA0900**	1
	4"	110	**ABAGHA1100**	1

PVCu Socket End Connectors Plain

Code: PSFAC	Nominal Size	Code	Pack Qty
	⅜"	**RBAMCA0160**	1
	½"	**RBAMCA0200**	1
	¾"	**RBAMCA0250**	1
	1"	**RBAMCA0320**	1
	1¼"	**RBAMCA0400**	1
	1½"	**RBAMCA0500**	1
	2"	**RBAMCA0630**	1
	2½"	**RBAMCA0750**	1
	3"	**RBAMCA0900**	1
	4"	**RBAMCA1100**	1

ABS Socket End Connectors Plain

Code: PSFAC	Nominal Size	Code	Pack Qty
	⅜"	**ABAMCA0160**	1
	½"	**ABAMCA0200**	1
	¾"	**ABAMCA0250**	1
	1"	**ABAMCA0320**	1
	1¼"	**ABAMCA0400**	1
	1½"	**ABAMCA0500**	1
	2"	**ABAMCA0630**	1
	2½"	**ABAMCA0750**	1
	3"	**ABAMCA0900**	1
	4"	**ABAMCA1100**	1

Accessories

PVCu and ABS valve spares

PVCu Socket End Connectors Plain Metric

Code: PSFAC	Nominal Size	Code	Pack Qty
	16	**RBIMCI0160**	1
	20	**RBIMCI0200**	1
	25	**RBIMCI0250**	1
	32	**RBIMCI0320**	1
	40	**RBIMCI0400**	1
	50	**RBIMCI0500**	1
	63	**RBIMCI0630**	1
	75	**RBIMCI0750**	1
	90	**RBIMCI0900**	1
	110	**RBIMCI1100**	1

PVCu BPack Qty Female Socket End Connectors BSP Female Threaded

Code: PSFAC	Nominal Size	Code	Pack Qty
	⅜"	**RBFMCF0160**	1
	½"	**RBFMCF0200**	1
	¾"	**RBFMCF0250**	1
	1"	**RBFMCF0320**	1
	1¼"	**RBFMCF0400**	1
	1½"	**RBFMCF0500**	1
	2"	**RBFMCF0630**	1
	2½"	**RBFMCF0750**	1
	3"	**RBFMCF0900**	1
	4"	**RBFMCF1100**	1

Actuator Bracket for Double Union Industrial Ball Valve with Universal Mounting Block

Code: PSFAC	Inches	mm	Code
	1"	32	**PBMSVM0320A**
	1¼"	40	**PBMSVM0400A**
	1½"	50	**PBMSVM0500A**
	2"	63	**PBMSVM0630A**
	2½"	75	**PBMSVM0750**
	3"	90	**PBMSVM0900**
	4"	110	**PBMSVM1100**

PVCu and ABS valve spares

Industrial Ball Valve Handle Orange

Code: PSFAC	Inches	mm	Code
	3/8"		RBAMOA0160
	1/2"		RBAMOA0200
	3/4"		RBAMOA0250
	1"		RBAMOA0320
	1 1/4"		RBAMOA0400
	1 1/2"		RBAMOA0500
	2"		RBAMOA0630
	2 1/2"		RBAMOA0750
	3"		RBAMOA0900
	4"		RBAMOA1100

Economy Valve Handle Blue

Code: PSFAC	Inches	mm	Code
	3/8"		RBAMBA0160
	1/2"		RBAMBA0200
	3/4"		RBAMBA0250
	1"		RBAMBA0320
	1 1/4"		RBAMBA0400
	1 1/2"		RBAMBA0500
	2"		RBAMBA0630
	2 1/2"		RBAMBA0750
	3"		RBAMBA0900
	4"		RBAMBA1100

EPDM and PTFE Seal Kits for Industrial Ball Valves

Code: PSFAC	Inches	mm	Code
	3/8"		EBDSED0160
	1/2"		EBDSED0200
	3/4"		EBDSED0250
	1"		EBDSED0320
	1 1/4"		EBDSED0400
	1 1/2"		EBDSED0500
	2"		EBDSED0630
	2 1/2"		EBDSED0750
	3"		EBDSED0900
	4"		EBDSED1100

FPM and PTFE Seal Kits for Industrial Ball Valves

Code: PSFAC	Inches	mm	Code
	3/8"		EBVSEV0160
	1/2"		EBVSEV0200
	3/4"		EBVSEV0250
	1"		EBVSEV0320
	1 1/4"		EBVSEV0400
	1 1/2"		EBVSEV0500
	2"		EBVSEV0630
	2 1/2"		EBVSEV0750
	3"		EBVSEV0900
	4"		EBVSEV1100

Accessories

PVCu and ABS union spares

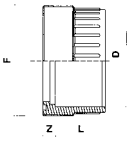
EPDM O Rings for Unions

Code: PSFAC	Inches	mm	Code
	⅜"	16	**EPOGBO0160**
	½"	20	**EPOGBO0200**
	¾"	25	**EPOGBO0250**
	1"	32	**EPOGBO0320**
	1¼"	40	**EPOGBO0400**
	1½"	50	**EPOGBO0500**
	2"	63	**EPOGBO0630**
	2½"	75	**EPOGBO0750**
	3"	90	**EPOGBO0900**
	4"	110	**EPOGBO1100**

FPM O Rings for Unions

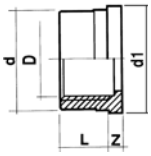
Code: PSFAC	Inches	mm	Code
	½"	20	**EPOGBV0200**
	¾"	25	**EPOGBV0250**
	1"	32	**EPOGBV0320**
	1¼"	40	**EPOGBV0400**
	1½"	50	**EPOGBV0500**
	2"	63	**EPOGBV0630**

PVCu Union Bush Plain



Code: PSFAC	Nominal Size	Code	L	Z	F	Weight (GR)
	½"	**RFABFA0200**	17	10	1"	15
	¾"	**RFABFA0250**	20	10	1¼"	25
	1"	**RFABFA0320**	23	10	1½"	35
	1¼"	**RFABFA0400**	27	12	2"	57
	1½"	**RFABFA0500**	31	14	2¼"	80
	2"	**RFABFA0630**	38	18	2¾"	135
	2½"	**RFABFA0750**	44	18	3½"	205
	3"	**RFABFA0900**	51	18	4"	270
	4"	**RFABFA1100**	63	18	5"	465

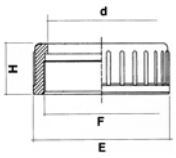
PVCu Union End Plain



Code: PSFAC	Nominal Size	Code	L	Z	d	d1	Weight (GR)
	½"	**RFABLA0200**	17	3	28	30	10
	¾"	**RFABLA0250**	20	3	36	39	16
	1"	**RFABLA0320**	23	3	42	45	22
	1¼"	**RFABLA0400**	27	3	53	57	40
	1½"	**RFABLA0500**	31	3	59	63	45
	2"	**RFABLA0630**	38	3	74	78	80
	2½"	**RFABLA0750**	44	3	93	97	150
	3"	**RFABLA0900**	51	5	105	110	195
	4"	**RFABLA1100**	63	5	129	135	350

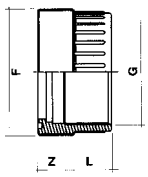
PVCu and ABS union spares

PVCu Union Nut



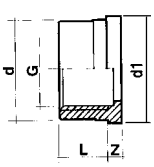
Code: PSFAC	Nominal Size	Code	D	H	F	E	Weight (GR)
	½"	**RFABGA0200**	28	23	1"	42	17
	¾"	**RFABGA0250**	36	25	1¼"	52	27
	1"	**RFABGA0320**	42	27	1½"	59	40
	1¼"	**RFABGA0400**	53	30	2"	72	55
	1½"	**RFABGA0500**	59	34	2¼"	79	90
	2"	**RFABGA0630**	74	38	2¾"	96	145
	2½"	**RFABGA0750**	93	45	3½"	119	235
	3"	**RFABGA0900**	105	52	4"	134	325
	4"	**RFABGA1100**	129	60	5"	163	510

PVCu Union Bush BSP Female Threaded



Code: PSFAC	Nominal Size	G	Code	L	Z	F	Weight (GR)
	⅜"	BSPF	**RFFBFF0160**	11	14	1"	10
	½"	BSPF	**RFFBFF0200**	15	11	1"	15
	¾"	BSPF	**RFFBFF0250**	16	13	1¼"	27
	1"	BSPF	**RFFBFF0320**	19	13	1½"	35
	1¼"	BSPF	**RFFBFF0400**	21	17	2"	60
	1½"	BSPF	**RFFBFF0500**	21	24	2¼"	104
	2"	BSPF	**RFFBFF0630**	26	30	2¾"	180
	2½"	BSPF	**RFFBFF0750**	30	32	3½"	235
	3"	BSPF	**RFFBFF0900**	33	36	4"	335
	4"	BSPF	**RFFBFF1100**	39	40	5"	470

PVCu Union End BSP Female Threaded

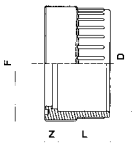


Code: PSFAC	Nominal Size	G	Code	L	Z	d	d1	Weight (GR)
	⅜"	BSPF	**RFFBLF0160**	11	6	22	24	7
	½"	BSPF	**RFFBLF0200**	15	4	28	30	10
	¾"	BSPF	**RFFBLF0250**	16	6	36	39	17
	1"	BSPF	**RFFBLF0320**	19	6	42	45	25
	1¼"	BSPF	**RFFBLF0400**	21	8	53	57	42
	1½"	BSPF	**RFFBLF0500**	21	13	59	63	65
	2"	BSPF	**RFFBLF0630**	26	15	74	78	120
	2½"	BSPF	**RFFBLF0750**	30	17	93	97	160
	3"	BSPF	**RFFBLF0900**	33	23	105	110	235
	4"	BSPF	**RFFBLF1100**	39	27	129	135	340

Accessories

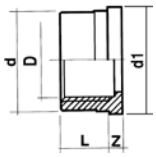
PVCu and ABS union spares

PVC Union Bush Plain Metric



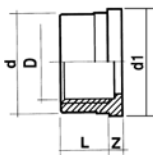
Code: PSFAC	Nominal Size	Code	L	Z	F	Weight (GR)
	16	RFIBFI0160	14	10	1"	10
	20	RFIBFI0200	16	10	1"	15
	25	RFIBFI0250	19	10	1¼"	25
	32	RFIBFI0320	22	10	1½"	35
	40	RFIBFI0400	26	12	2"	57
	50	RFIBFI0500	31	14	2¼"	80
	63	RFIBFI0630	38	18	2¾"	135
	75	RFIBFI0750	44	18	3½"	205
	90	RFIBFI0900	51	18	4"	270
	110	RFIBFI1100	61	18	5"	465

PVCu Union End Plain Metric



Code: PSFAC	Nominal Size	Code	L	Z	d	d1	Weight (GR)
	16	RFIBLI0160	14	3	22	24	6
	20	RFIBLI0200	16	3	28	30	10
	25	RFIBLI0250	19	3	36	39	16
	32	RFIBLI0320	22	3	42	45	22
	40	RFIBLI0400	26	3	53	57	40
	50	RFIBLI0500	31	3	59	63	45
	63	RFIBLI0630	38	3	74	78	80
	75	RFIBLI0750	44	3	93	97	150
	90	RFIBLI0900	51	5	105	110	195
	110	RFIBLI1100	61	5	129	135	350

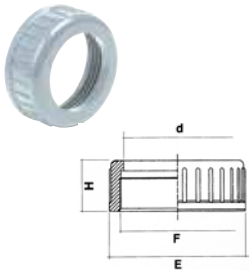
ABS Union End Plain



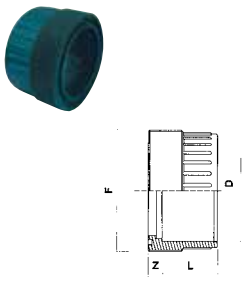
Code: PSFAC	Nominal Size	Code	L	Z	d	d1	Weight (GR)
	½"	AFABLA0200	17	3	28	30	8
	¾"	AFABLA0250	20	3	36	39	13
	1"	AFABLA0320	23	3	42	45	18
	1¼"	AFABLA0400	27	3	53	57	32
	1½"	AFABLA0500	31	3	59	63	36
	2"	AFABLA0630	38	3	74	78	64
	2½"	AFABLA0750	44	3	93	97	120
	3"	AFABLA0900	51	5	105	110	156
	4"	AFABLA1100	63	5	129	135	280

PVCu and ABS union spares

ABS Union Nut

Code: PSFAC	Nominal Size	Code	d	H	F	E	Weight (GR)
	½"	**AFABGA0200**	28	23	1"	42	14
	¾"	**AFABGA0250**	36	25	1¼"	52	22
	1"	**AFABGA0320**	42	27	1½"	59	32
	1¼"	**AFABGA0400**	53	30	2"	72	44
	1½"	**AFABGA0500**	59	34	2¼"	79	72
	2"	**AFABGA0630**	74	38	2¾"	76	116
	2½"	**AFABGA0750**	93	45	3½"	119	188
	3"	**AFABGA0900**	105	52	4"	134	260
	4"	**AFABGA1100**	129	60	5"	163	408

ABS Union Bush Plain

Code: PSFAC	Nominal Size	Code	L	Z	F	Weight (GR)
	½"	**AFABFA0200**	17	10	1"	12
	¾"	**AFABFA0250**	20	10	1¼"	20
	1"	**AFABFA0320**	23	10	1½"	28
	1¼"	**AFABFA0400**	27	12	2"	46
	1½"	**AFABFA0500**	31	14	2¼"	64
	2"	**AFABFA0630**	38	18	2¾"	108
	2½"	**AFABFA0750**	44	18	3½"	164
	3"	**AFABFA0900**	51	18	4"	216
	4"	**AFABFA1100**	63	18	5"	372

Ball Valve Locking Cap

Code: PSPVF	Nominal Size	Code	L	Z	F	Weight (GR)
	½"	**BDRHTA0200**				
	¾"	**BDRHTA0250**				
	1"	**BDRHTA0320**				
	1¼"	**BDRHTA0400**				
	1½"	**BDRHTA0500**				
	2"	**BDRHTA0630**				

Accessories

Material selection

In order to select the most suitable material for a pipe system the following factors need to be considered –

- The medium or fluid to be conveyed and its chemical composition
- Operating pressure
- Operating temperature

These factors are interlinked and only when all are addressed can the correct material be selected.

There are a number of properties which are key to the suitability of a material to fulfil the factors above.

General properties

Density

Is a measure of the mass of a given volume, polymers have the lowest density of all classes of engineering materials.

Energy content

The amount of energy released during the combustion of the substance. Polyolefines such as PE, PP and PB contain approximately the same energy as heating oil at 44MJ/kg.

Recycle fraction

Usually represented by a number between 0 and 1 without units. Higher fractions indicate materials which are likely to be recycled. Thermoplastics can be recycled, polyethylene offers one of the highest recyle factors of polymers at approximately 0.6.

Mechanical properties

Tensile

Tensile testing is performed by the elongation of a test specimen until it breaks. Values obtained from the resulting curve of stress against elongation include.

- Yield stress
- Percentage of elongation
- Modulus of elasticity
- Impact

Impact testing is performed to measure the ability of a material to withstand impact. The use of a notched test is necessary to produce a break in ductile materials.

Hardness

Testing the hardness of a material involves the application of a defined load through a defined surface area. Dependent on the type of test the resulting indentation or penetration is recorded as a measure of the material hardness.

Thermal properties

Thermal expansion coefficient

The rate of expansion or contraction due to a change in temperature differs between material types. Although the amount of expansion per metre for each degree change in temperature may appear small, the expansion of a long pipe length through a moderate change in temperature can be significant. Where plastics are to be joined to other materials consideration should be given to the possible stresses within the connection due to different coefficient values.

Thermal conductivity

Indication of the transfer of heat through the material. Higher values indicate a material which allows the passage of heat more readily. Lower values imply a better insulating material.

Electrical properties

Dielectric strength

The maximum electric field strength a material can intrinsically withstand without failure of its insulating properties. Poor conductors usually support electrostatic fields

Surface resistivity

The resistance to the flow of electrical current over the surface of a material. Engineering plastics are inherently good insulators with high surface resistance values of 10^{14} and above. Resistivity can be reduced through the addition of conductive additives to the base polymer.

The following is a list of abbreviations used in this catalogue:	
ABS	Acrylonitrile–Butadiene–Styrene
ASA	American Standards Association
BSP	British Standard Pipe (Thread)
DIN	Deutsche Industrie Normen (German Industrial Standards)
EPDM	Ethylene Propylene Rubber
FPM	Fluorine Rubber (e.g. Viton)
GR	Weight in grammes
ISO	International Standardisation Organisation
NBR	Nitrile Rubber
NP	Nominal Pressure
PE	Polyethylene
PP	Polypropylene
PTFE	Polytetrafluoroethylene (e.g. Teflon)
PVCu	Unplasticised Polyvinyl Chloride
SP	Standard Pack
PN	Pressure Rating

Material selection

Picture supplied courtesy of Sterling Hydrotec.

Comparative properties of PVCu, ABS and PP			
Property	**PVCu-Rigid**	**ABS High Impact**	**PP Homopolymer**
General			
Composition	$(CH_2\text{-}CH\text{-}Cl)_n$	$(CH_2\text{-}CH\text{-}CH_2\text{-}CH\text{-}CN\text{-}C_6H_4)_n$	$(CH_2\text{-}CH\text{-}CH_3)_n$
Density (Mg/m³)	1.35 to 1.55	1.03 to 1.07	0.90 to 0.92
Energy Content (Mj/kg)	85 to 106	85 to 120	90 to 110
Recycle Fraction	0.15 to 0.25	0.45 to 0.55	0.25 to 0.35
Mechanical			
Young's Modulus of elasticity (GPa)	2.2 to 3.5	2.1 to 2.8	1 to 1.6
Elastic Limit (MPa)	35 to 52	40 to 45	28 to 33
Tensile Strength (MPa)	30 to 70	45 to 48	25 to 40
Compressive Strengh (MPa)	55 to 60	55 to 60	40 to 45
Ductility	0.1 to 3	0.06 to 0.07	1 to 2
Endurance Limit (MPa)	27 to 31.2	24 to 27	15.4 to 18.2
Fracture Toughness (MPa.m^{½})	1 to 2	2.3 to 2.6	1.9 to 2.1
Hardness Vickers	10.6 to 15.6	5.6 to 12.2	9.3 to 11.2
Poisson's Ratio	0.38 to 0.43	0.38 to 0.42	0.4 to 0.45
Thermal			
Normal Service Temperature (°C)	0 to 60	-40 to 60	-10 to 110
Thermal Expansion (mm/m.°C)	0.055 to 0.095	0.070 to 0.100	0.080 to 0.150
Specific Heat (J/kg.K)	1000 to 1100	1500 to 1510	1920 to 2100
Thermal Conductivity (W/m.K)	0.24 to 0.26	0.17 to 0.24	0.16 to 0.24
Electrical			
Dielectric Constant	3.1 to 3.2	2.8 to 3.3	2.26 to 2.4
Resistivity (10^{13} ohm.m)	3.16 to 10	6.31 to 15.8	10 to 1000

Temperature and pressure relationship for pipes, PVCu imperial						
	Class C		Class D		Class E	
Temperature (°C)	bar	psi	bar	psi	bar	psi
0	9.0	130	12.0	174	15.0	217
20	9.0	130	12.0	174	15.0	217
30	8.1	117	10.8	156	13.5	195
35	7.2	104	9.6	139	12.0	174
40	6.3	91	8.4	121	10.5	152
45	5.4	78	7.2	104	9.0	130
50	4.0	58	5.4	78	6.7	97
55	2.7	39	3.6	52	4.5	65
60	1.3	18	1.8	26	2.2	31

Temperature and pressure relationship for pipes, PVCu metric		
	Pipe pressure rating (bar)	
Temperature (°C)	PN10	PN16
0	10.0	16.0
20	10.0	16.0
30	8.0	12.8
35	7.1	11.8
40	6.4	10.2
45	5.1	8.2
50	4.4	7.0
55	3.3	5.2
60	2.6	4.1

Temperature and pressure relationship for pipes, PE100		
	Pipe pressure rating (bar)	
Temperature (°C)	PN10/SDR17	PN16/SDR11
-40	10.0	16.0
-30	10.0	16.0
-20	10.0	16.0
0	10.0	16.0
20	10.0	16.0
30	8.4	13.5
40	7.2	11.6
50	3.6	5.8
60	1.8	2.9

Temperature and pressure relationship for pipes, ABS imperial						
	Class C		Class D		Class E	
Temperature (°C)	bar	psi	bar	psi	bar	psi
-40	9.0	130	12.0	174	15.0	217
-20	9.0	130	12.0	174	15.0	217
0	9.0	130	12.0	174	15.0	217
20	9.0	130	12.0	174	15.0	217
30	8.1	117	11.3	163	13.5	195
40	6.3	91	8.5	123	10.5	152
50	4.5	65	6.3	91	7.5	108
60	2.7	39	3.8	55	4.5	65

Temperature and pressure relationship for pipes, PP-H metric (PN10)				
	Pipe pressure rating (bar)			
Temperature (°C)	50 Years	25 Years	10 Years	1 Year
20	10.0	10.6	11.0	12.3
40	6.2	6.6	6.9	8.0
60	3.8	4.1	4.3	5.2
80	–	1.6	2.0	3.5
95	–	–	0.9	2.3
110	–	–	–	1.6

Selection of pipeline systems

Pipeline system selection

Pipeline system selection is usually based on a number of parameters: -

- The effect of working conditions such as pressure, temperature and the fluid carried.
- Flow rate of the fluid usually governs the pipe size.

PVCu (imperial sizes) pressure ratings– fittings, valves and pipes

Product	Size–inches	Pressure rating at 20°C	
		psi	bar
Fittings			
Solvent cement	½–6	217	15
	8, 10 and 12	130	9
Threaded	⅜–4	145	10
Union	½–2½	174	12
	3–4	145	10
Flange Blanks			
	1–2	232	16
	2½–4	145	10
	5–6	87	6
Valves			
Ball	⅜–2	232	16
	2½–4	145	10
3 Way ball	¾–2	145	10
Diaphragm	½–2	145	10
Butterfly	3–5	145	10
	6	87	6
Knife gate	1½–4	36	2.5
Check	⅜–2	232	16
	2½–3	145	10
Wafer check	2–6	145	10
	8	87	6
Pipes			
Class E	½–6	217	15
Class D	1¼–6	174	12
Class C	2–12	130	9
Class T Threading and machining only	⅜–2	174	12

PVCu (metric sizes) pressure ratings– fittings, valves and pipes

Product	Size–mm	Pressure rating at 20°C	
		bar	psi
Fittings			
Solvent cement	16–160	16	232
	200–315	10	145
Metric solvent x BSP adaptor	16 x ⅜" - 110–4"	10	145
Valves			
Ball	16–63	16	232
	75–110	10	145
Diaphragm	20–63	10	145
Butterfly	90–140	10	145
	160	6	87
Check	16–63	16	232
	75–90	10	145
Pipes			
PN rated	16–315	10 and 16	145 and 232

PP-H (metric sizes) pressure ratings– fittings, valves and pipes

Product	Size–mm (inches)	Pressure rating at 20°C	
		bar	psi
Fittings			
Socket fusion	16–110	10	145
Valves			
Ball union end/ socket fusion	20–63 (½"- 2")	10	145
Ball union end/ threaded BSP	(½"–2")	10	145
Butterfly	90–140 (3"–5")	10	145
	160–225 (6"–8")	6	87
Check	20–63 (½"–2")	10	145
Pipes			
PN rated	16–110	10	145

ABS (imperial sizes) pressure ratings– fittings, valves and pipes			
Product	Size–inches (mm)	Pressure rating at 20°C	
		psi	bar
Fittings			
Solvent cement	½–4	217	15
	5–6	174	12
	8	145	10
Threaded BSP	⅜–3	145	10
Union	½–2½	174	12
	3–4	145	10
Flange Blanks			
	1–2	232	16
	2½–4	145	10
	5–6	87	6
Valves			
Ball	⅜–2 (16–63mm)	232	16
	2½–4 (75–110mm)	145	10
Check	⅜–2 (16–63mm)	232	16
	2½–3 (75–90mm)	145	10
Pipes			
Class E	⅜–4	217	15
Class D	6	174	12
Class C	1–8	130	9
Class T Threading and machining only	⅜–2	174	12

Valve selection			
Valve features	Ball valve	Butterfly valve	Diaphragm valve
Standard seal	EPDM, FPM	EPDM, FPM	EPDM
Flow	Full	Restricted	Restricted
Flow adjustment	Limited, not positive	Good, positive	Good, positive
Frictional pressure loss	Low	Medium	High
Behaviour water hammer	Fair	Limited	Limited

Valve seal behaviour			
Seal features	Ball valve	Butterfly valve	Diaphragm valve
Liquid, particle free	Good	Good	Good
Liquid, particulate or crystal forming	Limited, needs regular cleaning	Good, but needs occasional cleaning	Good
Liquid, viscous	Good	Limited	Limited
Gases	Good	Good	Limited

Valve selection

Valve selection is based upon a number of key parameters: -

- The primary valve body material is selected along with the material best suited for the pipe system.
- Thereafter valve selection will depend on the properties of the conveyed medium and the valve characteristics themselves, as shown in table.
- The compatibility of the seal material to the conveyed medium within the known operating parameters must be confirmed, which can be determined by reference to the valve seal behaviour in table.
- Additionally, valves have another important characteristic known as torque rating which is very important in actuated applications.

For more information regarding the selection of valves for actuation and the relevant torque figures, please ask for a copy of the full Effast Technical Catalogue.

Storage, handling and installation

Introduction

One of the key parts of a successful installation comes from the way that plastic pipes and components are stored and handled. This chapter deals with the installation of plastic pipeline systems and describes the methods for preserving structural integrity and compensating for thermal expansion.

Storage and handling

Pipe is often stored directly on the ground or supported in racks or pallets and the following conditions should be observed: -

- Ensure that the ground surface is level and cleared of debris to prevent the pipes from becoming bent, scored and damaged.
- Pipes should never be stacked more than 6 layers high and in hot climates this should be restricted to 4 layers. Large bore pipes should not be stacked greater than 1 metre high, thus avoiding ovality due to heat and pressure.
- Pipes of different diameters and wall thickness should be stacked separately. If this is not practical the larger diameter and thicker walled pipes should be stored at the bottom of the stack.
- Pipe racks should be constructed to provide full support to each pipe layer. Side supports should be at least 100mm wide and be placed at regular intervals of 1.2 metres along the pipe length.
- Narrow straps to support the pipe stack should be avoided.
- Pipes can be stored in palletised stacks as long as the pallets and not the pipes support the stack weight and pallets should be stacked no more than 3 pallets high for short periods only.
- Pipes and fittings stored for an extended period of time should be protected from direct sunlight to avoid UV degradation. Fittings should be stored using a method that allows air circulation such as porous hessian sacks, boxes or on shelves.

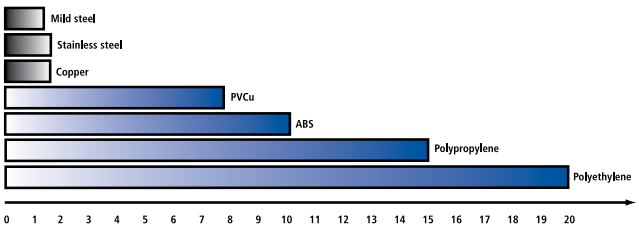
The whole purpose of correct handling is to avoid damage to pipes and should encompass loading, transit and unloading of the pipes. The following guidelines should be addressed when handling pipes: -

- Pipes should be loaded and unloaded manually without dragging them over the ground, as this causes damage. However if handling pallets of pipe by forklift ensure that the forks do not cause damage.
- Flatbed vehicles should be used to distribute pipe loads and the largest diameter pipe should be loaded first with the smaller pipe loaded on top or nested inside to avoid damage. Do not drop pipes off the vehicle when off loading but handle and stack them correctly.

Installation of plastic pipes

Thermoplastics expand and contract to a far greater extent than metals and the following sketch provides a comparison between some metals and plastics: -

Comparison of thermal expansion of plastics and metals



There are two factors to consider when calculating expansion or contraction in pipes: -

- Environmental temperature (external temperature) at which the pipe will stabilise prior to installation.
- Fluid temperature (internal temperature) which is the operational temperature of the pipeline system.

The change in length due to thermal expansion or contraction in a pipeline system is determined by the following formula: -
Where ΔL Expansion (ΔLe) or contraction (ΔLc) in mm

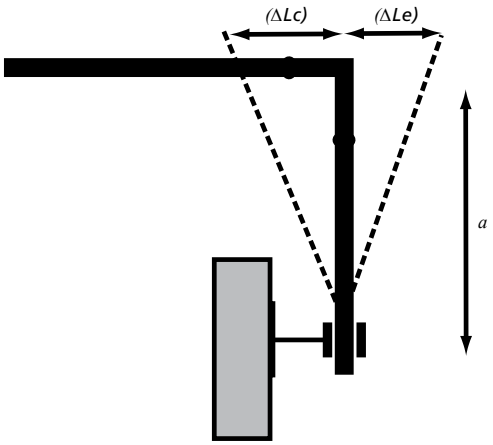
$$\Delta L = \Delta T \times L \times \delta$$

ΔT Difference in temperature between the installation and the operating temperatures in °C ($=T_{operate} - T_{install}$)
L Length of pipe when installed δCoefficient of expansion

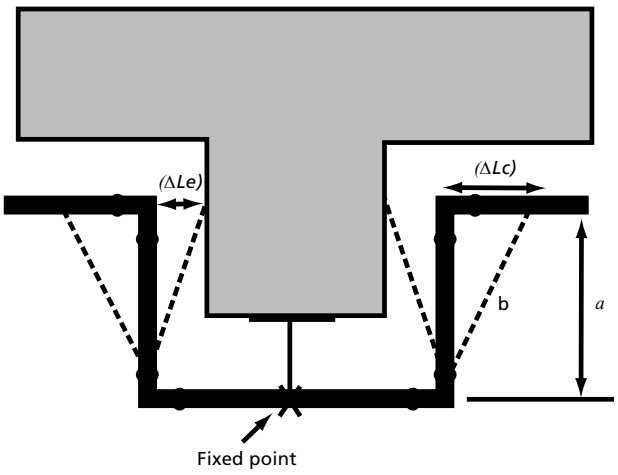
Flexible arms in pipeline installations

Flexible arms or expansion bellows are used in order to avoid the associated stresses generated from a pipe's change in length due to expansion or contraction. Expansion bellows are not a prime concern of this document and the installer is advised to seek specialist guidance from the manufacturers of such products. The flexibility of plastics permits expansion or contraction to be compensated for by means of either directional change within a pipe system (single flexible arm) or by the installation of expansion loops consisting of two flexible arms (double flexible arm), as shown in the following illustrations: -

Single arm



Double arm (expansion loop)



How to find the flexible arm (a) length

To calculate the length of a flexible arm () the following formulae can be used: -

$$a = \left(\sqrt{D \times \Delta L}\right) \times C_m$$

Single arm:

Double arm:

$$a = \left(\sqrt{D \times \frac{\Delta L}{2}}\right) \times C_m$$

Where a Flexible arm length (mm)
D Pipe outside diameter (mm)
ΔL Expansion or Contraction (mm) for single arm,
for double arm use $\Delta L/2$ C_m Constant for material, see table.

Thermoplastic material constant (C_m)	
Thermoplastic material	**Constant**
PVCu	33.5
ABS	32.7
PP	30.0
PE	26.0

Worked example

A 40mm ABS pipe (C_m = 32.7) has expanded in length by 22mm, what is the length required for single and double flexible arm arrangements?

Solution	
Single arm	**Double arm**
$a = \left(\sqrt{D \times \Delta L}\right) \times C_m$	$a = \left(\sqrt{D \times \frac{\Delta L}{2}}\right) \times C_m$
$a = \left(\sqrt{40 \times 22}\right) \times 32.7$	$a = \left(\sqrt{40 \times \frac{22}{2}}\right) \times 32.7$
a = 970mm	a = 686mm

Pre-stressing flexible arms

Sometimes changes of length (ΔL) can only be channelled in one direction, possibly due to a flexible section having to operate in a confined space. When this occurs the flexible arm can be pre-stressed achieving the following:-

- The flexible arm can be reduced in length
- The flexible arm will straighten under working conditions thus relieving a large amount of stress
- The installation will look better when in service

Storage, handling and installation

Coefficient of linear expansion for thermoplastics (δ)		
Thermoplastic material	**Coefficient δ (10^{-5}m/m°C)**	**Length/temperature equivalent (mm/m°C)**
PVCu	7.8	0.078
ABS	10.1	0.101
PP	15.0	0.150
PE	20.0	0.200

For example PVCu will expand 0.078mm per metre for every 1°C raised in mid-wall temperature above the installation temperature.

Calculated expansion for 1 metre length pipe					
Temperature difference (°C)	**Expansion (mm)**				**Comment**
	PVCu	**ABS**	**PP**	**PE100**	
1	0.078	0.101	0.150	0.200	
2	0.156	0.202	0.300	0.400	
3	0.234	0.303	0.450	0.600	
4	0.312	0.404	0.600	0.800	For the temperature range not on the chart add the factors
5	0.390	0.505	0.750	1.000	
6	0.468	0.606	0.900	1.200	
7	0.546	0.707	1.050	1.400	i.e.For PVCu @ 37°C
8	0.624	0.808	1.200	1.600	
9	0.702	0.909	1.350	1.800	20°C = 1.560mm
10	0.780	1.010	1.500	2.000	+17°C = 1.326mm
11	0.858	1.111	1.650	2.200	
12	0.936	1.212	1.800	2.400	37°C = 2.886mm
13	1.014	1.313	1.950	2.600	
14	1.092	1.414	2.100	2.800	
15	1.170	1.515	2.250	3.000	
16	1.248	1.616	2.400	3.200	
17	1.326	1.717	2.550	3.400	
18	1.404	1.818	2.700	3.600	
19	1.482	1.919	2.850	3.800	
20	1.560	2.020	3.000	4.000	

Please note that the temperature difference is the difference between the installation temperature and the working temperature, in degrees Celsius (°C).

Worked example

Find the expansion and contraction on a 4" diameter PVCu pipe system installed at 10°C, where the maximum and minimum operating temperatures are 30°C and 8°C respectively and the overall length of the installation is 30m.

Solution		
Step	**Operating temperature (°C)**	
	30	**8**
Calculate temperature difference ΔT (=T operate–T install)	= 30–10 = +20°C	= 8–10 = -2°C*
Calculate change in length due to expansion and contraction $\Delta L = \Delta T \times L \times \delta$ (δ = 0.078 for PVCu)	= 20 x 30 x 0.078 = 46.8mm	= -2 x 30 x 0.078 = -4.68mm*
Select length of flexible arm or compensator	Take the greater value (change in length) regardless of whether it is due to expansion or contraction that can accommodate the maximum movement. In this case ΔL = 46.8mm	

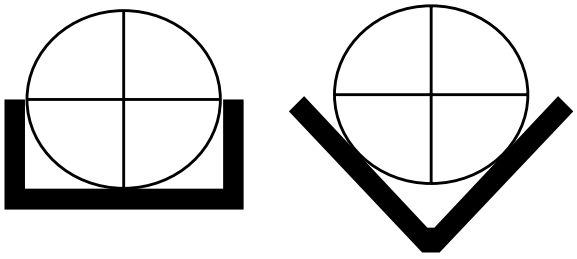
* Please note a (-) minus value represents the difference in temperature (it is not a subzero) and hence it causes a contraction of the length of the pipe.

Plastic pipe systems support and bracketing

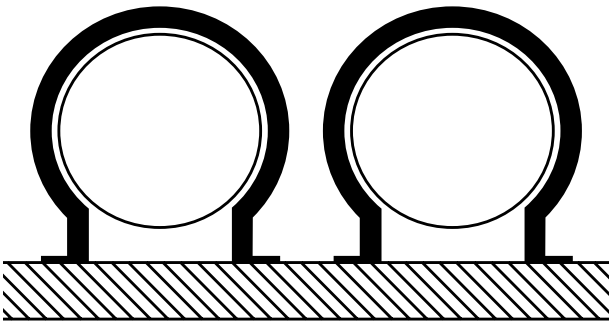
Plastic pipe systems require regular support which can vary according to pipe material, size and wall dimension of the pipe, the weight (density) of the liquid carried and the temperature of the pipe wall. There are three types of mechanism which support or restrain pipe movement: Restrained within a channel; supported with clips or brackets at predetermined intervals and limiting rings to restrict axial movement.

Supports, brackets and limiting rings

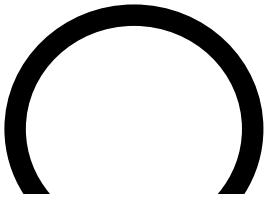
- Full support of the pipeline can be achieved by running along suitable channel and restraining it from lateral movement.



- Pipelines which are suspended have to be supported by brackets spaced at predetermined intervals (see the following tables).



- Limiting Rings PVCu and ABS: These can be made by cutting a small length (dissecting 1/3rd of the circumference) of class 'C' or 10 bar pipe of the same outside diameter of the carrier pipe. The remaining segment can be sprung open and then solvent welded into place on the carrier pipe.

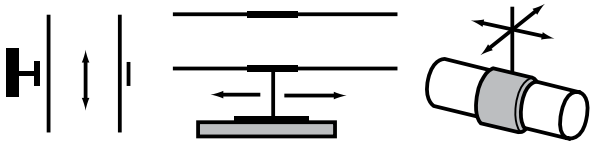


Brackets

Pipe brackets need to be made with the inside diameter of the bracket marginally larger than the pipe outer diameter. This allows free lineal movement of the pipe and avoids inhibiting expansion or contraction. They should also be smooth, to avoid damage to the outer surface of the pipe.
Tables are based on class E pipe (15 bar) or the PN16 metric rating. For pipes of a lower rating the spacing will be closer, derate as follows: -

- Class D (12 bar) and PN12 rated pipe x 0.75
- Class C (9 bar) and PN10 rated pipe x 0.62

Loose brackets–axial movement is required without constraint

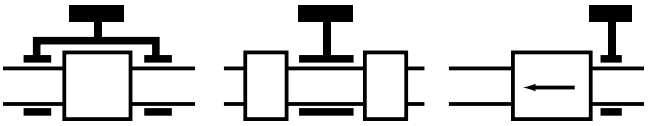


A loose bracket allows axial movement.

A sliding bracket allows movement along a flat supporting surface.

Hanging bracket allows radial and axial movement.

Fixed brackets–axial movement constrained or controlled



A bracket on either side prevents axial movement.

A bracket between two pipe sockets or limiting rings prevents axial movement.

A bracket to control pipe movement in one direction.

Storage, handling and installation

Bracket spacing for PVCu PN 16 metric pipe and class E (15 bar) imperial pipe						
Pipe size		Bracket spacing in metres				
mm	inch	20°C	30°C	40°C	50°C	60°C
16	⅜	0.80	0.70	0.50	*	*
20	½	0.90	0.80	0.60	*	*
25	¾	1.00	0.90	0.70	0.55	0.40
32	1	1.10	0.95	0.75	0.60	0.45
40	1¼	1.20	1.10	0.90	0.70	0.55
50	1½	1.30	1.20	1.00	0.80	0.60
63	2	1.40	1.30	1.10	0.90	0.65
75	2½	1.50	1.40	1.20	1.00	0.70
90	3	1.60	1.50	1.30	1.20	0.85
110	4	1.90	1.80	1.60	1.30	1.10
125	-	2.10	2.00	1.85	1.60	1.25
140	5	2.20	2.10	1.90	1.65	1.35
160	6	2.30	2.20	2.00	1.75	1.50
225	8	2.60	2.45	2.30	2.00	1.75
250	–	2.80	2.70	2.55	2.20	1.95
280	10	3.20	3.00	2.85	2.50	2.15
315	12	3.60	3.40	3.20	2.80	2.45

* Implies full support requirement.

Bracket spacing for ABS class E pipe (15 bar)					
Pipe size	Bracket spacing in metres				
inch	20°C	30°C	40°C	50°C	60°C
⅜	0.80	0.75	0.65	0.60	0.50
½	0.90	0.80	0.75	0.65	0.55
¾	1.00	0.95	0.85	0.75	0.70
1	1.10	1.00	0.95	0.80	0.75
1¼	1.20	1.10	1.00	0.90	0.80
1½	1.25	1.20	1.10	0.95	0.85
2	1.40	1.30	1.20	1.00	0.90
2½	1.50	1.35	1.25	1.15	1.00
3	1.60	1.45	1.35	1.20	1.05
4	1.80	1.65	1.55	1.35	1.20
5	2.00	1.80	1.70	1.50	1.30
6	2.10	1.90	1.80	1.60	1.40
8	2.30	2.10	1.90	1.70	1.50

Bracket spacing for PE100 PN16/SRD11 (For SDR17 pipe multiply the support centres by a factor of 0.91.)					
Pipe size	Bracket spacing in metres				
mm	20°C	30°C	40°C	50°C	60°C
20	0.66	0.66	0.55	0.55	0.44
25	0.77	0.66	0.66	0.66	0.55
32	0.88	0.88	0.77	0.77	0.66
40	0.99	0.99	0.88	0.88	0.77
50	1.10	1.10	0.99	0.99	0.88
63	1.32	1.32	1.21	1.10	0.99
75	1.54	1.43	1.32	1.21	1.10
90	1.65	1.65	1.54	1.43	1.32
110	1.87	1.76	1.65	1.65	1.43
125	1.98	1.87	1.76	1.76	1.54
140	2.09	2.09	1.98	1.87	1.65
160	2.31	2.20	2.09	1.98	1.76
180	2.42	2.31	2.20	2.09	1.98
200	2.53	2.42	2.31	2.20	2.09
225	2.75	2.64	2.53	2.42	2.31
250	2.86	2.75	2.64	2.53	2.31
280	3.08	2.97	2.86	2.64	2.42
315	3.19	3.08	2.97	2.86	2.64

* Implies full support requirement.

Bracket spacing for Polypropylene metric 10 bar rated pipe					
Pipe size	Bracket spacing in metres				
mm	20°C	40°C	60°C	80°C	100°C
16	0.74	0.68	0.63	0.54	0.39
20	0.79	0.69	0.64	0.59	0.44
25	0.84	0.82	0.74	0.69	0.49
32	0.99	0.94	0.84	0.74	0.54
40	1.05	1.03	0.94	0.84	0.59
50	1.20	1.14	1.04	0.89	0.69
63	1.38	1.29	1.18	1.04	0.79
75	1.53	1.43	1.28	1.13	0.84
90	1.63	1.53	1.43	1.23	0.93
110	1.84	1.73	1.58	1.38	1.04

The Z dimension

The following steps should be undertaken in preparation for a pipeline installation: -

- Prepare a basic sketch of the pipeline system, including fittings.
- Enter the dimensions of the pipes and fittings and the centre to centre measurement of each section either by measuring on site or from the engineer's drawings.
- Calculate the cut length of each piece of pipe between fittings to enable correct overall assembled length of section as follows:

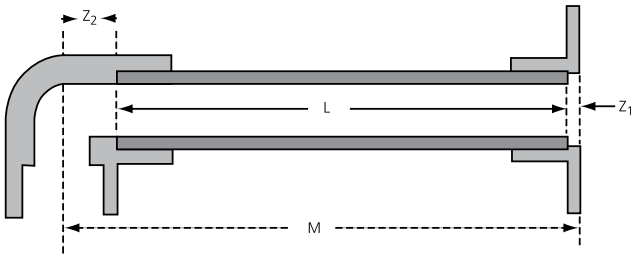
$L = M–Z_1–Z_2$

Where L Cut length of pipe

M Centre to centre length between fittings

$Z_1–Z_2$ Linear Dimensions of fittings

Z dimension



As an example, the installation notes for a PVCu pipe would appear as follows: -

M centre to centre = 1200mm

Less Z_1 flange = 4mm

Less Z_2 bend = 80mm

- 84mm

L cut length pipe = 1116mm

Jointing methods for Plastic pipe systems

This deals with the four key methods of joining plastic pipes and the selection of a jointing method is dependent on the pipe material and its characteristics.

Table below is a guide to the selection of the type of joint which can be used for the particular pipe material.

Thermoplastic jointing methods			
Method	PVCu	Thermoplastic material ABS	PP and PE
Solvent cement	✔	✔	✘
Solvent cement is formulated to chemically solvate the surfaces of pipes and fittings, so that when they are pushed together the softened surfaces intermix and cure into a hard, strong and leak-free joint. Materials welded this way must be alike, i.e. PVCu to PVCu and ABS to ABS. Not PVCu to ABS or vice versa.			
Mechanical	✔	✔	✔
This method uses threads and flanges to connect the different parts of pipeline systems.			
Fusion	✘	✘	✔
Fusion jointing involves heating the two components to be joined, so that the fusion/melt temperature on each surface is reached simultaneously. The two melted surfaces are then brought together at a pressure designed to produce a homogenous joint when cooled. The resulting joint will have an equivalent strength and pressure rating as the original pipe. Contact Polypipe for further details.			
Compression	✔	✔	✔
Compression jointing consists of compressing a rubber ring between the inner wall of the fitting and the outer wall of the pipe to be jointed. Compression joints can be used to connect different types of pipe, both plastic and metal. As long as the correct fitting is selected, taking into account the outside diameters of the different types of pipe work, then a satisfactory joint can be made. **Note:** Compression joints are designed primarily for use on water pipelines. Contact Polypipe for further details.			

✔ = Suitable ✘ = Not suitable

Methods of jointing

PVCu and ABS solvent jointing procedure

	Procedure	Equipment
Important information:	**• Always use Personal Protective Equipment–gloves and eye protection** **• Always carry out work in a well ventilated area** **• Always refer to Material Safety Data Sheets** **• Dispose of waste responsibly** **• Failure to follow the jointing procedure may invalidate any warranties given**	
1. Cut the pipe at right angles to its axis and to the required length. Deburr the cut end of the pipe with a sharp knife or scraper.		**Pipe cutter** Saw Scraper or knife
2. Chamfer the leading edge of the pipe at approximately 15° to 30°. This will prevent the solvent cement being wiped from both the pipe and fitting when mated together and will also help to build up a ring of solvent around the chamfer, thus ensuring a proper seal.		**Chamfering tool** Fine disc angle grinder, file or abrasive paper 80–100 grit

Pipe Size	Chamfer Size (mm)
⅜" (16mm)	2
½"–1½" (20–50mm)	3–4
2"–8" (63–225mm)	5–6

3. Mark the pipe back from the chamfered end to a length equal to the socket depth plus 5mm. This mark will act as a visual indicator to show that the pipe is fully inserted into the socket.		Marker pen
4. Roughen the pipe surface (up to the indicator mark) and the inside of the socket with abrasive cloth or paper. Do not roughen the pipe and fitting to the extent that the clearance between them is noticeably increased.		Abrasive paper/cloth 80–100 grit
5. Clean the inner surface of the socket and the surface of the pipe up to the mark using a lint free cloth or absorbent paper dampened with Effast solvent cleaner.		Lint free cloth or absorbent paper Effast solvent cleaner

PVCu and ABS solvent jointing procedure–continued		
Procedure		**Equipment**
Select the correct solvent cement, PVCu to PVCu, ABS to ABS. (failure to use the recommended solvent cement may invalidate any warranties given) Apply the cement straight from the tin and ensure all relevant surfaces are covered.	Read the instructions on the tin. Avoid using excessive amounts of solvent cement.	Effast PVCu cement Effast ABS cement Brush (half the diameter of the socket)

Joints are normally made in temperatures between 5–25°C and in dry conditions, damp or wet conditions can adversely effect the solvent jointing procedure. The maximum time before the cement is too dry for jointing is approximately 3 minutes. In hot weather this time is reduced. The joint must be made whilst the cement is still wet.
At temperatures below 5°C the curing time will be considerably increased.

	Pipe Size	**Holding Time** (minutes)
7. Push fittings/pipe together without twisting and ensure that they are aligned and fully engaged (the indicator mark should be in line with the edge of the socket) then hold the assembly for a short time as specified.	⅜"–2" (16mm–63mm)	½
	2½"–4" (75–119mm)	¾
	5"–8" (140–225mm)	1
	10"–12" (250–315mm)	2

When the joint is made, an O-ring of cement is formed between the pipe chamfer and the internal socket wall. This ring helps to ensure seal integrity. A bead of cement will show around the external junction of the pipe and fitting, this should be wiped off leaving the outer part of the joint clean. Do not disturb for at least 10–15 minutes to ensure that the weld integrity is maintained. After this period, the assembly can be carefully handled, prepared for further jointing or left for the recommended curing time which is:

Up to 8" (225mm) ambient temperature constantly above 5°C After 8 hours The joint will have cured enough to withstand the working pressure.
After 24 hours The pipe system can be fully pressure tested.

The number of operators:
For joints of up to 2½" (75mm) 1 person is required, from 3" (90mm) up to 6" (160mm) 2 persons are needed, for 8" (225mm) and above 3 people are required.
Pipe work should be ventilated during the joining and curing processes. Never seal a pipe system which has been newly jointed as the trapped vapours can cause damage. Positive ventilation with a small air blower is recommended to purge systems with multiple joints.

Recommended joints per litre of Effast cement			
Pipe size		**Thermoplastic material**	
inch	**mm**	**PVCu**	**ABS**
⅜–1	16–32	300	400
1¼–2	40–63	120	175
2½–3	75–90	50	70
4	110	30	45
5	140	20	30
6	160	15	25
8	200–225	8	15
10	250–280	3	4
12	315	3	4

Methods of jointing

Important points

- Heavy equipment should be supported independently from the pipeline. i.e. valves, strainers, etc.
- Pipe clips should be made to allow linear expansion of the pipeline and if lined the lining should be of a material compatible with the pipeline.
- Mastics, intumescent mastics, adhesive tapes and labels should not be used (as many degrade plastics), unless manufacturers provide documents of adhesive or mastic compatibility.
- Insulation must be considered very carefully, as a number of foam rubber insulation products and their adhesives may not be compatible with plastic pipes.
  Adhesives should only be used to bond the foam edges together and should never be used to bond the insulation to the pipeline. Refer to manufacturers for compatibility data. For example, compatible insulations are fibre wools (Rockwool), polystyrene, etc.
- Trace heating tapes: Don't use tapes covered with plasticized PVC as this can react with thermoplastic pipes. Tapes with sheaths made from woven wire, polyester or silicone rubber are acceptable.
- Oils: A number of synthetic oils are not suitable for use with plastic pipelines. Oils such as esters, organic phosphates and polyalkylene glycols should be avoided.
- Health and safety: Solvent cement and cleaning fluid give off vapours that are dangerous to health. During jointing the work place must be well ventilated.

Solvent jointing, "Do Nots"

- Make joints in rain or wet conditions.
- Use dirty brushes or cleaning rags.
- Use the same brushes with different solvent cements.
- Dilute or thin solvent cements with cleaner.
- Leave solvent cement tins open as the contents will evaporate and the cement performance will be reduced.
- Use near naked lights or smoke whilst jointing as solvents are highly flammable.
- Make joints in a confined space as solvents emit hazardous vapours.

Mechanical jointing procedure–threaded fittings–plastic to plastic

An extensive range of threaded fittings are available, mostly parallel threaded but some tapered. Thread compatibility is an essential aspect of jointing. For jointing such parts follow these steps: -

1. Select compatible thread i.e. Parallel to Parallel, never Parallel to taper or vice versa.
2. Use PTFE tape to seal the joint. If sealant pastes are used they must be compatible with the plastic components.
3. Hand tighten and if necessary tighten further to a maximum of 1/4 turn using a strap wrench.

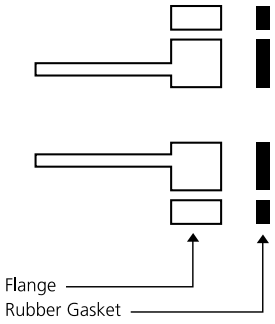
PVCu class 7 and ABS class T pipes, sizes ⅜"up to 2" are manufactured with a thick wall to enable threads to be cut.

Flanges–plastic to plastic/metal

Flanges are suitable for joining metals or rubbers to plastics. Jointing such parts follow these steps: -

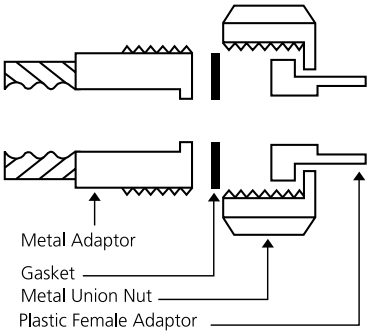
1. Ensure flanges are parallel, close to each other and allow a gap for the gasket.
2. Insert gasket, ensure that the bolt holes are aligned.
3. Use flat washers between bolt head, the nut and the flange.

Flange joint



Composite unions–metal to plastics union joint

Composite



NOTE: If metal thread is used in conjunction with a plastic thread then the temperature should not vary by more than 5°C.

DIN 8077/8078 PP-H (metric) pipe dimensions						
Diameter (mm)			Wall thickness (mm)			
Outside diameter	Mean outside diameter		6 bar		10 bar	
	Minimum	Maximum	Min	Max	Min	Max
16	16	16.3	–	–	2.0	2.4
20	20	20.3	1.8	2.2	2.5	3.0
25	25	25.3	1.8	2.2	2.7	3.2
32	32	32.3	2.0	2.4	3.0	3.5
40	40	40.4	2.3	2.8	3.7	4.3
50	50	50.5	2.9	3.4	4.6	5.3
63	63	63.6	3.6	4.2	5.8	6.6
75	75	75.7	4.3	5.0	6.9	7.8
90	90	90.9	5.1	5.9	8.2	9.3
110	110	111.0	6.3	7.2	10.0	11.2

EN1452 part 2 PVCu (metric) pipe dimensions			
Outside diameter (mm)	Average wall thickness (mm)		
	6 bar	10 bar	16 bar
16			
20			1.5
25			1.9
32		1.6	2.4
40		1.9	3.0
50	1.5	2.4	3.7
63	1.9	3.0	4.7
75	2.2	3.6	5.6
90	2.7	4.3	6.7
110	2.7	4.2	6.6
125	3.1	4.8	7.4
140	3.5	5.4	8.3
160	4.0	6.2	9.5
180	4.4	6.9	10.7
200	4.9	7.7	11.9
225	5.5	8.6	13.4
250	6.2	9.6	14.8
280	6.9	10.7	16.6
315	7.7	12.1	18.7

PE100 (metric) pipe dimensions		
Outside diameter (mm)	Average wall thickness (mm)	
	SDR17 (10 bar)	SDR11 (16 bar)
20	-	1.9
25	-	2.3
32	1.9	2.9
40	2.4	3.7
50	3	4.6
63	3.8	5.8
75	4.5	6.8
90	5.4	8.2
110	6.6	10
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2

Safety factor c = 2.5

Safety factor c = 2

Pipe and fittings dimensions

DIN 8061 PVCu (metric) pipe dimensions						DIN 8063 PVCu (metric) fitting dimensions		
Diameter (mm)			Average wall thickness (mm)			Diameter (mm)		
Outside diameter	Mean outside diameter		6 bar	10 bar	16 bar	Nominal size	Mean socket internal diameter at midpoint of socket depth	
	Minimum	Maximum					Minimum	Maximum
16	16	16.2	–	–	1.2	16	16.1	16.3
20	20	20.2	–	–	1.5	20	20.1	20.3
25	25	25.2	–	1.5	1.9	25	25.1	25.3
32	32	32.2	–	1.6	2.4	30	32.1	32.3
40	40	40.2	1.8	1.9	3.0	40	40.1	40.3
50	50	50.2	1.8	2.4	3.7	50	50.1	50.3
63	63	63.2	1.9	3.0	4.7	63	63.1	63.3
75	75	75.3	2.2	3.6	5.6	75	75.1	75.3
90	90	90.3	2.7	4.3	6.7	90	90.1	90.3
110	110	110.3	3.2	4.2	6.6	110	110.1	110.4
125	125	125.3	3.7	4.8	7.4	125	125.1	125.4
140	140	140.4	4.1	5.4	8.3	140	140.2	140.5
160	160	160.4	4.7	6.2	9.5	160	160.2	160.5
180	180	180.4	5.3	6.9	10.7	180	180.3	180.6
200	200	200.4	5.9	7.7	11.9	200	200.3	200.8
225	225	225.5	6.6	8.6	13.4	225	–	–
250	250	250.5	7.3	9.6	14.8	250	–	–
280	280	280.6	8.2	10.7	16.6	280	–	–
315	315	315.6	9.2	12.1	18.7	315	–	–

BS 3505 PVCu (imperial) pipe dimensions															BS 4346 part 1 PVCu (imperial) fitting dimensions	
Diameter					Wall thickness (mm)										Diameter (mm)	
Nominal size (inch)	Mean outside diameter (mm)		Individual outside diameter (mm)		Class C 9.0 bar			Class D 12.0 bar			Class E 15.0 bar			Class 7 12.0 bar	Mean socket internal diameter at midpoint of socket depth	
					Average	Individual		Average	Individual		Average	Individual		Average		
	Min	Max	Min	Max		Min	Max		Min	Max		Min	Max		Min	Max
⅜″	17.0	17.3	17.0	17.3	–	–	–	–	–	–	1.9	1.5	1.9	–	17.1	17.3
½″	21.2	21.5	21.2	21.5	–	–	–	–	–	–	2.1	1.7	2.1	4.0	21.3	21.5
¾″	26.6	26.9	26.6	26.9	–	–	–	–	–	–	2.5	1.9	2.5	4.2	26.7	26.9
1″	33.4	33.7	33.3	33.8	–	–	–	–	–	–	2.7	2.2	2.7	4.8	33.5	33.7
1¼″	42.1	42.4	42.0	42.5	–	–	–	2.7	2.2	2.7	3.2	2.7	3.2	5.2	42.2	42.4
1½″	48.1	48.4	48.0	48.5	–	–	–	3.0	2.5	3.0	3.7	3.1	3.7	5.5	48.2	48.4
2″	60.2	60.5	60.0	60.7	3.0	2.5	3.0	3.7	3.1	3.7	4.5	3.9	4.5	5.9	60.3	60.5
2½*	75.0	75.3	75.0	75.3	3.6	–	–	–	–	–	5.6	–	–	–	75.1	75.3
3″	88.7	89.1	88.4	89.4	4.1	3.5	4.1	5.3	4.6	5.3	6.5	5.7	6.6	–	88.8	89.1
4″	114.1	114.5	113.7	114.9	5.2	4.5	5.2	6.8	6.0	6.9	8.3	7.3	8.4	–	114.2	114.5
5*	140.0	140.4	139.4	141.0	6.3	5.5	6.4	8.3	7.3	8.4	10.1	9.0	10.4	–	140.1	140.4
6″	168.0	168.5	167.4	169.1	7.5	6.6	7.6	9.9	8.8	10.2	12.1	10.8	12.5	–	168.2	168.5
8″	218.8	219.4	218.0	220.2	8.8	7.8	9.0	11.6	10.3	11.9	14.1	12.6	14.5	–	219	219.4

NOTE: All PVCu ball valve imperial socket ends are manufactured in accordance with BS 4346 part 1 for mean socket internal diameter. The mean outside diameter of a pipe is arrived at either by taking the average of any two outside diameter measurements when measured at right angles to each other or by measuring with a circumference tape.

* Sizes 2½″ and 5″ are not British Standard sizes but the equivalent metric size. They have been included for continuity of size only.

BS 5391 ABS (imperial) pipe dimensions																BS 5392 part 1 ABS (imperial) fitting dimensions				
Nom size (inch)	Diameter				Wall thickness (mm)										Minimum socket depth (mm)	Mean socket internal diameter (mm)				
	Mean outside diameter (mm)		Individual outside diameter (mm)		Class B 6.0 bar		Class C 9.0 bar		Class D 12.0 bar		Class E 15.0 bar		Class T 12.0 bar			Root		Mouth	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max	Min	Max
⅜	17.0	17.3	17.0	17.3	–	–	–	–	–	–	1.6	1.8	3.4	3.6	14.5	16.9	17.3	17.1	17.3
½	21.2	21.5	21.2	21.5	–	–	–	–	–	–	1.9	2.1	3.5	3.7	16.5	21.1	21.4	21.3	21.5
¾	26.6	26.9	26.6	26.9	–	–	–	–	–	–	2.4	2.6	3.5	3.7	19.5	26.4	26.8	26.7	26.9
1	33.4	33.7	33.4	33.7	–	–	1.9	2.1	2.5	2.7	3.0	3.3	4.2	4.5	22.5	33.2	33.6	33.5	33.7
1¼	42.1	42.4	42.0	42.4	–	–	2.4	2.6	3.1	3.4	3.8	4.1	5.1	5.5	27.0	47.9	42.3	42.2	42.5
1½	48.1	48.4	48.0	48.5	–	–	2.7	3.0	3.6	3.9	4.4	4.7	5.8	6.2	30.0	47.9	48.3	48.2	48.6
2	60.2	60.5	60.0	60.7	–	–	3.4	3.7	4.5	4.9	5.4	5.8	7.0	7.4	36.0	60.0	60.4	60.3	60.7
2½	75.0	75.3	75.0	75.3	–	–	3.6	–	–	–	5.6	–	–	–	Refer to metric equivalent				
3	88.7	89.1	88.4	89.4	–	–	5.0	5.3	6.5	6.9	8.0	8.5	–	–	50.5	88.5	88.9	89.0	89.3
4	114.1	114.5	113.7	114.9	–	–	6.4	6.9	8.4	8.9	10.3	10.9	–	–	63.0	113.9	114.3	114.4	114.8
5	140.0	140.4	140.0	140.4	–	–	6.7	–	–	–	10.4	–	–	–	Refer to metric equivalent				
6	168.0	168.5	167.4	169.1	6.1	6.4	9.4	10.4	12.3	13.3	–	–	–	–	90.0	167.8	168.3	168.4	168.8
8	218.8	219.4	218.1	220.2	8.4	8.8	12.2	13.2	–	–	–	–	–	–	115.5	218.7	219.1	219.3	219.9

NOTE: All ABS ball valve imperial socket ends are manufactured in accordance with BS 5392 part 1 for mean socket internal diameter.
The mean outside diameter is arrived at either by taking the average of any two outside diameter measurements when measured at right angles to each other or by measuring with a circumference tape.

Guide to chemical resistance

Guide to chemical resistance

The use of thermoplastic pipe systems within the domestic and industrial markets is now widespread. Thermoplastics have not only replaced traditional materials such as steel, ductile iron and copper within the water industry, but have also replaced expensive lined metal and glass systems within the chemical industries. Because of this diversity of use, it is essential that the most suitable plastic material is matched to its proposed application. This section will provide a guide to compatible material selection. The information within this section has been collated from tests carried out by both national and international standards organisations (ISO) as well as tests performed by independent test houses. The tests were based on the use of pure chemicals. For mixed chemicals, we would advise that pilot tests should be undertaken in order to ascertain the resistance of the material under these circumstances.

Chemical resistance classifications

The chemical resistance section should only be looked on as a general guide. Changes to the composition, concentrations or working conditions under which chemicals are used, can alter the resistance of the material.

Terminology for chemical resistance tables	
Symbol/term	**Description**
+	Resistant
0	Conditionally resistant
–	Not resistant
"Blank"	Where section is blank there is no test data available
Technical grade	Technically pure
Saturated	Media has reached its maximum absorption in water at ambient temperature, which is the point where there can be no further absorption.
Aqueous	A solution below maximum absorption, expressed as a percentage (%) of saturation (concentration)
Suspension	Insoluble or partially soluble solid carried in an aqueous base normally prepared at ambient temperature
Commercial Proprietary Industrial	Self explanatory, grades of chemical named brands in general use

Pipe joints: solvent cement

ABS pipe joints, made with "Effast" ABS solvent cement, are classed as resistant as the material itself. PVCu pipe joints, made with "Effast" PVCu solvent cement, are normally classed as resistant as the material. However the following chemicals and their concentrations are the exception.

Media	Concentration
Hydrochloric acid, HCL	25% and above
Hydrofluoric acid, HF	All concentrations
Nitric acid, HNO_3	20% and above
Sulphuric acid, H_2SO_4	70% and above

Joints in contact with the above acids can only be classed as being conditionally resistant. To make joints classed as resistant, HCR36 solvent cement and cleaner or an equivalent should be used.

Pipe joints: fusion

Fusion joints are regarded as generally having the same chemical resistance as the material itself. However the jointing process can leave a certain amount of residual stress within the joint.

Seals and seat materials

The working life of seals and seat materials is often different from that of the pipe system and greatly dependent on the working conditions involved.
The following table outlines their general resistance.

Seal and seat material	
Material type	**Resistance**
EPDM–Ethylene Propylene Rubber	Satisfactory resistance to most aggressive chemicals, not suitable for oils or fat
FPM–Fluorine Rubber	The most resistant of the elastomers to solvents
NBR–Nitrile Rubber	Not resistant to oxidising agents, but resists petrol and oils
PTFE–Polytetrafluoroethylene	Resists all the chemicals shown in tables

	Material °C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Acetaldehyde	technically pure	–			–			+	0	0	0	–		+	0	–	0	–		
	40%, aqueous solution	0	–		–			+	+	0	+	+	–	+	+	+	+	0		
Acetic Acid	technically pure,	0	–		–			+	+	0	+	0		0			–			
	glacial 10% aqueous	+	+	0	+	0	–	+	+	+	+	+	+	+	+	0	0	–		
Acetic Acid Anhydride	technically pure	–			–			+	0		+			0			–			
Acetone	technically pure	–			–			+	+	+	+	+		+	+	+	–			
Acrylonitrile	technically pure	–			–			+	+	+	+			+	+	0	0	–		
Adipic Acid	saturated, aqueous	+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Alcoholic Spirits	app. 40% ethyl alcohol	+			–			+			+			+			+			
Allyl Alcohol	96%	0	–		–			+	+	+	+	+		0	0	0	0	–		
Aluminium Chloride	saturated	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+	+	+	
Aluminium Sulphate	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+		
Ammonia	gaseous, tech. pure	+	+	+	–			+	+	+	+	+		+			+			
Ammonium Acetate	aqueous, all				–			+	+	+	+	+	+	+	+	+	+	+		
Ammonium Hydrogen Fluoride	50%, aqueous	+	+	0	–			+	+	+	+	+		+			+			
Ammonium Compounds: See Sodium																				
Amyl Acetate	technically pure	–			–			+	+	+	0	–		0			–			
Amyl Alcohol	technically pure	+	+	0	–			+	+	+	+	+		+	+	+	0			
Aniline	technically pure	–			–			0			0			–			0	0		
Aniline Hydrochloride	aqueous, saturated	+	0		–			+	+	0	+	0		+	+	+	0	–		
Antimony Trichloride	90%, aqueous	+	+		–			+	+	+	+	+		+			+			
Aqua Regia		+	0		–			–			0	–		–			0			
Arsenic Acid	80%, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Barium Hydroxide	aqueous, saturated	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Barium Salts	aqueous, all	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+		
Beef Tallow Emulsion, Sulphonated	usual commercial	+						+			+			–			+			
Beer	usual commercial	+	+	+	+	+	+	+	+	+	+	+		+			+			
Benzaldehyde	aqueous, saturated	–			–			+	+	+	+			+	+	+	+	+		
Benzene	technically pure	–			–			0	0		0	–		–			+			
Benzine	free of lead and aromatic compounds	+	+	+	–			+	+	0	0	–		–			+	+		
Benzoic Acid	aqueous, all	+	+	0	+	+	0	+	+	+	+	+	+	–			+	+	0	
Benzyl Alcohol	technically pure	0			–			+	+	0	+	+		+			0			
Bleaching Lye	12.5% active chlorine aqueous	+	+	0	0			0	–		0	–		+			+			
Borax	aqueous, all	+	+	0	0			+	+	+	+	+	+	+	+	+	+	+		
Boric Acid	aqueous, all	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Brine, Sea Water		+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bromine, Liquid	technically pure	–			–			–			–			–			+			
Butadiene	technically pure	+			–			+			+	+		–			0			
Butane	technically pure	+			+			+			+			–			+			
Butanediol	aqueous, 10%	+	0		–			+	+	+	+	+		+	+	+	+	+		
Butanol	technically pure	+	+	0	–			+	+	+	+	0		+	+	+	+	0		
Butyl Acetate	technically pure	–			–			+			0			+	–		0	–		
Butyl Phenol, P–Tertiary	technically pure	0	–		–			0			+			–			0			
Butylene Glycol	technically pure	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	0		
Butylene Liquid	technically pure	+			–			–			–			0			+			
Butyric Acid	technically pure	+			–			+	+	0	+			0			0			
Calcium Bisulphate	cold saturated, aqueous	+												+			+	+	+	
Calcium Chloride	saturated, aqueous, all	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Calcium Hydroxide	aqueous, saturated	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Calcium Hypochlorite	cold saturated, aqueous	+	+		+	+	–	+	+	+	+	+		+	+	+	+	+		
Calcium Nitrate	50%, aqueous	+	+		+	+	+	+	+	+	+	+		+	+	+	+	+		
Carbon Dioxide (Carbonic Acid)	technically pure, moist	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Carbon Disulphide	technically pure	–			–			0			0			–			+			
Carbon Tetrachloride	technically pure	–			–			–			–			–			+	+		
Caustic Soda Solution	up to 40%, aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	0	–		
(Sodium Hydroxide)	up to 50%, aqueous	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	–			
Chloral Hydrate	technically pure	–			–			+	+	+	0	–		0			0			
Chloric Acid	10%, aqueous	+	+	0	–			+	+		–			+	+	+	–			
Chlorine	moist, 97% gaseous	0			–			–			–			0			+			
	anhydrous, tech.	0			–			0	0	–	–			0			+			

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Guide to chemical resistance

	Material °C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Chlorine	pure liquid, technically pure	–			–			–			–			–			0			
Chlorine Water	saturated	0	0		0	0		0	0		0			0			0			
Chloroacetic Acid, Mono	50%, aqueous	+	+		–			+	+	+	+	+		0			–			
Chloroenzene	technically pure	–			–			0			+			–			–			
Chloroethanol	technically pure	–			–			+	+	+	+	+		0			–			
Chloroform	technically pure	–			–			–			0			–			0			
Chlorosulphonic Acid	technically pure	0			–			–			–			–			–			
Chrome Alum (Chromium Potassium Sulphate)	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Chrome Acid	all, aqueous	+			–			0			0			0			+	0		
Cider		+			+	+		+			+			+			+			
Citric Acid	10% aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Copper Salts	all, aqueous	+	+	0	+	+	+	+	+	+	+	–		+	+	+	+	+		
Corn Oil	technically pure	0			0			+	+	0	+	0		0	–		+	+		
Cresol	cold saturated, aqueous	0			–			+	+		+			–			+			
Crotonic Aldehyde	technically pure	–			–			+			+			+			+			
Cyclohexane	technically pure	–			–			+	+	+	+			–			+			
Cyclohexanol	technically pure	+	+	+	–			+	+	+	+	0		–			+			
Cyclohexanone	technically pure	–			–			+	0	0	+	0		0			–			
Detergents (Washing Powders)	usual washing lathers	+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Dextrine	(Starch Gum) usual commercial	+	+	+	+	+	+	+	+	+	+			+	+	+	+	+		
Dibutyl Ether	technically pure	–			–			0 –			0	–		–			+	0		
Dibutyl Phthlate	technically pure	–			–			+	0	0	+	0		0			0			
Dibutyl Sebacate	technically pure	–			–			+			+			+			+			
Dichloroacetic Acid	technically pure	+	+	0	–			+	+	0	+	0		+	+	+	0	–		
Dichloroacetic Acid Methtl Esher	technically pure	–			–			+	+	+	+	+		+	+	0	–			
Dichlorobenzene	technically pure	–			–			0			0			–			+			
Dichloroethylene	technically pure	–			–			–			0			–			0			
Diesel Oil		+	+		0			+	0		0			–			+			
Diethylamine	technically pure	0			–						+			0						
Di-Isobutyl Ketone	technically pure	–			–			+		–	+	–		0			–			
Dimethyl Formamide	technically pure	–			–			+	+	0	+	+		0			+			
Dimethylamine	technically pure	0			–			+	0		+			0			–			
Ethyl Acetate	technically pure	–			–			+	0	0	+	0		0	0	0	–			
Ethyl Alcohol	technically pure, 96%	+	+	0	–			+	+	+	+	+		+	+	+	0	0		
Ethyl Alcohol + Acetic Acid	fermentation mixture	+	+	0	–			+	+	+	+			+	+	0	0	0		
Ethyl Benzene	technically pure	–			–						0	–		–			0			
Ethyl Chloride	technically pure	–			–			0			0			–			0			
Ethyl Ether	technically pure	–			–			0			+			–			–			
Ethylene Chloride	technically pure	–			–			0			0			0	0	–	+	0		
Ethylene Diamine	technically pure	0			–			+	+	+	+			+	+	+	0	–		
Ethylene Glycol	technically pure	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Ethylene Oxide	technically pure, liquid	–			–			–			0			0			–			
Fatty Acids >C6	technically pure	+	+	+	–			+	+	0	+	+		–			+			
Fatty Alcohol Sulphonates	aqueous	+	+	0	–			+	+	+	+	0		+	+	+	+	+		
Ferric Chloride	saturated	+	+	+	–			+	+	+	+	+	–	+	+	+	+	+	+	+
Ferric Nitrate	saturated	+	+	+	+	0 –		+	+	0	0	–		+	+	0	+	+	+	+
Ferrous Sulphate		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fluosilicic Acid	32%, aqueous	+	+	+	+	+	+	+	+	+	+			0	0	–	–			
Formaldehyde	40%, aqueous	+	+		+	+	+	+	+	+	+			+	+	+	+	+		
Formamide	technically pure	–			–			+	+	+	+	+		+			0			
Formic Acid	technically pure	+	0	–	–			+	+	+	+	–		+	+	+	–			
Fruit Juices		+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
Fuel Oil		+	0		0			0	–		0	–		–			+	+		
Furfuryl Alcohol	technically pure	–			–			+	+	+	+	0		0			–			
Gelatine	all, aqueous	+	+		+	+	+	+	+	+	+	+		+	+		+			
Glucose	all, aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Glycerine	technically pure	+	+	+	+	+	0	+	+	+	+	+	+	+	+	+	+	0		
Glycocoll	10%, aqueous	+	+		+			+	+		+			+	+		+			
Glycolic Acid	37%, aqueous	+			+	+		+	+	+	+			+			+			
Heptane	technically pure	+			+ –			+		0	+	0		–			+	+		

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	Material °C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Hexane	technically pure	+			+ –			+		0	+	0		–			+	+		
Hydrazine Hydrate	aqueous	+			–			+	+	+	+	+		+			+			
Hydrobromic Acid	50%, aqueous	+	+	+	+	+		+	+	+	+	+		+	+	0	+	+	–	
Hydrochloric Acid	up to 10%, aqueous	+	+	0	+	+	0 –	+	+	+	+	0		+	+	+	+	+		
	up to 36%, aqueous	+	+	0	–			+	+	+	+	–		+	0	–	+	–		
Hydrocyanic Acid	technically pure	+	+	0	+	+		+	+	+	+	+		+	0		+			
Hydrofluoric Acid	up to 10%, aqueous	+	0	0	+	+		+	+	0	+	+		–			+	0		
	40%, aqueous	+			–			+	+	0	+	+		–			+			
	70%, aqueous	+			–			+		0	+			–			+			
Hydrogen	technically pure	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Hydrogen Chloride	tech. pure, gaseous	+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Hydrogen Peroxide	3%, aqueous	+	+	0	+	+		+	+	+	+	+		+	0	–	+	–		
	30%, aqueous	+	+		–			+	+	+	+	0		0	–		+	0		
	90%, aqueous				–			+		–	–			0			0			
Hydrogen Sulphide	technically pure	+	+	+	+			+	+	0	+	+		+	0	–	+	0		
Iodine Solution	6.5% iodine in ethanol	–			–			+		0	+			+			+			
Iron Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+	+	
Iso-Octane	technically pure	+			–			+		0	+	0		–			+			
Isopropyl Alcohol	technically pure	+			–			+	+	+	+	+	+	+	+	+	+	+		
Isopropyl Ether	technically pure	–			–			0		–	0	–		–			–			
Lactic Acid	10%, aqueous	+	0	–	+	0 –		+	+	+	+	+	+	0	0	0	+	0		
Lanolin	technically pure	+	0		+	+	+	+	+	+	+	+		0	–		+	+		
Lead Acetate	aqueous, saturated	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+		
Linseed Oil	technically pure	+	+	0	+			+	+	+	+	+	+	0	–		+	+		
Lubricating Oils		+	+	+	0			+	+	0	0			–			+	+	–	
Magnesium Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+	+	+	+	+	+	+	+	
Maleic Acid	cold saturated, aqueous	+	+	0	+			+	+	+	+	+		0	–		+	+		
Mercury	pure	+	+	+	+			+	+	+	+	+		+	+	+	+	+		
Mercury Salts	cold, saturated, aqueous	+	+	0	+			+	+	+	+	+		+	+	+	+	+		
Methane (Natural Gas)	technically pure	+			+			+			+			–			+			
Methanol	all	+	+	0	–			+	+	+	+	+		+	+	+	0	0		
Methyl Acetate	technically pure	–			–			+			+	0		0			–			
Methyl Amine	32%, aqueous	0			–			+			+			+			+			
Methyl Bromide	technically pure	–			–			0			–			–			0			
Methyl Chloride	technically pure	–			–			0			–			0			–			
Methylene Chloride	technically pure	–			–			0			0			–			0			
Methyl Ethyl Ketone	technically pure	–			–			+	0	–	+	0		+	0		–			
Milk		+	+	+	+	+	+	+	+	+	+	+	+	+			+			
Molasses		+	+	0	+	+	0	+	+	+	+	+		+	+	+	+	+		
Monochloroacetic Acid Ethyl Ester	technically pure	0			–			+	+	+	+	+		+			0			
Monochloroacetic Acid Methyl Ester	technically pure	0			–			+	+	+	+	+		+			0			
Morpholin	technically pure	–			–			+	+	+	+	+		0			+			
Naphthalene	technically pure	–			–			+	0		+			–			+	+		
Nickel Salts	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Nitric Acid	5%, aqueous	+	+	+	+	0	–	+	+	+	+	0		+	+	0	+	0		
	up to 40%, aqueous	+	+	0	–			0	–		0	–		+	+	0	+	+		
	65%, aqueous	0	0	–	–			0	–	–	–			–			+	–		
Nitrobenzene	technically pure	–			–			+	+	0	+	+		–			0			
Nitroluene (O-, M-, P-)	technically pure	–			–			+	+	0	+	0		–			0	–		
Nitrous Gases	diluted, moist, anhydrous	+		0	0			+	+	+	+	–		+	+	0	+	+		
Oleic Acid	technically pure	+	+	+	+	0	–	+	+	0	+	0		–			+	–		
Olive Oil		+	+	+	+			+	+	0	+	+		–			+	+		
Oxalic Acid	cold saturated, aqueous	+	+	+	+	+		+	+	+	+	+		0	0	0	+	0		
Oxygen	technically pure	+	+	+	+	+	+	+	+	0	+	0		+	+	+	+	+	+	+
Ozone	cold saturated, aqueous	+	+		–			0	–		0	–		+	0	–	+	–		
Palmitic Acid	technically pure	+			–			0				–		0	–		+	–		
Palm Oil, Palm Nut Oil		+	–					+	+	0	+	0		+	0	–	+	+		
Paraffin Emulsions	usual comm., aqueous	+	+		–			+	+	0	+	0		–			+	+		
Paraffin Oil		+	+	0	+	+	+	+	+	+	+	0		–			+	+		
Perchloric Acid	10%, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		

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Guide to chemical resistance

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		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Perchloric Acid	70%, aqueous	0			–			+	0	–	0	–		+	+	+	+	+		
Perchloroethylene (Tetrachloroethylene)	technically pure	–			–			0			0			–			+	+		
Petroleum	technically pure	+			–			+	+	0	+	0		–			+	0		
Petroleum Ether	technically pure	+	+	+	–			+	0	0	+	0		–			+	0		
Petroleum Jelly	technically pure	0	–		–			0	–		+	0		–			+	+	+	+
Phenol	up to 90%, aqueous	0			–			+	+	0	+	+		–			+	–		
Phenylhydrazine	technically pure	–			–			0			0			0			+	0		
Phenylhydrazine Hydrochloride	aqueous	0			–			0			+	0		+	+	0	+	0		
Phosgene	gaseous, technically pure	+	0	0	–						0			+	+	+	+	0		
Phosphoric Acid	85%, aqueous	+	+	+	+	+	0	+	+	0	+	+	+	+	+	+	+	+	0	
Phosphorous Pentoxide	technically pure	+	+		+	+		+	+		+			+	+	+	+	+		
Photographic Developer	usual commercial	+	+	0	+	+	0	+	+	0	+			+	+		+			
Photographic Emulsion		+	+		+	+		+	+		+			+	+		+			
Photographic Fixer	usual commercial	+	+	0	+	+	0	+	+		+			+	+		+			
Phthalic Acid	saturated, aqueous	+	0	–	–			+	+	+	+	+		+	+	0	–			
Picric Acid	1%, aqueous	+			–			+			+			+	+	0	+	+		
Potash (Potassium Carbonate)	cold saturated, aqueous	+	+		+	+	+	+	+		+	+		+	+		+			
Potassium Permanganate	cold saturated, aqueous	+	+	0	–			+	+	0	+	+		+	+	+	+	+		
Potassium Compounds: See Sodium																				
Propane	technically pure, liquid	+			+			+			+			–			+			
Propanol, N- And Iso-	technically pure	+	0	0	–			+	+	+	+	+		+	+	+	+	+		
Propionic Acid 50%, Aqueous		+	+	0	–			+	+	+	+	+		+	+	+	+	0		
Propylene Glycol	technically pure	+	+	+	0			+	+	+	+	+		+	+	+	+	0		
Propylene Oxide	technically pure	0			–			+			+			+			–			
Pyridine	technically pure	–			–			+	0	0	0	0		+	0	–	0	–		
Silicone Oil		+	0	–	+			+	+	+	+	+	+	0	–		+	+		
Silver Salts	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Soap Solution	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Acetate	all, aqueous	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sodium Benzoate	cold saturated, aqueous	+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Sodium Bicarbonate	cold saturated, aqueous	+	+	+				+	+	+	+	+		+	+	+	+	+		
Sodium Bisulphate	10%, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+	+	
Sodium Bisulphite	all, aqueous	+	0	–	+	+	+	+	+	+	+	+		+	+	+	0	–		
Sodium Bromate	all, aqueous	+	0		+	+	+	+	0		+			+	+	+	+	+		
Sodium Bromide	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Carbonate (Soda)	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sodium Chlorate	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Chloride	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Sodium Chlorite	diluted, aqueous	0						+			+	0		+	+	+	+	+		
Sodium Chromate	10%, aqueous	+	+	0	+	+	+	+			+			+	+	+	+	+		
Sodium Disulphate	all, aqueous	+	+	0				+			+			+	+	+	+	+		
Sodium Dithionite (Hyposulphite)	up to 10%, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+		
Sodium Fluoride	cold saturated, aqueous	+	+		+	+	+	+			+			+	+	+	+	+		
Sodium Hydroxide See Caustic Soda																				
Sodium Hypochlorite	aqueous (12.5% active)	+	+	0	–			0	–		0	–		+			+			
Sodium Iodide	all, aqueous	+	+	0	+	+	+	+			+			+	+	+	+	+		
Sodium Nitrate	cold saturated, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Sodium Nitrite	cold saturated, aqueous	+			+	+	+	+			+			+	+	+	+	+		
Sodium Oxalate	cold saturated, aqueous	+	+	0				+			+			+			+			
Sodium Persulphate	cold saturated, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+	+	
Sodium Phosphate	cold saturated, aqueous	+	+	0	+	–		+	+	+	+	+	+	+	+	+	+	+		
Sodium Silicate	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Sulphate	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	0	+	+		
Sodium Sulphide	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	–			
Sodium Sulphite	cold saturated, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Sodium Thiosulphate	cold saturated, aqueous	+	+	0	+	–		+	+	+	+	+		+	+	+	+	+		
Spirits (Brandy)	usual commercial	+	+	+	–			+	+	+	+	+		+	+	+	+	+		
Stannous Chloride	cold saturated, aqueous	+	0	0	+	+		+	+	+	+	+		+	0	–	+	+		
Starch Solution	all, aqueous	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+		
Stearic Acid	technically pure	+	+	+	+	+		+		0	+	0		+	+	0	+	0		

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Material	°C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Succinic Acid	all, aqueous	+	+	+				+	+	+	+	+		+	+	+	+	+		
Sugar Syrup	usual commercial	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sulphur	technically pure	0	–		–			+	+	+	+	+		–			+	+		
Sulphur Dioxide	all, moist,	+	+	0	–			+	+	+	+	+		+	+	0	+	–		
	technically pure, liquid	–			–			–			–			0			0			
Sulphur Trioxide		–			–			–			–			–			+			
Sulphuric Acid	up to 30%, aqueous	+	+	0	+	+	0	+	+	+	+	+		+	+	+	+	+	–	
	up to 50%, aqueous	+	+	+	+	0	–	+	+	+	+	+		+	+	0	+	+		
	up to 80%, aqueous	+	+	+	–			+	+	0	+	0		+	0	–	+	0		
	up to 90%, aqueous	+	+		–			0			0			0	–		+			
	up to 96%, aqueous	+	+	0	–			–			–			–			+			
Sulphurous Acid	saturated, aqueous	+	+	0	–			+	+	+	+	+		+	0	–	+	0		
Tallow	technically pure	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+		
Tannic Acid	all, aqueous	+			+	+		+	+	+	+	+		+			+			
Tartaric Acid	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	0	–	+	+		
Tetrachloroethane	technically pure	–			–			0			0			–			0			
Tetraethyl Lead	technically pure	+			–			+			+			0			+			
Tetrahydrofurane	technically pure	–			–			0			–			–			–			
Thionyl Chloride	technically pure	–			–			–			–			–			–			
Toluene	technically pure	–			–			0	–		0	–		–			0	–		
Tributylphosphate	technically pure	–			–			+	+	+	+	+		+			–			
Trichloroethylene	technically pure	–			–			–			0			–			+			
Trichloroacetic Acid	50%, aqueous	+	0		–			+	+	+	+	+		0			–			
Trichloroethane (Methylchloroform)	technically pure	–			–			0			0			–			+			
1,2,2-Trifluoroethane (Freon 113)	technically pure	+	+											–			+			
Tricesyl Phosphate	technically pure	–			–			+	+	+	+	0		–			–			
Triethanolamine	technically pure	0			–			+	+	+	+			–			+			
Triethylamine	technically pure				+									–						
Trioctyl Phosphate	technically pure	–			–			0			+			–			–			
Turpentine Oil	technically pure	+	0		–			0	0	0	–			–			+	+		
Urea		+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Urine		+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Vegetable Oils And Fats		+	0		+	+		+	0		+	0		–			+	+		
Vinegar		+	+	+	+	+	+	+	+	+	+	+		+	0	–	0	–		
Vinyl Acetate		–			+	+	0				+	0		+			+			
Vinyl Chloride		–			–									0			+			
Waste Gases, Alkaline		+	+	+	–			+	+	+	+	+		+	+	+	+	+	–	
Waste Gases Containing:																				
- Carbon Oxides	all	+	+	+				+	+	+	+	+		+	+	+	+	+	+	
- Hydrochloric Acid	all	+	+	+				+	+	+	+	+		+	+	+	+	+	+	
- Hydrogen Fluoride	traces	+	+	+				+	+	+	+	+		+	+	0	+	+		
- Nitrous Gases	traces	+	+	+				+	+	+	+	0		+	+	+	+	+	0	
- Sulphur Dioxide	traces	+	+	+				+	+	+	+	+		+	+	+	+	+		
- Sulphur Trioxide	traces	+	+	+				+	+	+	+	0		+	+	+	+	+		
- Sulphuric Acid	all	+	+	+				+	+	+	+	0		+	+	+	+	+		
Water, Condensed		+	+	0	+	+	+	+	+	+	+	+		+	+	0	+	+		
Water, Distilled, De-Ionised		+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+
Water, Drinking		+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	
Wax Alcohol	technically pure	+	+	+	–			0	–		0	–		–			+	+		
Wetting Agents	up to 5%, aqueous	+	+	0	+			+			+	+		+			+			
Wines, Red And White	usual commercial	+			+	+	+	+	+	+	+	+		+			+			
Wine Vinegar	usual commercial	+	+	+	+	+		+	+	+	+	+		+	0		0	–		
Yeast	all, aqueous	+	+		+			+	+	+	+	+		+	+		+			
Xylene	technically pure	–			–			–			–			–			+	–		
Zinc Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		

= No Data – = Not Recommended 0 = Conditionally Resistant + = Resistant

The data in the tables is based on information from the raw material suppliers, gained using direct contact between the chemical and the unprocessed raw material. The resistance of any of the finished products against these media has not been verified. There is no given or intended legally binding assurance of material properties or of suitability for a specific purpose. Materials must be tested under actual service conditions to determine the suitability for a specific application.

Engineering data & flange tables

Volumetric rate of flow (liquid)

litre	litre per minute l/min	cubic metre per hour m3/h	cubic foot per hour ft3/h	cubic foot per minute ft3/m	uk gallon per minute uk gal/min	us gallon per minute us gal/min	us barrel/d
1	60	3.6001	127.136	2.1189	13.1986	15.8508	543.456
0.0167	1	0.0600	2.1189	0.3532	0.22	0.2642	9.0576
0.2778	16.6666	1	35.3147	0.5886	3.6662	4.4029	150.956
0.0079	0.4719	0.0283	1	0.1067	0.1038	0.1247	4.2746
0.4719	28.316	1.6990	60	1	6.2288	7.4805	256.475
0.0758	4.546	0.2728	9.6326	0.1605	1	1.201	41.1754
0.0631	3.7853	0.2271	8.0208	0.1337	0.8327	1	4.2857
0.0018	0.1104	0.0066	0.2339	0.0039	0.0243	0.0292	1

Pressure and liquid head

① bar	kilogram force per square centimetre ② kgf/cm2	pound force per square inch ③ lbf/in2	④ atm	foot of water ⑤ ft h2o	inch of water in h2o	metre of water m h2	centimetre of mercury cm hg	inch of mercury in hg	⑥ mm hg
1	1.0197	14.5038	0.9869	33.4553	401.463	10.1972	75.0062	29.530	29.530
0.9807	1	14.2233	0.9878	32.8084	393.701	10	73.556	28.959	28.959
0.0689	0.0703	1	0.0609	2.3067	27.68	0.7031	5.1715	2.036	2.036
1.0133	1.0332	14.6959	1	33.889	406.782	10.3323	76.0	29.9213	29.9213
0.0299	0.0305	0.4335	0.0295	1	12	0.3048	2.242	0.8827	0.8827
0.0025	0.0025	0.0361	0.0025	0.0833	1	0.0254	0.1868	0.0734	0.0734
0.0981	0.1000	1.422	0.0968	3.2808	39.3701	1	7.3556	2.896	2.896
0.0133	0.0136	0.1934	0.0132	0.4461	5.3524	0.136	1	0.3937	0.3937
0.0339	0.0345	0.4911	0.0334	1.133	13.5951	0.3453	2.54	1	1
0.0013	0.0014	0.0193	0.0013	0.446	0.5352	0.0136	0.1	0.0394	0.0394

①1 bar = 105N/m2 ② Technical (metric) atmosphere (at) ③ Often denoted non-technically as psi ④ International standard atmosphere ⑤ At density 1g/cm3 ⑥ Also known as torr

Dimesions of flanges (mm)

flange size			bs4504 pn6				bs4504 pn10				bs4504 pn16			
inch	n.b.mm	nominal	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts
½″	20	15	55	80	M10	4	65	95	M12	4	65	95	M12	4
¾″	25	20	65	90	M10	4	75	105	M12	4	75	105	M12	4
1″	32	25	75	100	M10	4	85	115	M12	4	85	115	M12	4
1¼″	40	32	90	120	M12	4	100	140	M16	4	100	140	M16	4
1½″	50	40	100	130	M12	4	110	150	M16	4	110	150	M16	4
2″	63	50	110	140	M12	4	125	165	M16	4	125	165	M16	4
2½″	75	65	130	160	M12	4	145	185	M16	4	145	185	M16	4
3″	90	80	150	190	M16	4	160	200	M16	8	160	200	M16	8
4″	110	100	170	210	M16	4	180	220	M16	8	180	220	M16	8
5″	140	125	200	240	M16	8	210	240	M16	8	210	240	M16	8
6″	160	150	225	265	M16	8	240	285	M20	8	240	285	M20	8
8″	225	200	280	320	M16	8	295	340	M20	8	295	340	M20	12
10″	280	250	335	375	M16	12	350	395	M20	12	355	405	M24	12
12″	315	300	395	440	M20	12	400	445	M20	12	410	460	M24	12
flange size			bs10 table d				bs10 table e				asa 150			
inch	n.b.mm	nominal	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts
½″	20	15	67	95	½″	4	67	95	½″	4	67	95	½″	4
¾″	25	20	73	102	½″	4	73	102	½″	4	73	102	½″	4
1″	32	25	83	114	½″	4	83	114	½″	4	83	114	½″	4
1¼″	40	32	87	121	½″	4	87	121	½″	4	87	121	½″	4
1½″	50	40	98	133	½″	4	98	133	½″	4	98	133	½″	4
2″	63	50	114	152	⅝″	4	114	152	⅝″	4	114	152	⅝″	4
2½″	75	65	127	165	⅝″	4	127	165	⅝″	4	127	165	⅝″	4
3″	90	80	146	184	⅝″	4	146	184	⅝″	4	146	184	⅝″	4
4″	110	100	178	216	⅝″	4	178	216	⅝″	4	178	216	⅝″	4
5″	140	125	210	254	⅝″	8	210	254	⅝″	8	210	254	⅝″	8
6″	160	150	235	279	⅝″	8	235	279	⅝″	8	235	279	⅝″	8
8″	225	200	292	337	⅝″	8	292	337	⅝″	8	292	337	⅝″	8
10″	280	250	356	406	¾″	8	356	406	¾″	8	356	406	¾″	8
12″	315	300	406	457	¾″	12	406	457	¾″	12	406	457	¾″	12

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