



CASE STUDY **TONKOLILI MINE**

Polypipe delivers sustainable drainage solution for Tonkolili Rail Yard

4,000m of 300mm Ridgidrain perforated twinwall pipe supplied for infrastructure work on one of the largest iron ore resources in the world.

Tonkolili mine represents one of the largest iron ore resources in the world contributing substantial economic benefits to Sierra Leone. As the largest employer in the country, the mine operator African Minerals is committed to the principles of sustainable development, respecting the environment and delivering safe and healthy workplaces, with at least 80 per cent of the workforce being drawn from local communities.

The Challenge

To support the iron ore project, African Minerals has developed a significant port and rail infrastructure which is fully integrated into the mining operations. Part of the railway, which provides the link between the mine and the port facility at Pepel, 200km away, was originally built in the 1930s; this 74km section has been completely replaced, and extended by a further 125km of new rail to complete the link.

On a project that is destined to have a multi-generational lifespan in excess of 60 years, sustainability is an important factor in the choice of materials used to underpin its infrastructure.



Ridgidrain Pipes



Tonkolili mine

The Solution

For the surface drainage of the rail marshalling yard at the Tonkolili iron ore mine in Sierra Leone, the mine operator, African Minerals Ltd, chose the Ridgidrain system from UK manufacturer Polypipe. The company supplied to the project over 4,000m of 300mm Ridgidrain perforated twinwall pipe, a product that combines both technology and sustainability.

Specifying HDPE (high-density polyethylene) as a sustainable solution for the surface drainage at the new marshalling yard, African Minerals selected Polypipe through a competitive tender process. The company cited a number of factors that determined its choice of the UK manufacturer, including excellent and effective communications, and the ability to work closely with both African Minerals and their shipping agent to ensure that all of the materials involved were manufactured to a precise specification and that tight shipping deadlines were met. Provision of full documentation was also a key factor.

The Polypipe Ridgidrain system is designed to satisfy both the strict demands of UK planning regulations and UK and European legislation. It is suitable for use in civil engineering and infrastructure projects, including highway, rail and airport infrastructure. The system features a proven structured wall construction with a reduced virgin plastic content. It was the first product in the UK to achieve the Highways Authority Product Approved Scheme (HAPAS) certification, and is BBA (British Board of Agrément) certified as suitable for surface water drainage in commercial and industrial applications.

The structured wall design of Ridgidrain gives high ring stiffness and strength and has a lower weight compared to clay or concrete products, which means reduced transport and installation costs and improved health and safety benefits for installers. HDPE provides excellent resistance to abrasion and chemical attack and withstands ground movement and differential settlement. The longer pipe lengths available reduce the number of joints required, significantly reducing the risk of leakage, while its extremely smooth bore resists blockage and makes the pipework system more easy to maintain. The product supplied for the Tonkolili project was fully perforated to allow effective sub-soil drainage.



Tonkolili mine



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Case Quotes

“ This project is extremely important to Sierra Leone and as the mine operator, African Minerals is committed to applying the highest standards to everything that we do. We are working to internationally recognised performance standards and so we place high demands on the materials we acquire for the mine infrastructure. The Polypipe product is backed up by full certification, so meets our specification in terms of documentation and traceability.

Gary Nels
Project Manager, African Minerals



For further information on the Ridgidrain twinwall drainage system and other water management solutions from Polypipe for the mining sector, please visit www.polypipe.com/mining or email: international@polypipe.com

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