

PIPELINE REPAIR

Gas pipelines at the TNB Power Station in Johor, Malaysia required repair and refurbishment as the polyethylene tape wrap system was failing. Penetration of the wrapping system entrapped moisture causing rapid spread of corrosion throughout the 1.5 km of pipe. Stagnant, permanently wet conditions such as those created within failed wrapping systems creates pitting corrosion which can lead to significant reductions in metal thickness and threaten pipeline integrity.



With average temperatures around 88°F/30°C, close proximity to the coast and annual rainfall over 80"/200cm, high humidity is a significant factor in pipeline corrosion at TNB.

Following a competitive tendering process, a combined system of Alocit and Enviropeel was chosen as providing the most effective solution to corrosion problems at the power station. Alocit 28.15 was chosen to provide the hard-wearing protection the pipelines needed, with Enviropeel providing active protection for bolted areas



Above: the tape-wrap system has become a threat to the pipeline instead of protecting it. Rust products streaming from within the coating have stained the concrete supports.

Left & below: removal of the wrapping reveals significant corrosion, including blistering paint and pitting caused by trapped water.



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such as flanges and valves.

First the failing wrap was removed, then surface preparation using a combination of blasting and power tools was undertaken. Two coats of Alocit 28.15 were carefully applied, with particular attention to coverage within pitted areas. Finally a cosmetic coat of a compatible PU was used.

Once the painting was completed, all the bolted flange joints were protected with Enviropeel as, even when blasted and painted, bolted systems are prone to failure. Enviropeel encapsulation provides a whole system, active protection that prevents the recurrence of rust.

Left: although still serviceable, if the flanges on this system were left for much longer, bolt integrity would be compromised

Right and below: Alocit 28.15 provides an extremely hard, long-lasting finish with Enviropeel providing the best possible protection for complex bolted areas.



PROJECT DATA

Project type:	Power station gas supply pipeline repair
Location:	Pasir Gudang, Johor, Malaysia
Description:	1.5 km gas pipeline 10" to 24" diameter pipe, flanges and valves
Area coated:	2950m ²
Coating system:	2 x 300 micron coats 28.15 1 x 50 micron PU topcoat Enviropeel encapsulation of bolted systems
Surface Prep:	Blasted SA2/2.5 and Power Tool ST2 50-100 micron profile

