SWEATING PIPES

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The world-famous Petronas Twin Towers and the surrounding city centre utilises liquefied natural gas for power generation and utilities. These gas lines are cooled by chilled water and the insulated pipe lines run underground beneath the KLCC at the Twin Towers. The diameters of these pipes range between 12″ and 48″.

Despite being a relatively new installation, the jointing flange areas of the pipe lines were suffering from high levels of corrosion under the insulation jacket, through failure of the original coating in the extremely wet conditions produced by condensation in highly humid conditions.

The high moisture levels which had caused the corrosion also made re-coating impossible using any standard coating. The decision to use Alocit was based on its proven ability to be applied on to wet and damp surfaces.

Above: 32″ flange after removal of insulation showing corrosion.

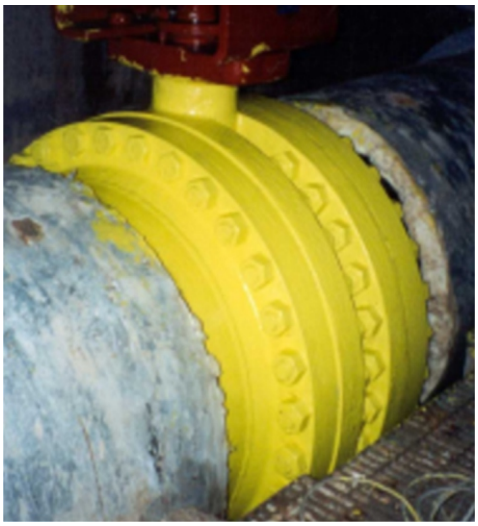
TECHNICAL DETAILS

Type of Line:	Chilled water line (sweating)	Surface preparation:	Water jetting/hand abrading
Sizes of Flanges:	12″, 24″, 32″ & 42″.	Application Method:	Hand brush
Sizes of Valves:	3″, 6″ & 10″.	Material used:	Alocit 28.15 Tropical Yellow & Tropical Gray
Substrate Condition:	Corroded, flaking & damp	Coverage Rate:	Ave. 5 ft^2/Kg @ 36 mils
Existing coating:	Red oxide primer & single pack aluminum	DFT 28.15 T Yellow:	16-20 mils
		DFT 28.15 T Grey:	16-20 mils
		Total average DFT:	36 mils

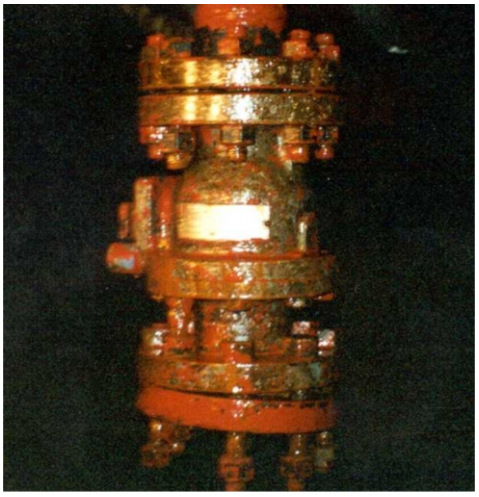
The pipelines were also difficult to access, as they are underground in a confined area, only accessible through manholes, so surface preparation and coating techniques were restricted to water jetting, hand abrading and brush application. After water jetting, flange surfaces were abraded using wet & dry sandpaper to create profile for adhesion.

Following abrading, all surfaces were washed down to remove contamination prior to the application of the first coat. An index coat of Alocit 28.15 Tropical Yellow was followed by a finishing coat of Alocit 28.15 Tropical Gray.

Despite the very high levels of surface water, as shown in the photo below, the material was able to achieve full coverage and long-term protection for the valves and flanges.



Above: Alocit 28.15 Tropical Yellow first 'index' coat.



Right: Dripping wet and at risk from severe corrosion, these three inch flanges were also coated during the project.

Below: This close up of a finished flange with its second coat of 28.15 Tropical Gray, shows just how much condensation was on every surface. Coating on such wet surfaces proves beyond doubt Alocit's outstanding surface tolerance.

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