

BPCL refinery endorses Hempaprime CUI 275 for superior corrosion protection

Hempel A/S, successfully conducted trials of Hempaprime CUI 275 at Bharat Petroleum Corporation Limited, Mumbai Refinery (BPCL, MR), one of India's largest refineries, with an annual refining capacity of 14 Million Metric Tons. Hempaprime CUI 275 was approved for usage in both new construction and maintenance for insulated areas up to 204°C, and atmospheric conditions up to 275 °C.

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Hempaprime CUI 275- a superior anti-corrosion solution

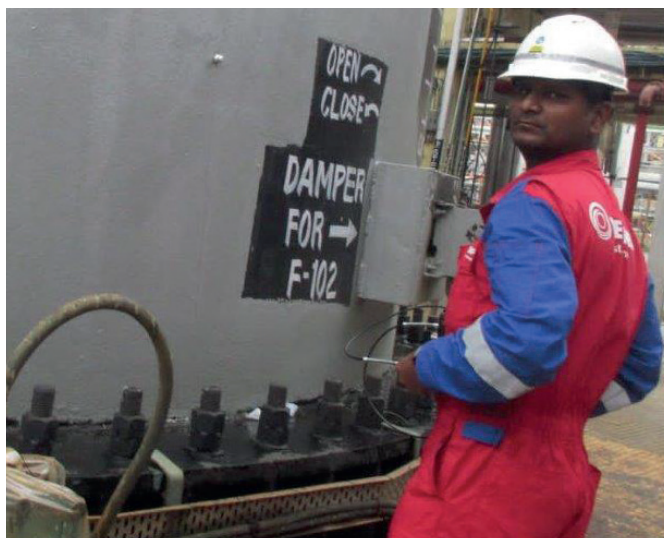
Customer name	BPCL
Country	India
Project	Hempaprime CUI 275 Trial at Mumbai Refinery
Year	2023
Asset reference	Boiler Plant- Vessel, Pipelines, DG Set Stack
Project size	Trial area
CUI system	Hempaprime CUI 275
Total DFT	2 coats @ 150 µm = 300 µm

The challenge

The petrochemical industry faces major disruptions, lost production, expensive repairs, and potential safety and environmental hazards due to CUI, with its effects running into millions of dollars. The BPCL refinery has extensive both insulated and atmospheric assets. Due to facility operational requirements, often times the best surface preparation and being able to take the equipment out of service were not always an option for insulated assets. The facility needed a product which could be applied and perform over limited surface preparation, and applied to hot surfaces up to 204 °C, if needed.

The trial

Hempaprime CUI 275, was applied to assets at the BPCL refinery under the minimal surface preparation of SSPC-SP-2 / ISO St2, and then re-insulated. These assets included a vessel, two inlet pipelines, and a DG set stack. The Hempaprime CUI 275 was designed to provide long-lasting barrier protection in corrosive environments, particularly those with high temperatures and wet conditions beneath thermal insulation. It can endure operating temperatures from -196° C to 204° C, making it suitable for assets prone to CUI and thermal cycling. With its fast-drying and alkylamine-cured epoxy formula, Hempaprime CUI 275 offers superior crack resistance and higher Dry Film Thicknesses (DFTs) compared to traditional epoxy phenolic coatings. It is suitable for new construction and maintenance/repair projects involving carbon and stainless steels, as well as insulated and uninsulated service areas found at BPCL. Hempaprime CUI 275 meets international standards such as ISO 19277:2018 for categories CUI-1, CUI-2, CUI-3, cryo equivalents insulated surface, and ISO 12944 for C5 H and CX for atmosphere surface. The surface preparation and paint application, including an adhesion test of the dried film, were performed by the Hempel Services team with support from BPCL. The assets were coated with two coats of Hempaprime CUI 275, each at 150 microns, using a brush and roller.



	Product	DFT
1st & 2nd Coat	2 X Hempaprime CUI 275	300µm
Application	Application was carried out by brush and roller	

The result

Trials conducted for Hempaprime CUI 275 on BPCL's assets were successful, meeting the desired performance parameters. The cross cut and pull off adhesion test yielded satisfactory results, passing the desired threshold in line with ISO 4624 and ASTM D 3359 respectively. BPCL endorsed the solution, confirming that Hempaprime CUI 275 can be extended for the painting of surfaces associated with CUI, and thermal cyclic temperatures. Hempaprime CUI 275 is therefore recommended for use in areas under insulation up to 205 °C and for uninsulated assets up to 275 °C.