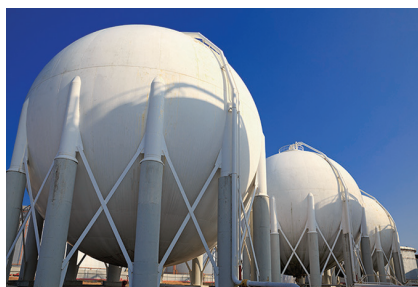


Storage Vessel Protection

More than 15 years ago, a large oil and gas refinery on the U.S. Gulf Coast installed 3M™ Interam™ Endothermic Mat (3M E-mat) to protect structural steel. The material was applied to protect the vessel skirts and 2-story tall steel legs that support many large spherical tanks containing flammable petroleum distillates in the refinery.

Two layers of 3M E-mat were wrapped around the approximately 24-inch wide legs and held in place with stainless steel banding. Although not required, a stainless steel jacket was then applied on top of the 3M E-mat to protect the material from rain, salt in the humid air, dust and ultraviolet light in sunlight.

An engineer at the refinery recently contacted 3M and requested assistance in identifying the 3M material. At the time, the plant was conducting a periodic inspection of the structural steel in various areas of the refinery to determine if corrosion beneath the 3M E-mat – also known as corrosion under insulation (CUI) – was occurring.

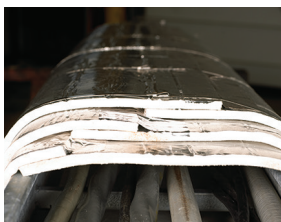


NON DESTRUCTIVE INSPECTION AND TESTING

“It only took a moment to identify the 3M Interam Endothermic Mat. The 3M product was well protected by the stainless steel jacket and looked like it was new. There was no deterioration at all,” said Matthew Aguirre, Sales Representative, 3M Building & Commercial Services / Fire Protection Products. “The structural steel also looked great and showed no sign of rust or corrosion.”

The non-destructive inspection and testing for corrosion and compliance was performed quickly, and the 3M E-mat that had been removed without being damaged was simply reinstalled. A few damaged pieces that occurred during inspection needed to be replaced.

“Refinery officials were very pleased with the inspection results and they were surprised by the longevity of 3M E-mat,” said Aguirre. “The material doesn’t dry out so maintenance is effortless. It also allows easy inspection. Just cut a piece to inspect the structural steel, then foil tape it back into place and add the stainless steel band. It’s that easy.”



CORROSION UNDER INSULATION

3M E-mat won't encourage corrosion. 3M E-mat can be installed with or without a stainless steel jacket which helps preserve 3M E-mat in extremely harsh conditions. The material satisfies UL 1709 environmental test standards both with and without the stainless steel jacketing. The refinery owner realized significant savings by not having to replace any structural steel on the numerous tanks due to corrosion.

"There's no need to remove and recoat steel as with coatings. And with 3M E-mat, there's no waiting for the product to dry between coats," said Aguirre. "It's fast and easy to apply, and it provides highly effective fire protection. Using 3M E-mat also removes the possibility of human error in properly mixing, preparing and applying cementitious fireproofing material."

Passes Hydrocarbon and Jet-Fire Tests

3M E-mat meets the requirements of the UL 1709 Hydrocarbon Pool Fire Test, ISO 22899 Jet-Fire test, and NFPA 58 Appendix H (NFPA 290), and ASTM E119 Fire Tests of Building Construction and Materials.

3M™ Interam™ Endothermic Mat

Easy-to-install 3M E-mat provides full-envelope fire protection for a broad range of critical components including structural steel, electrical raceways and vessel skirts. The flexibility and space saving design of 3M E-mat meets installation requirements in nearly all areas of refineries.

This flexible mat provides a uniform covering that, when exposed to high temperatures, releases chemically bound water to cool the outer surfaces of the wrap material and significantly retard heat transfer. 3M's advanced fire protection technology offers outstanding performance in many fire scenarios including large hydrocarbon pool fires in accordance with UL 1709 (ASTM E 1529).

Visit www.3M.com/firestop for technical information, listed systems, training information and more, or call 1.800.328.1687.



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