

Advances in insulative coatings address multiple plant issues

Carboline

Thermal insulation coatings (TICs) have been used to protect workers from hot surfaces for a number of years. These acrylic-based, spray-on coatings provide thermal barriers, prevent condensation on cold surfaces, and protect storage tanks and vessels from solar heat buildup. TICs can often replace classical insulation materials for complex geometries or on large flat areas where classical insulation is cost prohibitive or problematic. Keeping insulation dry and maintenance free has been an industry challenge. Wet insulation is ineffective and can lead to serious corrosion under insulation (CUI).

While the acrylic-based TICs have been an attractive alternative to classical insulation, they are not without their limitations. The films tend to be soft and easily damaged and they will only tolerate occasional light foot traffic. Their tensile strength is weak and they have limited chemical resistance. Most have application restrictions; film build, recoat times and numerous coats are often required for performance.

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Recent advances in technology now offer water-based epoxy formulations with far superior physical properties and chemical resistance — both features more desirable for industrial and/or abusive applications. With superior tensile strength and adhesion properties, epoxies offer more durability and longer service lives. The epoxy features a “chemical cure” rather than simply a water evaporation with acrylics. This results in a faster recoat time and more thickness per coat. A typical acrylic application of 4 millimeters (mm) would take eight coats over a four-day period. With the epoxy, it would only be four coats over two days. In addition to the big leap in physical properties, the epoxy has far superior resistance to acid or caustic fumes or spills.

Versatile coatings

TICs are uniquely formulated to protect workers from hot surfaces up to 350 F. Since they bond directly to the steel surface, water penetration is greatly minimized, which reduces the potential for CUI. Epoxy technology provides a superior barrier against permeation.

TICs have similar inch-per-inch insulation values as classical insulation but are not practical for projects that need inches of thickness. They can, however, provide up to 60-percent energy efficiency when applied at only 4-6 mm. They are outstanding protection against heat caused by solar radiation for

pressure vessels, hydrocarbon storage tanks, liquefied petroleum tanks, etc. Owners can reduce their solvent (carbon) emissions on storage tanks by keeping skin temperatures cooler. Because TICs are applied like paint, they are ideal for complex geometries where classical materials are difficult to install.

TICs are versatile materials. They protect personnel from hot surfaces, provide thermal insulation, reduce corrosion and eliminate sweating surfaces. A TIC based on epoxy technology is an innovative, cost-saving, durable, high performance material that helps reduce maintenance costs, protect

workers and improve operating efficiency for storage tanks/vessels.

For more information on insulative coatings (Carbotherm® 3300 and Carbotherm® 551) from Carboline, visit www.carboline.com or call (314) 644-1000. ●



Fewer coats, more durability

Carbotherm 551 (waterborne epoxy insulative coating)

- Inhibits heat transfer
- Excellent insulation properties
- Protects workers from burns
- High film build, faster recoat
- More durable than acrylics
- Eliminates condensation



For more information on how we can solve your problem call 1.800.848.4645 or visit www.carboline.com



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