SHERWIN-WILLIAMS.

HEAT-FLEX® ACE

ADVANCED CUI EPOXY (ACE)

Heat-Flex ACE is a next-generation ultra-high solids advanced novolac epoxy for corrosion under insulation (CUI). Developed with a functional chemical enhancement, surpassing performance capabilities of traditional solvent-based epoxy phenolic and novolac coatings.

This advanced CUI epoxy technology is unique, and different from other epoxy chemistries, as it offers unrivalled performance and application properties through the robustness of the resin system rather than through pigmentation.

Heat-Flex ACE provides external protection of process pipes, valves and vessels, operating between temperatures from -196°C (-321°F) to 232°C (450°F), and is suitable for use in new construction and maintenance projects of both carbon and stainless steel substrates, in insulated and uninsulated service.

BENEFITS

ACE resin technology delivers unrivalled properties that meet the expectations of both the owner and the applicator, providing a more dependable and longer lasting organic coating solution to mitigate the risk of CUI.

Unparrelled performance — more dependable — longer lasting

- Best in class — CUI temperature resistance
- Excellent corrosion creep resistance
- Outstanding resistance to chemicals and variable pH levels experienced in CUI service
- Superior resistance to erosion, cracking and mechanical damage

Highly versatile — highest throughput in shop and field

- High build capability, one- or two-coat systems without cracking
- Airless, plural-spray, conventional spray, brush and roller application
- Wide dry film thickness (DFT) range
- Specification simplification

Environmentally friendly — reducing carbon footprint

- Most versatile 100 percent solids CUI product on the market
- Reducing solvent abatement issues or processes in shop
- Safer in shop application due to being solvent free
- Lowest VOC (<100 g/l)

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UNRIVALLED CUI PERFORMANCE

Can withstand higher elevated temperatures, protecting from corrosion during service and resisting the variable chemical environment found under insulation.

AMPP SIMULATION TEST PROGRAMME

Primary prequalification test for TM21442 - Standard Test Method for Evaluating Protective Coatings for Use Under Insulation, which can be used as input to future risk assessments to predict service life and inspection intervals for CUI systems.

Heat-Flex outperforms all coatings tested normally used in CUI service to 205°C (401°F).

ELECTRICAL IMPEDANCE SPECTROSCOPY (EIS)

A tool for evaluating long-term barrier protection systems to detect early signs of deterioration.
EIS shows that organic coatings used in CUI service environments exhibit diminished protective properties as time and temperature increase, showing degradation as temperatures reach and exceed 205°C (401°F).

Heat-Flex ACE does not show degradation, maintaining protective properties at temperatures well above 205°C (401°F).

VERTICAL (HOUSTON) PIPE TEST IN ACCORDANCE WITH ISO 19277:2018

Excellent results conforming to category CUI3 – exceeding 205°C (401°F). Sherwin-Williams conducted numerous third-party durability testing, including ISO 19277 “Houston CUI Simulation Testing.”

DURABILITY FROM SHOP TO FIELD

Heat-Flex ACE features enhanced durability, providing protection against corrosion and mechanical damage in highly corrosive atmospheric environments prior to being put into service, minimizing the damage caused by the transportation of the coated steelwork from the shop to the site.

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IMPROVED CORROSION RESISTANCE

Performance after accelerated testing showed that Heat-Flex ACE outperforms organic coatings exhibiting exceptional adhesion and an excellent rating for rust and blistering.

Heat-Flex ACE has been tested against environments up to ISO 12944-9 CX, direct-to-metal with no pre-heating, and passes these requirements without a topcoat. Excellent corrosion creep result of <4.5 mm without a topcoat, which is exceptional for 100 percent solids products.

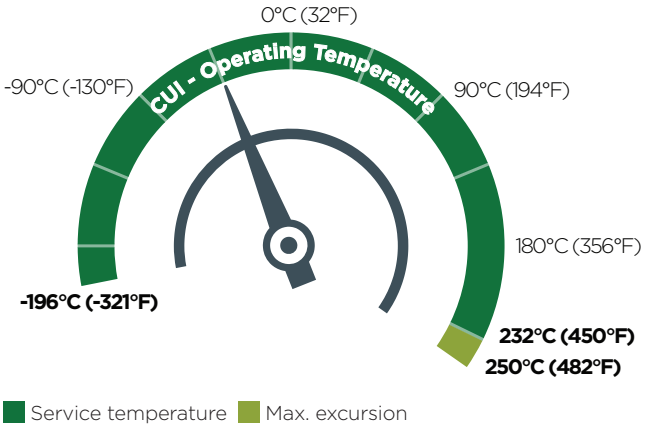
EROSION RESISTANCE, ACCORDING TO BS EN 927-6:2016

Coatings were subjected to cyclic UV and water spray to simulate erosion in tropical environments. DFT was monitored over a period of 20 cycles.

Performance after accelerated testing showed Heat-Flex ACE outperforms traditional epoxy phenolics; erosion was only 30 µm (1.2 mils) after 20 erosion cycles

Heat-Flex ACE will not significantly erode before being put into service and can withstand uninsulated service without a topcoat.

SUITABLE OPERATING TEMPERATURES



Service temperature Max. excursion

Use outside of given temperatures is not recommended.

TYPICAL SPECIFICATION

Insulated and Uninsulated CS and SS to 232°C (450°F)

One-coat system: Heat-Flex® ACE 1 x 300–500µm (12.0-20.0 mils) DFT

Two-coat system: Heat-Flex® ACE 2 x 200–250µm (8-10 mils) DFT

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams Protective & Marine delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe. Our broad portfolio of high-performance coatings and systems that excel at combating corrosion helps customers achieve smarter, time-tested asset protection. We serve a wide array of industries across our rapidly growing international distribution footprint, including energy, water and wastewater, bridge and highway, steel fabrication, flooring, manufacturing & processing, rail and power, and marine.

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