

PPG HI-TEMP 1027™ HD

Prevents Corrosion Under Insulation (CUI) at extreme temperatures from -320°F up to 1200°F.

Highly durable coating offering excellent corrosion and weathering resistance, less damage during transportation and handling in a single and fast-to-cure coat



PPG HI-TEMP 1027™ HD

Effectively prevents Corrosion Under Insulation (CUI) and reduces the risk of unexpected shutdowns



Corrosion Under Insulation (CUI)

Corrosion Under Insulation has been challenging industries ever since pipelines and other assets were first insulated. These industries include oil and gas, chemical processing, pulp and paper, steel mill, power generation, as well as cryogenic services such as an LNG (Liquified Natural Gas) plant.

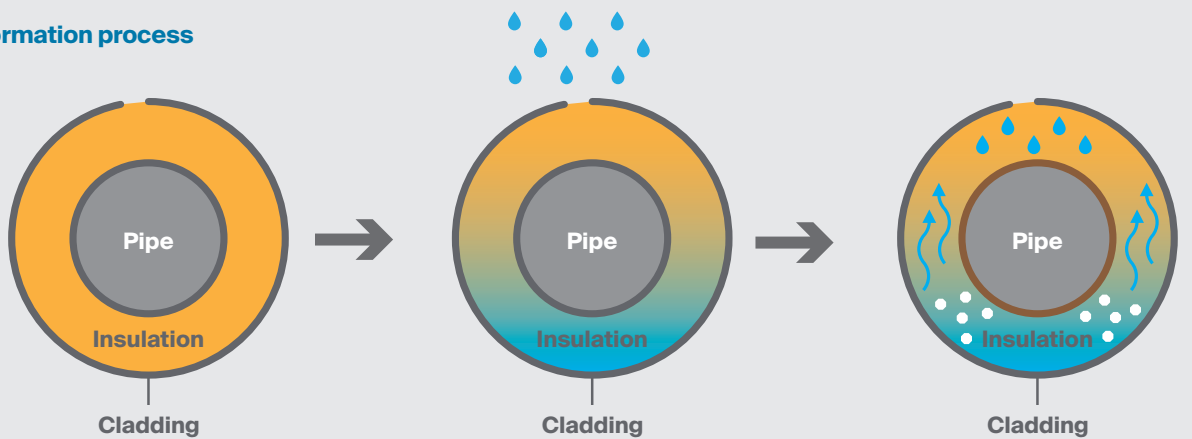
Often the major cause of many of the industries' most costly problems, leakage or pipe failures caused by CUI can have a significant impact on health, safety and the environment. It can also force unexpected shutdowns, resulting in lost production.

Temperature, humidity and chemical extremes under insulation material make protecting such valuable assets very difficult. To reduce the risk of CUI, asset owners require an effective coating solution to prevent damage from these conditions.



Corrosion Under Insulation (CUI)

CUI formation process



- Gaps in the cladding caused by:
- Damage
 - Poor sealing
 - Improper fit
 - Cladding disintegration

Precipitation penetrates throughout the insulation.

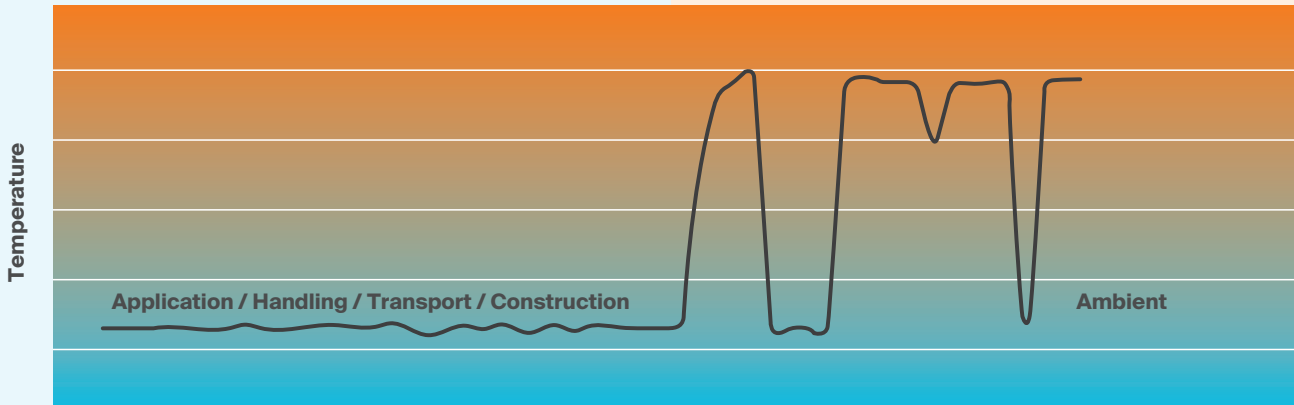
The collected fluids boil and condense, concentrating corrosive electrolytes.

PPG HI-TEMP 1027 HD

Effective corrosion resistance in ambient and extreme cyclic temperature ranges

Construction

Operation



While the use of modular construction is becoming increasingly popular, it often means modular assets are exposed to an ambient temperature, corrosive environment for longer and are at risk of transport and handling damage.

Asset owners, designers and fabricators require parts to be pre-coated with a CUI coating to meet new construction (ambient) as well as operating conditions (extreme temperatures). The CUI coating solution also needs to provide cracking, delamination and general wear resistance to minimize the risk of transportation damage.

As depicted on the opposite page, the outer cladding can be damaged or assembled incorrectly, exposing the insulation system. Once water gets inside, it often becomes trapped and when heated, boils and turns to steam. The steam rises, coming into contact with the inside of the cladding, then condenses and drops back down into the insulation. Some steam leaves the assembly but, in most cases, once the insulation becomes wet, it stays wet - especially below 302°F.

When the wet insulation cools the substrate, it produces acids and chlorides. These chemicals combined with the high temperature create an aggressive corrosive reaction.

Coatings that are used for high temperature service must survive the maximum temperature, thermal shock, thermal cycling and boiling water that may occur in service.

PPG HI-TEMP 1027™ HD

PPG HI-TEMP 1027 HD is our next generation ambient cure, high temperature CUI coating. Excellent hardness and corrosion resistance at ambient temperatures makes it ideal for new construction projects

Single coat application, improve project throughput

PPG HI-TEMP 1027 HD is a high-build product. This means it provides 250-300µm (10-12 mils) dry film thickness in one coat vs. two coats of alternative coatings, reducing application time and increasing production efficiency.

With excellent hardness development (2-3x harder than alternative solutions), it will improve your project throughput, reduce handling damage and be ready for transport in a day.*



Applicator friendly

PPG HI-TEMP 1027 HD provides a long pot life of 6 hours. The convenient 2:1 mix ratio makes for easy, error-free mixing. The product can be applied with standard spraying equipment.

* Drying times are dependent on air and steel temperature, applied film thickness, ventilation and other environmental conditions, see product datasheet for details.

Durable CUI coating providing wear and scratch resistance during handling, erecting and long-distance shipping

PPG HI-TEMP 1027 HD has been specially formulated to provide exceptional resistance to the wear that can occur when new construction parts are being handled, erected, and transported over long distances, inland and offshore, from the point of manufacture to the final project destination.

PPG HI-TEMP 1027 HD helps prevent damage and the need for touch-up work in the field, saving time and money.



An effective CUI barrier coating for new construction in ambient temperature conditions

During the new construction process, many parts such as piping and vessels are pre-coated. This leads to exposure to corrosive environments in ambient temperatures during long-distance transportation.

PPG HI-TEMP 1027 HD provides excellent corrosion resistance in ambient temperatures throughout long construction windows.



PPG HI-TEMP 1027™ HD

Effective protection against CUI in extreme temperatures during operational phase



Excellent protection in extreme temperatures

Thermal shock can cause cracking, fracturing and delamination. This allows water to come in contact with the insulated steel and lead to CUI. PPG HI-TEMP 1027 HD is able to withstand severe cyclic temperatures from -320°F (-196°C) to 1000°F (540°C). It also resists dry exposure with intermittent temperature peaks of 1200°F (650°C). It is able to withstand severe cyclic conditions in the cryogenic temperature range through to an elevated temperature, with no visible effect on the coating.

Resistance to boiling water

The PPG HI-TEMP 1027 HD coating is resistant to intermittent immersion in boiling water accumulated within the cladding, reducing the risk of CUI.

Maximum temperature exposure and thermal shock

- Withstands cyclic testing with heating up to 1200°F (650°C) and quenching in cold water.

Resistant to cryogenic exposure

- Tested for cryogenic exposure by multiple cycles of immersion in liquid nitrogen (-321°F/-196°C) and quenching into boiling water (212°F/100°C)

PPG HI-TEMP 1027 HD ambient cure benefits

- Delivers long-lasting CUI protection for carbon steel and stainless steel
- Reduces the risk of unexpected shutdown due to CUI problems
- Designed to resist extreme cyclic temperatures from -320°F (-196°C) to 1000°F (540°C)
- Resistant to dry operating windows up to 1200°F (650°C)
- Resistant to thermal shock, cycling and intermittent immersion and boiling water
- Delivers improved corrosion and weathering resistance at ambient and high temperatures
- Excellent corrosion resistance during long construction windows
- Exceptional resistance to wear during modular construction process
- Reduces the requirement for touch-up work in the field
- Single coat application that is easy to apply and fast to dry





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