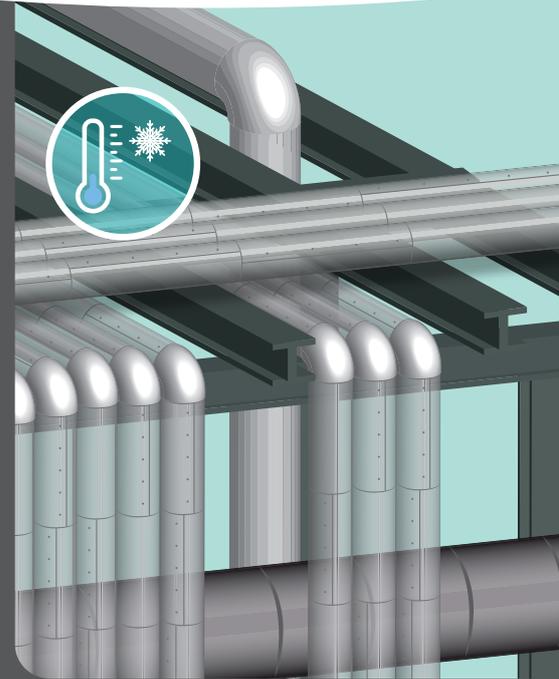


Interbond® 2340UPC

- Excellent DFT tolerance to over-application reduces rework costs
- Short overcoating intervals maximize productivity during the application process
- Low temperature cure, down to -5°C (23°F), reduces heating costs in the winter months
- Reduced coating system complexity allows applicators to increase productivity
- Easier stock management, reducing wasted stock



Application of next generation CUI prevention based on Alkylated Amine technology

Interbond 2340UPC can deliver **Cost reductions** up to

10%

Few people understand the meaning of the word “complexity” better than owners, engineers and specifiers of major industrial facilities such as found in the oil and gas or energy sectors. In such intricate environments, efficiency is key but extremely elusive, and our customer was looking for ways to reduce coating costs, coats and complexity. On previous projects, the challenge of coating specification complexity had caused:

- **Reduced productivity at the application stage**
- **Increased chance of errors requiring rework, adding application cost**
- **Increased rework costs onsite during the construction phase as equipment arriving with the incorrect coating system for the final operating environment was reworked to a correct coating**
- **Increased risk of CUI and other corrosion issues on the finished plant, increasing MandR costs**

The major challenge was the massive complexity of the maintenance project which contributed to a large rework spend and reduced productivity. Traditional coating systems are designed to offer corrosion protection over a limited range of service environments and temperatures, which means that on previous projects, more than seven different coatings were needed to protect the various pipes, valves and vessels. This subsequently meant that training was difficult with a painting workforce that rapidly changed depending on workload, and so the challenge was to cut costs and guarantee delivery of the project on time. Traditional anti-corrosive solutions had been shown to add cost and complexity, so the project team decided to look for a proven and reliable alternative solution.

After discussion with International Protective Coatings, the decision was taken to apply the UPC approach to the project, using one ‘Universal Pipe

Coating’ to paint all pipes, valves and vessels. Standardizing the approach to coating specification greatly simplified the painting process, increasing productivity and improving quality. Interbond 2340UPC is a temperature resistant coating from International providing excellent corrosion protection from -196°C (-321°F) to 230°C (446°F).

Designed to maximize productivity vs. traditional epoxy phenolic and inorganic zinc silicate type systems, Interbond 2340UPC can help owners and specifiers to reduce costs, avoid rework and maximize plant efficiency despite the complexity and interdependent nature of the problem.

Applying the ‘UPC Approach’ with Interbond 2340UPC to all pipes, valves and vessels saved approximately 10% on overall rework costs over the course of the project, as well as greatly improving productivity and helping to ensure the maximum performance in operation.

High Performance and Versatility Reimagined

As an asset manager or maintenance specifier whenever you can find versatility, efficiency **and** reliability, even though you’re dealing with complex CUI conditions that range in temperature from -196°C (-321°F) to 230°C (446°F) on a variety of piping and equipment, ...“well, then you’re really on to something!”

Our customer’s major onshore oil and gas expansion project in central Asia required high-performance protective coatings with specific advanced application benefits. Interbond 2340UPC was chosen for long term temperature and corrosion resistance, simple and efficient maintenance application, and capabilities to overcome some of the most difficult application barriers providing a unique advantage to the project.

By choosing the Universal Pipe Coating (UPC) approach, the asset owner simplified their complex coating specification for process pipes, standardizing the offer to just a single coating. Interbond 2340UPC represents outstanding application properties such as high tolerance to over-application and fast cure even at sub-zero temperatures.

The versatility and efficiency of this product helped this critical expansion project’s specifier to tailor a solution that increased productivity while reducing rework costs and the risk of early coating failure, ensuring easier repair work in future maintenance cycles.

An innovative solution proven around the World

Technological breakthroughs do little for addressing challenges without reliability. While Interbond 2340UPC's Alkylated Amine Epoxy innovation provides oil and gas managers and specifiers a cutting-edge solution to a wide variety of coating problems, we are most proud of its reliability to consistently provide this corrosion solution in a host of different environments and for a diverse group of applications the world over. From a PNG facility in Papua New Guinea to petrochemical plants in China to refineries in the United States and the Middle East, Interbond 2340UPC has proven its reliability in a vast amount of field applications towards:

- **Reducing specification complexity**
- **Excellent application efficiency reducing maintenance turnaround times**
- **Dependable DFT thickness tolerance prevents maintenance rework and provides a single cost-effective solution for piping, valves, vessels and other components.**
- **Exceptional corrosion resistance on insulated and uninsulated steel with a wide range of operating temperatures.**
- **Trusted UV resistance**

Diving deeper...

Corrosion under insulation (CUI) costs the oil and gas industry millions of dollars each year. Moisture ingress into conventional insulation materials usually results in accelerated corrosion of the underlying steel surface, which can result in structural failure of the pipe, vessel or other insulated item. If left unchecked, CUI can result in leakages from pipes and vessels as a result of localized corrosion. If such equipment is operating under high pressure, this increases the potential for catastrophic failure. CUI is generally a risk in the temperature range of -4°C to 175°C (25°F to 347°F) but the highest corrosion rates are normally experienced in operational conditions between 60°C to 120°C (140°F to 248°F). Under these conditions, corrosion rates of between 1.5 - 3.0mm per year have been reported, and the potential for corrosion doubles for every 15 - 20°C increase in temperature between 0 - 100°C (32 - 212°F). The oil and gas market operates in continuous high temperatures and has a wide variety of process conditions, which inevitably involve heat and cyclic conditions. Environmental conditions can be extremely harsh and thermal cyclic conditions impose a high degree of stress upon coatings which can result in a loss of physical properties. Steam-out cleaning and short but severe temperature spikes can also create cyclic conditions which accelerate corrosion.

Understanding the CUI Challenge

Traditionally, insulated pipework operating at elevated (or very low) temperatures has been coated using epoxy phenolic technology; this provides robust corrosion protection during downtime and excellent heat resistance in service. However, this traditional technology does come with some widely-recognized limitations from a quality assurance and productivity viewpoint at the point of application. Costs are driven higher by dry film thickness sensitivity and the potential for in-service cracking, as well as slow drying/curing speeds, particularly at lower temperatures.

AAE (Alkylated Amine Epoxy) technology delivers the right balance of benefits for both the applicator and the asset owner, increasing confidence that the performance expectations inherent within the maintenance repairs are delivered and helping to greatly reduce the risk of CUI. Delivering superb ambient temperature ISO12944-9 resistance, Interbond 2340UPC is truly a next generation pipe coating, allowing simplicity in application and specification, while resulting in increased confidence for asset protection and improved application flexibility vs traditional coating solutions.

The next generation alternative

Interbond 2340UPC

The fact that Interbond 2340UPC delivers flexibly and efficiently over a wide variety of both insulated and uninsulated vessels, pipes, and valves (Universal Pipe Coating), makes it a potential game changer for applicators and specifiers alike in terms of high efficiency, fast cure in low temperatures, excellent CUI and UV resistance, while delivering the reliability required in our industry. Interbond 2340UPC from International Protective Coatings is the next generation of coating protection against CUI.