CUI and Cyclic Temperature Solutions

Maintenance Solutions for Downstream Oil & Gas
High Temperature Maintenance Range

Corrosion Under Insulation

The problem of corrosion under insulation (CUI) costs industry millions of dollars annually. Moisture ingress into conventional insulation materials usually results in accelerated corrosion of the underlying steel surface which, if left unchecked, can result in structural failure of the pipe, vessel or other insulated items. Industry challenges such as CUI can be a huge issue for facilities and put added pressure on maintenance strategies.

- CUI maintenance work can take up >50% of a typical Oil & Gas facility maintenance budget
- CUI can cause catastrophic failure if left unchecked
- The large cost of scaffolding, stripping/recladding insulation and labour during the maintenance turnaround process means that CUI coatings need to be relied on for long term performance

CUI and Cyclic Temperature Solutions

The High Temperature Maintenance (HTM) range from AkzoNobel has been designed to increase performance, improve productivity and reduce cost of high temperature maintenance.

Interbond 2340UPC

- Temperature resistance and corrosion protection from -196°C (-321°F) to 230°C (446°F)
- Provides protection against CUI
- Low temperature cure down to -5°C (23°F)
- Excellent tolerance to over application
- Short minimum overcoating intervals
- Suitable for application to steel substrates operating at temperatures up to 120°C (250°F)

Intertherm 751CSA

- Temperature resistance and corrosion protection from -196°C (-321°F) to 400°C (751°F)
- Renowned ‘Cold Spray Aluminium’ technology with excellent CUI and thermal cyclic resistance
- No need for shutdowns - application directly to high temperature online equipment

Intertherm 2205

- up to 230°C (446°F)

Cyclic Temperature Service

Cyclic temperature service is common in industrial processes and known to be particularly damaging to protective coating systems. This damage is usually due to the increased stress that regular cycling can put on a coating film, sometimes leading to cracking and early failure.

Intertherm 751CSA

- Temperature resistance and corrosion protection from -196°C (-321°F) to 400°C (751°F)
- Excellent resistance to “thermal shock” experienced during rapid temperature cycling
- Provides protection against CUI
- Can be applied at 200um (8 mils) in a single coat using standard application equipment
- Suitable for application to steel substrates operating at temperatures up to 150°C (302°F)
Maintenance of Operational Assets

Optimum plant operation demands increased efficiency and reduced downtime as much as possible. This means that the shutdown of assets prior to starting maintenance is not always possible.

High temperature pipes, valves and vessels sometimes require online application at temperatures up to 205°C (401°F). This can cause challenges for traditional coating technologies which are typically not formulated with online maintenance in mind, often leading to early failure.

**Intertherm 2205**

Intertherm 2205 is a specialist temperature resistant maintenance coating, designed to resist CUI and cyclic high temperatures up to 205°C (401°F), with peaks to 230°C (446°F). Intertherm 2205 shows excellent application characteristics and can be brush applied to hand prepared, hot steel up to 205°C (401°F).

Intertherm 2205 is based on a novel technology called ‘hot spread epoxy’ developed in house by AkzoNobel. Viscous in appearance, the coating spreads rapidly when applied directly to online equipment, forming an effective barrier against corrosion, even on St2 (SP2) steel. Hot spread epoxy technology is a high solids material specifically formulated to provide asset owners maximum performance in CUI maintenance environments.

- Temperature resistance and corrosion protection up to 230°C (446°F)
- Hot application to live equipment up to 205°C (401°F)
- Provides protection against CUI
- Cures ready to insulate after 10 minutes*
- Excellent adhesion to steel cleaned by hand or power tool (St2/SP2 preparation)
- Easy application by brush or roller
- Low VOC

*When applied at temperatures above 100°C (212°F)

### High Temperature Maintenance Range

<table>
<thead>
<tr>
<th>Product</th>
<th>Maximum Operating Temperature</th>
<th>Maximum Application Temperature</th>
<th>Minimum Surface Preparation</th>
<th>Time to Reinsulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interbond 2340UPC</td>
<td>205°C/230°C peak (401°F/446°F)</td>
<td>120°C (248°F)</td>
<td>SP11</td>
<td>12 hours 2 hours</td>
</tr>
<tr>
<td>Intertherm 751CSA</td>
<td>400°C (751°F)</td>
<td>150°C (302°F)</td>
<td>SP11</td>
<td>24 hours 2 hours</td>
</tr>
<tr>
<td>Intertherm 2205</td>
<td>205°C/230°C peak (401°F/446°F)</td>
<td>205°C (401°F)</td>
<td>St2 (SP2)</td>
<td>N/A 10 minutes</td>
</tr>
</tbody>
</table>

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