Conforma Clad™ Solutions for Petrochemical Applications

Pumps
Extend the life of your components in high-temperature erosive, abrasive, and heavy catalyst mediums.

- FCC bottoms
- Hot oil
- Clarifier
- Catalyst-entrained medium
- Casings
- Impellers
- Back plates
- Wear sleeves

Thermowells
Prolong life in erosive and abrasive environments. Our formulas work best when catalyst or small particle erosion limits other solutions.

- Distillation
- FCC
- Fluidized bed
- LC finers and more

Conveyance and Tubes
Protect your valves, piping, and tubes in high-wear erosive or abrasive environments.

- Get up to 5x more life
- Safeguard pendants, u-bends, and complex shapes
- High coefficient of heat transfer
- Excellent ability to withstand severe thermal shock
- Linear wear offers predictable life extrapolation
Conforma Clad™ Solutions for Petrochemical Applications

Cladding Photomicrograph

**CLADDING**
Dense tungsten carbide loading with uniform carbide distribution. High wear resistance with predictable wear rates and continuous operation up to 1900° F. No interconnected porosity. Superior corrosion and impact resistance.

**BOND LINE**
True metallurgical bond (>70,000 psi) with high interparticle bond strength. Provides unsurpassed strength and prevents chipping, flaking, and check-cracking.

**DIFFUSION ZONE**
Minimal dilution. Substrate retains uniform properties in diffusion zone.

**SUBSTRATE**
Heat treatable. After cladding process to restore substrate’s mechanical properties.

Performance Data

**EROSION TEST**
90° Impingement Angle, 240 ft/sec (30-minute test)

<table>
<thead>
<tr>
<th>Material</th>
<th>Material Loss (g)</th>
<th>Volume Loss (mm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conforma Clad WC 219</td>
<td>0.21</td>
<td>9</td>
</tr>
<tr>
<td>Hardfaced Alloy</td>
<td>0.84</td>
<td>33</td>
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<tr>
<td>Cobalt Alloy A</td>
<td>1.15</td>
<td>44</td>
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<tr>
<td>Chrome Carbide Weld Overlay</td>
<td>1.34</td>
<td>65</td>
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<tr>
<td>Cobalt Alloy B</td>
<td>2.00</td>
<td>1,555</td>
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<tr>
<td>50Cr/50Ni</td>
<td>2.36</td>
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</tbody>
</table>

UP TO 10X BETTER
Erosion Resistance versus Cobalt Alloys

**CORROSION TEST (ASTM G31)**
1% Sulfuric Acid at 212° F (100° C)

<table>
<thead>
<tr>
<th>Material</th>
<th>Volume Loss (mm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conforma Clad WC 200</td>
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<tr>
<td>Conforma Clad WC 210</td>
<td>33</td>
</tr>
<tr>
<td>Conforma Clad WC 219</td>
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<tr>
<td>316 Stainless Steel</td>
<td>65</td>
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<tr>
<td>17-4PH</td>
<td>1,555</td>
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</tbody>
</table>

UP TO 7X BETTER
Corrosion Resistance versus Stainless Steel

FOR FURTHER INFORMATION
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www.kennametal.com