MORGRIP CLiP Connectors

PRODUCT DESCRIPTION

The MORGRIP Clad & Lined Pipe (CLiP) Connector is the only DNV-GL Type Approved method to permanently repair pipelines which are clad or lined with corrosion resistant alloy (CRA). These pipeline systems cannot be repaired in the conventional manner as the pipe media, if allowed to bypass the CRA, will penetrate the base metal leading to failure.

Developed under a joint industry project with 2 major operators and witnessed throughout by DNV-GL in accordance with RP-A203 Technology Qualification, MORGRIP CLiP provides a reliable, repeatable, permanent repair that does not prevent pigging operations or other long term inspection and maintenance programs.

Deploying an End Seal Module that is fitted to conventional MORGRIP designs, including onshore, topside, subsea and remote deepwater connectors, the technology uses graphite seals that engage onto the pipe inner diameter, ensuring continuation of the CRA lining.

MORGRIP CLiP Connectors, ideal for emergency repair, planned shutdown or contingency stock, are based on over 30 years of MORGRIP technology and application. Quicker, easier, safer and significantly cheaper than complex hyperbaric welding or pipeline replacement.

CAPACITIES

<table>
<thead>
<tr>
<th>Pipeline size</th>
<th>10” to 26”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Carbon steel pipeline clad or lined with corrosion resistant alloy</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40degC to 149degC</td>
</tr>
<tr>
<td>Working Pressure</td>
<td>Up to 364Bar</td>
</tr>
</tbody>
</table>

For applications outside of this scope, bespoke engineered solutions are available.
MORGRIP CLiP Connectors
MORGRIP CLAMPS & CONNECTORS

INTERFACES

<table>
<thead>
<tr>
<th>Activation</th>
<th>Bolt Tensioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gripping Technology</td>
<td>Ball &amp; Taper</td>
</tr>
<tr>
<td>Seal Material</td>
<td>Dual Graphite</td>
</tr>
<tr>
<td>Back Seal Pressure Test</td>
<td>Yes</td>
</tr>
<tr>
<td>Diver Installation</td>
<td>Rigging with buoyancy subsea or subsea lifting frames</td>
</tr>
<tr>
<td>Remote Installation</td>
<td>Connector installation frame</td>
</tr>
</tbody>
</table>

ADDITIONAL INFORMATION

<table>
<thead>
<tr>
<th>Design code</th>
<th>DNVGL-ST-F101/ F113 Pipeline Repair</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ASME BPVC VIII Div.1</td>
</tr>
<tr>
<td></td>
<td>ASME B31.3</td>
</tr>
<tr>
<td></td>
<td>API 5L Linepipe specification</td>
</tr>
<tr>
<td></td>
<td>ASME BPVC VIII Div.2 on request</td>
</tr>
<tr>
<td>Coating</td>
<td>Jotamastik 87 or Interzone 954 as standard</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Not required post installation</td>
</tr>
<tr>
<td>Packing</td>
<td>Steel shipping frames</td>
</tr>
</tbody>
</table>

For more information on this and related products, visit us at:

www.connectorsubsea.com

01 // 16in MORGRIP CLiP Connector
02 // End Seal Module mounted in Adaptor Plate

End Seal Module featured in standard MORGRIP Subsea Flange Adaptor

End Seal Module that enables graphite seal activation on pipe end

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Ball & Taper

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