The Solution
Corrosion of all pipe supports is one of the leading causes of process piping failure, which can have potentially catastrophic results.

Beam supports, saddle supports and pipe shoes create crevices where water is trapped and hydrostatic contact with the pipe surface. Under these conditions, crevice corrosion rapidly undermines the coating and causes rapid wall loss.

Creviced Corrosion
Deepwater developed the I-Rod brand of pipe supports specifically to combat crevice corrosion and ensure a long, safe life for pipelines by eliminating the crevices between the pipe and the support.

I-Rod is a durable, extruded thermoplastic cut into a half-round rod. It is the key component in all Deepwater's I-Rod pipe supports.

The way that I-Rod works is simple:
1. The half-round shape minimizes contact between the pipe and the support, eliminating the crevice.
2. It also provides an electrically isolated stand-off between the pipe and the supporting beam or saddle clamp. This allows for easy maintenance and inspection while preventing galvanic corrosion between dissimilar metals (the pipe and support).
3. I-Rod has excellent compressive strength and is a very low friction coefficient, making it ideal as a beam, bending. Pipe damage during new construction is reduced when I-Rod is used to assist in pipe fitting.

I-Rod is available for most pipe support configurations, including beam supports (I-Rod assembly), pipe shoes and saddle clamps (I-Rod clip), and even for stainless steel process tubing.

Pipe and pipe supports have been in service since 1990, when a new offshore dictionary structure (Pilot) was built. Since then, I-Rod has been specified all of the major operators in the Gulf of Mexico and many others worldwide.

This product has also successfully replaced the traditional and downstream sectors onshore in the U.S. and in Europe. The I-Rod pipe support family has grown to include several varieties of the original product, but all still utilize the original I-Rod thermoplastic as the basis of their success. Other materials have been used in an attempt to copy or improve upon I-Rod, but none has achieved the success of the original.

De-Awes of Importers
Other products that mimic I-Rod have been the cause of many problems. Authentic I-Rod has a unique number printed directly on the surface, and only licensed agents of Deepwater are authorized to sell I-Rod. Go to www.stoprust.com for a list of approved agents.

How to order I-Rod
1. Size: Provide the appropriate dimensions. No Bolt - Normal pipe size (A)
   b. I-Rod Clip - Nominal pipe size (A), Clamp width (B)

Technical Information / Contact details

<table>
<thead>
<tr>
<th>Material</th>
<th>Max Operating Temp. (°F)</th>
<th>Working Point (°F)</th>
<th>Cond. Strength (ksi)</th>
<th>Max Load (ft-lb)</th>
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</thead>
<tbody>
<tr>
<td>Stainless</td>
<td>925</td>
<td>865</td>
<td>16</td>
<td>7,300 / 5,550</td>
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<tr>
<td>Alum.</td>
<td>362 / 171</td>
<td>309 / 150</td>
<td>29</td>
<td>11,000 / 6,200</td>
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<td>PE/PPR</td>
<td>400 / 240</td>
<td>344 / 190</td>
<td>26 / 17</td>
<td>10,010 / 4,550</td>
</tr>
</tbody>
</table>

Below:
This assembly product falls under the weight of the pipe:
This assembly product can be shipped on a pallet.

Welcome to Corrscience.

Contact Details

Corr Science Inc.
402-820 2nd Avenue North
Calgary, Alberta, Canada T2J 2A9
800-229-6398
info@corrscience.com

Eliminate Corrosion Problems at Pipe Supports

Way ahead in corrosion control

www.stoprust.com
The Problem

Corrosion at pipe supports is one of the leading causes of pipeline failure, which can harm catastrophic results.

Beam supports, saddle supports and pipe shoes create crevices where water is trapped and held in constant contact with the pipe surface. Under these conditions, crevice corrosion quickly undercuts the paint coating and causes rapid wall loss.

Crevice Corrosion

Actual times to failure vary from case to case, but the progression of events always follows the same basic sequence:

1. A crevice is created which does not allow water to escape or evaporate. Water is trapped in close proximity to the pipe for long periods of time.
2. The paint system on the pipe is now placed in continuous immersion service rather than the intermittent immersion service anticipated by the paint formulation. As a result, the paint system softens and fails prematurely. This begins with a pinhole defect.
3. The steel is now directly exposed to moisture and the oxidation (corrosion) process begins, consuming oxygen from the water. Crevice corrosion quickly sets in, as long as moisture is trapped. In time, the life of the pipe is shortened until it prevents water from entering the gap. An aggressive corrosion reaction will begin to create a large area of the pipe beneath the paint.
4. Without inspection, the problem remains uncorrected and failure of the paint system cannot be guaranteed and the pads make inspection for crevice corrosion impossible.

If adhesion is lost between pad and pipe, a large crevice is created which does not allow water to escape or evaporate. Water is trapped in close proximity to the pipe for long periods of time.

Inspection Difficulties

Most "standard" piping designs do very little to prevent crevice formation at the support. Some solutions, though, make it impossible to inspect the pipe surfaces. Inspection is the only way to verify that a crevice has not been created.

The pads have been designed to take the form of either FRP (Fiberglass) or steel for many years. The purpose of these pads is to eliminate wear to the pipe at supports, which move due to thermal cycling. These pads are not an effective guard against crevice corrosion; adhesion cannot be guaranteed and the pads make inspection for crevice corrosion impossible.

Some pipe support designs, which seek only to eliminate wear to the pipe at supports, are ineffective at preventing crevice corrosion. This is because the pads do nothing to address water accumulation. In some cases, the pad deforms and actually "traps" the water to the pipe.

Nu-Bolt Assembly

Designed by Deepwater's NACE-certified corrosion engineers, the Nu-Bolt assembly combines I-Rod with a modified stainless U-bolt. A variety of corrosion-resistant treatments can be applied to the bolt to ensure long-term service in the most corrosive operating environments. For higher-temperature applications, the I-Rod may be replaced with I-Rod HT, which provides higher melting temperatures and corrosive pressures. For the most extreme conditions, PEEK can be substituted to withstand temperatures up to 240°F (110°C).

Bolt Coating

The standard U-bolt comes in galvanized black steel (G2). You can also choose from 316 stainless steel (G300) or SermaGard®, a superior corrosion coating that ensures the paint coating endures the harshest conditions with excellent results.

PolyShrink

PolyShrink is applied over the outside of the U-bolt to provide the pipe system with long-term installation. It is not designed to protect the U-bolt. The material is a cross-linked polyolefin that is UV-stable and rated for service in temperatures up to 110°C (230°F).

I-Rod, I-Rod HT & PEEK

For 90% of applications, standard I-Rod Thermoplastic is the best material choice. With excellent corrosive strength and low creep, it provides excellent support. If constant operating temperature get above 180°F, then I-Rod HT (thermocolored or PEEK, black-colored) can be substituted, depending on the requirements of the environment.

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