

FACT SHEET

CONSULTANCY & CORROSION TESTING OF PIPELINES

Controlling corrosion during hydrotesting and long-term wet lay-up

Installing pipework that has been unused and laid-up for extended periods presents a range of potential corrosion problems, but with Intertek's extensive expertise in this field and Total Quality Assurance approach, means we can help you eliminate these issues, minimise downtime and get operations running promptly and efficiently.



Pipeline during long-term wet lay-up

Mothballing

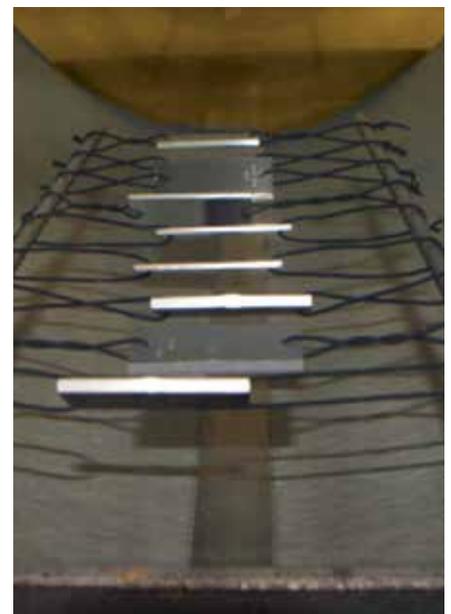
Assets normally designed for continuous service eventually need to be taken out of service for short or extended periods of time. During such periods, the corrosion threat to these assets is likely to be higher than normal; mainly due to oxygen corrosion and microbial activity by sulfate-reducing bacteria (SRB). Protective treatment during a shut-in period, commonly termed "mothballing", is carried out to minimise corrosion. The approach and storage media applied depends on the asset and the duration of shut-down. In pre-existing assets, mothballing with dry crude oil or nitrogen is preferred; however, when water is used the procedure is called wet lay-up.

Wet lay-up using filtered, chemically treated water is often the most practical and cost effective strategy for mothballing following hydrostatic testing during pre-commissioning of new installations. The chemical treatment normally comprises an oxygen scavenger, biocide and sometimes a corrosion inhibitor.

Seeking expert advice to prevent corrosion during wet lay-up is vital for oil and gas operators. Intertek's Total Quality Assurance solutions provide you with the confidence and peace of mind to ensure that your operating procedures, systems and products are functioning properly, helping you to make informed decisions to mitigate risks.

Services

- Review design plans
- Wet lay-up laboratory simulation tests carried out to your requirements and specified conditions
- Monitoring of chemical treatment and performance on-site during flooding
- Failure analysis



Detail of pipeline during long-term wet lay-up



Corrosion Testing

Review Design Plans

Typical challenges to mitigating corrosion include establishing cleaning procedures, suitable concentrations of oxygen scavengers, biocides and corrosion inhibitors, reducing the likely period of wet lay-up and ensuring the environmental impact is kept to a minimum when dewatering.

The guidance Intertek provides aims to safeguard your materials prior to installation. During pre-commissioning, we offer extensive testing and analysis programmes and water treatment recommendations regarding the control of solids, oxygen and bacteria.

Wet Lay-Up Testing

Chemical evaluation tests such as time-kill tests (biocides), bubble tests (corrosion inhibition) and reaction rate tests (oxygen scavengers) are designed to evaluate time-critical performance in flowing systems.

However, these tests are not suitable for evaluating long-term wet lay-up scenarios where the product is applied and left in situ

for an extended period of time without replenishment. In the case of long term wet lay-up the main concern is chemical degradation.

Intertek can provide full-scale pipe section simulation laboratory testing under temperature-controlled conditions in order to evaluate ongoing long term performance when these chemicals are used for wet lay-up application.

On-Site Monitoring

Inconsistent chemical dosing during mothballing often occurs. This can lead to either good or very poor corrosion control even in different sections of the same pipe.

Our chemists conduct round the clock routine analysis on treated water to monitor and ensure consistency of chemical dosing and performance during flooding on major projects. Intertek chemists can also monitor chemical performance during the period of wet lay-up and be in attendance during dewatering.

Failure Analysis

While it is ideal that pipework is fully protected from degradation prior to commissioning, occasions arise when equipment corrodes after installation as a result of poor pre-commissioning practice.

We have a dedicated team of specialists that investigate corrosion and materials failures to determine the cause and recommend remedial measures to avoid future issues.

FOR MORE INFORMATION



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