

FPSO - INDONESIA



Client Profile

Country : Indonesia
 Asset Type : FPSO
 Location : Natuna Sea
 Industry : Oil & Gas
 Weather : Hot and Humid

Background

On October 2015, IEV was invited by an established oil and gas producer in Indonesia to demonstrate the Oxifree coating on one of their FPSOs. The pilot project was implemented to demonstrate the capability of Oxifree non-bonding encapsulation coating technology to control corrosion on selected flanges at the live riser turret and deck of the FPSO.

The Challenges

All offshore production assets are exposed to harsh marine environment, including but not limited to salt water, salt mist and UV rays, leading to corrosion of exposed metal components. The client's assets were also subject to similar conditions. In this case, the main challenges were:

1. limited space, accessible only through a small manhole, in which conventional method of corrosion prevention may not be applicable; and
2. surface preparation and application without an operational shutdown, in which blasting and painting is not an option.

The Solution

The portable Polymelt 12 machine, with light weight of 29 KGs, is employed to ease the application process, considering the limited workspace at site (a manhole of 65cm x 90cm). A minimum surface preparation is required prior to coating. Oxifree application only requires a minimum surface preparation of St2 standard without causing operational shutdown, which saves client's time, cost and resources.



FPSO: 6" Gas flange at the riser turret, before & after coating

For more information about this project, e-mail mgc@iev-group.com



Function test result on a portion of a selected flange prior to demonstration



Oxifree coating in progress on a selected flange on the FPSO deck



8" flange at the riser turret, before & after coating

The Process

Prior to actual application, a function test was carried out at the selected flange on top deck for client to witness the Oxifree application. Upon completion of surface preparation, two coatings of Oxifree TM198 were applied on four selected flanged connections on both the riser turret and the deck of the FPSO. The following is the detailed scope of work for the demonstration.

Scope of work	Work Description
1 unit of 6" gas line flange hanger at the riser turret	<ul style="list-style-type: none"> The Oxifree material is melted in Polymelt 12 machine. Each coating application cycle lasts up to 10 minutes. The Oxifree TM 198 coating is applied in two coatings, onto the surface of the selected flanges, with the minimum thickness of 4mm achieved.
1 unit of 8" crude oil flange at the riser turret	
2 units of 6" flange at FPSO deck	

Summary

This unique Oxifree coating application for a FPSO has overcome challenges in providing corrosion protection on a live riser turret for the oil and gas line flanges, within an extremely limited working space and without shutting down its operation.

The Oxifree coating was employed as a pilot project to undertake this challenge and has proven to be an effective and efficient solution. Hence, it would significantly reduce the maintenance costs and prolong the life span of the protected assets.

Oxifree material has been thoroughly tested to 11688 hours of "industry standard" Salt Spray test, which complies with ASTM B117 corrosion testing (equivalent to in excess of 20 years in the field). Oxifree has also undergone ASTM G56 UV/Weathering test and exceeded the required longevity with ease.

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