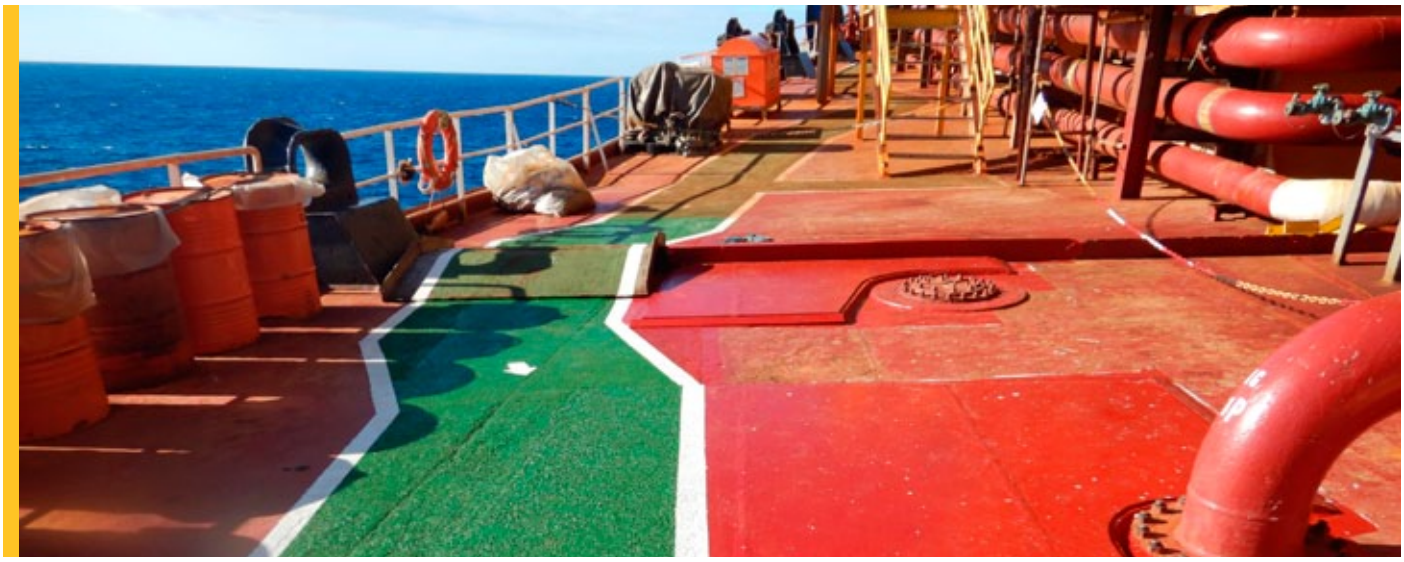
SPS TECHNOLOGY

Structural Composites Engineered for the 21st Century

FPSO Capixaba

June 2021

Project type	Cold Work Repair - Main Deck
Area	11m^2
Design	10-25-E
Yard	On-station, Offshore-Brazil
Owner	SBM Offshore NV Group
Class	ABS



Summary

Using the SPS® Cold Work solution to reinstate the deck of the FPSO Capixaba ensured:

- 100% operational capacity was maintained throughout – tank below remained operational
- A non-disruptive repair was completed much faster than a crop and renew repair
- Reinstated deck plate stronger than original
- Fire risk eliminated
- No crude oil tank cleaning was required
- No under deck scaffolding required in confined space

Background

Excessive steel diminution had occurred on the Main Deck above the port cargo oil tank requiring local steel reinstatement. The FPSO Capixaba has the capacity to produce up to 100,000 barrels of crude oil each day, an important factor when choosing the method of repair. Unlike SPS, conventional in-situ repairs of this sort are slow and expensive and limit a vessels operating capacity.

Details

The structural steel reinstatement of the Main Deck plating using SPS was carried out on-station by steelworkers from SPS partner, ASOM and SPS Technology's injection engineer. SPS enabled the FPSO Capixaba to maintain 100% operational capacity throughout the project, which took ten days to complete.

SPS Cold Work installation was used to deliver this permanent repair, reinstating the existing deck and creating a new composite section. A combination of bolts and structural adhesive was used to fit and join the steel components to form airtight cavities into which the elastomer core was injected. All steel components were prefabricated before shipping on-board for installation. This reduced the cost of the project, eliminated welding requirements, reduced time offshore for the installation team, which in turn, simplified project logistics. This design and process was evaluated and approved by ABS Brazil, locally.

"The SPS Cold Work solution reduced the amount of in-situ offshore work and POB requirements, allowing the FPSO to remain in operation. Fire-related risk was eliminated during the repair. SPS Cold Work was a great solution, as well as being Class approved, for steel repairs where both hot work and POB are a constraint."

Andrea Galter, Operability Lead Engineer
SBM Offshore

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FPSO Capixaba Deck Reinstatement

SPS Product Specification

Fast
Short repair schedules

Non-disruptive
Minimal labour, no or reduced downtime

Economic
Reduced repair costs, eliminated time out of service

SPS

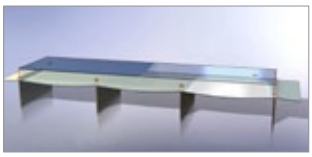
SPS uses existing corroded or worn plating as one side of a steel composite panel formed by a new top plate and an elastomer core. The resulting composite fully restores or enhances the strength of the original structure. SPS is approved by all major Classification Societies.

Typical SPS Repair

1 **PREPARE** existing surface

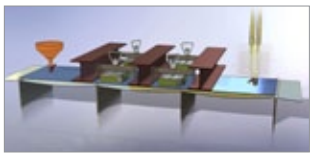
Grit blast and clean

2 **CREATE** cavities



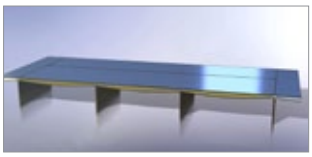
Fit perimeter bars and new top plate to form an airtight cavity

3 **INJECT** elastomer core



Temporary restraint beams positioned and cavities filled

4 **REPAIR** complete



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