

SPS COLD WORK SOLUTION

- Bolted/adhered Perimeter Bars
- Bolted/adhered Top Plates
- Elastomer Core
- Original Structure

SPS Technology is committed to improving sustainability and reducing carbon footprint. Repairs with SPS deliver a low carbon footprint and are 100% recyclable. It eliminates electrical, insulation, piping and conduit damage and steel wastage that occurs during traditional crop and renewal repairs

SPS Technology not only repairs vital assets, but provides a permanent lifespan solution, reinvigorating cold/warm stacked assets that may have been earmarked for decommissioning or lay-up into viable commercial assets in demand as the oil and gas markets move from a period of contraction to growth - extending asset lifespan

SPS is a structural composite material comprising two metal plates bonded with elastomer core. SPS is stronger than stiffened steel - with no risk of corrosion to existing plating from above

The SPS elastomer core is manufactured by BASF, the world's leading chemical company that creates chemistry for a sustainable future. In partnership with BASF, and utilising the global-leading firm's science and innovation, SPS Technology can continue to meet the current and future needs of the offshore industry

BASF's long-standing partnership with SPS Technology is testament to the credibility, reliability and high performance of the SPS system, which outperforms alternative composite structural steel repairs from a speed, flexibility, durability and cost perspective

Reliable, intrinsically safe and fully class-approved, SPS offers the most economic permanent composite repair solution to offshore asset owners, underpinned by 25 years' experience, independent testing and hundreds of projects in service

SPS is an established, class approved permanent repair technique in the marine and offshore sectors. For many operators it has become a standard solution with evidenced credibility based on extensive experience, replacing historical repair methods

There are no barriers to SPS being used safely and efficiently. SPS is a patented technology, accepted by major classification societies ABS, Lloyd's Register, DNV and BV including publication in Class Rules and Guides

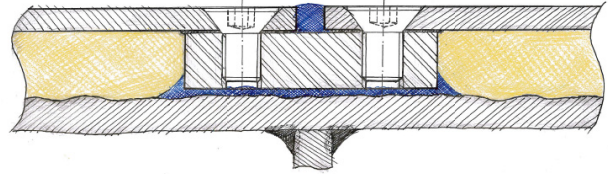
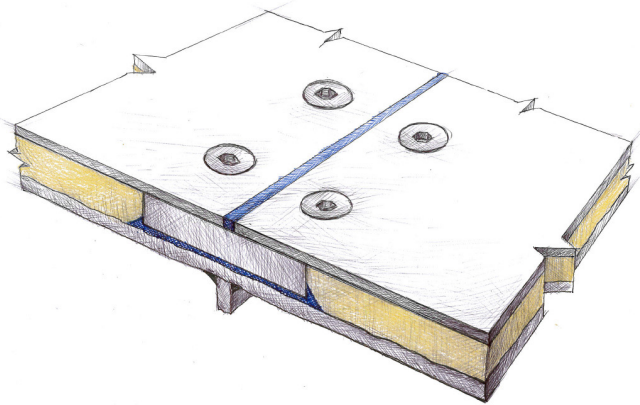
SPS has significant cost and time benefits for the offshore market. It is up to 11 times cheaper and three times faster than crop and renewal - and between three and five times better value than other Cold Work solutions. Moreover, its design and application processes are routine and simple

SPS provides indirect cost savings. A structural steel repair quote from SPS Technology is fully inclusive, with no hidden additional costs concealed in different repair and maintenance budgets. SPS solutions eliminate the need for cofferdams and dive boats

SPS provides a permanent life cycle solution. As well as being up to 11 times cheaper and three times faster than a steel 'crop and renewal' process, as a permanent repair solution, SPS negates the need for further operational expenditure

SPS provides impact, blast and ballistics protection, vibration and sound damping, thermal insulation and fire (J60 and H120) protection

Health and safety risk reduction: A main deck repair on a FPSO using steel crop and renewal requires scaffolding, cut and gouge meterage, welding - all of which pose risk to safety and potential LTIs



SPS Cold Work repair and strengthening suitable for all areas on FPSOs plus other offshore assets and tankers

- Bottom shell
- Longitudinal or transverse frames
- All other primary structural elements
- decks and tanks
- Bulkheads
- Side shell
- Helidecks
- Pipes

Satisfied Cold Work customers include:

- ConocoPhillips
- Hess Offshore
- Chevron
- Transocean
- Aker
- Shell
- British Royal Navy
- BW Offshore
- Stork
- and many more...

References

- 1 Lloyd's Register Rules for the Application of Sandwich Panel Construction to Ship Structure
DNV GL Class Guideline - Steel Sandwich Panel Construction (DNV CG-0154)
ABS Guidance Notes on Composite Repairs of Steel Structures and Piping Systems (Appendix 1: Sandwich Plate with a Continuous Elastomer Core)
- 2 Figures based on a cost comparison for bottom shell reinstatement of an FPSO on station off the coast of E Africa using SPS vs crop and renew

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