



SPS Overlay applications:

- Bulkheads • Decks • Funnel casings • Gym floors • HFO/MGO tank thermal barriers
- Machinery space upgrades • Pool rooms • Side shell protection • Vibration and acoustic damping
- Upgrade to Ice Class • Tank tops • In-service below the waterline hull repairs

Intelligent Engineering's Sandwich Plate System (SPS) is a steel-elastomer-steel composite that is a safe, fast, non-intrusive, simple, proven and class approved method of repair and strengthening that can be completed in drydock, alongside in port or in-service.

The inherent characteristics of SPS deliver significant safety and operating benefits including high impact resistance, A60 fire insulation, blast and fragment protection and vibration damping.

Repair and Strengthening

In repair and strengthening applications SPS is constructed as an "Overlay". Existing plating, which may be corroded or deformed, is used as one side of the composite. A new flat face plate is then fixed over the existing surface, leaving a void precisely the thickness of the core. The elastomer core is then injected to form a renewed, fully composite structure, stronger and longer lasting than the original.

At IE we have been supplying innovative solutions to the maritime and offshore industries since 1996. We have an established track record in the repair, strengthening and construction of ships and offshore assets. SPS is approved by all major Classification Societies.



SPS Overlay - the existing worn/corroded plate and new top plate are bonded together with a solid elastomer core forming a fully composite structure.

Benefits... shorter schedules, improved performance

Shorter, predictable schedules, lower repair costs

- Typically four times faster than crop and replace reducing time out of service
- Repair undertaken during passage, alongside in port or drydock
- Existing structure remains intact allowing adjacent work to continue in parallel
- Lower repair risk as avoids removal of attached services

Improved lifetime performance, lower operating costs

- High impact resistance limits operational damage to structure and coatings
- Range of metals used to suit end use
- Reduced fatigue stresses extend structural lifecycle



Pacific Star, Carnival Plc

- 29m² engine room tank top strengthened above nine oil tanks
- “No hot work” solution removed the need for gas-freeing of adjacent oil tanks
- Project completed whilst ship engaged on cruise out of Brisbane, Australia
- Project completed in eight days with no interruption to schedule



MS Expedition, Expedition Shipping

- 38m² of Deck 1 reinstated
- Project completed at Astican Ship Yard, Las Palmas during scheduled dry docking



Zuiderdam, Holland America Line NV (Phase I)

- 38m² tank top reinstated
- Project undertaken off coast of Alaska with no interruption to schedule



Sea Princess, Princess Cruise Lines Ltd

- 90m² tank top reinstated
- Vessel cruising in Pacific Ocean with no interruption to schedule

Zuiderdam, Holland America Line NV (Phase II)

- 55m² tank top reinstated
- Project completed whilst in-service with no interruption to schedule

Fully Supported Technical Solutions - IE will:

- Work with your technical and project management staff to optimise the benefits of SPS
- Provide a Classification Society approved design
- Complete the injection of the elastomer core to stringent QC standards
- Work under contract to the owner/operator for the design and injection only with the associated steelwork provided to IE's specification by the yard. Alternatively, IE can provide a turnkey package to include steelwork

IE has developed methods for reinstating steelwork in-situ whilst the vessel continues to operate, with no hot work solutions where necessary.