



Trusted protection for the marine industry

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The shipping industry is extremely dynamic, with ship owners having to juggle many tasks at once. Ship maintenance is a vital operational component in maintaining a healthy vessel. By staying on top of maintenance and service, ship owners can have peace of mind knowing that they have provided a safe working environment for their crews, ensured compliance with safety codes and class regulations, as well as safeguarded the longevity of their vessels.

At Innovative Manufacturing, we understand the importance of ensuring safe sea-going operations and have catered our products to meet the needs of vessels both at sea and berth. Innovative Manufacturing specializes in a wide range of anti-corrosion, sealing and repair products to protect clients' ships, crew and cargo from damage and injury. Being a local company, we take pride in offering tailor-made products that meet the needs of our customers in British Columbia and beyond. With a state-of-the-art R&D department, we continue to evolve our existing product lines, while exploring new product development synergies with our partners and customers.

Corrosion in the marine industry

Corrosion is defined as the gradual destruction of materials by chemical and/or electrochemical reaction with their environment. In March 2016, NACE International released an IMPACT study stating that the

global cost of corrosion is estimated to be \$2.5 trillion USD, with the transportation sector accounting for roughly 20 per cent of that figure. The marine industry is especially vulnerable to corrosion as harsh ocean conditions result in compromised exposed metal surfaces. Over time, this deterioration can severely impact both assets and the individuals coming into contact with these surfaces. The IMPACT study found that implementing corrosion prevention mechanisms could lead to a result in global savings of between 15-35 per cent of the cost of the damage.

Working with strategic partners throughout Canada and the U.S., Innovative Manufacturing is able to provide unique solutions to protect against the deteriorating effects of corrosion on sea-going vessels, marine pilings, and in the municipal/industrial sector. PetroWrap® is a cold-applied, anti-corrosion system of petrolatum based PetroWrap® Anti-Corrosion Tape, PetroWrap® Primer, and where counteracting is necessary, PetroWrap® Mastic. Where physical contact is likely, PetroWrap® Overwrap should be applied covering the system. PetroWrap® can be used on a wide range of applications including protecting steel pipes, flanges and valves, fire protection and pipe and sprinkler systems, hydraulic pipes, valves and fittings as well as marine pilings. The system offers long-term protection of metal surfaces that are underground,

underwater or exposed—even in the most severe environments.

Materials and corrosion protection as marine regulations change

The new IMO regulations to reduce sulphur oxide emissions from vessels are coming into effect January 1, 2020. This will involve conforming to a new 0.5 per cent m/m (mass/mass) sulphur cap on fuel content in order to mitigate the harmful emissions from ships on the environment. The vast majority of global vessels currently use high sulphur fuel oil (HSFO) as their main marine fuel for propulsion. The challenge faced by ship owners is moving away from HSFO to a more sustainable and 'green' fuel. Fuel with 0.5 per cent sulphur in the form of low sulphur fuel oil (LSFO) can be used as an alternative, however, logistical challenges such as availability from refineries is a clear drawback. Furthermore, many vessels may not have been converted in order to use LSFO as an alternative. This leads to ship owners continuing to use HSFO while adding scrubber systems to reduce sulphur content. As modifications of exhaust gas systems occur, sustainable and environmentally friendly coating and insulation systems are a necessary choice to protect against corrosive environments and insulate high-temperature surfaces.

In addition to implementing the PetroWrap® solution on any surface that may be susceptible to corrosion when



Featured products and class certifications associated with Innovative Manufacturing designed to protect vessels.

MANUFACTURING

scrubber retrofit work is performed, ExoWrap® insulation is a crucial product to consider in order to safeguard crews at sea. ExoWrap® is a revolutionary 'one step' insulation system to easily insulate high temperature surfaces in vessel engine rooms. Withstanding temperatures of up to 1000°C, ExoWrap® is Lloyd's class certified and meets IMO Resolution MSC.61(67), the adoption of international codes for application of fire test procedures. ExoWrap® also meets SOLAS Regulation II – 2/15.2.10, stating that surfaces with temperatures above 220°C which may be impinged as a result of fuel system failure shall be properly insulated.

Further solutions from Innovative Manufacturing

Protective Anti Splashing Tape

NoSpray® Protection System is a type-approved aluminum/glass cloth jacketing system designed to prevent the flammable spray of hot oil which can come into contact with hot surfaces thus causing fires in vessel engine rooms and injury to crew. NoSpray® Anti Splashing system is available in tape format and is coated on one side with a silicone adhesive for ease of installation and superior adhesion. NoSpray® conforms with Solas Regulation II 2/15.2.11 and is fire tested in accordance with IMO Resolution A.653 (16). NoSpray® can be applied on fuel oil injection pipes, fuel and lube oil service pipes, fuel oil valve cooling pipes attached to diesel engines, flammable oil pipes, pumps and strainers as well as fuel oil heaters.

Marine Hatch Tape

CanSeal® is a heavy-duty hatch sealing tape with a high tack adhesive mastic and with silver backing, guaranteed to provide

extraordinary strength, adhesion and flexibility in moderate weather conditions. CanSeal® hatch tape is designed to keep out moisture and fumes from the vessel's cargo and provides weather resistance to salt and marine conditions.

High Temperature Pipe Dressing

SteamKote® is a proprietary non-flammable high temperature coating formulated to protect against corrosion on steam pipes, valves and deck equipment. SteamKote® forms a flexible 'skin' when cured that will not crack, peel or harden even under harsh marine conditions. SteamKote® is the only pipe dressing in the market which is non-flammable. This makes the product safer to use and easier to store.

Emergency Pipe Repair Kit

CanFix® Emergency Repair Kit is a complete system for making emergency repairs to a wide variety of pipe materials. CanFix® consists of a patented fiberglass cloth impregnated with water-activated resin that sets in minutes with no measuring, mixing, or messy cleanup. Approved and used by the Canadian and US Navy and Coast Guard, CanFix® has proved itself invaluable when surfaces are compromised at sea. The solution can be used on riser exhaust, leaking hydraulic lines, water cooling hoses and fluid lines, leaking steam lines and fittings, corrosion protection coating, and emergency repairs to fuel lines.

Adam Eweida (MSc) the Marine Division Manager at Innovative Manufacturing has been active in the marine market since 2007. Adam has been involved with engine room equipment sales, logistics and maintenance repair in both Canada and Sweden. Adam can be reached at adam@innovativemfg.ca.




TRUSTED PROTECTION FOR THE MARINE INDUSTRY



- PetroWrap® Anti-Corrosion Tape
- CanSeal® Marine Hatch Tape
- SteamKote® HT Pipe Dressing
- ExoWrap® Insulation System
- NoSpray® Anti-Splashing Tape
- CanFix® Emergency Pipe Repair Kit

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