



The benefits of using Bondstrand in Water Ballast System, especially in tankers, and LNG Carriers

Bondstrand Piping Systems are commonly used on ships for a variety of reasons.

Corrosion Resistant

The product is itself corrosion resistant since this is made up of inert components that do not corrode in the harsh marine environment. There is no reaction between the piping systems and the environment, and there is therefore no galvanic corrosion, stress corrosion or other forms of corrosion. The alternative material commonly used on ships is carbon steel. Just imagine for a moment that this is now time for maintenance of this carbon steel water ballast system.

Maintenance of a carbon steel water ballast system

The maintenance of a corroded carbon steel water ballast system is an elaborate process. This involves carrying out inspection of the system, requiring tanks to be gas free and made safe for entry, identifying where the corroded sections of the piping are, finding a suitable time and suitable dry docking facilities, planning for the cutting out of the corroded sections and removal of pipe sections. The pipe sections can only be removed by cutting the outer or the inner bottoms in way of the tanks. After new sections of carbon steel pipes are inserted into the tanks, the tank top or tank bottom needs to be welded back in place and the welding seams inspected by the certifying classification society. This whole exercise itself is both expensive and time consuming.

Bondstrand Fiberglass Water Ballast System

Bondstrand fiberglass pipes and fittings can be used throughout this system starting from the sea chests valves through to the inlet of the pumps located in the machinery spaces or pump rooms, outlet from the pumps through the bulkheads and into the suction / discharge bell mouths. In short, the sea water filters, bulkhead penetration pieces, expansion couplings, suction bell mouths, pipes and fittings are all in Bondstrand materials engineered for the application. NOV Fiber Glass Systems supplies this system in ready-to-install pipe spool pieces with defined locations for specific support types. We deliver a system. We do not just deliver pipes and fittings. An engineered Bondstrand fiberglass Water Ballast System properly installed will not require maintenance.



Bulkhead Penetration Pieces



Other benefits

Long-life Piping and low life cycle cost

High capital cost assets such as tankers and LNG Carriers are typically operated well beyond the twenty to twenty five years periods life. Bondstrand fiberglass systems last the life time of the vessels. Consequently without need for maintenance, the overall cost of Bondstrand piping is much cheaper than ordinary heavy schedule steel pipes.

Lightweight

Bondstrand Piping typically weighs about 15% the weight of heavy schedule steel. This means that ship owners are able to carry more cargo. Alternatively, the vessel is able to travel faster due to its lighter weight. Shipyards do not have to utilize heavy equipment to transport Bondstrand Piping.



Sea Water Filter

Robust Marine Piping

Bondstrand Piping is manufactured following all classification societies' rules and regulations. We exceed the IMO Resolution 753 A (18) standards. Bondstrand 7000M pipes and fittings are manufactured meeting external pressure requirements such as may be encountered in a ballast tank. The pipe wall has three times safety factor on the external collapse.

In addition, the piping must also be able to withstand internal pressure. Bondstrand Piping is designed for an internal pressure rating of 16 bar working pressure. This design pressure exceeds those required in the shipyard specifications. The safety factor designed into the system is four times.

Maximum operating temperature that the piping can be subjected to is 93° C.



Double O-Ring Expansion Coupling

Assistance

NOV Fiber Glass Systems provides assistance directly and /or through our global network of agents and service partners including consultations on design, training, after sales and where necessary modifications and repairs to the Bondstrand systems onboard all sea going vessels. NOV Fiber Glass Systems is a partner you can rely on!

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