LEAK TESTING OF LNG CARRIER TANKS

THE OBJECTIVE
LNG cargo tankers have been developed into high-end engineering assets. The materials used and applied design concepts are completely safeguarded by in-line monitoring of possible leakages. Even so, leakages can still occur, due to surface cracks caused by ship movement or physical damage to the tank bottoms. Especially with membrane type tankers the localization of leaks is very difficult, due to their volume and restricted access to the areas concerned.

THE SOLUTION
To ensure safe and reliable operation of LNG carriers, SGS offers pre-service leak testing of newly installed tanks as well as in-service leak testing and localization when the safety system indicates potentially unsafe operations. Our services are highly specialized, enabling us to localize leaks as quickly as possible.

WHY SGS?
SGS understands the importance of safe LNG carrier operations. Thanks to our global network we can be at your service anywhere and anytime. Our teams possess the specific skills and a long track record in carrying out these advanced inspections. Coordination is the responsibility of our Korean expert office. We will make your docking time as short as possible and provide clear and reliable results.

OUR SERVICES FOR LEAK TESTING OF LNG CARRIER TANKS
A selection of technologies can be applied to locate leakages. According to time frame, expected damage and history, SGS will select and apply the most suitable leak testing methods:

Ammonia (NH3) Leak Testing
This test is performed by injecting an inert gas mixed with ammonia into the internal space of the test material under pressure. Paint sensitive to ammonia is first applied over the welding seams to be tested and the inert nitrogen and ammonia mixture is then fed internally through the test material. A leak site and its size can be detected by the location and extent of the paint’s discoloration. This method is specifically used for application on welding seams.

Helium (He) Leak Testing
This test is performed by injecting helium gas into the internal space of the test material and pressurizing it. The helium gas will escape through any welding seam flaws, cracks or pin holes. Detection of leaking helium gas is performed by a probe connected to a helium mass spectrometer, where the gas is ionized in the ion chamber by an electron beam generated by a filament. A helium ion collector gathers only helium ions and sends an amplified signal to the indicator. The extent of the leakage can be measured by the signal strength. This method is specifically applied on welding seams.

Pressure Change Measurement Testing
The total leakage is measured by evaluating the inside pressure change related to the time passed in a decompressed or pressurized test object. This test is performed in addition to other technologies in order to quickly locate easily detectable leaks that can be repaired at an early stage.

APPLICATION RANGE
• LNG Carrier (Mark III type and NO 96 type as latest version)
• All kinds of storage tanks
• Pressure chambers
• Heat exchangers

SGS also offers Leak Testing for wind energy technology, storage tanks, and pipelines.

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WHEN YOU NEED TO BE SURE