



Hatch Cover Tightness Testing Device



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Over 40% of all P&I claims are due to damaged cargo caused by water ingress via the hatch covers. This represents \$46.9m of damaged cargo every year. As a result, reports of leaking hatch covers are the most frequent case for selecting a vessel for an unscheduled condition survey.

Even small amounts of water can do extensive damage to cargoes. Steel products are the costliest when it comes to wet damage - they make up 28% of claims – but dry bulk (22%) and bagged bulk (14%) are also susceptible. Regular and efficient testing of hatch covers can, therefore, save companies like you millions in claims for damaged cargo.

But the losses suffered by the shipping industry due to defective or poorly maintained hatch covers shows no signs of diminishing. The 50 million GT, A- rated North of England P&I club says that it continues to experience three to four claims each year valued between US\$500,000 and US\$ 1,000,000 for waterdamaged cargoes resulting from hatch cover defects.

Hatch Cover Testing Legislations



Hatch covers on bulk carriers are subject to annual inspection by the Classification Societies surveyors.

The inspection covers the structural parts of the coamings and hatch covers as well as examining the closing, sealing and securing devices.

The “**Guidelines on the Enhanced Programme of Inspection during Surveys**” (ref. IMO Res. A744(18)) states that hatch cover sets should be surveyed open, closed, and in operation at each annual survey, including:

- Stowage and securing open position
- Proper fit and efficiency of sealing in closed condition
- Operational testing of hydraulic and power components, wires, chains and link drives

SOLAS Ch.XII states that all bulk carriers must comply with the maintenance requirements provided in the ‘Standards for Owners’ Inspections and Maintenance of Bulk Carrier Hatch Covers’. The hatch cover maintenance plan must also form a part of the ship’s safety management system as referred to in the ISM code.



Ultrasonic Testing

There are **three different kinds of tightness tests** that can be used to check hatch covers for leakage which includes:

- **Water-hose leak detection**
- **Chalk testing**
- **Ultrasonic testing**

Ultrasonic testing is very simple in its operation and is the most accurate way to ensure your hatches are functioning correctly. Using just a transmitter and a detector the transmitter emits ultrasonic waves and is placed in the cargo hold. The hatch cover is closed, fully cleated and battened. The operator then uses the hand-held detector to listen for the ultrasonic waves from the outside, picking up all sounds that pass through the sealing arrangements, vents or cracks.

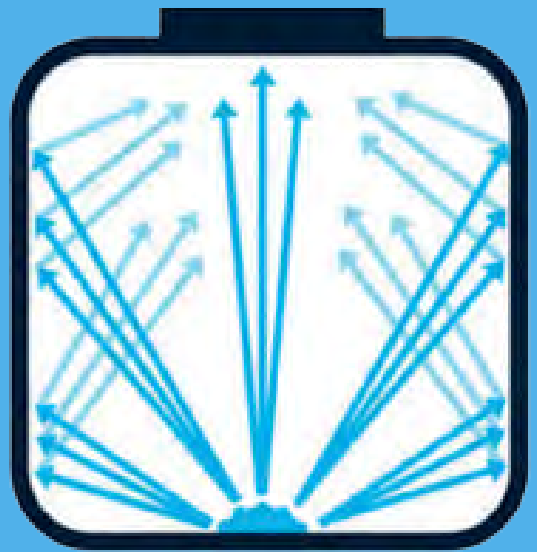
The effectiveness of a hatch cover tester is determined by the amount of energy that reaches the hatch cover. This in turn is determined by a combination of the primary dispersion pattern from the emitter and the first reflection pattern.

Hatch cover testers that rely on secondary and subsequent reflection patterns to direct the sound to the hatch cover are less effective due to the gradual loss of the sound at each reflection.

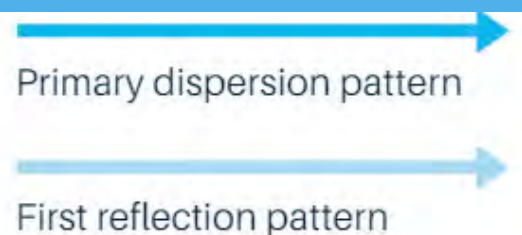
Unlike hose and chalk tests which only show if there is contact between the rubber packing and compression bar, ultrasonic testing indicates when you have the required compression and provides a precise location for any leakages. It only needs one operator and doesn't rely on the cargo hold being emptied.



Inefficient Transmitter



Efficient Transmitter





Because of its high power, unique design and pattern of emitters, Hatchtite™ is the most effective ultrasonic tester on the market. Over its lifetime, Hatchtite™ will cost you less than 70 cents per day per ship. You can also easily move Hatchtite™ from ship to ship.

Wouldn't you and your company feel assured knowing that your cargo is safe because you made the decision to buy the best testing device on the market?

Realise the benefits today:

- Pinpoints small leaks are areas that lack compression
- Lightweight and portable
- Simple to use, accurate and reliable
- Can be carried without interfering with ships operations

Hatchtite™ Features

Dome Configuration	Hatchtite™ uses 13, 40 KHz ultrasound emitters arranged on a dome. This produces an omnidirectional sound field that's uniformly distributed throughout the cargo hold.
Emission Strength	Hatchtite's transmitter is 1,000 times more powerful than any other on the market so it's able to give complete cover in even the largest of holds.
Low Maintenance	Hatchtite's runtime is 40 hours instead of the usual 10 and, while most ultrasonic transmitters need calibrating annually, Hatchtite™ will operate for 5 years before calibration is required.
Less Disruption	Hatchtite™ can be easily lowered down into the hold whether the ship is empty or loaded so there's no major interruption to operations.
Meets Regulations	Hatchtite™ measures in decibels to comply with P&I club stipulations and DNV requirements.
Robust & Durable	Hatchtite™ is rated IP66. It's fully compliant with IACS Unified Requirement U.R.Z17 and is approved by insurers and P&I clubs.

TECHNICAL SPECIFICATIONS

Transmitter

Dimensions	190 (L) x 100 (W) x 60 (D) mm max
Weight	200g
Case Material	Impact resistant ABS with leather pouch
IP Rating	IP66
Indicators	3No. Green LEDs – correct operation 3No. Red LEDs – low battery indicator
Output	157dB @ 40KHz
Emitters	13 individual emitters
Power	6No. AA 1.5V Alkaline batteries Input for 9 to 24V DC
User Controls	ON/OFF switch
Battery Life	4-6 hours

Receiver

Dimensions	160 (L) x 95 (W) x 38 (D) mm
Weight	225g
Case Material	Impact resistant ABS with leather pouch
IP Rating	IP66
User Controls	OHV calibration control knob Remote control db/OHV Selector
Loudspeaker	1W - interna
Power	1 x PP3 9V alkaline disposable cell
Battery Life	40 hours
Headphone	Colour coded BLUE3 accepts 3.5mm jack, stereo or mono inspection microphone socket colour coded RED
Socket Display	3 1/2 digit 12.7mm characters LC Display

Microphone

Dimensions	10mm diameter, 1200mm extended, 300mm folded closed
Material	Aluminium extension
Weight	200g

Carry Case

Dimensions	450g x 320 x 100mm
Material	Polycarbonate
Weight	1.9kg

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At Martek Marine, we are committed to establishing high ethical standards of behaviour and effective corporate governance. This defines our strategic and financial objectives. Corporate responsibility remains central to delivering our strategy and achieving our success.

We are committed to conducting business in an environmentally responsible manner. We are putting in place processes to understand and address our responsibilities in respect of our operational impacts on the environment.

We aim to reduce the use of replacement parts and calibration to help overcome waste and excessive carbon emission.

Pioneering sustainable and innovative solutions for ship safety, performance and crew welfare.

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