Hatch Cover Tightness Testing Device

Hatchtite
Ultrasonic Testing Device

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Hatch Cover Tightness Testing

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 water-damaged cargoes resulting from hatch cover defects.

Hatch Cover Testing Legislation

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
- **P**roper 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.

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Ultrasonic Testing

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

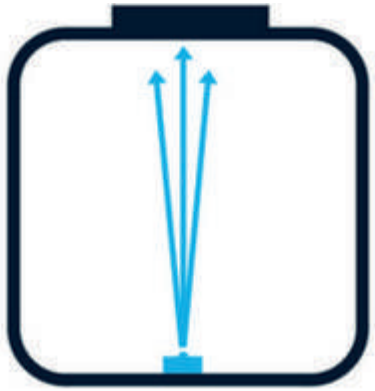
- **Water-hose leak detection**
- **Chalk testing**
- **Ultrasonic testing**

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 is turn is determined by a combination of the primary dispersion pattern from the emitter and the first reflection pattern.

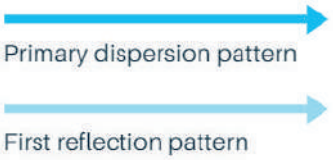
Hatch cover testers that rely on secondary and subsequent reflection patterns to direct the sound to the hatch cover are less effective due to the gradual loss of the sound at each reflection.

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



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Hatchtite™

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**
- **Full ABS Type Approval**

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:	IP 66
Indicators:	3No. Green LED's - Correct Operation, 3No. Red LED's - Low Battery Indicator
Output:	157 dB @ 40 KHz
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 hour

Receiver	
Dimensions:	160 (L) x 95 (W) x 38 (D) mm
Weight:	225g
Case:	Impact resistant ABS with Lether pouch
IP Rating:	IP 66
User Controls:	OHV calibration control knob, Remote Control db/OHV Selector
Loudspeakers:	1W - internal
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 extention
Weight:	200g

Carry Case	
Dimensions:	450 x 320 x 100mm
Material:	Polycarbonate
Weight:	1.9Kg

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