



## DNV Certified IR Windows Assure Reliability and Safety at Sea

By: New River, Press Company

### Overview:

Manufactured in 2013, the Maersk Intrepid is a drilling rig that has been designed to operate in the extremely harsh environment of the North Sea. Up to 150 people stay on the rig at any one time so, safety and fire prevention are paramount and to minimise the risk Maersk operates a rigorous preventative maintenance programme for all electrical equipment on board, in line with NFPA 70E and SOLAS regulations.

Thermal imaging is an essential element of this regime and Maersk has recently taken further steps to underpin the safe use of this method. It has chosen to install IRISS IR windows, the only products of their type to carry Lloyds, ABS (American Bureau of Shipping) and DNV accreditation.

Removing panels to gain access to switchgear for thermal inspection is a very risky business. The danger of arc flash – a short circuit through the air that creates a fireball explosion – is huge. Simply dropping hand tools or a cover panel, making accidental contact with energised parts or changing the state of equipment are common triggers and the results can be fatal. These hazards are bad enough on land but at sea, they are even more acute.



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# Case Study

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The use of an IRISS IR window effectively allows the switchgear to remain in an enclosed and guarded condition, so the IR scan becomes a non-invasive task. Infrared passes through the window's transmissive polymer lens without compromising the IP65/NEMA 4X seal on the enclosure panel.

This not only keeps personnel safe but it also allows the system to be thermally inspected under normal load conditions. As a result both quantitative and qualitative data can be acquired on the status of the electrical system. Furthermore, applications previously considered to be too hazardous for thermal imaging, can be brought into the regular inspection schedule.

Maersk chose IRISS windows because they are the most tested windows on the market and comply with all safety standards required by the offshore industry. The products were recommended and supplied by TCAM AS of Norway, a local partner of IRISS that specialises in preventative maintenance solutions. The lion's share of the thirty IRISS windows ordered by Maersk were custom rectangular CAP-CT 24 and CAP-CT 12 made from a transparent polymer with grill reinforcement. They allow assets to be monitored in the visual, ultraviolet and all infrared spectrums.

The IRISS polymer window provides many advantages over a crystal alternative. Firstly it is designed for harsh engineering use. Unlike crystal, it withstands vibration and won't shatter. Nor will it lose its transmission qualities in the presence of UV or salt water so for maritime and offshore use IRISS is a clear front-runner.

Another advantage is that an IRISS window can be virtually any size and shape. The optimum size of a crystal window is just 4" in diameter and can only be round, the shape in which it is grown in the laboratory. IRISS CAP-CT Series windows are available in a wide variety of standard sizes from 10cm to 60cm in width but can also be supplied in custom sizes and to fit curved surfaces. Indeed Maersk took advantage of this design freedom by including a bespoke window in its order.

"We supplied the IRISS windows for Maersk Intrepid in September 2015 and they are now allowing rig engineers to undertake fast thermal inspection of critical components," confirms Tormod Selbekk of TCAM AS. "Electrical inspection in heavy seas is extremely hazardous and this is why the IRISS products are particularly helpful in the maritime and offshore industries. They ensure the compliance with industry standards, reliability of assets and most importantly personnel safety."



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