

Nofirno Multi Cable and Pipe Transits

The latest fire test procedures for AO & HO multi cable transits and pipe penetrations

CSD Sealing Systems are the UK market leaders in the supply of cable and pipe sealing systems for the marine and offshore industries, having extensive experience and knowledge of supplying offshore engineers with specialist sealing solutions for over 20 years. The systems enhance the integrity of fire, gas and watertight boundaries when penetrating with pipes or cables and are proven in the North Sea on major upgrade projects for Statoil, Norsk Hydro, Shell, BP, Talisman and ConocoPhillips.

The RISE NOFIRNO Multi cable transit and RISE NOFIRNO pipe penetration systems have been tested in accordance with the IMO 2010 FTP Code to prove integrity in "A-0" and "H-0" without any insulation applied.

The new IMO International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code), took effect from 1 July 2012 and addresses the importance of separate fire tests for pipe penetrations and cable transits through "A-0" divisions and "A-60" divisions;

Many sub divisions within a modern ship and offshore platforms are classified under IMO SOLAS 74 and IMO MODU (2009) as "A-0" and "H-0" where there is a risk of hydrocarbon fire. It is vitally important that pipe penetrations and cable transits are installed as tested in "A-0" and "H-0" divisions and any insulation (if required and applied in the fire test) is also then applied in practice.

An "A-0" test is more difficult for a pipe penetration and cable transit to pass, since there is normally no fire insulation fitted on an "A-0" division. The penetration and cable transit is subjected to a far greater heat load because of the tremendous amount of radiated heat in addition to the normal conducted heat as shown in the image above. This increased heat load could then result in integrity failure with fire breaking through a pipe penetration or cable transit within the 60 minutes.

All "A" class fire tests are for a duration of 60 minutes, "A-60" divisions are required to maintain the insulation & integrity for 60 minutes and "A-0" divisions must still contain a fire (integrity) for 60 minutes but because we are not concerned about temperature rise (insulation) there is normally no insulation applied. The only way many "A-60" approved systems can pass the "A-0" fire test is if they are locally insulated to protect them; this is not always then applied in the field.

The previous FTP code only made reference to "A" class divisions, any testing on "A-60" divisions was assumed to satisfy the criteria for all "A" class divisions including: "A-0"; certificates were issued for "A-0 - A-60" on the basis of "A-60" testing (but drawings showed insulation applied), there were no separate tests required for "A-0" divisions.

This distinction is now much clearer. Extracts from The new IMO International Code for Application of Fire Test Procedures, 2010 (2010 FTP Code);

Pipe and duct penetrations

“A-0” class pipe penetrations are recommended to be performed in an uninsulated (“A-0”) bulkhead/deck. If the pipe penetrations are tested as an “A-60” class penetration, any insulation fitted (on the penetration itself and 200 mm around) will be required to be fitted also for class “A-60”. “A-0” penetrations shall not be approved without an “A-0” test although tested and approved as “A-60”.

Projects

Golden Eagle Development Offshore Oil Platforms

UK North Sea CB&I/Nexen -supply RISE NOFIRNO system, sealing 970 pipe penetrations across both platforms to protect against hydrocarbon jet fires J30/ H60 and blast overpressures of 1 bar.

Shell Upgrade Program

RISE NOFIRNO system used to replace original pipe penetration seals over 13 platforms, (average of approximately 250 pipe penetrations per platform) to prevent corrosion; AO - A60 & HO- H120 rated.

ConocoPhillips Jasmine Platform (New Build)

Supplied RISE NOFIRNO system to seal 316 pipe penetrations with service pipes ranging from 26.7mm to 508mm, A60 & J30 rated.

Other Projects

BP

Andrew Redevelopment, Azeri & Magnus

Nexen

Buzzard

Talisman

Fulmar A, Montrose Alpha, Clyde, Claymore & Tartan

Apache

Forties Alpha, Forties Echo & Beryl Alpha

Cable Transits

“A-0” class cable transits are recommended to be performed in an uninsulated (“A-0”) bulkhead/deck. If the cable transits are tested as “A-60” penetration, any insulation fitted on an exposed side (on the cable transits itself and 200 mm around) will be required to be fitted also for “A-0”. “A-0” cable transits shall not be approved without an “A-0” test although tested and approved as “A-60”.

Benefits

RISE NOFIRNO flexible pipe penetration system is one of the most adaptive systems for sealing straight and angled pipe penetrations and can even accommodate multiple pipe runs, significantly saving in space. The system remains elastic and can therefore accommodate significant pipe movement in all directions.

Certified for use in all A) - A60 & H0 - H120 bulkheads and decks

A-0 and H-0 areas without any additional insulation required

2 hour Jet Fire rated without any additional insulation & gas and watertight after an A-60 fire test

Prevents corrosion inside the penetration by preventing moisture build up inside the penetration seal

Remains elastic to accommodate movement between pipe systems and the structure, ensuring integrity is maintained throughout the life of the structure

SLIPSIL Plug pipe penetration combines simple installation with high performance sealing.

RISE NOFIRNO Multi Cable Transit is one of the most flexible & safest systems for sealing cable transits.

Certified for use in all A0 - A60 & H0 - H120 bulkheads and decks, with no insulation required on fire hazard side

Certified for use in A-0 and H-0 areas without any additional insulation required

2 hour Jet Fire rated without any additional insulation & gas and watertight after an A60 fire test

Easy addition & removal of cables & up to 50% space saving over modular block style Multi Cable Transits
