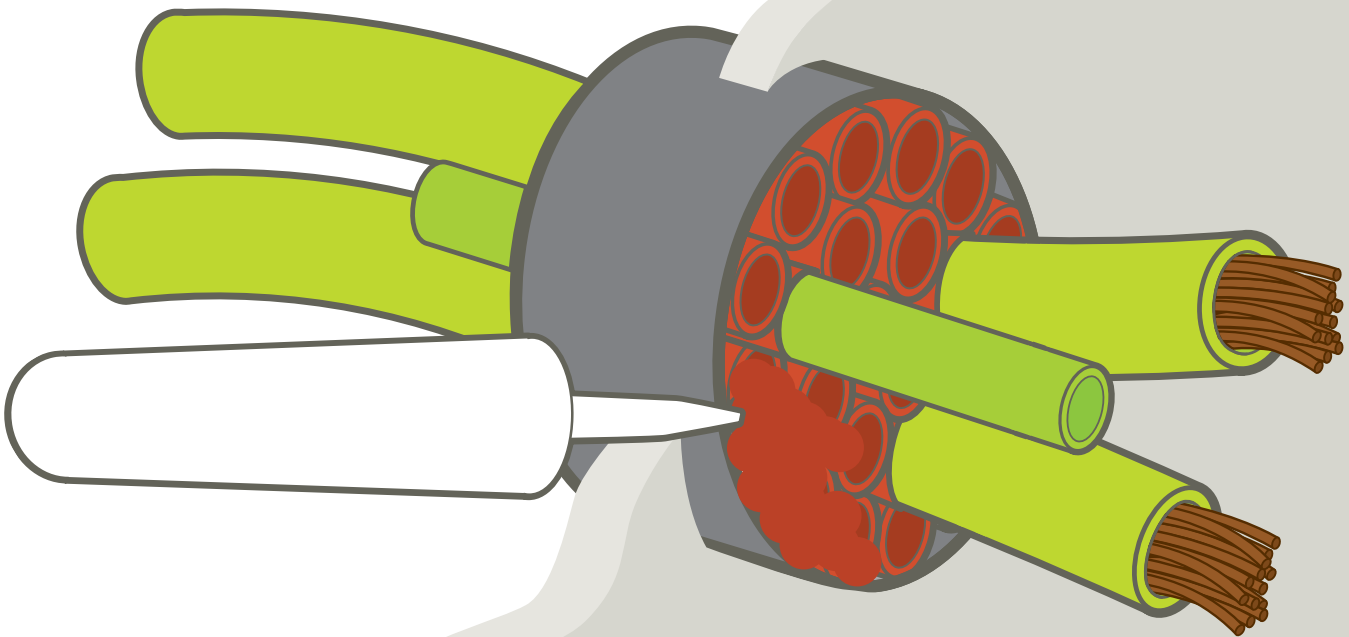


NOFIRNO[®]

Duct Seal

The RAPID Sealing System



“...an effective and simple solution for sealing cable ducts and building entries against flooding and gas ingress.”



THORNE &
DERRICK
INTERNATIONAL

Thorne & Derrick

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www.powerandcables.com

Features.



Simple and effective

The NOFIRNO Duct Seal was introduced specifically for use within the UK onshore construction market utilising the rubber technologies of Beele Engineering's NOFIRNO penetration sealing system.

The NOFIRNO system is a multi-cable and pipe transit sealing system designed specifically for cable ducts and building entries, delivering proven technology and the highest levels of lifetime sealing performance. It provides an effective and simple solution protecting against flood and gas ingress.

Few components

The NOFIRNO Duct seal comprises of two components, NOFIRNO rubber multi sleeves used to separate cables and provide a backing for a high quality NOFIRNO sealant.

Bonded sleeves can easily be torn

off if necessary and with our cutting tool, sleeves can be quickly slit to fit around cables. These joined sleeves make the system even quicker and easier to install than the standard RISE Duct Seal system. The sealant layer and filler sleeves work together to provide a flexible long term sealing solution.

Gas and water tight

The elasticity and high bonding strength of NOFIRNO sealant offers a flexible seal, which resists movement, shock and vibration, as well as high pressure. The RISE NOFIRNO multi sleeves ensure cable separation and are used to pack the free space and provide a backing for the application of the sealant. The completed duct seal will prevent the migration of dangerous gases and provide flood protection (certified up to 4 bar) and has been independently tested to prove no deterioration in performance for more than 50 years.

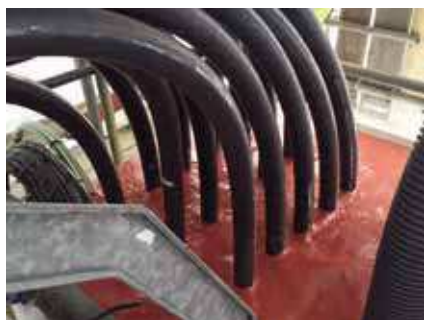
Adding/removing cables

The system is very simple to install and also easy to re-enter to add, remove or replace any cable during maintenance. The NOFIRNO Duct Seal system has been adopted across the onshore utility, nuclear and construction industries for these applications.

An instructional installation video can also be downloaded from our website, www.csdsealingsystems.co.uk



Benefits.



“...independently tested to prove no deterioration in performance for more than 50 years.”

Ensures DSEAR gastight compliance even in heavily filled cable ducts

Quick and easy to install in both horizontal & vertical ducts. Multi-sleeves make packing free space even easier

Easy re-entry for adding, removing or replacing cables

Ensures ATEX compliance

Can seal ducts in some running water conditions when using our SLIPSIL Waterstop or Aquastop system

Tested to prove no deterioration in performance for more than 50 years

Provides long term support to cables

WIMES compliant

No frame required and can be installed in any sized or shaped opening

Resistant to Methane, Hydrogen Sulphide and Chlorine

Resistant to submersion in petrol, diesel and synthetic transmission oils

Suitable for trefoil and large power cables

Prevents rodent ingress

Provides flood protection - Tested from front and back of seal

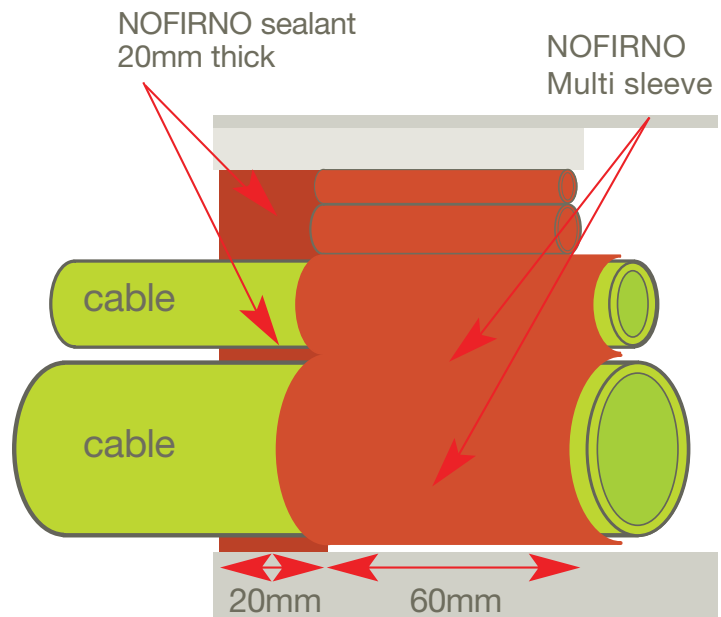
Installation Layout.

The NOFIRNO Duct seal can be used in vertical as well as horizontal ducts. The insert sleeves cling to the cables without sliding down and falling out of the penetration. The high adhesion and viscosity of the sealant means it will not run or drip when applied overhead.

20mm layer of NOFIRNO sealant. 60mm RISE NOFIRNO Multi sleeve

- Water tight pressure resistance tested up to 4 bar
- WIMES, DSEAR, ATEX & APEA compliant

- Curing rate of sealant layer 1-2mm per day
- Service temperature -50°C to 180°C
- Allows elongation of 200% and deformation of approx 50%



Extensive test programme.

ABS - 2.5 bar pressure test front of seal
ABS - 2.5 bar pressure test back of seal
BV - 4 bar pressure test front of seal

TNO Efectis Laboratory - Age Testing to 50 years with no deterioration in performance

TNO Efectis Laboratory - Resistance to Hydrogen Sulphide, Chlorine and Methane

HC-electric laboratory - Resistance to rodent ingress

TNO Efectis Laboratory - Submersion and contact testing for fuel oils

TNO Efectis Laboratory - Resistance to solar radiation and acid or salt laden atmospheres

Qinetiq - Test for resistance to shock and vibration





Standard kits available to suit the following duct sizes

50mm	160mm
100mm	200mm
125mm	225mm
150mm	300mm

NOFIRNO can be used to suite any sized opening. If the standard selection does not suite your requirements or if you have ducts with cables or services passing through please contact us to discuss.



TOOLS REQUIRED (INSTALLATION KITS AVAILABLE)

- High ratio sealant gun
- Long nose pliers
- Approved degreasing wipes
- Cellulose sponges
- Wooden depth gauge (marked at 20mm)
- Longer cartridge nozzles & angle connectors
- Disposable nitrile gloves
- Water spray
- Head torch
- Cartridge cutter

Installation Instructions.

Clean
Thoroughly



Step 1

Ensure the duct opening is clear, remove any debris which may interfere with the installation of the NOFIRNO Duct Seal. Carefully cutting off any cable ties will help separate the cables. The duct should also be dry.

Ensure
Cable
Separation



Step 2

Using an approved degreasing cleaner, thoroughly clean all surfaces where sealant will be applied. All dirt, cement, dust or oil must be removed from the inside edge of the duct or building entry and the outside of any cable or service pipe. Several wipes may be needed. The NOFIRNO sealant will not bond to any surface that is not clean and dry.

Pack
Tightly



Step 3

To ensure cable separation for installations with smaller cables, use the sleeve cutting tool to slit a quantity of the NOFIRNO sleeves. This should be about equal to the quantity of cables in the duct.

Apply
Sufficient
Sealant



Step 4

Place a split sleeve around each of the cables in the duct and then push the multi sleeves into the duct. For larger or single cables, this is not necessary. Simply ensure the multi sleeves provide separation between cables and between the duct and cables.



Step 5

Fill the remaining free space with spare NOFIRNO multi sleeves.



Step 6

Any small gaps should be filled with smaller sized 18/12 NOFIRNO multi sleeves. Multi sleeves can be easily separated in to smaller quantities. It is important to ensure multi sleeves are tightly packed into the duct to create a solid base for the application of the sealant.



Step 7

Push all of the multi sleeves into the duct.



Step 8

Push sleeves into duct to depth of 20mm, allowing for the application of the NOFIRNO sealant layer.



Step 9

Adjustments can be made to the multi sleeves using a pair of long nosed pliers. Allowing the correct 20mm depth will ensure a suitable layer of sealant is applied and a good seal is maintained.



Step 10

Attach the nozzle to the NOFIRNO sealant cartridge and snip nozzle at an angle, this will help installation. For awkward applications longer nozzles and angled applicators are available. To ensure a good bond is made, before adding the NOFIRNO sealant, clean the duct and cables again using the approved degreaser.



Step 11

Using a specialist high ratio caulking gun, apply NOFIRNO sealant to the least accessible areas first (usually around cables). Apply sealant over sleeves, allowing to fill out to the required 20mm depth; a slight overfill is needed. Use a torch to check for gaps in sealant & apply more sealant if required.



Step 12

When working with the NOFIRNO sealant we recommend the use of disposable nitrile gloves. Using the water spray, dampen the cellulose sponge. This is done to stop the sealant from sticking to the sponge whilst working with it.



Step 13

Using a dabbing motion, firmly pat down the NOFIRNO sealant, ensuring the sealant makes good contact with both cable and the duct wall. For installations in vertical ducts the sealant should stand just proud of the duct; allowing any water to run off the surface without pooling.



Step 14

Use the water spray to wet your gloves, this will ensure the sealant does not stick to the gloves.



Step 15

The surface of the NOFIRNO sealant should then be finished off by hand. Ensure a good smooth finish is obtained by the use of a fast skimming motion. Make sure there is a good seal around all of the cables, paying particular attention between the cables.



Step 16

Take a final check with a torch to ensure sufficient sealant has been applied and the duct is properly sealed. If there are any areas that do not seem sufficiently sealed add more NOFIRNO sealant in this area and smooth off as before. Clean any excess sealant from the edge of the duct and cables.



Step 17

The completed NOFIRNO Duct Seal will provide a 4 bar (58 psi) water tight and 1.0 bar (15 psi) gas tight rated seal. The NOFIRNO system is proven to provide maintenance free protection for a period in excess of 50 years.

**See overleaf for
'Adding or
replacing a cable'**

Adding a cable.



Step 1

Adding new cables is a simple process. The recommended CSD coring tool is used to remove a section of the sealant layer to locate an empty NOFIRNO multi sleeve. Please take care not to damage existing cables.



Step 2

A hole slightly larger than the new cable should be made using the coring tool, use pliers to remove any unwanted sealant. Long nosed pliers are then used to remove some of the empty NOFIRNO multi sleeves. Insert the long nosed pliers in to the sleeve and use a twisting action to remove the multi sleeve from its strip of sleeves.



Step 3

The cable is pushed into the space created, thoroughly clean the cable using an approved degreaser wipe (De-solve-it 4000GDW) to ensure a good bond will be made with the sealant. A sleeve must be put around the new cable.



Step 4

Pack with additional NOFIRNO multi sleeves if required. Smaller 18/12 sleeves can be used for smaller gaps.



Step 5

Refill the opening cut in the sealant layer with sufficient sealant. A slight overfill is required.



Step 6

Finish the sealant layer in the usual way. Using nitrile gloves, pat the sealant down with the damp sponge. With wet gloves, smooth the surface of the sealant by hand and inspect with the torch to complete the installation.

CSD coring tool Tested to 1000v



Blackwood		kiwa															
Electrical Safety Summary Sheet																	
Project No: 14-1000A		Date: 04/12/2014															
Company: CSD Sealing Systems																	
Product: Coring tool																	
<table border="1"> <thead> <tr> <th>Test</th> <th>Electrical insulation test</th> </tr> </thead> <tbody> <tr> <td>Comments:</td> <td>Two samples of the product (shown below) were supplied by the client and each sample gave identical results.</td> </tr> <tr> <td colspan="2">  </td> </tr> <tr> <td colspan="2"> A test was carried out with conductive material wrapped around the handle 30mm from the metal of the hole cutter. </td> </tr> <tr> <td colspan="2">  </td> </tr> <tr> <td colspan="2"> A voltage of 1000 Vac was applied for 1 minute and no breakdown occurred. </td> </tr> <tr> <td colspan="2"> A voltage of 2000 Vac was applied for 1 minute and no breakdown occurred. Breakdown occurred at 2500 Vac. </td> </tr> </tbody> </table>				Test	Electrical insulation test	Comments:	Two samples of the product (shown below) were supplied by the client and each sample gave identical results.			A test was carried out with conductive material wrapped around the handle 30mm from the metal of the hole cutter.				A voltage of 1000 Vac was applied for 1 minute and no breakdown occurred.		A voltage of 2000 Vac was applied for 1 minute and no breakdown occurred. Breakdown occurred at 2500 Vac.	
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RISE & RISE NOFIRNO

Multi-Cable & Pipe Penetration Sealing Systems.

Features.

Simple and effective

The RISE and RISE NORFINO multi-cable and pipe transit sealing systems provide an effective and simple solution for penetrating fire rated walls and floors.

Few components

The standard RISE system is used for cable transits and comprises of RISE FRR/LEHF insert sleeves used to separate the cables and for packing the free space in the transit. These sleeves are also used as a backing for FIWA, a high quality silicone based, fire resistant and water repellent sealant.

The RISE NOFIRNO system can be used for cable transits, pipe

penetrations or a mixture of both.

FRR/LEHF insert sleeves are used around each cable with NOFIRNO rubber filler sleeves used to pack any free space in the transit and is completed with NOFIRNO sealant layers.

Fire, gas and watertight

Using the RISE insert sleeves and applying sealant to both faces of the opening will provide a fire tight seal tested in accordance with BS EN1366-3 and certified in accordance with EN 13501-2 for up to 4 hours of fire protection.

When exposed to heat or flame the advanced rubbers developed by

Beele Engineering will resist heat and flame ensuring total protection against fire breakthrough and protect against toxic and corrosive gases.

Flexible and versatile

The RISE and RISE NOFIRNO systems can be used in wall or floor penetrations and are suitable for cable transits and metallic, GRP and plastic pipe penetrations.

Adding, Replacing or Removing Services

The system is very simple to install and is also easy to re-enter to add, remove or replace any cable or pipe during maintenance.



Benefits.

Quick and easy to install in both wall and floor penetrations

Provides long term cable support

WIMES compliant

Easy re-entry for adding, removing or replacing services

Suitable for humid environments

Tested and proven to provide no deterioration in performance for more than 50 years

No frame required and can be installed in any sized or shaped opening

Certified to provide up to 4 hours of fire protection

Ensures ATEX compliance

Space saving & allows for highly filled cabled transits

Fire tested in accordance with BS EN 1366-3 and BS476

Water and gastight sealing protection

Suitable for trefoil and large power cables

Resistant to methane, Hydrogen Sulphide and Chlorine

Cables and pipes can pass through openings off-centre or angled

RISE Multi-Cable Transit Seals

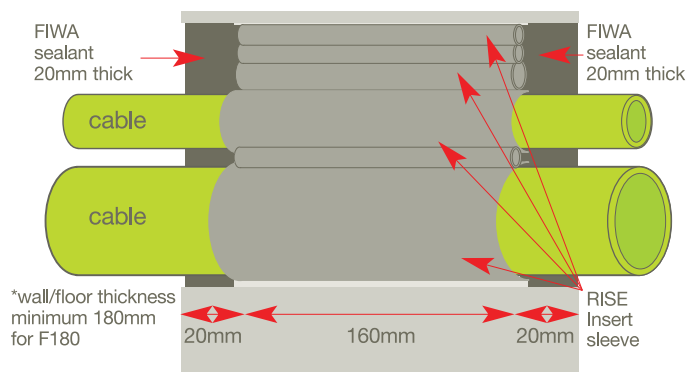
Multi-Cable Transits, Pipe Penetrations and Building Entries

Fire Protection, gas tight and water tight

Using the RISE fire rated insert sleeves at a length of 160mm and applying FIWA sealant to both faces of the opening, will provide a fire stopping seal. When exposed to heat or flame, the advanced rubbers used within the system will resist heat and flame, assuring total conduit protection from fire, heat, toxic and corrosive gases.

Installation layout.

Onshore application.



Components

- 2 x 20mm layers of FIWA sealant
- 160mm RISE insert sleeves Type FRR/LEHF
- 4 hours fire protection
- Certified pressure resistance
 - 1.5 bar water tight
 - 1 bar gas tight

RATING
EI 120
E 240

RISE NOFIRNO Multi-Cable Transit Seals

Fire Protection, gas tight and water tight

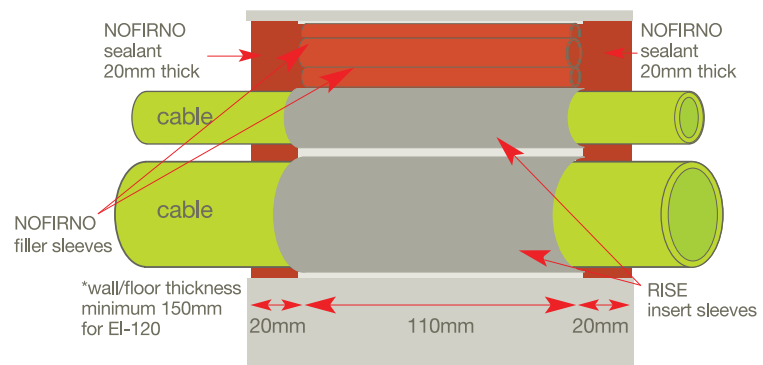
Using the RISE fire rated insert sleeves around each cable, filling the free space with NOFIRNO multi sleeves at a length of 110mm and applying NOFIRNO sealant to both faces of the opening, will provide a fire stopping seal. When exposed to heat or flame, the advanced rubbers used within the system will resist heat and flame, assuring total conduit protection from fire, heat, toxic and corrosive gases.

Components

- 2 x 20mm layers of NOFIRNO sealant
- 110mm RISE insert sleeves Type FRR/LEHF
- 110mm NOFIRNO multi sleeves
- 2 hours fire protection
- Certified pressure resistance
 - 4 bar water tight
 - 1 bar gas tight

Installation layout.

Onshore application.



RATING
EI 120

RISE NOFIRNO Single and Multi-Pipe Penetration Seals

Fire Protection, gas tight and water tight

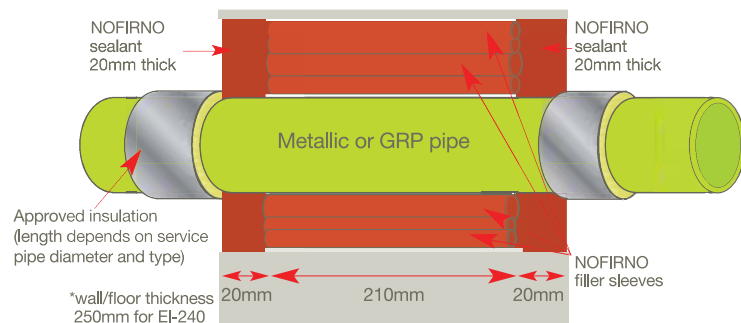
Using the NOFIRNO multi sleeves at a length of 210mm and applying NOFIRNO sealant to both faces of the opening, will provide a fire stopping seal. When exposed to heat or flame, the advanced rubbers used within the system will resist heat and flame, assuring total conduit protection from fire, heat, toxic and corrosive gases. By increasing the amount of insulation applied to the service pipe the length of the penetration can be reduced to a minimum of 150mm.

Components

- 2 x 20mm layers of NOFIRNO sealant
- 210mm NOFIRNO multi sleeves
- 4 hours fire protection
- Certified pressure resistance
 - 4 bar water tight
 - 1 bar gas tight

Installation layout.

Onshore application.



RATING
EI 240

Beele Engineering are always developing and testing their products. Please check for updates.