

BEELE / CSD FIRE STOPPING SYSTEMS

1. GENERAL

This section relates to **Beele / CSD** fire rated service penetration systems and control joint fire stopping systems and includes:

- fire resistant barrier for seismic and other movement gaps
- formulated compound of incombustible fibres
- fire-stop composite sheets
- fire-stop collars and sleeves
- fire-stop wraps and pillows
- fire-stop sealants
- fire-stop mortars

1.1 RELATED WORK

Refer to ~ for ~

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC C/AS1	Fire Safety
BSEN 1366.4	Fire resistance tests for service installations. Linear joint seals
AS 1530.4:2005	Methods for fire tests on building materials, components and structures - Fire resistance test of elements of construction
AS 4072.1:2005	Components for the protection of openings in fire-resistant separating elements - Service penetrations and control joints
ASTM C1519 - 10	Standard Test Method for Evaluating Durability of Building Construction Sealants by Laboratory Accelerated Weathering Procedures

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Beele Engineering Product Overview
Beele Engineering Technical Manual
Certification references to AS1530.4-2005 and AS 4072.1-2005

Manufacturer/supplier contact details

Company: Beele Australasia (PTY)Ltd
Beele Australasia Ltd

Web: www.beele.com.au

Email: sales@beele.com.au

Telephone: Australia 1800 1500 33
+64 274 070 053

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years: For manufacture/supply of fire stopping systems

- Provide this warranty on the manufacturer/supplier standard form.
- Commence the warranty from the date of practical completion of the contract works.

1.5 WARRANTY - INSTALLER

Provide an installer warranty:

5 years: For installation of fire stopping systems

- Provide this warranty on the installer/applicator standard form.
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.6 QUALIFICATIONS

Installers should be trades people trained with the materials and techniques specified. Qualified installers are recognised and accepted on the Certified Identification System provided by CID International Ltd.

1.7 NO SUBSTITUTIONS

Substitutions are not permitted to any of the specified systems, components and associated products listed in this section.

1.8 MANUFACTURERS INFORMATION

Submit type test certificates for each combination of fire stopping system, application, type of service, and substrate and penetration orientation. Include drawings of tested details.

- Submit report to AS 4072.1 appendix C.
- Submit evidence that systems specified without reference to brand conform to specified requirements.
- Submit copies of relevant manufacturers' instructions, for systems specified without reference to brand.
- Material data sheets (MSDS): Submit MSDS for systems specified without references to brand.
- Give notice if substrate or penetrations or both are not suitable for fire stopping.

1.9 LABELLING AND IDENTIFICATION OF FIRE RATED SERVICES PENETRATIONS

All service penetrations to fire cells and fire separation systems are required to comply with all the designed fire integrity of the specified systems. Label all fire rated service penetrations to AS 4072.1 using the Certified Identification System provided by CID International Ltd.

Each fire stopping installation to have a permanently fixed tag or lable with reference information containing the following information:

- Manufacturer's name
- Name and address of installer
- Date of installation
- System installed
- FRR
- Location of penetration on site
- Sign off by certified installer

Refer to CID International Ltd at www.cidcert.com to record all service penetrations.

1.10 INSPECTIONS

Give sufficient notice so that inspections may be made of the following:

- Service penetrations completed and ready for fire stopping.
- Finish fire stopping, before being concealed.

Compliance information

1.11 FIRE STOPPING SYSTEM COMPLIANCE

1.12 INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation:

- Manufacturer's, and or supplier's warranty
- Installer's warranty
- Producer Statement - Construction from the installer
- Other information required by the BCA in the Building Consent Approval documents.

- 1.13 **CERTIFICATION**
Submit evidence of compliance, to the recommendations of AS 4072.1 Appendix B.
Submit a certification document for installed fire stopping penetration and control joints.
- Form: To figure B1 of AS 4072.1

Schedule: Submit a schedule of installed fire stopped penetrations and control joints.
- Form: To figure B2 of AS 4072.1

2. PRODUCTS

Materials

- 2.1 **ACTIFOAM FOR CABLE TRAY AND BUSS BAR PENETRATIONS**
ACTIFOAM expanding rubber pads activated by fire that fills cavities or gaps, provides a fire seal that is tested up to 4 hour durations. Cables are layered between the pads and sealed with FIWA sealant. The system provides a flexible seal capable of resisting movement, vibrations, protecting against smoke, gas and water ingress to high pressures in excess of 2.5 BAR (2500kg).

For seismic gaps, friction fit to manufacturer's instructions. Fire tested to AS 1530.4 - 2005 and complies with AS 4072.1-2005.

- 2.2 **RISE FOR MULTI-CABLE TRANSITS**
RISE protects against fire for a period of up to four hours, sealing power and data cable penetrations. RISE sleeves are slipped over individual power cables or small bundles of data cables and sealed with FIWA sealant. The system provides a flexible seal capable of resisting movement, vibrations, protecting against smoke, gas and water ingress to high pressures in excess of 4 BAR (4000kg).

Fire tested to AS 1530.4 - 2005, and to AS 4072.1-2005.

- 2.3 **RISE/ NOFIRNO FOR MULTI-MIX TRANSITS FOR CABLES AND PIPES**
RISE/ NOFIRNO is approved for any combination of cable, metallic, insulated and plastic pipes through a single penetration. The system is used for the fire, gas, smoke and water-tight sealing of:
- Single or multi cables
 - Transit openings carrying metal and/or plastic pipes and/or insulated pipes
 - Mixture of pipes (all types referenced above) and cables.

The system provides a flexible seal capable of resisting movement, vibrations, protecting against smoke, gas and water ingress to high pressures in excess of 6 BAR (6000kg).
For seismic gaps, fit to manufacturer's instructions and seal with NOFIRNO Sealant.

Fire tested to AS 1530.4 - 2005 and to AS 4072.1-2005. It is also approved for single & multi-pipe penetrations for the harshest fire ratings of Jet Fire class for 120 minutes.

- 2.4 **NOFIRNO BOARD / PANELS**
NOFIRNO BOARD fire resistant panel or strip comprising of mineral wool, coated with NOFIRNO both sides tested to 2 hours. NOFIRNO boards are 60 mm thick (without coating) and have a density of 152 kg/m³. Fire tested to AS 1530.4 - 2005 and to AS 4072.1-2005.

- 2.5 **SLIPSIL SEALING PLUGS FOR SEALING METAL PIPES**
SLIPSIL sealing plug that combines simple installation with effective sealing performance. They are engineered as two half plugs designed to seal pipes and cables against the ingress of gas and water at pressures in excess of 2.5 BAR and fire protection around metal pipes for up to 4 hours. Range of sizes to suit services between 5mm and 520mm in diameter.

Fire tested to AS 1530.4 - 2005 and to AS 4072.1-2005.

- 2.6 RISE/ULTRA FIRE WRAPS, STRIPS AND SLEEVES
Strip, wrap or sleeve designed to crush all types of plastic and insulated pipes. The RISE/ULTRA system it begins activation at 75°C, when PVC starts to soften and distort.

Fire tested to AS 1530.4 - 2005 and to AS 4072.1-2005.

- 2.7 FIRE PILLOWS FOR TEMPORARY PROTECTION
ACTIFOAM pads can be used as a fire pillow as they expand to close off penetration in a fire situation. No sealant is required for ease of removal and placement of pads during work in progress. If smoke seal is required, then FIWA sealant will be required

Fire tested to AS 1530.4 - 2005 and to AS 4072.1-2005.

Fire and acoustic sealants and mortars

- 2.8 FIWA SEALANT
FIWA sealant; one part sealant that expands up to 1000% its volume under fire load. Fire tested to AS 1530.4 - 2005, to AS 4072.1-2005 and BSEN 1366.4 to provide up to 4 hours fire integrity and up to 3 hours insulation. Tested to ASTM C1519 - 10 for Dynamic movement and artificial age test.

- 2.9 NOFIRNO SEALANT
NOFIRNO sealant; one part sealant that resists fire erosion of 2 hours under Jet Fire test conditions (force flame at 360kpm from one metre distance at 1200°).
Fire tested to AS 1530.4 - 2005, to AS 4072.1-2005 and BSEN 1366.4 to provide up to 4 hours fire integrity and up to 3 hours insulation. Tested to ASTM C1519 - 10 for Dynamic movement and artificial age test.

3. EXECUTION

- 3.1 DELIVERY, STORAGE AND HANDLING
Take delivery of materials and goods and store on site and protect from damage.
Protect finished surfaces, edges and corners from damage.
Move/handle goods in accordance with manufactures requirements.
Reject and replace goods that are damaged or will not provide the required finish.

- 3.2 GENERAL PREPARATION
Fire stopping after services have been installed through penetrations and properly spaced and supported, after sleeving where appropriate, and after removal of temporary lines, but before restricting access to the penetrations, including before dry lining.

Supply ventilation for non-aqueous solvent-cured materials. Apply fire stopping material to uniform density. Finish surfaces to a uniform and level condition. Maintain cable and pipe separation. Protect adjacent surfaces from damage arising through installation of fire stopping.

Allow for thermal movement for the pipes and ducts. Reinforce or support fire stopping materials with non-combustible materials when:

- The unsupported span of the fire stopping materials > 500mm.
- The fire stopping materials are non-rigid.

To large openings provide fire stopping capable of supporting the same loads as the surrounding element or provide similar structural support around the opening.

Installation

- 3.3 INSTALLATION OF SYSTEMS
CSD recommend systems to be installed using a CSD certified installer registered on the Certified Identification System from CID International.

Fire stopping

- 3.4 **INSTALLATION OF ACTIFOAM**
Ensure the penetration is dry and free from dirt, dust and grease. Insert ACTIFOAM pads to create layers between cables ensuring separation of cables. Seal both faces with FIWA or NOFIRNO sealant paying attention around each individual cable. Hollow structures to have a cavity constraint system to constrain expanding product.
- 3.5 **INSTALLATION OF RISE RAPID**
Ensure the penetration is dry and free from dirt, dust and grease. Insert RISE sleeves around cables to create separation between cables. Insert RISE filler sleeves into the remaining space ensuring the penetration is packed full.

Seal both faces with FIWA or NOFIRNO sealant paying attention around each individual cable. Hollow structures to have a cavity constraint system to constrain expanding product.
- 3.6 **INSTALLATION OF RISE NOFIRNO**
Ensure the penetration is dry and free from dirt, dust and grease. Insert RISE sleeves around cables to create separation between cables. Insert RISE/ULTRA sleeves around plastic and insulated pipes. Insert NOFIRNO sleeves into the remaining space ensuring the penetration is packed full.

Seal both faces with NOFIRNO sealant paying attention around each individual cable and pipe. Hollow structures to have a cavity constraint system to constrain expanding product.
- 3.7 **INSTALLATION OF NOFIRNO BOARD**
Cut NOFIRNO board to suit the penetration size / shape and insert into place. Seal around perimeter with NOFIRNO sealant.
- 3.8 **INSTALLATION OF SLIPSIL SEALING PLUGS**
Ensure the penetration is dry and free from dirt, dust and grease. The pipe needs to be central and perpendicular through the penetration to ensure a tight seal. Lubricate penetration wall and each half plug and push into place. Hollow structures to have a cavity constraint system to constrain expanding product.
- 3.9 **INSTALLATION OF RISE/ULTRA WRAPS AND SLEEVES**
Fit fire wraps to plastic and insulated pipes where they penetrate the wall or floor. Slide inside the penetration and seal both sides with NOFINO sealant to ensure a smoke and acoustic seal. Hollow structures to have a cavity constraint system to constrain expanding product.
- 3.10 **INSTALLATION OF FIRE PILLOWS FOR TEMPORARY PROTECTION**
Insert ACTIFOAM pads around pipes and cables. Ensure pads are packed firmly into opening and around pipes and cable services
- 3.11 **INSTALLATION OF FIRE AND ACOUSTIC SEALANTS/FOAMS**
For both FIWA and NOFIRNO sealants, clean all surfaces from dust , dirt or other contaminants. Mask adjacent areas and remove immediately after tooling. Fill all joints to required depth with relevant backing system

Completion

- 3.12 **ROUTINE CLEANING**
Carry out routine trade cleaning of this part of the work including periodic removal all debris, unused materials and elements from the site.

- 3.13 DEFECTIVE OR DAMAGED WORK
Repair damaged elements. Replace damaged where repair is not possible or will not be acceptable. Leave fire stopping system to the standard required for following trades.

4. SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

Refer to <http://www.csdsystems.co.nz/Manuals.html>

Full installation instructions are available from:

Email: sales@beelee.com.au

Website: www.beelee.com.au
www.csdsystems.co.nz

Fire stop barriers

- 4.1 COMPRESSIBLE FIRE STOPPING

Location: ~

Type/Brand: **ACTIFOAM/ULTRA**

- 4.2 FIRE PANELS AND SEALING STRIPS

Location: ~

Type/Brand: **NOFIRNO** Board / Panels

Fire plugs, collars and wraps

- 4.3 FIRE SEALING PLUG

Location: ~

Type/Brand: **SLIPSIL** Sealing Plugs for sealing metal pipes

- 4.4 FIRE WRAPS AND SLEEVES

Location: ~

Type/Brand: **RISE / ULTRA** Fire Wraps, Strips and Sleeves

- 4.5 FIRE PILLOWS

Location: ~

Type/Brand: **ACTIFOAM** Fire Pillows / Pads

Fire stop mortars, sealants and foams

- 4.6 FIRE SEALANT

Location: ~

Type/Brand: **FIWA**
NOFIRNO