

Specification and Design Guidance Document 2024



As part of Tremco CPG UK, **Nullifire** offers a comprehensive range of innovative fire protection solutions, providing specifiers, designers, facility managers, contractors, and installers with access to market-leading support and products for both Fire Stopping and Intumescent Coatings from a **single-source solution**.

With decades of expertise, our singular focus remains clear: protecting people and buildings from fire. Passive Fire Protection is highly complex but essential, especially as modern buildings become more advanced. At Nullifire, we understand the critical need for reliability in fire safety, which is why we deliver integrated systems that are designed to perform when it matters most.

Our **Nullifire Intumescent Coatings** are renowned for safeguarding steel structures, while our **Fire Stopping Solutions** ensure superior passive fire protection for service penetrations, movement joints and linear gaps. These products, paired with unique interfacing solutions, provide all-around fire safety.

With a dedicated team of technical experts, we focus on delivering what our customers need at every stage of a project - **smart, reliable protection**. Whether it's a consultation, product selection, or project support, Nullifire is your trusted partner in fire protection.

TABLE OF CONTENT

The following sections will guide you through our innovative products, expert support, and how Nullifire serves specifiers, designers, facility managers, and contractors with smart fire protection solutions. Use the table of contents to navigate to specific topics easily.

03	Introduction
04	Understanding the Golden Thread
05	Understanding Building Regulations
06	Building Safety Regulations and The Nullifire Impact
08	Early Engagement with Nullifire
10	Fire Strategy and The Role of Compartmentalisation
12	Understanding Terminology
16	Services and Material Types
18	Servicing Spacing Guidance
19	Understanding Compartment Walls and Floors
22	Standards for Multiple Services and Test Requirements
24	Understanding Deflection, Ducts and Dampers, and CVPC
25	Types of Openings
26	Service Supports
	Testing & Accreditation
27	Third Party Installations

The Nullifire Offering

28	An Overview of Nullifire
30	Maximum Opening Sizes
	Product Longevity
	Fire Stopping for Combustible Pipes (40mm or Less)
32	Guidance on FB750 Intubatt and FS702 Intumastic
33	Sustainability and Environmental Product Declarations
34	Nullifire Traceability Technologies
35	Technical Notes
46	Acoustic Considerations
	Chemical Compatibility

About Tremco CPG UK and its brands

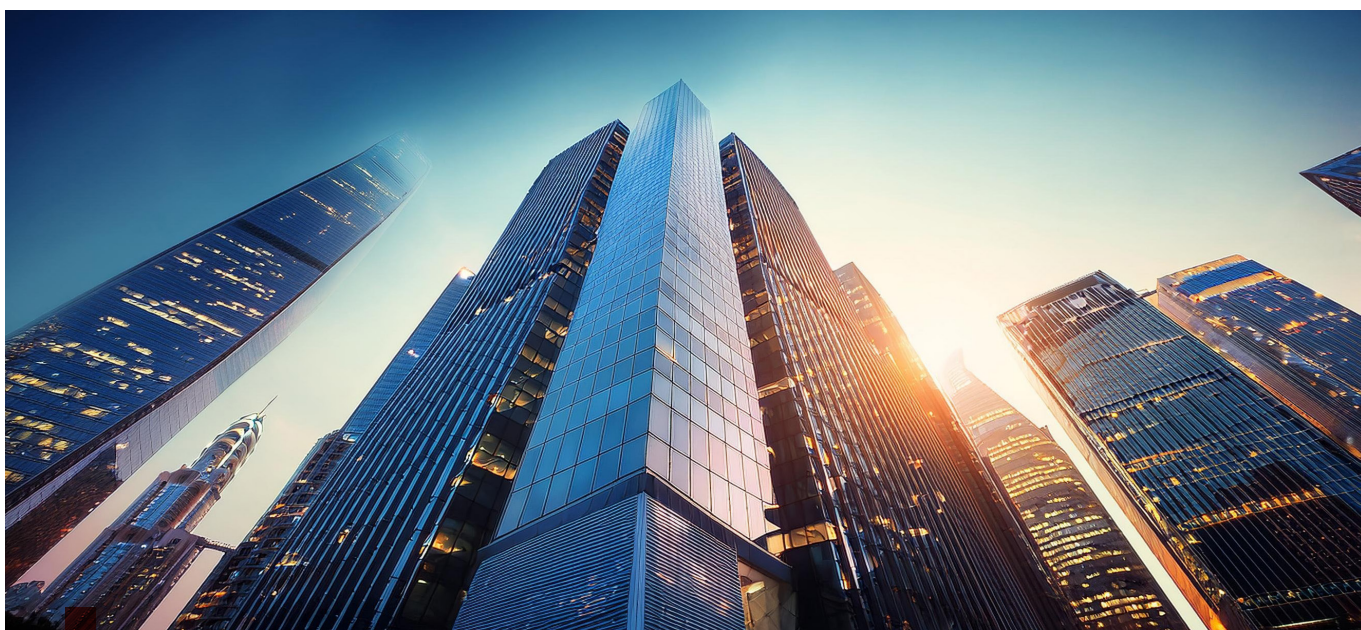
40	Tremco CPG UK and its brands
----	------------------------------

Understanding The Golden Thread

In the ever-evolving landscape of construction, one concept has emerged as crucial to maintaining safety, accountability, and quality across all projects: the Golden Thread. This principle, particularly emphasised following the Grenfell Tower tragedy, is central to ensuring that vital information about a building's design, construction, and maintenance is preserved accurately and comprehensively. When it comes to Passive Fire Protection (PFP), the Golden Thread and its importance cannot be overstated.

Understanding the Golden Thread:

The Golden Thread refers to the digital record of all information that is essential to the safe management of buildings. This encompasses every detail from design intent to construction, modifications, and ongoing maintenance. The goal is to ensure that anyone involved in a building's life cycle can assess accurate and up-to-date information, promoting transparency and informed decision making.



A Focus on Design Phase, Construction Phase, Post Construction and Maintenance

During the design phase, the Golden Thread ensures that the fire protection measures are integrated into the building's plans from the outset. This includes selecting materials and construction methods that meet fire safety standards. Detailed records of these decisions are crucial for future reference and modifications.

During construction, the Golden Thread tracks the installation of passive fire protection systems, ensuring that they are implemented as designed. This includes photographic evidence, material certificates, and installation reports. Any deviations from the plan must be documented and justified, ensuring that the integrity of the fire protection strategy is maintained.

Once construction is complete, the Golden Thread continues to play a vital role. It provides a living document that records any changes or updates to the building's passive fire protection measures. This is particularly important for maintenance and inspections, ensuring that all systems remain effective over time.

Understanding UK Building Regulations

In the UK, passive fire protection (PFP) regulations are governed by several key pieces of legislation and standards to ensure the safety of buildings. The primary framework comes from the Building Regulations 2010 and particularly Approved Document B (Fire Safety), which outlines the requirements for fire-resistant structures, compartmentalisation, and fire-stopping systems. This regulation emphasises the need for buildings to be divided into fire compartments, which help prevent the spread of fire and smoke. Passive fire protection systems from Nullifire, including materials such as fire-resistant sealants, mineral wool batts, and Intumescent products, must be

properly installed to meet these requirements. The materials and installations should be tested and certified to BS 476 or EN 1366 standards for fire resistance.

Additionally, passive fire protection within the UK must comply with the Regulatory Reform Order 2005. This legislation mandates that a "responsible person" must ensure the building's fire safety measures are sufficient, including the maintenance of fire-stopping systems and ensuring all passive fire protection products are fit for purpose throughout a building's life cycle. Regular inspections and risk assessments are



Industry Associations

The Association for Specialist Fire Protection (ASFP) is the UK's leading trade association dedicated to promoting best practices in passive fire protection (PFP). It provides guidance, education, and assurance that PFP products and installations meet the highest standards. The ASFP works closely with regulatory bodies and the construction industry to improve fire safety standards. It also offers training, technical support, and professional development for those involved in fire protection, aiming to enhance the competency and quality of PFP systems across the UK.



Building Safety Regulations: What You Need to Know

In 2022, new regulations become mandatory in UK law, driven by the findings and recommendations from the Grenfell Tower inquiry. These regulations are critical for all high-risk buildings (HRBs), including those with at least two residential units and buildings over 18-meters in height, as well as hospital and care homes.

A New Approach to Building Safety

The traditional planning process has been replaced by a series of defined "Gateways". Each gateway requires developers to submit comprehensive documentation and assurances including:

- Detailed safety plans
- Fire and structural safety checks
- Construction and change management procedures
- Demonstrations of competencies and compliance.

Oversight by the Building Safety Regulator (BSR)

The Building Safety Regulator (BSR), part of the Health and Safety Executive, assesses the information at each gateway. No work can begin until approvals are granted, and any major changes to the building design or structure must be re-approved. Even minor modifications are subject to mandatory delay periods.

Golden Thread Information and Handover

At Gateway 3, upon project completion, all "as-built" information must be handed over, including the "Golden thread" data - a permanent, digital record of the building's design, materials, and compliance checks. This record ensures the provision of accurate product information, testing, certifications, and ongoing updates throughout the building's life cycle, maintaining a thorough safety record for future changes.



The Nullfire Impact: Ensuring Compliance and Safety at Every Stage

Nullfire plays a critical role in the evolving regulatory landscape, with stringent safety requirements now built into every stage of high-risk building projects. Here's how our expertise supports compliance and project success.

Nullfire's fire protection solutions must be included in all project specifications from the outset. Our involvement across every phase ensures that safety requirements are fully met, with minimal chance for specification changes throughout the project. As the regulatory environment becomes more demanding, Main Contractors and Developers now require extensive support. Nullfire is there to provide expert guidance, ensuring correct product application and regulatory compliance every step of the way.

We provide accessible, digitalised product information packs that are clear and precise. This enables seamless documentation at every Gateway, ensuring that vital compliance data is readily available

and verifiable. With enhanced legal accountability, responsibilities and risks are increasingly passed down the supply chain. Nullfire helps protect your project by ensuring that our products meet all required competencies and certifications, enhancing legal awareness across all parties involved.

The complexity of new regulations can lead to project delays and difficulty estimating timelines. Nullfire's products are designed to mitigate these risks, providing high-quality, compliant solutions that streamline approval processes and reduce downtime. We offer extensive technical support at all stages, from specification and application to the final handover of the building. Our team ensures that all fire protection measures are correctly implemented, helping you achieve regulatory compliance with confidence.

Nullfire's commitment to safety, accuracy, and compliance makes us a trusted partner in navigating the new building safety landscape.



Contact our Technical Team at firestoppinghelp@tremcocpg.com

Early Engagement with Nullifire

Engaging with Nullifire's expert team at the earliest stage of a construction project is essential to ensure the highest level of fire protection. As experts in both fire stopping and Intumescent coatings, our team offers tailored advice that aligns with building specifications and regulatory requirements. Early collaboration allows us to provide the most effective and cost-efficient fire protection solutions, ensuring that every aspect of passive fire protection is properly planned and executed. This proactive approach not only mitigates risk but also streamlines the construction process by avoiding costly delays or design revisions.

Fire protection is a complex and highly regulated area, especially in today's modern, intricate buildings. With Nullifire's specialist support from the start, specifiers, main contractors, and architects can be confident that their project is meeting the necessary fire safety standards. Our technical team brings decades of experience to the table, providing guidance on everything from product selection to bespoke technical evaluations. By early engagement, stakeholders benefit from compliant fire protection strategies that are seamlessly integrated into the overall construction design.

Involving Nullifire's technical experts from the outset also ensures long-term safety and compliance. Our solutions are tailored to meet the unique challenges of each project, accounting for latest building codes and fire safety regulations. Early engagement helps minimise the risk of oversights, ensuring that fire protection solutions are installed correctly and perform as required, protecting both the building and its occupants.

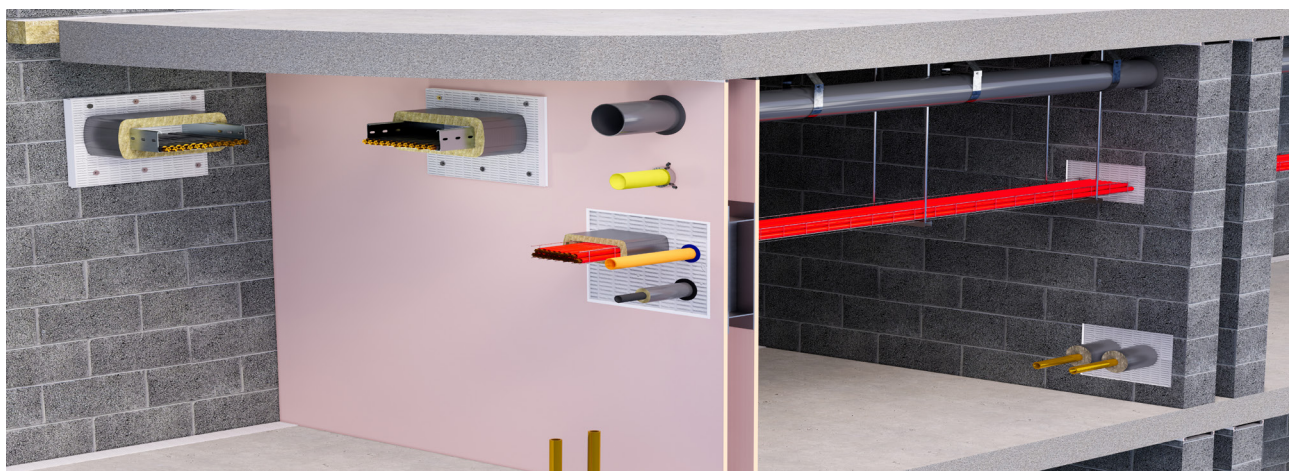
Benefits of Early Engagement

- ✓ Comprehensive fire protection strategies tailored to specific project needs.
- ✓ Expert advice on product selection and system integration.
- ✓ Assurance that designs meet the latest fire safety regulations and building codes.
- ✓ Cost savings through efficient planning and avoidance of rework or delays.
- ✓ Streamlined coordination with contractors, architects, and installers.
- ✓ Peace of mind with solutions designed to perform effectively in the event of a fire.



Fire Strategy

A fire strategy is developed by qualified experts who assess various critical aspects of the building, such as its purpose and occupancy, amongst others. This strategy outlines the locations of the compartment walls and floors needed to ensure the safe evacuation of occupants. It should be designed in accordance with the guidelines set out in Approved Document B. The fire resistance requirements for walls and floors are specified in terms of integrity and insulation, and measured in minutes. At Nullfire, all product packaging and documentation clearly displays the fire resistance classification, and we also use distinct colour coding to make these ratings easily identifiable. Fire resistance classifications are as below:



The Role of Compartmentalisation

It is a requirement within UK building regulations, for fire compartments to be utilised as a means of preventing the spread of fire and smoke within a building.

Fire compartmentalisation is achieved by constructing walls and floors of known and tested fire resistance performance. Fire compartments are often breached to accommodate various services. It is the role of fire stopping products to reinstate the fire resistance of the now breached compartment, to a performance outlined by the fire strategy.

Compartment Terminology:

E = Fire Integrity: The ability to stop flames and hot gases passing through.

I = Fire Insulation: The ability to limit heat transfer through the compartment.

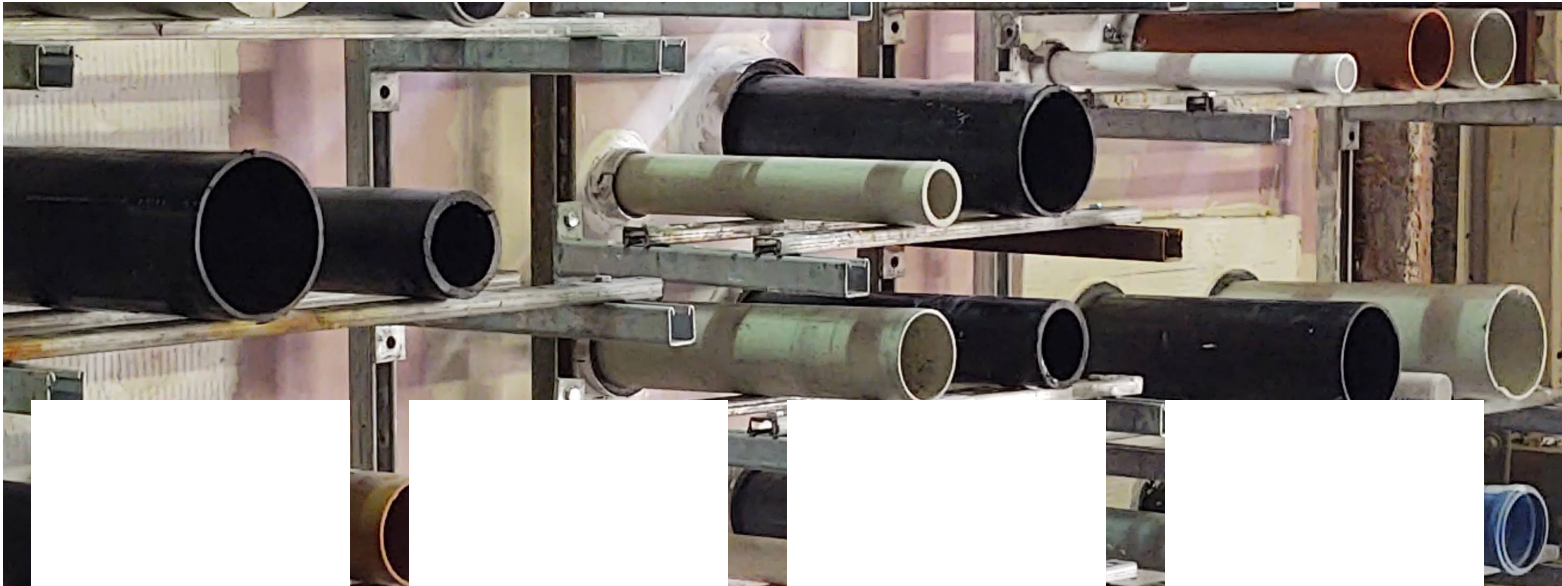
A fire compartment is only as strong as its weakest point. For example, a 60-minute door within a 30-minute wall creates a 30-minute fire compartment.

Please note: Nullfire interprets the commonly used classification FR as an integrity only requirement.



Understanding Terminology

When working with Nullfire, it's important to understand some key terms that our experts may use in conversations with you regarding fire-stopping solutions and compartmentalisation strategies. Below you will find the explanations of these terms:



TESTED SOLUTIONS

These are products directly tested in a fire scenario at a UKAS-accredited test lab, offering the highest level of assurance. This is always the ideal solution, ensuring compliance with stringent fire safety standards.

AD-HOC SOLUTIONS

In cases where there's a small deviation from a tested solution (e.g., a different substrate that still holds an equal or greater fire rating), an ad-hoc solution may be used. This allows flexibility while maintaining fire safety.

TECHNICAL EVALUATIONS

When there are multiple deviations from a tested solution, Nullfire generates a technical evaluation. These documents are based on expert opinion and related test evidence. They should either:

1. Be accepted by site
2. Be assessed by a third party engineer
3. Be taken for testing in a UKAS-accredited lab.

BEST ENDEAVORS

In situations where no test evidence exists, a "best endeavors" solution may be implemented. This is a last resort, used when something is better than nothing, though it lacks formal test backing.

Penetration / Penetration Seals

- **Penetration Services** such as cables, pipes, conduits, or bus bars that pass through an opening.
- **Penetration Seal:** A system of materials used to seal the penetration and reinstate the compartment line.

Type of Penetration Seals

- **Single Service Penetration Seal:** For sealing penetrations with only one service passing through (e.g., a cable or pipe).
- **Multiple Penetration Seal:** For sealing penetrations where more than one service of the same type (e.g., multiple cables or pipes) passes through.
- **Mixed Penetration Seal:** For penetrations involving multiple types of services (e.g., cables and pipes).
- **Combined Penetration Seal:** For seals with services that are tested to different standards, such as ducts and dampers in the same opening as cable trays and pipes

Additional Fire-Resistant Components

- **Fire Resistant Ventilation Duct:** Device used for the distribution or extraction of air, and designed to provide a degree of fire resistance, tested with a dedicated fire stopping penetration seal as dictated by the manufacturer.
- **Fire Damper:** Device for use in heating, ventilation and air conditioning (HVAC) systems at fire boundaries to maintain compartmentalisation and protect means of escape in case of fire, tested with a dedicated fire stopping penetration seal system as dictated by the manufacturer.

Construction and Wall Terminology

- **Single Skin/Double Skin Wall:** Refers to the layers of plasterboard in the wall build up. For example a "single skin" wall would usually denote a 75/80mm thick wall with a single layer of 12.5/15mm board to each side. Equally a double skin wall would usually denote a 100mm or thicker wall with 2 layers of plasterboard to each side of the build-up.

Fire Stopping Products and Seals

- **Closure Device:** These Intumescent or graphite-based products expand during a fire to seal gaps created by burning or melting services. Examples include collars, high pressure mastic, straps, and sleeves.

Primary Seals

- **FB750 Intubatt and FR230 Intucompound:** These are considered primary sealing products and can function on their own or in conjunction with a secondary sealant or strap. The number of FB750 Intubatt layers required can be determined by knowing for example, but not limited to:
 1. Fire Rating (typically a single layer of FB750 Intubatt offers up to EI60; double layer up to EI240).
 2. Opening configuration.
 3. Acoustic requirements. Product configuration changes may be required to achieve the acoustic performance required.

Important Usage Notes

- FB750 Intubatt cannot be dry-fitted
- FR230 Intucompound should not be installed against non-load capable substrates or across movement joints.

By understanding these terms, you'll be better equipped to engage in discussions about fire safety and the solutions provided by Nullifire.



Services and Material Types: Insulation and Fire Stopping

Understanding the specific requirements for different services and materials is crucial for effective fire-stopping and compartmentalisation. Whether dealing with combustible or non-combustible pipes, lagged materials, cables, ducts, or conduits, Nullfire's tested solutions and expert methodologies ensure compliance with fire safety standards. By using the correct combination of closure devices, primary seals, and tested products, we help restore and maintain the fire resistance of any penetrated compartment, providing peace of mind and protecting lives and property.

Cables & Carriers

Cable baskets, ladder, perforated & non perforated trays all proven by test. Wherever possible it is important to identify the cable types as per the test standards classification below:

EN 1366-3:2021 (E)

Table A.4 — Cables for the standard configuration

Cable	Cable type	Service group	Number of cables	Cable Dimension	Designation	Standard	Insulation / sheath material	Diameter range [mm]	Nominal weight [kg/km] a, b
A1	small sheathed	1	3 c	5 × 1,5	see Table A.6	HD 603.3	PVC / PVC	14 a, b	300
A3	small sheathed	1	3 c	5 × 1,5	see Table A.6	HD 604.5	PE-X / EVAC	13 a, e (≤14,0 e)	230
B	small sheathed	1	2	1 × 95	see Table A.6	HD 603.3	PVC / PVC	18—21 a, f	1150
C1	medium sheathed	2	1	4 × 95	see Table A.6	HD 603.3	PVC / PVC	40—47 a, f	5300
C3	medium sheathed	2	1	4 × 95	see Table A.6	HD 604.5	PE-X / EVAC	42 a, d (≤45,5 e)	4050
D1	large sheathed	3	1	4 × 185	see Table A.6	HD 603.3	PVC / PVC	52 a, g	9900
D3	large sheathed	3	1	4 × 185	see Table A.6	HD 604.5	PE-X / EVAC	58 a, d (≤62,5 e)	7750
E	medium sheathed	2	2	1 × 185	see Table A.6	HD 603.3	PVC / PVC	23—27 a, f	2050
F	cable bundle, (telecommunication cable, optional)	4	1 tied bundle of 100 mm diameter h	20 × 2 × 0,6 screened k		—	PE / PE m	15—17 a, n, o	275 to 320 o
G	non-sheathed (wire, optional)	5	2	1 × 185	H07V-R	EN 50525-2-31	PVC / —	19,3—23,3 a, p	1890

NOTE For an illustration of the construction of the cables see Figure H.1

a For information only

b Average value from technical data sheets of manufacturers

c For penetration seals with a width smaller than 600 mm the number of cables shall be reduced to 6

d Nominal diameter of HD 604.5C

e Maximum diameter of HD 604.5C

f Values for minimum and maximum diameter from HD 603.3G

g Nominal diameter from HD 603.3L

h Depending on the actual diameter of the single cables 30 to 43 cables may be necessary to produce a tied bundle of 100 mm diameter

k Construction: solid bare copper conductors of 0,6 mm diameter, core insulation of polyethylene, cores stranded to quads and the quads stranded to bundles, one layer of plastic foil, static screen of plastic-laminated aluminium tape, polyethylene outer sheath. See also H.4.1.2.

m PE = Polyethylene, solid or cellular

n Values from technical data sheets of manufacturers; actual values shall be used to calculate the number of cables necessary to form a tied bundle of 100 mm diameter

o The given value relates to the single cable, not the cable bundle, and depends on the construction details of the cable (solid-PE or cellular-PE)

p Values for minimum and maximum diameter from EN 50525-2-31

Combustible Pipes

All combustible pipes, regardless of size, must be sealed with a suitable closure device. It is essential to identify the material type (e.g., PVC, HDPE, ABS) to ensure proper fire protection.

Non-Combustible Pipes

Typically referring to steel, copper, or cast iron; non-combustible pipes are generally sealed with non-expansive products and do not require a closure device. These pipes should not be cast directly into FR230 Intucompound without consideration to thermal expansion, as this can cause cracking.

Combustible Lagging

Lagging materials that could burn, melt, or degrade should be treated with a closure device unless proven otherwise by testing. Nullfire will never recommend the removal of pipe insulation. Insulation should only be removed with written site permission, explaining the necessity and accepting any associated liabilities.

Trunking (Non-Combustible)

Usually, a steel trunking system is used as a protective routing and covering system for electrical cables and wires throughout a building. A suitably qualified person should ensure fire stopping is present within trunking and it meets the requirements of both fire stopping and electrical regulations. FP333 Intupillow pro can be used within trunking if installed by a qualified person(s).

Conduits

Smoke transfer must always be considered when sealing conduits. Conduits should be smoke-sealed at at least one side. Combustible conduits require a suitable closure device at the compartment line, while non-combustible conduits are sealed in a similar manner to steel or cooper pipes.



Serving Spacing Guidance

For effective fire-stopping, proper spacing between services is essential. Here's a brief guide:

- **Measurement:** All dimensions are taken from the outer edge of the services
- **Cables:** Cables within trays can be bundled into a maximum diameter of 100mm. Each bundle should be spaced at least 100mm from the edges of adjacent bundles.
- **Application:** These spacing guidelines apply to both vertical and horizontal installations in flexible walls, AAC slabs, concrete floors, and concrete walls.
- **Fire Dampers:** Fire dampers should be maintained within a separate opening. Every effort should be made to keep a minimum separation to other Fire Dampers, Ducts, or typical penetration seals as per the wall manufacturers details.

For installations involving timber or Isowall substrates, additional guidance should be sought to ensure compliance and effectiveness.

Minimum Service Distances / Spacing								
Service Type	Dimensions	Substrate	Steel Pipe	Combustible Pipe	Cable Tray	Trunking	Insulated Pipe	Cooper Pipe
Insulated Pipe		30mm	50mm	30mm	30mm	50mm	30mm	50mm
Copper Pipe		30mm	30mm	100mm	100mm	100mm	50mm	30mm
Steel Pipe		30mm	30mm	50mm	30mm	30mm	50mm	30mm
Combustible Pipe	<55mm	0mm	50mm	0mm to same size	50mm	50mm	30mm	100mm
	55-110mm	20mm	50mm	30mm to same size	50mm	50mm	30mm	100mm
Trunking		0mm	30mm	50mm	50mm	50mm	50mm	100mm
Cable Tray		0mm	30mm	50mm	30mm	50mm	30mm	100mm



Contact our Technical Team at firestoppinghelp@tremcocpg.com



Understanding Compartment Walls and Floors

Proper fire-stopping relies on a clear understanding of different wall and floor constructions. Here's a guide to various types of compartments and their fire stopping requirements.

Flexible Partitions

Constructed from metal or wooden studs with layers of fire-rated plasterboard (either single or double, 12.5mm or 15mm). These partitions are designed to provide fire resistance while accommodating movement and flexibility.

Rigid Wall

Typically made from materials such as concrete or masonry, these walls are designed to provide a solid, immovable barrier to prevent the spread of fire.

Shaft Walls

Specially designed asymmetrical walls that enclose service shafts for vertical services like ducts and pipes. These walls are constructed to protect the integrity of the fire compartment.

CLT Walls & Floors

Made from layers of cross laminated timber boards bonded together, CLT walls and floors offer significant structural strength and fire resistance, often used in modern construction for their sustainability.

White Walls / Sandwich Panels

Consist of a core material (like polyurethane or mineral fibre) sandwiched between two outer layer of metal. These panels are economic and quick to build systems that provide thermal insulation and added hygiene properties.

Porotherm Brick Walls

Constructed using Porotherm bricks, which are clay-based and designed to offer both thermal and fire resistance. These walls are used because the bricks are much lighter and can reduce construction time.

Cavity Walls

Comprising of two layers of masonry with a gap (cavity) between them, cavity walls are designed to improve insulation and reduce moisture ingress, while also contributing to acoustic properties.

Trapezoidal Decks

Also known as a composite deck, these are made up of a metal sheet to the underside and concrete infilled above. the metal has a trapezoidal profile. These are used in commercial and industrial buildings for it load bearing, fire resistance and finish properties.

Flexible Floor

Typically constructed using a system of beam and joists with layers of fire-rated plasterboard. Designed to accommodate movement and ensure fire protection.

Rigid Floor

Constructed from solid materials like concrete or composite materials, rigid floors provide a strong barrier against fire spread and are often used in multi-storey buildings.

Lath and Plaster Ceilings

Traditional ceiling construction using wooden laths covered with a plaster layer. While less common today, these ceilings require appropriate fire stopping measures to ensure safety.

Hollow Core Floor

A type of precast concrete floor with hollow cores running through it to reduce weight while maintaining strength and fire resistance. Commonly used in residential and commercial buildings.

In fire-stopping applications, each of these constructions must be properly sealed and protected to maintain the integrity of the fire compartment. Ensuring that the correct materials and methods are used for each type of wall or floor is crucial for effective fire protection strategies.



Clay Pot Floor

Made from clay pots used as spacers within a concrete floor slab, this construction provides fire resistance and thermal insulation.



Standards for Multiple Services and Test Requirements

Ensuring the fire safety of building construction involves rigorous testing and adherence to established standards. These standards are crucial for verifying the effectiveness of fire stopping solutions in various construction elements. The following guidance outlines the testing methods and classifications for wall and floor construction, penetration seals, linear joints, fire resistant ducts, and fire dampers. Understanding these standards helps ensure that fire stopping measures are properly implemented to maintain safety and compliance.

Wall and Floor Constructions:

Wall and floor constructions must be classified to BS EN 13501-2 in order to then be tested and compliant to the fire resistance test standards

Penetration Seals:

The BS-EN 1366-3 specifies a method of test for penetration seals to maintain the fire resistance of a separating element at the position at which it has been penetrated by a service (or services), through supporting constructions such as walls or floors. These simulate the interaction between the test specimen and the separating element into which the sealing system is to be installed in practice.

Penetration seals used to seal gaps around chimneys, air ventilation systems, fire rated ventilation ducts, fire rated service ducts, shafts and smoke extraction ducts as well as combined penetration seals are excluded from the EN 1366-3.

Purpose of the Test:

The test assesses the integrity and insulation performance of:

- The penetration seal
- The penetrating service(s)

Linear Joints:

EN 1366-4 specifies the testing method for linear joint seals. Linear joint seals are positioned in voids, gaps, or other discontinuities within one, or between two or more, construction elements. Normally such openings, are denoted as linear because their length is greater than their width - defined by a typical ratio at least 10:1 in practice.

Purpose of the Test:

The test assesses:

- The interface of a linear joint seal and the construction with regards to integrity and insulation;
- The integrity and insulation performance of the linear joint seal;

Fire-resistant Ducts are tested in accordance with BS EN 1366-1 and then classified in accordance with BS EN 13501-3.

Fire Dampers, are tested in accordance with BS EN 1366-2 and then classified in Accordance with BS EN 13501-3.

Understanding Deflection

Generally, we come across 2 main types of movement requirements, the first is deflection from the soffit and the second is service movement.

Soffit deflection, this is where the soffit moves down by a known amount of mm.

Service movement, this is where the services running through a builders work opening are supported as per the service manufacturers details to the soffit. If the soffit moves, this in term will cause the services to move as well.

Movement of products is expressed as a %. To ensure the correct movement requirement is met, please ensure that the opening size is checked first.

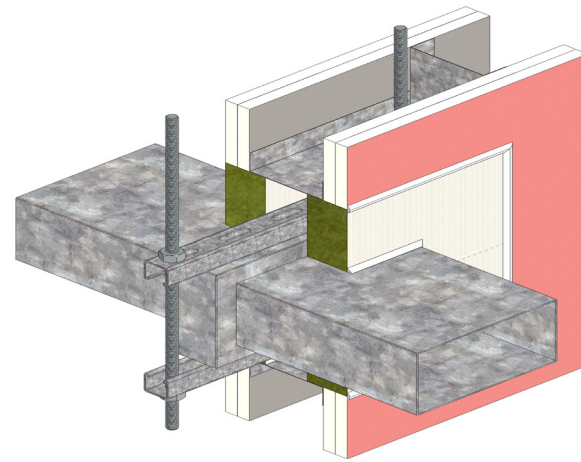
For example, in a 100mm high opening, a product that can cope with 7.5% of movement will only be able to move 7.5mm. If the requirement for movement is 10mm, this is not sufficient and the opening will need to be extended.

An Overview: Ducts and Dampers

In the first instance please consult the manufacturers tested details. These can vary between being specific and noting specific products and fire stopping manufacturers. Others can be more vague, and refer to minimum physical properties, such as density but not be manufacturer specific.

Ducts and dampers are tested to different international test standards than our fire stopping products, because of this they should be in their own separate openings. Please also refer to the construction manufacturers details regarding opening distances.

We are able to support as we do have some solutions, most are ad hoc solutions to be considered by site and presented to the fire engineer for approval. The duct and damper manufacturers details will always supersede our own.



An Overview: CPVC

Ensure that all CPVC pipes are identified, and all products used are on the manufacturers chemical compatibility approval list.

CPVC pipes are known to be sensitive to a number of substances and chemicals so please ensure the correct products are used and the pipes do not become contaminated or come into direct contact with other services. Ensure all following trades are made aware of potential contamination risks.

FS719 HP Blue has been approved for use around Blazemaster CPVC pipes. All unidentified pipes please ensure an aluminum foil barrier (non-adhesive) is utilised as a barrier to stop contact.



Contact our Technical Team at firestoppinghelp@tremcocpg.com

Type of Openings

It is imperative at design stage that the type of opening is specified in order for Nullifire to advise on an available tested solution.

MEP services should be coordinated to identify the size of the opening, service type and hole type being formed in the compartment wall/floor.

4-Sided

Typical letterbox opening formed in plasterboard (flexible). Ideally, this type of opening will be framed and lined in accordance with the dry lining manufacturers details. If the opening is not framed and lined, then a pattress/face fix detail would be required.

3-Sided

This is where an opening is created at the head of the wall/deflection zone. Consideration must be taken to ensure that spacing of services are measured to accommodate additional movement criteria like slab and service movement, and also minimum distances as outlined by the fire stopping manufacturer.

Direct to Substrate

These opening are when no primary seal is used and are cut directly from the substrate. These are usually in the form of a cored hole in the substrate.

Partial Penetration

Currently fall outside of any test standard: We apply knowledge from the service type in a traditional configuration, however this still results in only a technical evaluation being available. Also see ASFP Advisory note 13.

Access from Single Side

If access from only one side of the wall is available, Nullifire do have a number of tested details available. However, the opening will be required to be framed and lined. If this is not possible only the accessible side will be deemed as having a fire rated seal.

Wall Cavities

If a block work wall is a double layer of block this will create a cavity in the wall build up. It is imperative the wall is sealed from both sides or the cavity is sealed correctly to stop the passage of fire and smoke throughout the cavity itself.

Service Supports

Services should be supported in line with the installer/service manufacturers recommendations. Any deviation from this may result in warranty and liability changes, and also may result in prosecution.

It is generally assumed that services should be supported as per the fire test, normally between 200mm and 500mm away from the compartment. We do not support this opinion as many service support systems are designed to accommodate thermal expansion, movement, acoustic enhancements etc. Additionally, we are not qualified to interfere with a service manufacturers specific design.

We have tested services with various service support systems, however services have always been cut as required by the standard (BS EN 1366-3) and capped accordingly. This is a test requirement and is never replicated on site.

The responsibility of correct installation of service supports lies with the building owner, main contractor and installing company. Requirements may also be determined by other building codes.



Certification, Assessments and Testing

Fire tests are conducted by our R&D department, from these tests we receive a report which outlines the products performance and its associated fire results.

Over a period of time, these reports are gathered and providing they meet certain criteria, they are effectively gathered and summarised into one document. This is then approved/ issued by a third party in the form of a document. There are different types of certification but their overriding principle is that they are a collection of test reports.

Examples of certification include but is not limited to ETA (European Technical Assessment) , Certifire, UL-EU, Classification reports, UKTA.

There are additional documents called assessments, these can also be issued by third party bodies, and are carried out by a fire engineer and evaluate the presented data to offer an opinion on whether a seal or methodology would achieve a theoretical fire rating with related test evidence.

Third-Party Installation

UK Regulations do not require any accreditation or specialist qualification for the installation of fire protection or the reinstatement of Fire Compartments. Approved Document B (Fire Safety) to the England and Wales Building Regulations states independent schemes of certification and accreditation of installers can provide confidence that the required level of performance for a system, product, component or structure can be achieved.

The Regulatory Reform Fire Safety Order (RRFSO) requires you to investigate the competence of your chosen Sub-Contractor or installer. There are a number of accredited schemes, the most commonly subscribed companies (but not limited to) are known to provide such schemes:

- LPCB/BRE
- IFC Certification Ltd
- Warrington Certification Ltd (FIRAS)
- BM Trada – Q Mark



Spacing for Builders Work Openings

Within the fire stopping standards, these allow for 100mm without testing, you can claim smaller distances if tested. However, each dry lining manufacturer has different guidance for spacing between openings, from their test evidence. Wherever possible it is important to follow the dry lining manufacturers separation distances as it may void any warranties.

Please refer to the plasterboard manufacturer for approved guidance on spacings as theirs will supersede Nullifire's.

Our Offering

At Nullifire, we take great pride in leveraging our extensive experience and expertise in Passive Fire Protection to support and educate the industry. Our learning hub is a testament to our commitment, offering a wide range of training opportunities designed to enhance your knowledge and skills in fire protection.

We provide a robust selection of Continuing Professional Development (CPD) courses that are RIBA-approved and available free of charge on-line. These courses include "A Guide to the Requirements of Fire Stopping" and "Specifying Intumescent Fire Protection for Structural Steel." These sessions are tailored to equip you with the essential insights needed to stay ahead in the field.

In addition to our CPD offerings, we also provide specialized training sessions focusing on cavity barriers and in-depth installer training for Nullifire-specific products. These programs are designed to deepen your understanding and enhance your practical knowledge.

Our commitment to supporting you extends beyond the classroom. We offer site visits and are available for early engagement and troubleshooting meetings via Teams. Our technical team is always ready to assist with any product or testing-related inquiries you may have, whether over the phone or via email.



Register for Training

Signing up for training with Nullifire is easy and straightforward. Simply visit our Events & Training page to explore our upcoming sessions and courses. From there, you can select the training that best fits your needs and register directly on-line.

Specification Services

At Nullifire, our specification services are dedicated to providing expert support for your fire protection needs. Through our comprehensive approach, we help you select the most suitable fire stopping and protection solutions for your projects. Our team of specialists offers detailed guidance on product selection, ensures compliance with regulations, and provides tailored recommendations to meet your specific requirements.

Explore Nullifinder

Nullifinder is an innovative tool provided by Nullifire to streamline your fire protection planning and product selection. This user-friendly resource helps you quickly identify the appropriate fire stopping and protection solutions for various applications. By entering project details, Nullifinder delivers tailored recommendations that ensure compliance with safety standards and optimal performance. For a more efficient and accurate approach to specifying fire protection measures, visit our Nullifinder page.

Maximum Opening Sizes

Rigid and Flexible Walls - 75mm min (single skin)

Compressed/ Bonded and Sealed

Single Batt Compression (symmetric)

Maximum opening dimension:

- 1.9 m²: 2000 x 950 mm

Compression required:

- 2- 3 mm

Pattress Bonded /Sealed mechanically restrained

Double Batt Pattress (symmetric)

Maximum opening dimension:

- 2.73 m²: 2600 x 1050 mm

Compression required:

- Zero

Min 100mm wall (double skin)

Single Compressed/ Bonded and Sealed

Single Batt Compression (symmetric)

Maximum opening dimension:

- 1.9 m²: 2000 x 950 mm

Compression required:

- 2- 3 mm

Double Compressed/ Bonded and Sealed

Double Batt Compression (symmetric)

Maximum opening dimension:

- 6.76/m²: 2600 x 2600 mm

Compression required:

- 2- 3 mm

Pattress Bonded /Sealed mechanically restrained

Double Batt Pattress (symmetric)

Maximum opening dimension:

- 2.73 m²: 2600 x 1050 mm

Compression required:

- Zero

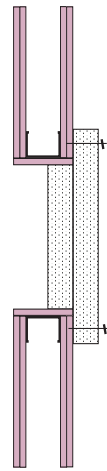
Double Skin Partitions

Minimum 100 mm overall thickness.

Covers all installations of equal or greater wall thickness.



TESTED FOR SINGLE SIDE ACCESS INSTALLATIONS.



Step 1 - Single Batt Compression

Maximum opening dimension:

- 1.21 m²: 1100 x 1100 mm

Compression required:

- 2- 3 mm

Step 2 - Single Batt Pattress

Maximum opening dimension:

- 1.21 m²: 1100 x 1100 mm

Compression required:

- Zero

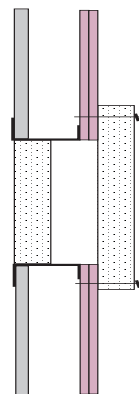
Shaft Wall

Minimum 90 mm overall thickness.

Covers all installations of equal or greater wall thickness.



Tested for shaft wall applications.



Step 1 - Single Batt Compression

Maximum opening dimension:

- 1.21 m²: 1100 x 1100 mm

Compression required:

- 2- 3 mm

Step 2 - Single Batt Pattress

Maximum opening dimension:

- 1.21 m²: 1100 x 1100 mm

Compression required:

- Zero

Product Longevity

Nullfire, a brand of Tremco CPG UK warrants the performance of the fire stopping products for the lifetime of the building (a maximum of 50 years). Products supplied by Tremco CPG UK (Nullfire brand) are manufactured to a ISO9001 accredited quality system. Tremco CPG UK warrants the fire performance of these products and that they are fit for purpose in providing a tried and tested fire stopping solution.

Any damage, be it physical, water, fire, accidental, or wind load should be rectified immediately as these are life critical products. All products are expected to be included within the buildings routine maintenance plan. A competent person only should repair any damage to any products immediately to ensure continuation of fire performance. Any changes to the building design or use should have the fire strategy re evaluated.

Fire Stopping for Combustible Pipes (40mm or Less)

Section 7 of the statutory guidance to the Building Regulations in England & Wales, Approved Document B, vol. 1 for dwelling houses, and section 10 of vol. 2, for buildings other than dwelling houses, provides specific guidance with respect to combustible pipes with an internal diameter of 40 mm or less.

The guidance in ADB can be confusing on this topic and has been mistakenly perceived that any services with a pipe diameter less than 40mm does not require fire stopping. This is not the case!

The ASFP guidance and Nullfire guidance recommend the use of tested fire stopping systems, around any service passing through a fire rated compartment.

Any combustible services 40mm in diameter or less will melt away to leave a gap in the compartment line (as would any service over 40mm in diameter). This will at the very least allow the passage of smoke and hinder the exit of the buildings occupants. And worse case facilitate the spread of the fire between compartments rapidly. This is why a closure device is needed, it will reinstate the compartment line. There are many tested solutions for services of this size



FB750 Intubatt Repair and Dry Batt

Dry joints are not permitted!

All repairs would be considered ad hoc as they are not tested. These can be proposed to a competent person for approval, such a fire engineer.

Do not mix and match manufacturers of fire stopping products within the seal, therefore the manufacturer needs to be identified in the first instance. See also ASFP guidance note 6.

If the FB750 Intubatt has been installed using dry fit methodology, ensure its installed under the correct amount of compression. Inject FS702 into the joints of the existing batt, this should be continuous along the joints, using a small cut nozzle. Ensure its inserted to a minimum of 10mm depth and pump the sealant whilst dragging the nozzle along. Liberally point all available perimeter edges, service abutments , joints or any delamination's with a minimum of a 10mm fillet of FS702 .

Paint all of the exposed faces of the FB750 Intubatt with FS712

Overcoating FB750 and FS702

FS702 , once fully cured can be over coated with a standard trade water based emulsion in order to achieve a certain colour. This is considered as ad hoc as it hasn't been tested and may effect the surface spread of flame properties of the product.

The same is true for the FB750 Intubatt.

FS709 HP can also be overcoated as above, however because of the dark colour, more coats will be required. FS703 cannot be overcoated due to the chemistry of the product.

Environmental Conditions

The majority of our products are designed to be used within an internal environment and not exposed to weather conditions. There is a couple of exceptions to this, for example our FS703 Silicone sealant. If you are unsure of what products can be used where, please consult the relevant ETAs (European Technical Assessments) for information. See below taken from the EAD:

- Type X: intended for use in conditions exposed to weathering
- Type Y₁: intended for use at temperatures below 0°C with exposure to UV but no exposure to rain
- Type Y₂: intended for use at temperatures below 0°C, but with no exposure to rain no UV
- Type Z₁: intended for use in internal conditions with humidity equal to or higher than 85 % RH excluding temperatures below 0°C⁵, without exposure to rain or UV
- Type Z₂: intended for uses in internal conditions with humidity lower than 85% RH excluding temperatures below 0°C, without exposure to rain or UV

Products that meet requirements for type X, meet the requirements for all other types. Products that meet requirements for type Y₁ also meet the requirements for type Y₂, Z₁ and Z₂. Products that meet the requirements for type Y₂ also meet the requirements for type Z₁ and Z₂. Products that meet the requirements for type Z₁, also meet the requirements for type Z₂.

Sustainability and Environmental Product Declarations (EPDs)

At Tremco CPG, sustainability is at the heart of our operations. We are dedicated to minimizing our environmental impact through innovative practices and products that support a greener future. Our commitment extends from reducing carbon footprints to improving energy efficiency and ensuring the responsible use of resources.

Our Sustainability Approach

We focus on creating products that not only perform at the highest standards but also contribute to a sustainable environment. Our sustainability initiatives include optimizing manufacturing processes, reducing waste, and enhancing the life cycle of our products. We work closely with our partners and customers to promote environmentally-friendly practices across the construction industry.

Environmental Product Declarations (EPDs)

Transparency is key to our sustainability efforts. We provide Environmental Product Declarations (EPDs) for our products, offering clear and comprehensive information on their environmental impact. These declarations help you make informed decisions by detailing the product's performance in terms of energy consumption, resource use, and emissions throughout its life cycle.

For more information on how Tremco CPG is advancing sustainability and to view our EPDs, visit our Sustainability page and EPDs page.

Join us in building a more sustainable future with products that prioritize both performance and environmental responsibility.



Contact our Technical Team at firestoppinghelp@tremcocpg.com

Nullifire Traceability Technologies

At Nullifire, we are committed to advancing fire protection through cutting-edge traceability technologies. Our innovative solutions ensure that our fire stopping systems not only meet but exceed industry standards, offering enhanced performance and reliability.

Optifire Technology



Our Optifire system represents a significant leap forward in fire protection technology. This state-of-the-art solution integrates advanced traceability features, enabling precise monitoring and management of fire stopping applications. Optifire provides detailed insights and documentation, ensuring that every aspect of the installation is trackable and compliant with safety regulations.

Optifire+ : Enhanced Performance and Assurance



Building on the success of Optifire, our Optifire+ technology offers an even more robust solution. Optifire+ combines all the benefits of Optifire with additional enhancements for superior performance. This advanced system provides increased visibility into the integrity of fire stopping measures, further ensuring compliance and reliability over time.

These unique technologies offer a guaranteed source of quality and new levels of assurance, whilst acting as an incentive to ensure products are used and applied correctly.

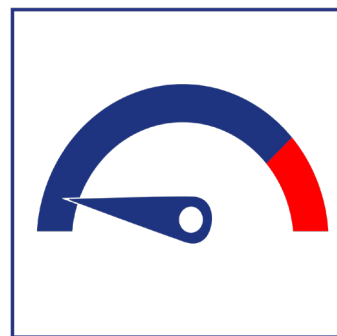
- Applicators – Ability to ensure product installed on site is correct.
- Main Contractors – Ability to ensure that the whole contract chain is adhering to the same specifications.
- Architects and Specifiers – Ability to ensure that the specified quality products are installed without potentially inferior quality alternatives used.



Insurance Premiums



Lifetime Traceability



Reduced Risk

Load Bearing Applications

If a load bearing detail where light foot traffic is required, the Nullifire FR230 Intucompound should be specified.

FR230 Intucompound should be installed to a minimum depth of 100mm. Floor installations up to 1.2m² (or a max span of 300mm x infinite length) without the need for additional framework support, to ensure its load bearing performance is achieved. Nullifire FR230 at 100mm depth provides a safe working platform for loads up to 2.5kN/m².

Floor installation above 1.21m² (or a maximum span of 2000mm x infinite length) can be accommodated using an additional 50x50x2mm angle frame.

FR230 Intucompound may not be installed against a non-load capable substrate or across a movement joint. Both FB750 Intubatt and FR230 Intucompound may be used in walls and floors. FB750 Intubatt is not a load capable product.

Gas & Electrical Regulations

Gas pipework passing through walls, floors and structures must be sleeved.

Sleeving gas pipework protects it from mechanical damage as it passes through a structure and ensures that any potential escape of gas does not lead to an undetected dangerous and potentially explosive build-up of gas within the structure.

In accordance with BS 6891:2015, gas pipework sleeves shall be:

- Resistant to corrosion
- Impermeable to gas, for example, copper, steel, polyethylene (PE) or polyvinyl chloride (PVC)
- Capable of protecting the pipework from mechanical damage from structural movement
- Sealed with a suitably fire-resistant flexible sealant in accordance with BSEN1366-3, between the gas pipe and the sleeve (annular space)
- Sealed at both ends as specified by IGEM/G/5 Edition3 in multiple occupancy buildings, at one end in other building types.

If you fail to consider these requirements and your work affects the safety of a gas installation, you not only put people and buildings at risk, but you could face prosecution, a fine or even imprisonment.

Remember:

Work should be undertaken by someone who is competent

- STOP WORK if there is a risk of damage to existing gas appliance(s) or pipework – GET ADVICE!
- Where necessary employ a Gas Safe registered engineer to decommission and make the installation safe during the project and re-commission the installation once your work is complete.

If in doubt, stop work and contact a suitably qualified Gas Safe registered engineer for advice. To find a Gas Safe registered engineer visit: GasSafeRegister.co.uk.

Intumescent Interactions

Often on site there are interfaces between Intumescent coated steel and fire stopping. There are inherent difficulties when dealing with these occurrences, the first and main one being that the 2 are tested to different test methodologies. There are instances where we have tested some of these interactions but these are limited as the variety of situations seen on site are broad.

Acoustic Considerations

For optimal acoustic performance, the following sound insulation values are achieved with Nullifire products:

- 2 layers of Intubatt (140 kg/m³): 57 dB
- 2 layers of Intubatt (180 kg/m³): 59 dB
- 1 layer of Intubatt (140 kg/m³): 36 dB

Other product performance includes:

- FF197: 62 dB
- FS702: 55 dB
- FS719: 66 dB
- FJ400: 63 dB
- FS703: 66 dB
- FR230: 52 dB
- FS709: 64 dB

The largest acoustic performing element would be the compartment substrates and could limit performance of the primary fire stopping seal.

Test data can be issued for review.



Chemical Compatibility

Our product range is broadly compatible with most services, however in recent years there has been concern raised over the chemical compatibility with some materials (see also CPVC section). To our knowledge the only materials where chemical compatibility confirmation should be sought is for CPVC pipes and also Carbon Pegler pipes. This can be done by contacting the service manufacturer or consulting issued compatibility lists.



Tremco CPG Europe manufactures high performance building materials in order to solve the complex challenges faced by today's construction industry. It is the home for multiple European construction product brands, including illbruck, Flowcrete, Nullifire, Carboline, Tremco, Vandex, Dryvit and Nudura. With over 1,400 employees across Europe, we are committed to being by your side to shape a world where buildings and structures save energy, last longer and exceed sustainability benchmarks.

From joint sealing, bonding and insulation through to passive fire protection, flooring, waterproofing and roofing solutions- the product brands housed within Tremco CPG Europe cover a wide array of different construction needs. Combined with the wealth of expertise, services and support we provide a truly unique offer- to make our customers more successful time after time.

Tremco CPG Europe is part of RPM International Inc. - one of the world's leading construction products companies for both the industrial and consumer segments.

Our Values



COLLABORATION



HONESTY & INTEGRITY



RESPECT



ENGAGEMENT



SUSTAINABLE
DEVELOPMENT

Delivering World-Class Construction Product Solutions.

The product brands housed within Tremco CPG Europe cover a wide array of different construction needs and provide a wealth of complex services, support and systems that are rarely found together under one roof.



**Sealing, bonding
& insulation**

Window Insulation, Façade Construction, Exterior Insulation & EIFS, Structural & Inplant Glazing, Insulated Concrete Forms (ICFs)



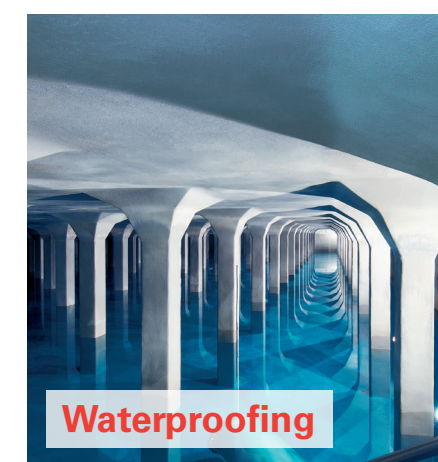
Passive Fire Protection

Fire Stopping for Service Penetrations, Linear Joints and Ventilated Cavity Barriers. Intumescent and Cementitious Coatings



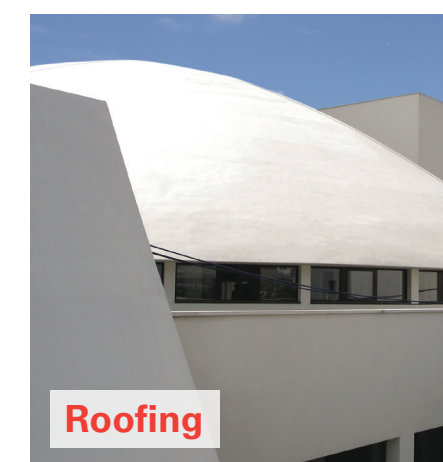
Flooring

Seamless Resin Flooring, Subfloor Preparation, Car Parking Structures



Waterproofing

Bridge Decks, Infrastructure, Potable & Waste Water Industry, Balconies, Terraces, Basements & Foundations.



Roofing

Liquid Applied Systems, Felt Systems, Vegetated Roofing

Europe's leading construction products brands...



Tremco CPG UK Limited
Coupland Road
Hindley Green
WN2 4HT, UK

+44 (0) 1942 251400
hello@tremcocpg.com
www.tremcocpg.eu



www.nullifire.com



firesales@tremcocpg.com



[@Nullifire](https://www.facebook.com/Nullifire)



[/company/Nullifire](https://www.linkedin.com/company/Nullifire)