



ESSENTIAL FIRE STOPPING IN DATA CENTRE DESIGN

A COMPREHENSIVE RANGE OF FIRE STOPPING
PRODUCTS & SOLUTIONS



YOUR TRUSTED PARTNER

In today's interconnected world, data centres underpin global commerce, communication, logistics, and security, making uninterrupted uptime a baseline requirement. Data Centre designers must ensure robust fire safety to protect valuable data and assets and eliminate the risk of costly downtime.

Tremco CPG can support you with a holistic range of fire stopping solutions that are designed to meet the challenging requirements of data centres, from a single source. Our independently certified solutions cover service penetrations, linear joints, structural protection, and cavity barriers, combining fire stopping and intumescent coatings for comprehensive passive fire protection, making buildings safe, stronger, and more efficient and sustainable.



Sustainability Initiatives

Optimising manufacturing, reducing waste and extending product life.



Passive Fire Protection

Fire Stopping products prevent the spread of flames, heat and smoke.



3rd Party Certified Products and Systems

Compatible product solutions, certified by independent test bodies.

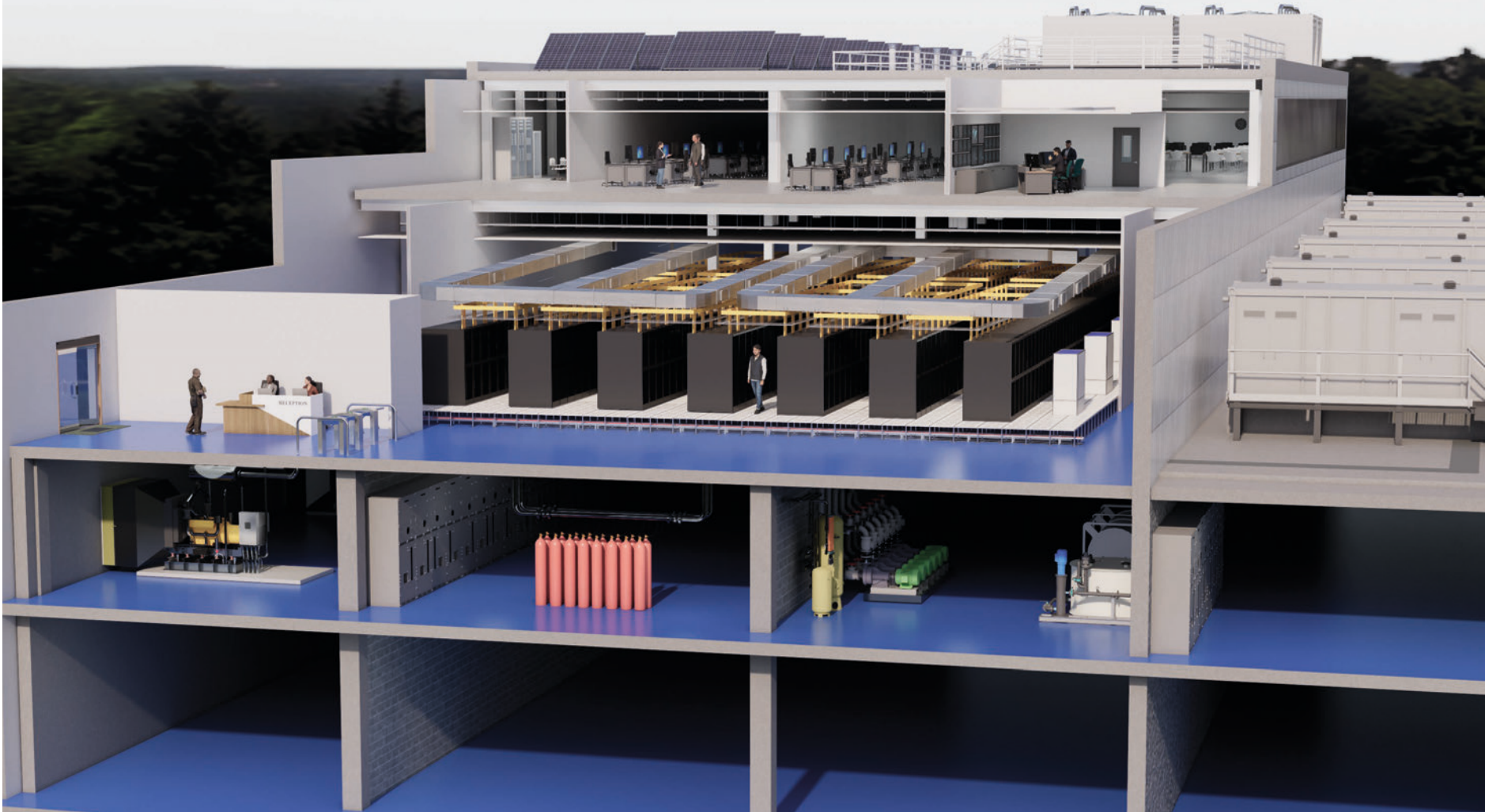


Optimising the Life Cycle Assessment

Transparent Environmental Product Declarations (EPDs) to select the most sustainable option.

Contents

Introduction	02
Planning & Best Practices	
The Importance of Early Engagement	04
Digital Records	06
Traceability Technologies	07
Developing a Fire Strategy	08
From Design to Defence: Compartmentation for Continuity	09
Compartmentation and Structural Fire Protection	10
Choosing Compatible Materials	11
Tremco CPG's Offering	
FZ400 Movement Joint Filler	12
Patented Innovation: FZ100 Fire Safe Zone	14
The Product Range	15
Fire Stopping for Service Penetrations	17
Acoustic Considerations	18
Certification, Assessments and Testing	20





PASSIVE FIRE PROTECTION PLANNING & BEST PRACTICES

The Importance of Early Engagement

Operating 24/7, even the smallest disruption to data centres can trigger significant financial loss, data compromise, and reputational damage. True resilience begins at the design stage, where every choice—from power supply systems to passive fire protection—shapes reliability, ensuring both visible and unseen infrastructure work together to maintain continuous operation.

With decades of expertise, Tremco CPG delivers essential passive fire protection through integrated systems designed to perform when it matters most. Backed by a specialist team in fire stopping and intumescent coatings, we work closely with customers, competent and trained installers, and project teams from the earliest stages to deliver smart, reliable, and cost-effective solutions.

Benefits of Early Engagement

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

Digital Record of All Information

Tremco CPG fire stopping solutions support projects in an increasingly demanding regulatory landscape, providing a digitalised record of a building’s fire safety features to ensure that compliance data is clear, accessible, verifiable, and understood by all parties involved in design, construction and maintenance.

Known in the UK as the Golden Thread, this digital record provides accurate, up-to-date information throughout a building’s life cycle, helping contractors and developers manage legal responsibilities, reduce risk, maintain safety standards across the supply chain, and support informed decision-making.



Nullifire Traceability Technologies

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



This state-of-the-art fire protection technology 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.



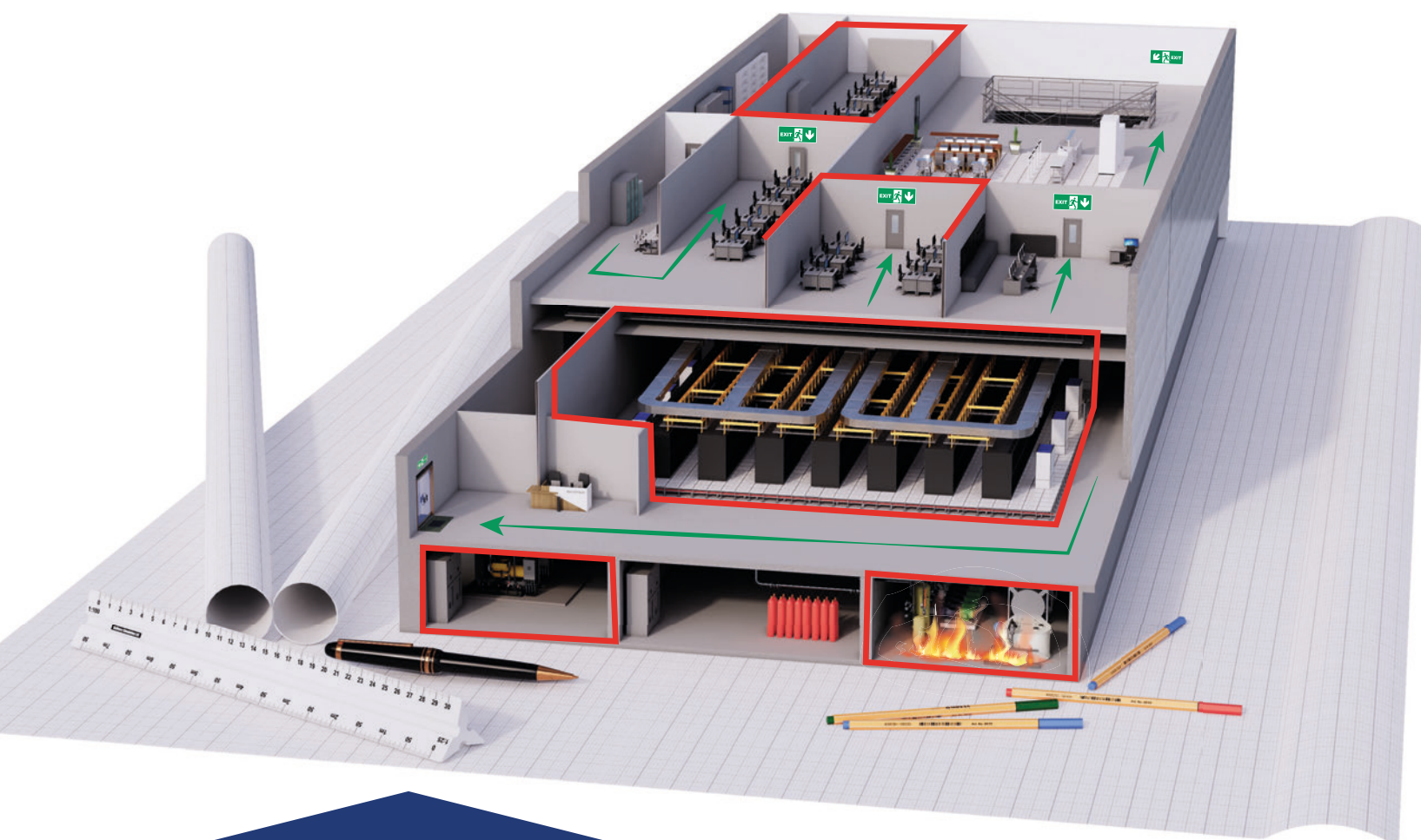
Optifire+ combines all the benefits of Optifire with additional enhancements for superior performance, including increased visibility into the integrity of fire stopping measures, further ensuring compliance and reliability over time.

- 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.

Fire Strategy

A fire strategy, developed by qualified experts, assesses building use and occupancy to define compartmentation and fire resistance requirements that ensure safe evacuation and protect the building and its critical contents.

The strategy defines the locations of compartment walls and floors required to allow sufficient time for occupants to evacuate safely, while also providing optimal protection for the building and its contents—such as valuable data that would be costly to replace if destroyed.



Fire Resistance

The fire resistance requirements for walls and floors are specified in terms of integrity and insulation and measured in minutes. All our product packaging and documentation clearly displays the fire resistance classification, and distinct colour coding makes these ratings easily identifiable. Fire resistance classifications are as below:

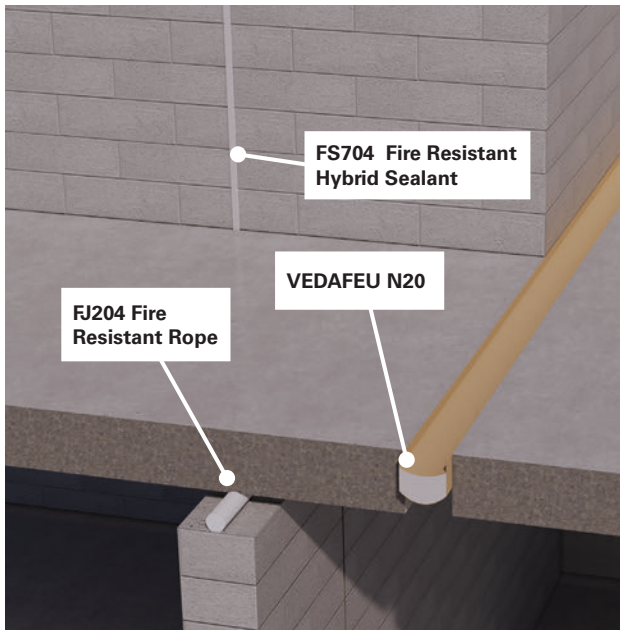


From Design to Defence: Compartmentation for Continuity

In high-density data centres, early design coordination and specialist fire stopping input are essential to manage space constraints, ensure compliant service separation, and avoid installation-stage issues.

The strategy defines the locations of compartment walls and floors required to allow sufficient time for occupants to evacuate safely, while also providing optimal protection for the building and its contents—such as valuable data that would be costly to replace if destroyed.

Limited technical space can conflict with the minimum service separation distances required for tested fire stopping performance and these constraints are often identified too late, making early design coordination essential. By planning service routing around known fire stopping tolerances, and with early input from Tremco CPG to assess spacing and acceptable configurations when it comes to compartmentation, designs can be finalised with confidence and compliance built in.



Fire Compartmentation



When properly integrated into design and construction, effective fire stopping can contain fire at the point of origin, turning a potential catastrophe into a manageable event. It demonstrates that fire safety is not just a regulatory requirement, but a critical enabler of business continuity.

By sealing gaps between walls and slabs, as well as around openings, fire stopping preserves compartmentation within each section of a building. Treating linear joints and service penetrations helps maintain the integrity of the building envelope, protecting life safety while minimising operational disruption and the risk of data loss.

With innovative solutions, Tremco CPG protects critical infrastructure by establishing fire-resistant zones at vulnerable points such as cable penetrations, ducts, and structural joints. This targeted protection strengthens overall resilience, extends evacuation time, and reduces damage to essential data and equipment in the event of fire.

Compartmentation and Structural Fire Protection

Fire compartmentation and structural fire protection work hand in hand: while fire stopping preserves compartment integrity, structural steel must also retain its load-bearing capacity to prevent collapse during a fire.

As steel rapidly loses strength at high temperatures, unprotected structures can fail within minutes, undermining even the best fire strategies. Intumescent coatings expand when exposed to heat, forming an insulating char that protects steel and has been tested up to R120. Used alongside fire stopping systems, they create a unified passive fire protection strategy that maintains both compartment integrity and structural stability for the intended fire resistance period.

The placement of steel beams should also be carefully considered. Best practice is to avoid corner penetrations within compartment lines. You should limit openings to one beam per opening, or enclose columns to redefine the compartment boundary.

Structural steel beams crossing fire-rated walls—particularly at corners—are a common but often overlooked fire safety challenge. These configurations frequently involve multiple beams connecting to a single column and often lack standardised fire test data.

Best practice is to avoid corner penetrations by adjusting compartment boundaries. Where this isn't possible, enclosing the column within a fire-rated enclosure can effectively relocate the fire line. Limiting penetrations to a single beam per opening further reduces risk and enables early resolution of fire safety issues during design.



Compatible Materials

Not all building products are compatible with every fire stopping material, and having technical specialists on hand to work closely with designers and contractors to assess material compatibility helps to avoid late-stage, costly changes.

Cost-driven selections can introduce systems whose performance under fire, chemical exposure, or long-term conditions is unproven. For example CPVC piping, used in some sprinkler systems, is particularly chemically sensitive, with contact from incompatible sealants, oils, or cable jackets potentially leading to material degradation. Early verification of HVAC materials—such as pipe and insulation types—against tested fire stopping solutions is therefore essential to a coordinated, buildable design.

Where CPVC piping is specified, Nullifire has developed tested and approved fire stopping solutions, including systems incorporating FS719. Our technical specialists work with designers and contractors to assess material compatibility, identify compliant solutions, and address constraints early, helping to avoid late-stage changes, untested on-site fixes, and compliance risks.



TREMCO CPG'S OFFERING

FZ400 Movement Joint Filler

Designed to accommodate structural movement while maintaining the integrity of compartmentation, FZ400 is Nullifire's cutting-edge fire stopping product.

Buildings experience movement throughout their service life due to loads such as snow, wind, and thermal expansion, causing structural deflection that is often underestimated in fire stopping design. Services fixed to moving structural elements transfer this movement directly to fire stopping systems at compartment boundaries. If fire stopping are rigid or not designed to accommodate movement, repeated deflection can lead to cracking, loss of adhesion or compression, and eventual separation—creating hidden risks at compartment boundaries and compromising fire performance.

To address this challenge, fire stopping systems in movement and deflection zones must accommodate structural movement while maintaining fire resistance.



The Nullifire FZ400 Movement Joint Filler is designed for these conditions, used in linear joints, service penetrations, and beneath steel beams to allow controlled movement from beam deflection or slab movement. Tested under repeated cyclic deflection and achieving fire ratings up to EI 120, FZ400 demonstrates that compartment integrity can be maintained when movement-capable fire stopping solutions are properly integrated.

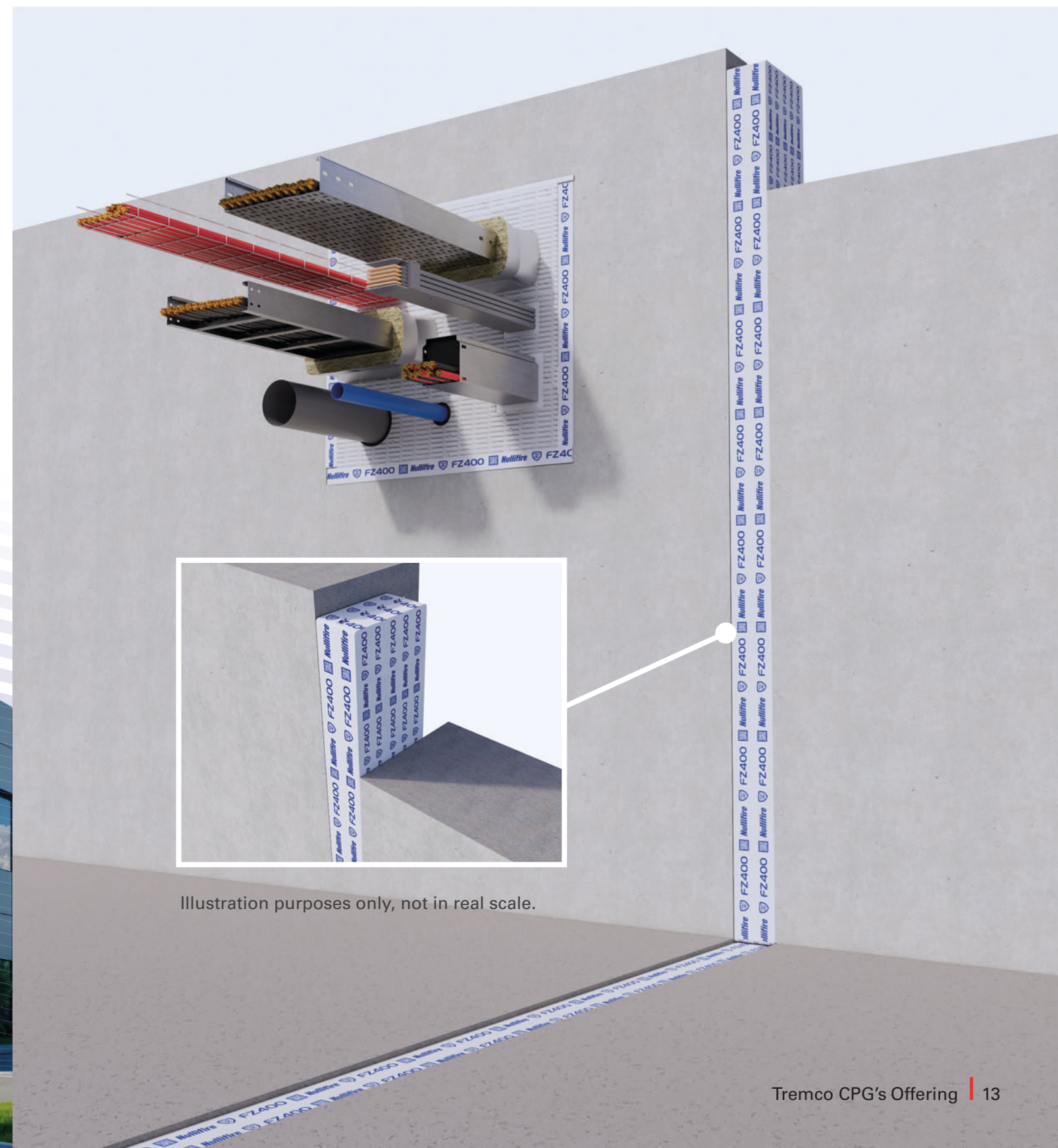
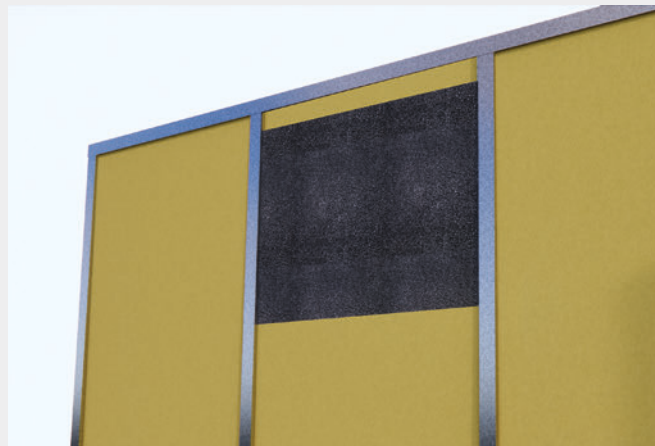


Illustration purposes only, not in real scale.



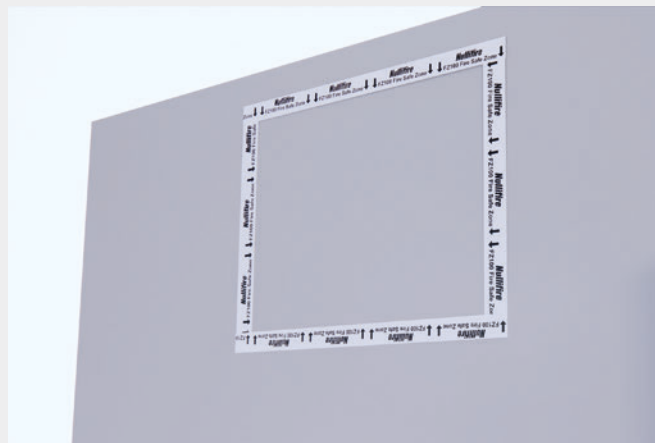
Patented Innovation for quick & easy installation on-site



OFF-SITE or ON-SITE

The firewall construction phase.

- 1 A piece of FZ100 slab is inserted inside the wall panel.
- 2 The wall is closed and the area marked as **FZ100 Fire Safe Zone**.



ON-SITE

Simple and flexible retro-fit of any services, anytime after the construction.

- 1 Appropriate size openings are drilled or cut to the plasterboard.
- 2 The services are pushed through the FZ100 and all penetrations are sealed with FS702 Fire Resistant Acrylic Sealant. Fire stopping DONE.



Remain Flexible with FZ100 FIRE SAFE ZONE

Nullifire FZ100 Fire Safe Zone system revolutionises the installation of cable transit management in data centres by combining fire safety and operational efficiency.

Factory-prefabricated, this solution enables quick and easy installation on-site. It ensures effective fire compartmentation, which is essential for protecting critical infrastructure. FZ100 Fire Safe Zone remains accessible for future cable additions without compromising safety. By integrating this solution, data centres streamline maintenance and ensure long-term compliance with fire protection regulations.



Based on our unique
GXT-technology



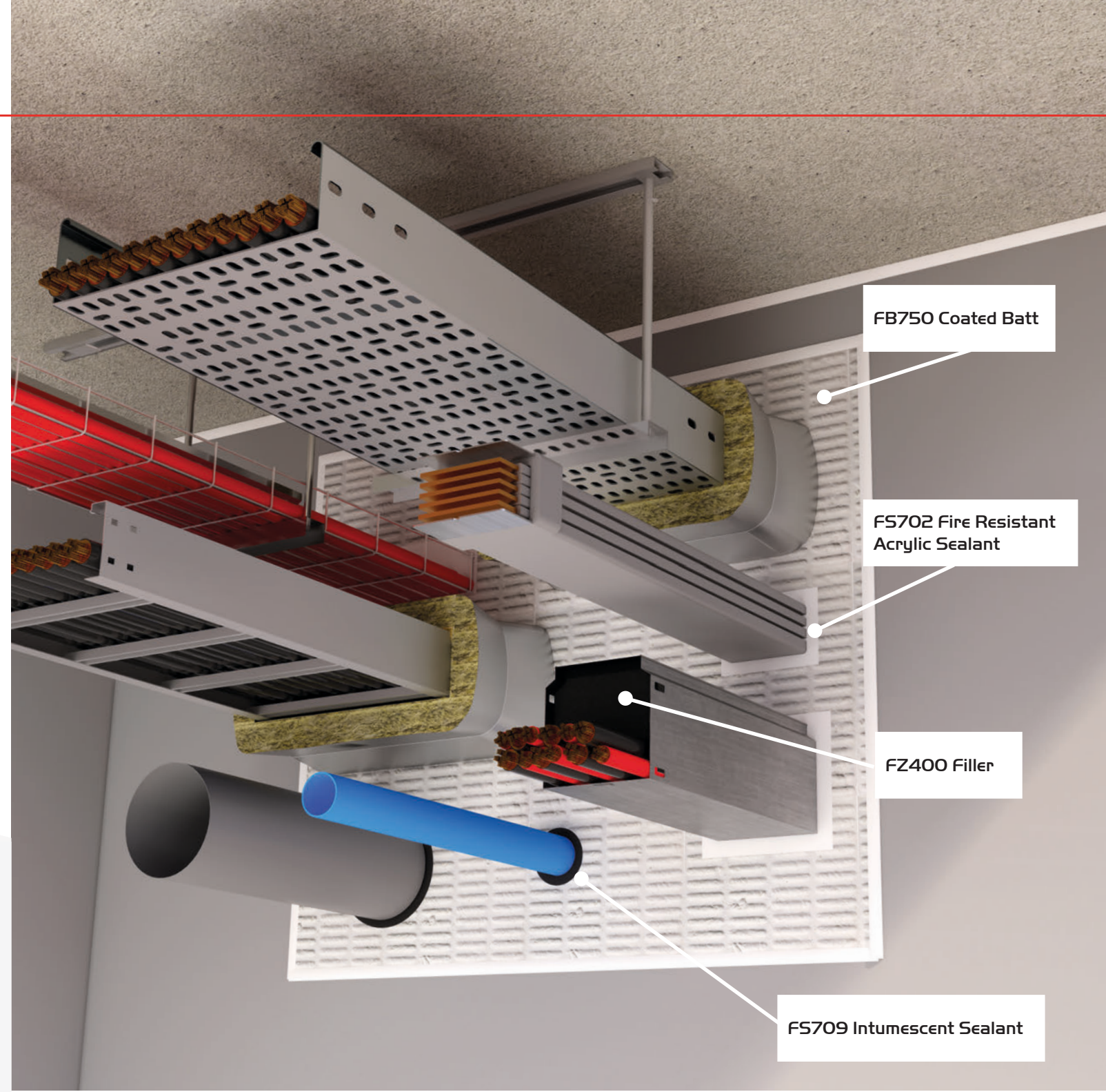
The Product Range

Nullifire warrants the performance of the fire stopping products for the lifetime of the building (a maximum of 50 years). Any damage to products or systems, 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 building’s routine maintenance plan. A competent person should repair any damage to any products immediately to ensure continuation of fire performance. The fire strategy should be re-evaluated if any changes occur to the building’s design or use.

When considering the fire stopping solutions for your data centre, alongside a team of fire stopping experts, the ideal products and solutions for all vulnerable locations should be assessed and specified.

The range includes:

- Coated Batts
- Fire Resistant Ropes
- Intumescent Pipe Collars
- Intumescent Straps
- Intumescent Sealants
- Fire Resistant Sealants
- Cavity Barriers
- Fire Rated PU Foams



Fire Stopping for Service Penetrations

Fire stopping around technical penetrations are crucial. They seal spaces created by the combustion of flammable networks (e.g. fibre optic cables, PVC, HDPE ducts) and destroyed insulation, preventing the spread of fire, smoke, and heat.

ACOUSTIC CONSIDERATIONS

Considerations Worth Highlighting

Other solutions that are often overlooked but could be key requirements in data centres, include acoustic considerations. Passive fire protection and acoustics play a vital role in providing safety and sensory experience in a building.

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

- 2 layers of FB750 Intubatt (140 kg/m^3): 57 dB
- 2 layers of FB750 Intubatt (180 kg/m^3): 59 dB
- 1 layer of FB750 Intubatt (140 kg/m^3): 36 dB

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

Test data can be issued for review.



CERTIFICATION, ASSESSMENTS AND TESTING



3rd Party Certified Products and Systems

Protect your building from the design phase with compliant, certified solutions, specified for your building.

Fire stopping is essential in meeting the evolving safety and regulatory requirements of high-risk building projects, ensuring compliance from the start. By offering expert guidance and digital product information packs, we help contractors and developers avoid specification changes and streamline documentation. Our products meet all necessary certifications, protecting projects by enhancing legal accountability and minimising risk throughout the supply chain.

Tremco CPG is a member of the following Fire Protection Associations:

- **United Kindom:** ASFP
- **France:** GTFI
- **The Netherlands:** BBN (Brandveilig Bouwen Nederland)
- **Norway:** BFOBrann
- **Finland:** Finnish Fire stopping Association
- **Sweden:** Fog och Brandskyddsföretagen
- **Germany:** Bundesverband Brandschutz e.V

At Tremco CPG Europe, we are currently using the following accredited laboratories and notified bodies for testing and certification purposes:

- UL
- Warrington Fire
- CSTB
- MPA Stuttgart
- IFT Rosenheim
- ETA Danmark.



Product Performance Certification

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

Over a period of time, and providing they meet certain criteria, the reports are 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. These evaluate the presented data to offer an opinion on whether a seal or methodology would achieve a theoretical fire rating with related test evidence.



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, 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.



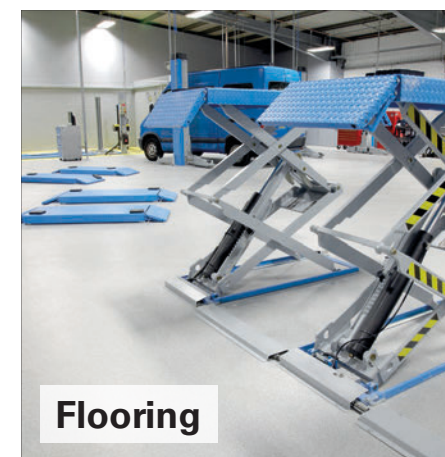
**Sealing, bonding
& insulation**

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



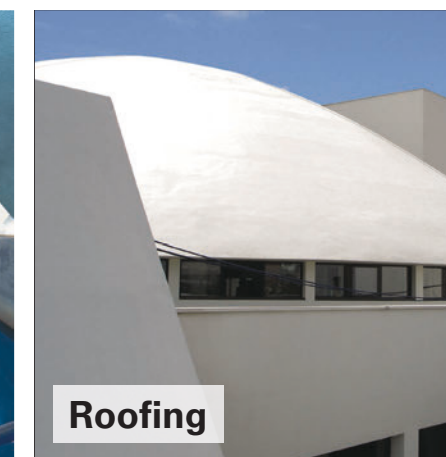
Flooring

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...



