Promat

FULLY TESTED
UP TO 4 HOURS FIRE RESISTANCE

FULLY CERTIFIED

Safeguarding Critical Infrastructure

Advanced Passive Fire Protection Solutions for Data Centres

Data centres face significant fire risks due to high-density equipment, complex cabling, and continuous operation demands, making robust fire protection crucial for preventing costly disruptions.

etex inspiring ways of living

Importance of Fire Protection in Data Centres

Data centres are critical to the functioning of modern businesses and services, making the protection of these facilities from fire risks paramount. Effective fire protection ensures the uninterrupted operation, safety of high-value assets, and the integrity of the data they house.

Continuity of Operations

Data centres require 24/7 uptime, with no tolerance for downtime. Effective fire protection ensures operations remain uninterrupted during fire events, preventing costly service outages and maintaining critical services like cloud computing and financial transactions.

Protection of High-Value Assets

Data centres house expensive and sensitive electronic equipment, vulnerable to both fire and traditional suppression methods. Fire protection systems must safeguard these assets from fire and other damage, such as from water or chemical agents, minimising potential financial losses.

Data Integrity and Security

The primary function of data centres is to store and process data. Effective fire protection preserves data integrity and prevents loss or corruption, protecting against security breaches and legal liabilities.

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Potential Consequences of Fire Incidents

A fire in a data centre can have devastating effects, from prolonged service outages and financial losses to severe damage to reputation and legal repercussions. Understanding these potential consequences underscores the necessity of robust fire protection systems.

Service Outages and Financial Losses

Fires can lead to prolonged service disruptions and significant financial losses, including equipment damage, recovery costs, and lost revenue. These consequences can be devastating, particularly for businesses reliant on continuous operation.

Data Loss and Breaches

Fire damage to data storage devices can result in irreparable data loss, potentially leading to data breaches and legal penalties. Protecting data from fire is critical for maintaining trust and compliance with regulations.

Reputation Damage

A fire incident can severely harm a data centre's reputation, leading to lost business and diminished client trust. Effective fire protection is essential to maintain the organisation's credibility and client relationships.

Legal and Regulatory Consequences

Non-compliance with fire safety regulations due to inadequate fire protection can result in legal penalties, fines, and higher insurance premiums. Ensuring compliance is crucial for avoiding these risks.

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Challenges in Data Centre Fire Protection

Protecting data centres from fire involves addressing several unique challenges, such as managing complex cabling, balancing cooling needs with fire containment, and ensuring seamless integration with other building systems—all while maintaining continuous operation and human safety.

Complex Cable Management

The dense network of cables in data centres creates significant fire risks, requiring effective fire-stopping solutions at cable penetrations to prevent fire spread. Frequent upgrades and changes to cabling further complicate fire safety efforts.

Balancing Cooling Requirements and Fire Containment

Data centres need unobstructed airflow for cooling, which can conflict with the need to contain fire and smoke. Fire protection designs must accommodate both cooling needs and fire safety without compromising operational efficiency.

Continuous Operation and Maintenance

Fire protection systems must be reliable and easily maintainable, allowing for regular testing and upkeep without disrupting data centre operations. This presents logistical challenges that require careful planning.

Integration with Building Systems

Coordinating fire protection with other building systems like HVAC and security is complex but necessary to ensure effective response during emergencies. Systems must work together seamlessly to provide comprehensive protection.
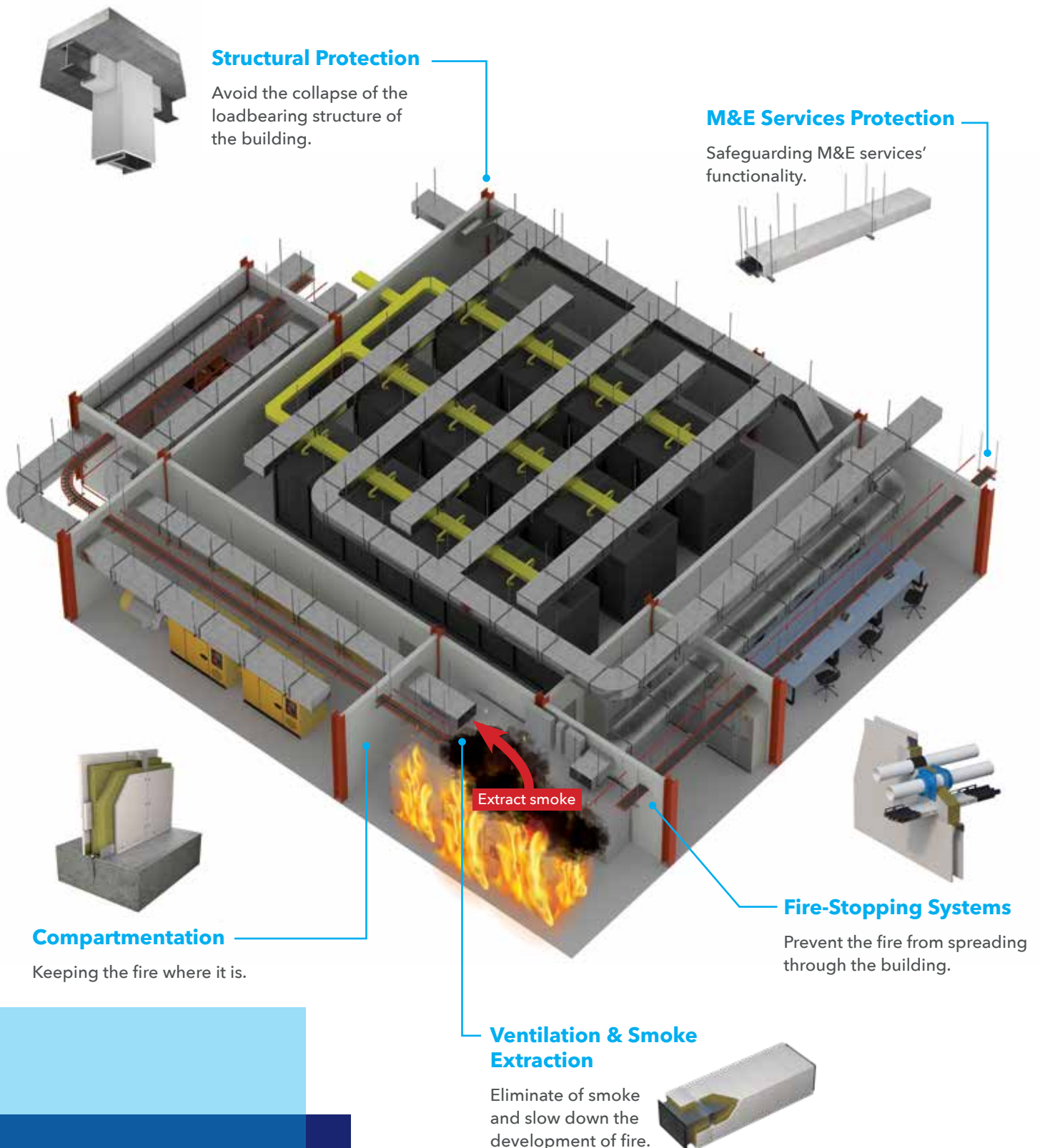
Human Safety and Evacuation

Ensuring safe evacuation for on-site personnel is crucial, even in data centres with minimal staff. Training and emergency preparedness are essential for a quick and effective response during a fire incident.

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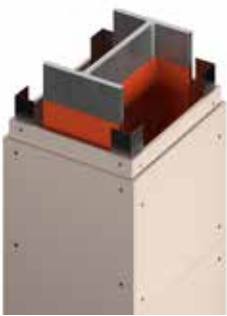## Promat's Passive Fire Protection Solutions

Data centres face complex fire risks that require specialised protection strategies. Promat offers a comprehensive range of passive fire protection solutions designed to address these unique challenges. From containing fire and smoke to protecting critical equipment and structural integrity, Promat's solutions ensure that data centres remain secure, operational, and compliant with safety regulations, even in the event of a fire.

Structural Protection
Avoid the collapse of the loadbearing structure of the building.

M&E Services Protection
Safeguarding M&E services' functionality.

Extract smoke

Compartmentation
Keeping the fire where it is.

Fire-Stopping Systems
Prevent the fire from spreading through the building.

Ventilation & Smoke Extraction
Eliminate of smoke and slow down the development of fire.

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Structural Protection

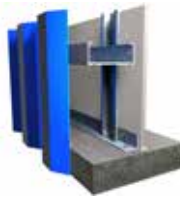## Avoid the collapse of the loadbearing structure of the building

The structural integrity of a data centre is crucial during a fire event. Promat's solutions for structural protection, including fireproofing for steel and concrete, ensure that the building's framework remains stable under extreme temperatures. This protection is vital to prevent structural collapse, providing additional time for safe evacuation and fire-fighting efforts, while preserving the integrity of the data centre's infrastructure.
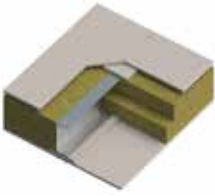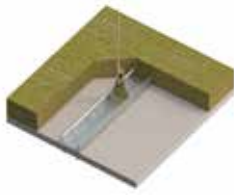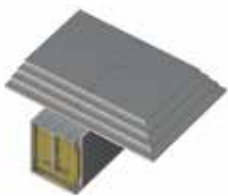
Structutal steel protection			Concrete protection
Board Encasement	**Vermiculite Spray**	**Water Based Intumescent Paint**	**Board Encasement**
→ Uniform thickness guaranteed. → Surface preparation on steel is not required. → Does not require special equipment. → Can be installed simultaneously with other trades. → Easy maintenance. → Any architectural finish can be applied.	→ Direct spray application. → Economical - high yield – low density. → Low material cost, efficient thicknesses. → For both indoor and outdoor applications.	→ Aesthetic surface (thin and seamless result). → Can be applied with roller, brush or airless spray. → Offsite application possible. → For both indoor and outdoor applications; requires a suitable topcoat for outdoor applications.	→ Uniform thickness guaranteed. → Does not require special equipment. → 12 mm thick PROMATECT®-H board equivalent to 64 mm thick concrete. → Moisture resistant, can be used in semi exposed environment, such as car park or plant room. → Can be installed simultaneously with other trades. → Easy maintenance. → Any architectural finish can be applied.

* Systems shown vary depending on the country.

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Compartmentation

Keeping the fire where it is

Effective compartmentation is essential in data centers to prevent the spread of fire and smoke between different areas. Promat's compartmentation solutions, including fire-resistant boards and panels, create robust barriers within walls, ceilings, and floors. These systems help contain fires to specific zones, protecting critical equipment and maintaining the structural integrity of the facility during an incident.

Wall / Partition		External Wall	Fire & Blast Solution
Steel Stud Partition	**Slim/Solid Partition**	**External Wall**	**Fire & Blast Wall/Ceiling**
→ Lightweight and Flexible: Made from steel studs with fire-resistant boards, offering easy installation and design flexibility. → Non-Loadbearing: Typically used for internal partitions; it doesn't support structural loads.	→ Slim Design: Formed by layering 2 to 3 fire-resistant boards together without steel studs, making it slimmer than steel stud partitions. → Frameless Design: Offers a more compact solution for internal partitions where space-saving is important. Can be installed from one side.	→ Fire Protection Lining: Added as a lining to the existing external wall to enhance fire protection. → Non-Structural Addition: Primarily serves as a fire-resistant layer without altering the load-bearing function of the external wall.	→ Dual Protection: Provides robust fire resistance while also shielding against explosive forces, safeguarding both personnel and equipment. → Blast Resistant: Designed to maintain stability under extreme conditions, preventing fire and blast from spreading to adjacent areas. → Suitable for both external and internal application.

Ceilings			Floor
Self-supporting Ceiling	**Suspended Ceiling**	**Slim/Solid Ceiling**	**Floor System**
→ Horizontal Subdivision: Suitable where fire separation is required to subdivide a voluminous compartment horizontally. → Independent and Robust: The ceiling is hanger free, depending on the construction can be symmetrical or asymmetrical, permit one or two sided access.	→ Flexible and Easy to Install: For situations where the ceiling void permits a suspended ceiling, these ceilings are easy to install from the bottom. → Larger Coverage: Suitable for larger area.	→ Slim and Non-Loadbearing: Formed by layering 2 to 3 fire-resistant boards together without steel studs, making it slimmer than self-supporting ceiling. → Frameless Design: Offers a more compact solution for ceiling where space-saving is important.	→ Structural and Fire-Resistant: Promat boards create a strong, load-bearing floor with built-in fire resistance, maintaining integrity under load and during a fire. → Versatile Application: Suitable for various floor assemblies, offering both structural support and enhanced fire safety.

* Systems shown vary depending on the country.

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Compartmentation Enhancements

Reinforcing barriers to keep fire and smoke contained

Compartmentation Enhancements are specialised systems designed to support and reinforce the integrity of compartmentation within a building. This category includes access panels, smoke curtains, and fire barriers, all of which play a crucial role in sealing openings, managing the movement of smoke, and maintaining fire-resistant barriers. These enhancements work together to ensure that fire and smoke are contained within designated areas, preventing fire spread and protecting the safety of occupants.

Access Panels		Fire & Smoke Barrier
Horizontal Access Panel	**Vertical Access Panel**	**Fire & Smoke Barrier**
→ Installed in horizontal surfaces, typically in ceilings or floors → Provides access to services, equipment, or utilities located above ceilings or beneath floors, such as HVAC systems, wiring, or plumbing.	→ Installed in vertical surfaces, such as walls → Provides access to utilities, pipes, cables, and other building services within walls or behind partitions.	→ Designed to control and direct the movement of smoke during a fire, keep escape routes clear and protect occupants from smoke inhalation. → Prevent the spread of fire by compartmentalizing spaces within a building, protecting both people and property

* Systems shown vary depending on the country.

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Fire-Stopping Systems

Prevent the fire from spreading through the building

The intricate network of cables in data centres poses significant fire risks, especially at points where cables penetrate walls and floors. Promat's fire-stopping systems offer reliable solutions to seal these penetrations, preventing the spread of fire and smoke between compartments. This protection is crucial for preserving the safety and functionality of the data centre's infrastructure.

Penetration Seals			
Fire Collars For Combustible Pipes	**Services Penetration Seals**	**Cable Box Circular**	**Cable Transit Seal**
→ Purpose: Installed around plastic or other combustible pipes that penetrate fire-rated walls or floors. → Function: During a fire, the collar expands to seal the gap left by the melting pipe, preventing fire and smoke from spreading to adjacent compartments.	→ Purpose: Protects multiple services like pipes and cable trays that penetrate fire-resistant compartments. → Function: Creates a fire-resistant barrier around the penetrations, effectively sealing off larger openings and preventing fire and smoke spread.	→ Purpose: To provide an intumescent sealing system for cable penetrations. → Function: Easy and quick to install, this system allows for retrofitting of cables without removing the existing firestopping system.	→ Purpose: Prevents fire spread between compartments while allowing flexible service installations. → Function: Modular system that accommodates various cable sizes, enabling easy installation and removal without compromising fire protection.

Gaps	Joints	Opening	Switch box
Sealing Small Gaps & Imperfections Of Fit	**Building Joints**	**Ventilation Grille**	**Electrical Junction Box Intumescent**
→ Purpose: Fills small gaps and imperfections around services that pass through fire compartments. → Function: Ensures that even the smallest gaps are sealed to maintain the integrity of the fire-resistant barrier.	→ Purpose: Protects joints such as construction, movement, or control joints in a building. → Function: Seals joints to prevent fire and smoke from spreading through these potential weak points between compartments.	→ Purpose: Allows for ventilation while maintaining fire protection in compartments. → Function: Expands when exposed to heat, sealing the opening to stop fire and smoke spread during a fire event.	→ Purpose: Seals the openings around electrical switchboxes in fire-rated walls. → Function: Expands in a fire to maintain the wall's fire resistance by preventing fire and heat from entering through the switchbox openings.

* Systems shown vary depending on the country.

Promat

Ventilation & Smoke Extraction

Eliminate of smoke and slow down the development of fire

Controlling ventilation and smoke extraction is critical in a data centre to manage air quality and prevent the spread of smoke during a fire. Promat offers protection for steel ducts and also provides self-supporting duct systems. These solutions are designed to contain and control smoke, ensuring safe evacuation routes and protecting sensitive equipment, helping to quickly contain any fire incident and facilitate effective fire suppression.

Board-cladded to Steel Duct		Self supporting Duct
Board System	**Paint**	**Board System**
→ High Fire Protection and Insulation: Promat boards cladded to steel ducts provide enhanced fire resistance and thermal insulation, suitable for higher fire rating requirements. → Durable and Robust: Offers long-term protection and durability, ideal for critical areas needing strong fire protection.	→ Cost-Effective: Applying fire-resistant paint to steel ducts is a more affordable solution, providing basic fire protection. → Lower Fire Rating: Offers lower fire resistance compared to the board-cladded system, making it suitable for less critical areas.	→ Lighter Weight: Constructed entirely from Promat boards without steel duct, resulting in a lighter duct system. → Integrated Fire Protection: Combines structural integrity and fire resistance in a single system, eliminating the need for an additional steel duct.

M&E Services Protection

Safeguarding M&E services' functionality

Mechanical and electrical (M&E) services are vital to the operation of a data centre, but they also present unique fire risks. Promat's fire-rated enclosures for M&E services ensure that critical components, such as power distribution units, cable trays, fire alarms, fire shutters, and emergency lighting systems, are shielded from fire exposure. These enclosures help maintain the operational integrity of essential services during a fire, reducing the risk of downtime and equipment damage.

M&E Services Protection	
Enclosure System	**Cable Coating**
→ High Fire Protection and Insulation: Encloses M&E services like cable trays and pipes with Promat boards, providing superior fire resistance and thermal insulation. → Comprehensive Coverage: Offers robust protection for both cables and pipes, ensuring critical systems remain operational during a fire.	→ Cost-Effective and Lightweight: Involves applying a fire-resistant coating directly to cables, making it a more affordable and lighter option. → Basic Fire Protection: Retards the spread of fire, and reduces the emission of smoke and lower the smoke density of combustible cable jackets, while ensuring the continuity of electrical power supply for continued operation of emergency equipment

* Systems shown vary depending on the country.

Promat

How Promat Supports Your Data Centre

Promat is your trusted partner in ensuring comprehensive fire protection for data centres, backed by decades of experience and expertise.

Over 60 Years of Experience

With more than six decades of industry know-how, Promat brings unparalleled expertise in passive fire protection, ensuring your data center is safeguarded by proven solutions.

Comprehensive Passive Fire Protection Systems

We offer a full range of passive fire protection systems, tailored to meet the unique needs of your data center, from compartmentation to structural protection.

Regulatory Compliance

Promat understands the specific regulations governing data centers. Our systems are fully tested, certified, and approved by local authorities to ensure compliance and safety.

In-House Fire Testing Lab

Our dedicated fire testing lab and research center conduct over 200 fire tests annually, ensuring our solutions are continuously optimized and reliable.

Technical Support and Consultation

Promat provides expert technical support and consultation, offering customized solutions and ongoing assistance to keep your fire protection systems at peak performance.

Training and Education

We offer comprehensive training programs, and workshops to equip your team with the knowledge and skills needed to effectively manage fire safety in your data center project.

This overview highlights Promat's extensive support, from experience and technical expertise to training and regulatory compliance, ensuring your data center is well-protected.

Promat

Transparency is at the heart of our sustainability journey

Sustainability is key to Promat's purpose of Advancing expertise to build a safe and sustainable world. Promat solutions can make a strong contribution to more sustainable construction and industrial industries, by working on circularity and decarbonisation and across the lifecycle of our products.

At Promat, we are dedicated to playing a proactive role in a sustainable tomorrow. We not only enable sustainable energy and construction methods; we also work towards developing a more sustainable portfolio. As part of the Etex Group, we have the credentials and ClearChange is also about having a clear path towards our objectives for a more circular portfolio that contains less embodied carbon. We focus on 6 key areas to reduce our carbon footprint and help our customers to build sustainably.

We're the experts in passive fire protection, but our mission doesn't stop there.

If we are to truly protect lives and assets while respecting the planet we must also ensure that sustainability is at the heart of what we do.

Finding ways to create positive change and make a real difference to our environmental impact.

That's why we have introduced CLEARCHANGE, our approach to ensuring we are doing just that in everything we do.

CLEARCHANGE is about transparency – demonstrating in six clear steps how we will tackle the sustainability challenges faced by all areas of our business. From product design through installation and use to reuse and recycling.

We take 6 steps along the lifeycle of our products

6 Steps to **CLEAR**CHANGE

Sustainable design
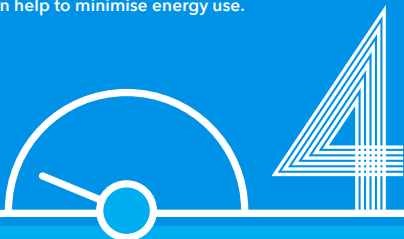We seek to reduce carbon through the smart development and evolution of our ducting board products.

1

Decarbonisation
We have reduced our use of fossil fuels by finding better alternatives across the production process.

2

CO^2

Energy saving
We look closely at how our ducting boards interact with other products and systems, and where they can help to minimise energy use.
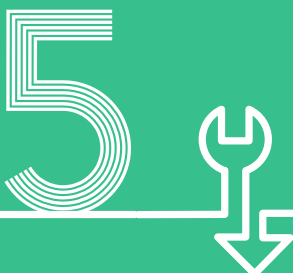
4

Delivery & Assembly
Our job doesn't end when the product leaves our factory – it's crucial we are supporting its sustainable use, too.

3

Built to last
All Promat ducting boards offer excellent durability and performance in use.

5

Re-use and recycling
We have a responsibility to encourage the circular use of our ducting boards, with the goal of avoiding waste to landfill.

6

Promat

Comprehensive Technical Support for Your Data Center Project

We understand that designing and building a passive fire protection solution is often not an easy task.

We recognise that designing and implementing a passive fire protection solution can be complex. That's why we're here to help you navigate local regulations, assess risks, and ensure your building project meets the highest fire safety standards. Our team offers comprehensive technical reports and all the supporting documents you need to finalize your design and kickstart your project with confidence.

Count on us for expert technical support and practical advice to deliver an impeccable fire safety solution. Reach out to us today, and let's ensure your project is protected from the start.

Do not hesitate to contact us.

Promat

GLOBAL EXPERT IN PASSIVE FIRE PROTECTION

Promat is the expert and worldwide reference in passive fire protection and high-performance insulation for the construction sector and a large number of industrial markets. We offer sustainable solutions that protect lives and assets, enhance comfort, optimise process efficiency, minimise the loss of space and energy and help reduce CO_2 emissions.

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→ The technical data provided in this publication is based on mean values prevalent at time of publication and is thus subject to fluctuation. It should not be regarded as a guarantee to system performance.

→ All data contained herein conforms to and frequently surpasses generally accepted fire protection standards recognised by most professional fire science practitioners and regulatory authorities worldwide. The same general principle is equally applicable to all Promat products and systems. Promat has access to a considerable body of test authentication data and this can be provided on a complimentary basis upon request. It should be noted however that this publication replaces all previous editions in its entirety.

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About Etex

Etex is a global building material manufacturer and pioneer in lightweight construction. Etex wants to inspire people around the world to build living spaces that are ever more safe, sustainable, smart and beautiful.
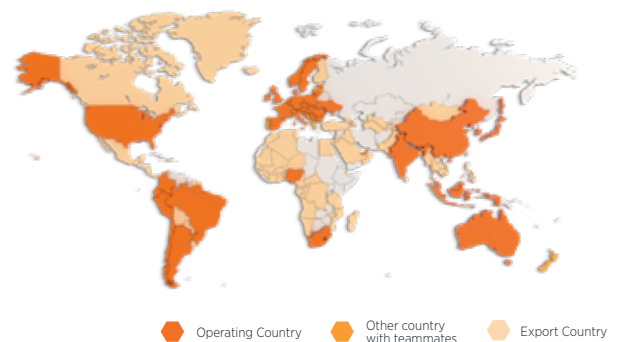
Founded in 1905, headquartered in Zaventem, Belgium, Etex is a family-owned company with more than 13,500 employees globally. It operates more than 160 sites in 45 countries and recorded a revenue of EUR 3.8 billion in 2023. Etex fosters a collaborative and caring culture, a pioneering spirit and a passion to always do better for its customers.

Etex has five R&D centres supporting five global divisions:
- Building Performance: dry construction solutions including plasterboards and fibre cement boards, plasters and formulated products, passive fire protection and associated products.
- Exteriors: a range of aesthetic fibre cement materials for use in agriculture, architectural and residential exteriors.
- Industry: fire protection and high-performance insulation products for the construction and OEM (Original Equipment Manufacturer) industries.
- Insulation: glass mineral wool and extruded polystyrene (XPS) for thermal and acoustic insulation.
- New Ways: high-tech offsite modular solutions based on wood and steel framing.

Etex's global portfolio includes leading commercial brands such as Promat, Kalsi, Siniat, Equitone, Eternit, Cedral, Durlock, Gyplac, Pladur, Superboard and URSA.

Etex is Inspiring Ways of Living, for more information, please visit our website: www.etexgroup.com

■ Operating Country   ■ Other country with teammates   ■ Export Country

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