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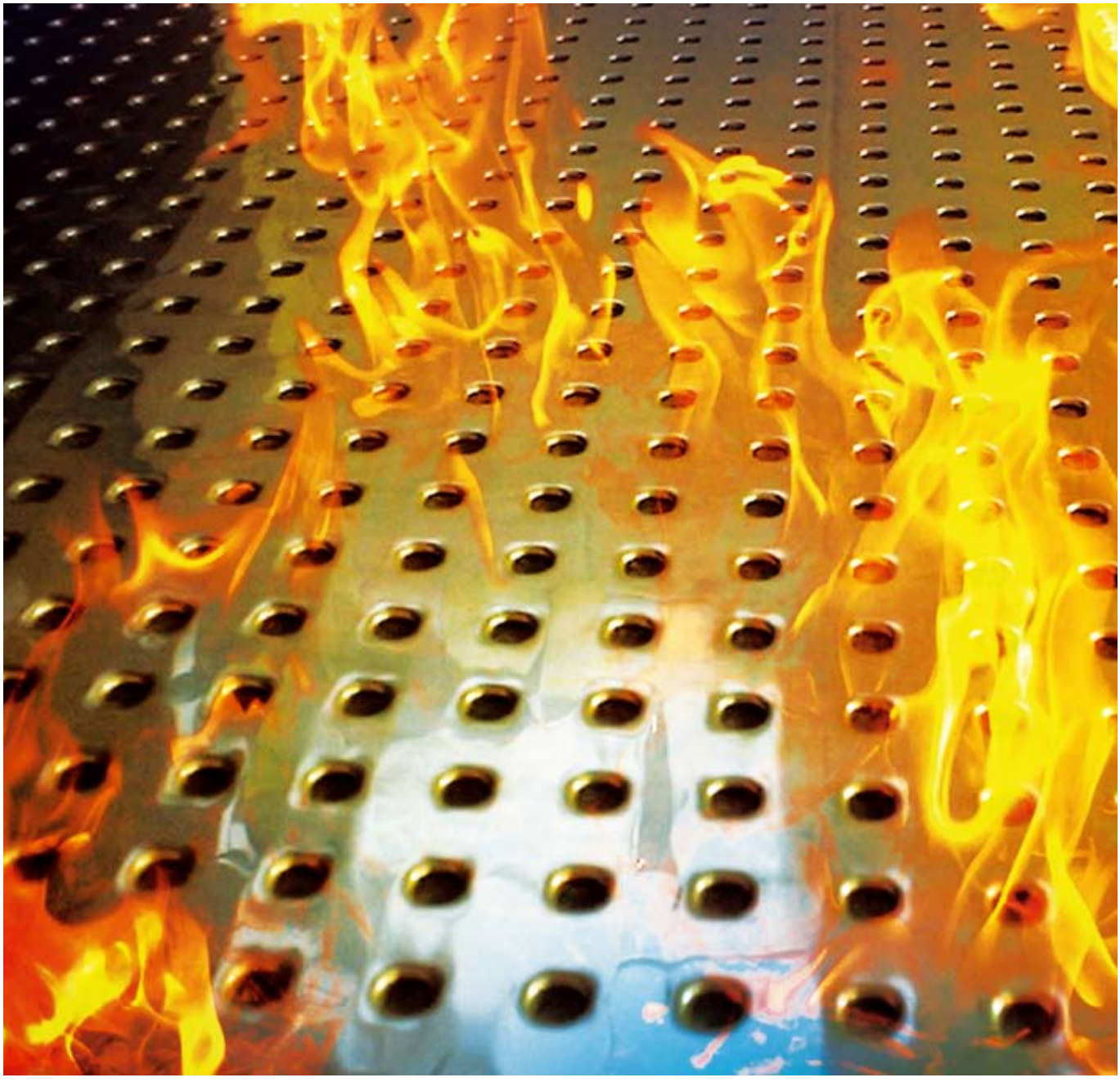
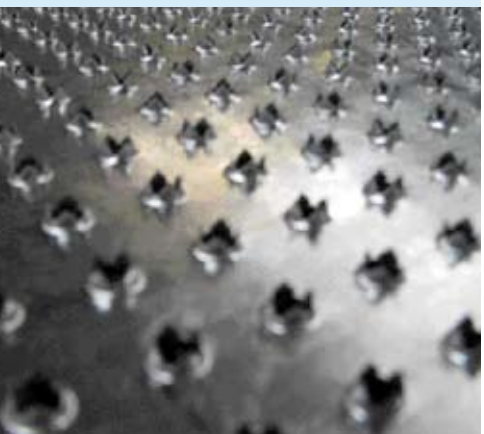
January 2008

Promat DURASTEEL®
High Performance Systems



Promat

Promat DURASTEEL® High Performance Systems



The risks associated with industrial and manufacturing environments are assessed as being even broader than those for commercial buildings.

In the event of a fire, effective compartmentation is paramount to prevent loss of life and limit damage to property and consequential loss. By separating a fire with strategic barriers, including fire resistant doors, ceilings and penetration seals, the spread of fire and smoke can be prevented.

Promat DURASTEEL® High Performance Systems

WHAT IS Promat DURASTEEL®?

Promat DURASTEEL® is a composite panel of fibre reinforced cement mechanically bonded to punched steel sheets on both outer surfaces. It is classed as 'non-combustible' to BS 476: Part 4: 1970 and to Clause 10 of EN 13501-1: 2002. It is both highly impact and and moisture resistant.

Promat DURASTEEL® has been developed and supported through rigorous testing for use in barriers, door and ceiling applications, with a wide range of specifications available.

Promat DURASTEEL® systems combine lightness, strength, impact, blast resistance and durability with exceptional fire resistance. These systems remain unaffected by firefighters' hoses, leaving them capable of performing their original function even during a fire.

Promat DURASTEEL® systems have been used successfully across the industry for many years, including rail and metro projects as well as military developments and commercial, pharmaceutical and petrochemical facilities.

Promat has developed DURASTEEL®, to ensure its effective use in blast resistant constructions in a wide range of industrial applications, including power generation and anti-terrorist installations.

GENERAL INFORMATION

Promat DURASTEEL® walls and partitions can be designed and installed in various layout and framing options to meet a multitude of needs. In today's construction markets the need for systems which can perform multi-functional roles, whilst capable of allowing for fast track and cost effective installation are of prime importance.

The Promat DURASTEEL® partition and wall system can easily fulfil all of these roles. Promat DURASTEEL® walls have resistance to extreme impact, before, during and after exposure to fire. This ensures that under use, they suffer no damage from the burden of every day exposure within, for instance, warehouse situations. Under fire conditions they protect and maintain compartmentation and after a fire they ensure a building remains secure until remedial work can be undertaken.

Promat DURASTEEL® systems are swiftly installed; on most occasions they have no requirement for additional foundations or other special construction works. Installation is a "dry" trade, thus there is no disruption of other trades working in the same areas, therefore allowing faster project completion.

Promat DURASTEEL® systems can offer both integrity only or integrity and insulation. Walls can be designed for high blast resistance and meet most of the generally recognised fire curves, including cellulosic and hydrocarbon.

Promat DURASTEEL® systems combine extremely high levels of fire, impact and water resistance. They are proven to withstand the most demanding environments, temperature extremes, hostile elements and can resist high thermal shock, such as high pressure firemen's hoses.

Promat DURASTEEL® partition and wall systems can be used in applications such as separation of hazardous areas, shielding for valve actuators, protection of escape routes and tunnels, construction of refuge areas, compartmentation within buildings and storage areas for hazardous goods or protection of equipment.

INTRODUCTION TO Promat DURASTEEL®

Promat UK Limited is a market leader in passive fire protection and high temperature insulation, with a fire protection range that offers a unique combination of product benefits: exceptional strength, impact and moisture resistance, ease of working, installation and safety in use.

Promat UK Limited is a subsidiary of Promat International, which has sales offices, factories and workshops worldwide.

Promat DURASTEEL® fire and impact resistant systems provide a cost effective fast track solution to the problem of compartmentation of large warehouses and fire resistant enclosures, rooms, ceilings, cable trunking and the like.

Promat DURASTEEL® systems can be fitted with a range of compatible personnel doors, sliding and guillotine doors, roller shutters and access hatches to provide up to 240 minutes fire resistance.

As an indication of the effectiveness of Promat DURASTEEL® these photographs show a production facility before and after a fire. The Promat DURASTEEL® wall separating two sections of the factory performed exactly as designed. Indeed, the bottling plant on the unaffected side of the barrier was operational again within 2 days of the fire, therefore minimising the affects of the incident as much as possible.

Promat DURASTEEL® High Performance Systems

Typical Mechanical Properties			
Flexural strength $F_{rupture}$	9.5mm	Average, dry	N/mm² 84
Modulus of elasticity E	9.5mm	Average, dry	N/mm² 40,000

General Technical data	
Material class	Non-combustible
Surface spread of flame	Class 1
Building Regulations classification	Class 0
Alkalinity (approximately) pH (core)	10-13
Thermal conductance (approximately) at 20°C W/m²K	60
Coefficient of expansion (20-100°C) m/mK	15 x 10^{-6}
Nominal moisture content (air-dried) %	6
Moisture movement (ambient to saturated) %	–
Thickness tolerance of standard boards	+1.0 to -1.0
Length x Width tolerance of standard boards mm	±2.0

Board Format Data			
Thickness (mm)	**Length x Width (mm)**	**Approx. Weight (Kg/m²)**	
		Dry	**With approx. 6% moisture**
9.5	2500 x 1200	19.8	21.0

Construction Details		
Specific Applications Required	**Primary Performance**	**Fire Performance (minutes)**
Public and service corridors	Impact resistance	E120
Warehousing		E240
Industrial buildings		E240 / I60
Mass transit systems		E240 / I120
Manufacturing facilities		EI 240
Other areas subject to abnormally rough use		
Offshore facilities	Blast resistance	H120
Petro-chemical industry		H120
Gas processing plant		
Other areas subject to projectile or explosion risk		

NOTE: Fire performance figures denote integrity (E) and insulation (I) performance respectively.

Acoustic performance figures established by direct testing or by assessment.

For details of specifications and installation details, please consult Promat Technical Services.

Promat DURASTEEL® High Performance Systems

SPECIFICATION DETAILS

Details are shown for a basic range of high performance barriers. Using the strength of the DURASTEEL® panel, Promat barriers offer exceptional fire and impact resistance.

Integrity only barriers require one sheet of 9.5mm Promat DURASTEEL® on one side of the stud, while insulated barriers require a 9.5mm Promat DURASTEEL® sheet on either side.

These barriers are suitable for use in heavily trafficked commercial and industrial buildings. Promat DURASTEEL® barriers are regularly used in constructions up to 15 metres in height.

Walls greater than 15m high can be designed on a bespoke basis – please contact Promat Technical Services for details.

Stud Channel Sizes

Height of partition – m	Size of channel for single skin uninsulated partition – mm x mm x mm	Size of channel for double skin insulated partitions – mm x mm x mm
0 – 6	80 x 60 x 3	80 x 60 x 3
6 – 9	150 x 60 x 3	150 x 60 x 3
9 – 12	Two 150 x 60 x 3 back to back	Two 150 x 60 x 3 back to back
12 – 15	Two 175 x 60 x 3 back to back	Two 200 x 60 x 3 back to back

Insulated Partitions

Fire resistance – minutes	Stud depth – mm	DURASTEEL® fillets per face	Rock wool infill
E240 / I120	80	1*	2 x 40mm x 140kg/m^3
E240 / I120	150	None	3 x 50mm x 80kg/m^3
E240 / I240	80	2*	3 x 40mm x 140kg/m^3
E240 / I240	150	2*	3 x 50mm x 100kg/m^3

**Fillets must overlap the channels by at least 20mm on both sides.*

PAINTING AND DECORATING

Promat DURASTEEL® is self-finished in either galvanised or stainless steel and requires no decoration. If decoration is required, Promat DURASTEEL® should be de-greased with a solvent based cleaning agent before any form of decoration is applied. Seek paint manufacturers recommendations.

MAINTENANCE AND CLEANING

Panels do not normally require any maintenance in use. If panels are damaged they should be replaced rather than repaired in order to ensure fire performance is maintained.

Promat DURASTEEL® High Performance Systems

SYSTEM PERFORMANCE

Type	Building & Construction	Offshore Constructions
Single-skin Constructions	E60, E120, E240 or E360	Marine Classification A0 (A and B class), H0
Double-skin Constructions	EI 60, EI 90, EI 120, EI 180 or EI 240	Marine Classification A60 for standard fire tests H60 and H120 ratings for hydrocarbon fire tests.
Special	Promat DURASTEEL® has designed and installed many purpose-built fire walls, which provide special performance characteristics beyond fire resistance. All structures can be independently assessed to ensure the required performance is achieved.	

SYSTEM TESTS AND APPROVALS

Promat DURASTEEL® systems have been tested extensively in the UK to comply to all relevant parts of BS 476, as well as many international standards such as: Factory Mutual (FM), Underwriters Laboratories Inc (UL), Underwriters Laboratories Canada (ULC), Det Norske Veritas (DNV), Lloyds Register of Shipping (LRS), Zulassung, EDF and LUL. The systems have also achieved the stringent Certifire approvals.

Over £2.5M has been spent on tests, assessments and approvals to comply with many insurance specific requirements, both in the UK and overseas.

Promat run investigative programmes at our facilities in Belgium and the UK. Promat UK Limited operate the UKAS accredited Blackburn Fire Test Centre (BFTC) at Blackburn, Lancashire. All Promat materials are manufactured in accordance with accredited BS EN ISO 9000 quality management systems.

The picture right shows a Promat DURASTEEL® wall undergoing impact following a fire test. The picture above shows a concrete block wall undergoing similar testing.

certifire

Promat DURASTEEL® High Performance Systems

The picture above shows Promat DURASTEEL® wall being fire tested to E240.
Below are examples of Promat DURASTEEL® UK and International certification.


certifire

CERTIFICATE OF APPROVAL
No CF 429

PROMAT UK LTD


Lloyd's Register

CERTIFICATE OF FIRE APPROVAL


Lloyd's Register

CERTIFICATE OF FIRE APPROVAL


Lloyd's Register

CERTIFICATE OF FIRE APPROVAL


DNV

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

Class H Fire Wall and Bulkhead

DURASTEEL

Promat UK Limited
Bracknell, Berkshire RG12 2TD, United Kingdom

Promat DURASTEEL® High Performance Systems

DESIGN AND TECHNICAL SERVICES

With over 100 years of combined experience, our dedicated technical and sales support teams are available to provide information and assistance to help in the design and installation of Promat DURASTEEL® systems.

SYSTEM INSTALLATION

After a site survey, installers will provide fully designed working drawings. Promat manufacture the fire resisting sheet, doors and penetration seals, which give a single source and responsibility.

All elements are tested as a system to ensure compatibility, with one guarantee source. Access panels for maintenance or fire stopping of penetrations through the barrier can be included in the system estimate.

Promat DURASTEEL® systems are installed by experienced, licensed installers. Once the work is complete, the system undergoes a thorough check before it is issued a warranted Certificate of Conformity.

These licensed installers are all assessed under the FIRAS third party accreditation scheme.

REGULATORY REFORM (FIRE SAFETY) ORDER 2006 (RRFSO)

Fire safety law changed in October 2006. The new law emphasises prevention of fires and reduction of risk, and makes it the property owner's responsibility to ensure the safety of everyone who uses their premises and the immediate vicinity.

The Department for Communities and Local Government (DCLG) have produced a set of guides to advise the responsible person how to comply to the fire safety law, help them to carry out a fire risk assessment and identify general fire precautions that will need to be put in place.

Failure to meet the requirements of these new regulations could lead to prosecution, which could then result in hefty fines or even conviction. The Order replaces any previous fire legislation. Any fire certificates issued under the Fire Precautions Act 1971 have ceased to have effect from 1st October 2006.

Promat provides a free advice service to help parties within the building industry to make the right choices in fire safety. Promat's technical department are constantly searching for solutions, and are experts in fire safety legislation. They monitor any changes and test practical solutions.

Promat DURASTEEL® High Performance Systems

TESTIMONIALS

R&S FIRE AND SECURITY LIMITED

"In 1998 we created a separate division within the R&S group devoted solely to DURASTEEL® Systems. We take pride in the quality of our installations and strive to improve our technical capabilities in order to provide our Clients' with both the service they seek, and a product system that fulfils their needs.

Over this period we have formed an excellent working relationship with Promat UK Ltd in both promoting, and successfully manufacturing and installing 4 hour fire rated barrier, ceiling, enclosure, and ductwork systems for our blue chip clients throughout the UK, Europe and Asia.

Our professional attention to design, detail and installation of these flexible and unique systems by a dedicated labour force and management team, has enabled this division to succeed. This coupled with our "can do" approach has resulted in repeat business and referrals from satisfied Clients.

In continuing partnership with Promat UK Ltd, we anticipate successfully expanding on this relationship to provide more clients with the proven and tested Promat DURASTEEL® system to solve their fire protection problems."

SHARPFIBRE LIMITED

"Sharpfibre Ltd are pleased to be associated with Promat UK Ltd. ***DURASTEEL® has a proven track record in providing clients innovative solutions*** to complex high performance fire and blast proof barriers."

MITIE McCARTNEY FIRE PROTECTION LIMITED

"MITIE McCartney Fire Protection Ltd, part of the £935 million pound, 40,000 strong MITIE Group Plc, have been a market leader in passive fire protection for over 25 years. For most of this time, we have been working closely with Promat, utilising their full range of products, services and technical support.

Appointed as a licensed DURASTEEL® applicator for fire barriers at the inception of the scheme, MITIE McCartney Fire Protection and Promat are capable of bringing together their vast experience to provide and enhance life safety systems and property protection on sites as varied as airports, steel works, commercial premises and power stations.

DURASTEEL® has proved popular with clients, not only because of its robust nature but also due to the confidence it provides through the extensive test data and certainty of application through the approved licensed installer scheme."

INVICTA STORAGE SYSTEMS LIMITED

"Over a period of 10 years, Invicta Storage Systems Ltd has been pleased to install DURASTEEL® barriers and vaults to our clients, resulting in an excellent working partnership with Promat UK Ltd. Invicta Storage Systems Ltd values its position as a licensed installer and actively takes every opportunity to advance its technical sales, product knowledge and market share.

DURASTEEL® has become one of our core products and we have successfully installed a number of 4-hour fire rated barriers and vaults to many of our blue chip clients throughout the UK, Europe and the USA.

Our success has been contributed to referrals from satisfied customers, impressed by the product's unique capabilities and our professional service.

We look forward to building on an already excellent working relationship with Promat in the future."

Promat DURASTEEL® High Performance Systems

KEY FEATURES:

- **Up to EI 240 and E 360 fire rating**
- **Impact resistant**
- **Unaffected by water**
- **Non-combustible**
- **Minimal smoke or toxic gas in a fire**
- **Slim, space-saving profile**
- **Lightweight, no foundations**
- **Easily relocatable**
- **Hose-stream resistant**
- **Mechanical or seismic vibration resistant**
- **Suitable for retro-installation**
- **Low sound transmission**

KEY BENEFITS

- Comprehensive technical expertise
- Certifire accredited systems
- FIRAS accredited and fully qualified licensed installers
- Guaranteed system with full certificate of conformity
- Tested to comply to UK and international standards
- Insurance industry accreditation
- System fully fire tested to conform to new RR(FS)O standards
- Tested with a range of service penetrations and fire doors
- No maintenance 'fit and forget' system
- Over 40 years service life
- High installation rate

SYSTEMS AVAILABLE

Some common partition systems constructed from Promat DURASTEEL® are shown on the following pages. When considering the design of walls, it is essential to consider the section size of the steel framing in conjunction with the wind loading factors, expansion allowance, together with the height and span of the wall, to ensure that under both fire and ambient conditions, the wall will provide the necessary design performance. The basic framing system comprises of lightweight steel sections, with a nominal 3mm thickness, dependant on the other design factors etc. All framing is either bolted, screwed or welded into position, again this would be dependant on location, performance parameters and design requirements.

Where a cold smoke seal is required, the boards must be bedded on PROMASEAL® fire rated silicone or PROMASEAL® Intumescent mastic. For demountable wall systems, to ensure sealants do not act as adhesives, a cold smoke seal composed of a 2mm thick strip of Promat PL Intumescent strip can be applied. For the integrity only systems, the Promat DURASTEEL® walls have been tested with the framework on both the exposed and unexposed face to fire, in order to show that the frame can be exposed without detriment to the fire performance of the system.

The framing for the Promat DURASTEEL® wall systems must be securely fixed back to a substrate (concrete, masonry or steel) that has an equal or better fire performance than the designed wall. All fixings must be non-combustible, and must be those listed in the approval documents. Expansion bolts used to fix framework should be steel, not aluminium or plastic.

Promat DURASTEEL® High Performance Systems

LOW RADIATION FIRE WALL

Low radiation fire wall for construction where a high degree of stability and integrity are required, where insulation as measured upon the unexposed surface of the wall is not critical, but where heat radiation from exposed to unexposed face could be of importance. Promat DURASTEEL® low heat radiation walls offer a lightweight construction, which is very narrow across its thickness.

Used in conjunction with the Promat DURASTEEL® pallet racking fire barrier system, this wall offers increased warehousing space and allows for racking to be placed practically against the Promat DURASTEEL® wall itself.

Single layer Promat DURASTEEL® fire walls can be constructed using framing of either steel channels, Tee sections or back to back angle sections. The type of framing system and the dimensions of the steel sections will depend on the performance requirements of the wall in terms of wind load, fire performance, impact resistance etc. In instances such as these, Promat DURASTEEL® walls are of a bespoke design.

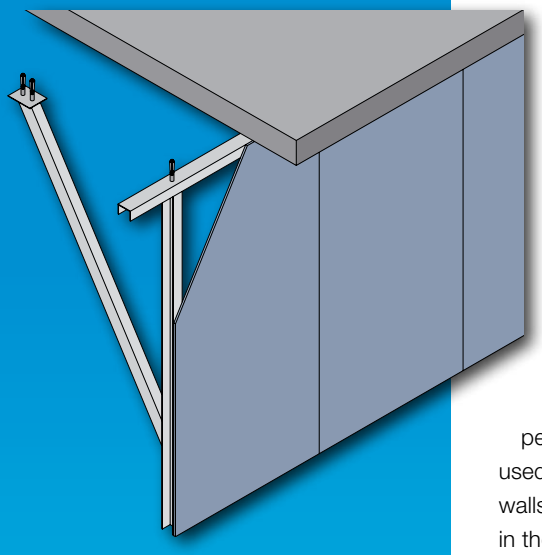
RADIATION CHARACTERISTICS

Radiation levels measured during a test on a single skin 9.5mm Promat DURASTEEL® barrier

Radiation Levels (kW/m²)				
Distance from barrier (m)	**After 30 minutes**	**After 60 minutes**	**After 120 minutes**	**After 240 minutes**
0.5	7.5	12.0	16.0	20.0
1.5	4.6	7.1	9.8	12.5
2.5	2.5	3.9	5.4	6.9

Effects of Thermal Radiation	
Radiation Heat Flux (kW/m²)	**Observed effect**
0.67	Summer sunshine in the UK
1.0	Maximum for indefinite skin exposure
6.4	Pain after 8 seconds skin exposure
10.4	Pain after 3 seconds skin exposure
12.5	Piloted ignition of timber
16.0	Blistering of skin after 5 seconds exposure
29	Spontaneous ignition of timber

Promat DURASTEEL® High Performance Systems



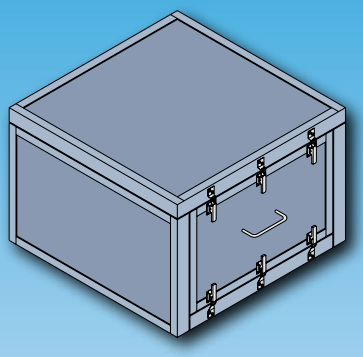
PROTECTED ZONES, SPANDREL PANELS, SMOKE SCREENS

Smoke kills more people in fires than heat, flames or structural collapse. It is therefore recognised that occupant safety in a fire can be greatly improved by providing an efficient smoke extraction system. Part of an engineered smoke control system may involve the provision of smoke reservoirs, the use of smoke channelling screens and smoke curtains.

Testing standards for smoke control equipment smoke curtains and screens shall meet the requirements of BS 7346: Part 3: 1990, which requires the screen to withstand a fire temperature of 600°C +/-20°C for a minimum of 30 minutes.

The Promat DURASTEEL® system has been tested to the criteria of BS 476: Part 20, with its much higher exposure temperature requirements and it provided a performance in excess of 240 minutes. Promat DURASTEEL® barriers can also be used in position as horizontal “wings” (protected zones) at the head and to the sides of fire walls, forming an added “band” of protection at the junction with other substrates (as detailed in the FPA Design Guide Supplement 2004). This makes it exceptionally difficult for fire to breach a roof and thus leap over the top of, or around, the fire resistant wall system.

Promat DURASTEEL® can also be used within spandrel panel systems, positioned at the end of floor slabs in order to prevent fire bridging gaps between floor slabs and curtain wall systems.



VALVE PROTECTION ENCLOSURES

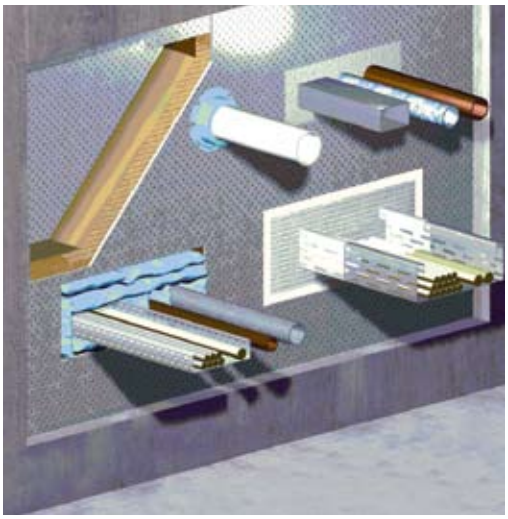
The ability to isolate storage areas or to direct highly combustible fuels away from a heat source through a series of protected valves is paramount in the event of fire.

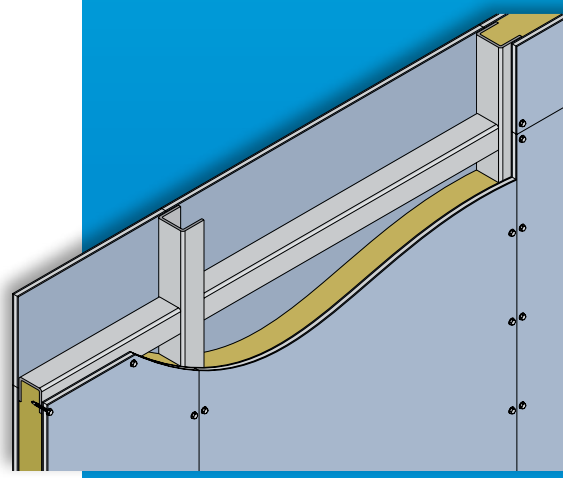
When subjected to high temperatures, the plastic parts of a valve can easily be rendered inoperative, resulting in the valve’s inability to divert or arrest flow.

Promat DURASTEEL® can offer different methods of protection for valves, dependent on the requirement.

In certain circumstances, it may be sufficient to protect the valve with a fire resistant shielding. In other cases, a more substantial form of protection may be required. In these circumstances, the valve can be fully enclosed within a Promat DURASTEEL® valve actuator box. These boxes have been designed to ensure the valve temperature cannot rise by more than 30°C in 15 minutes, or 30°C in 30 minutes, depending on the type of Promat DURASTEEL® protection applied.

Promat DURASTEEL® High Performance Systems





Promat DURASTEEL® High Performance Systems

INSULATED FIRE WALL

Fire walls for construction where high insulation as well as stability is required during a fire. Promat DURASTEEL® insulated fire walls are designed to prevent the passage of heat from a fully developed fire on the exposed face. The maximum permitted temperature rise allowable on the surface of the unexposed face is 140°C as a mean temperature over all the surface, or a maximum temperature rise of 180°C at any one point over all the surface.

Insulated wall constructions should be used in areas where the following may occur:

- Escaping personnel or fire fighters may have bodily contact with the wall surface.
- If used as a wall lining to any escape route, for instance as an access tunnel within a factory.
- If there are any volatile chemicals or materials stored within the vicinity of the fire wall and which may ignite at low temperatures.
- There is a need to improve compartmentation beyond simple integrity.

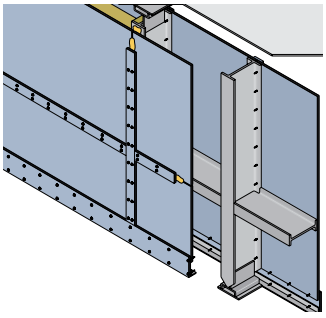
There are a number of methods of constructing insulated wall systems. Each option has its own benefits. The type of system, thickness and density of the rock wool and cover strips, if required, are all dependent on the fire and physical performance required from the system.

FIREBLAST™ WALL

Designed specifically to protect personnel and equipment from the effects of explosion, fire, impact, and the effects of smoke and fumes in hazardous environments, such as offshore platforms, petrochemical installations, chemical plants, military establishments, civil defence works and hazardous process plants.

Additional features of Fireblast™ fire and blast resistant walls:

- Blast resistant, tested from 0.3 to 2 bar over pressure.
- Resistant to hydrocarbon fires, tested to H120.
- Impact resistant to 4000J after 180 minute fire test.
- High energy absorption.
- Hose stream resistant to a 5 Bar high pressure hose. In accordance with DIN 4102 Parts 2 and 3 requirements.



Unlike many fire and blast resistant materials, Promat DURASTEEL® is non-combustible and will withstand an explosion followed by a prolonged fire and still be unaffected by hose stream fire fighting. Its integrity remains unimpaired, ensuring continued protection against fire, impact and moisture as well as preventing the escape of smoke and toxic gases. Promat DURASTEEL® systems are tested up to H120 fire rating, and the systems can be designed to suit specific project performance requirements.

All Fireblast™ walls are individually tailored to suit specific project performance requirements, please consult Promat for specification and construction details.

Promat DURASTEEL® High Performance Systems

SYSTEM APPLICATIONS

Promat DURASTEEL® FOR INDUSTRY

Manufacturing & Warehouse Complex

The need for effective protection of personnel, plant, stores and property in industry is vital. Promat DURASTEEL® is proven to contain fire within compartments of a production area or storage facility, thus allowing evacuation of personnel, minimising disruption of processes and preventing the destruction of valuable stocks.

Promat DURASTEEL® FOR TRANSPORTATION INFRASTRUCTURE

Underground Rail System

Promat DURASTEEL® is lightweight, robust and ideally suited to the external environment of all trackside, station and rolling stock fire protection requirements. It is also widely used in road and rail tunnels.

Promat DURASTEEL® High Performance Systems

Promat DURASTEEL® FOR COMMERCE

High-Rise Office Block

Promat DURASTEEL® is the first choice fire protection product for an impressively wide range of structures, including high-rise offices and hotels, airports, retail parks, leisure complexes, public buildings and government institutions.

Promat DURASTEEL® has also undergone rigorous testing for use in electrical plant rooms and is the approved system for the numerous EDF installations throughout London.

Other Promat DURASTEEL® applications may be suitable in high-rise office blocks; e.g. fire doors, fuel storage and boiler room enclosures, ceilings above liftshafts, ceilings to fan rooms, lift door transom panels, curtain wall fire breaks and penetration seals.

Airport

For every airport operator, one item within their mission statement is to provide for the highest standard of safety in civil aviation and airport operation. The range of Promat DURASTEEL® systems for airports are proven to meet or exceed the most rigorous British and International legislative requirements.

Other Promat DURASTEEL® applications may be suitable in airports; e.g. duct splitters, riser shafts, transformer enclosures.

Promat DURASTEEL® High Performance Systems

Promat DURASTEEL® FOR NUCLEAR AND FOSSIL FUEL POWER STATIONS

Nuclear/Fossil Fuel Power Stations

In an industry where the concern for environmental protection, coupled with increasing demand for electrical power, brings constant technology development in both conventional and new approaches to energy supply, only a system such as Promat DURASTEEL® has the flexibility to match the need for innovative solutions.

Promat DURASTEEL® is non-combustible, will withstand prolonged hydrocarbon fire, resists hose-stream fire-fighting, is impact and moisture resistant, and does not emit smoke or toxic gases.

Promat DURASTEEL® FOR HYDROCARBON

Offshore Oil/Gas Production Platform

The light weight and strength of DURASTEEL® combine with its resistance to hydrocarbon fire, blast, impact, water and corrosion to make Promat DURASTEEL® systems the ideal choice for fire protection on offshore production platforms and in potentially hazardous land-based environments.

Promat DURASTEEL® High Performance Systems

CASE STUDIES

"Before the roof went on, rain water was running down the DURASTEEL® walls for months on end without any detrimental effect on the integrity of the product."

says Peter Sandals,
site agent for Essex-based R&S Fire & Security Ltd, the specialist sub-contractor responsible for its installation.

"The system selection process identified Promat DURASTEEL® as the most appropriate partitioning material based on the fire rating, its durability and ability to withstand the environmental conditions that exist during the early phases of construction"

MACE solutions

Heathrow Terminal 5

The quality of Promat DURASTEEL® and our specialist installers were tested to the full at T5. Promat supplied 80,000m² of DURASTEEL® to the £4.2m billion project, its largest specification to date.

Designed by the Richard Rogers Partnership, T5 is being hailed as a new landmark for London. When it opens in Spring 2008, it will be able to accommodate 30 million passengers a year. But there's far more to it than just a building. As well as the vast new terminal – which could fit 50 football pitches – and its two satellites, the project includes 47 aircraft stands, a control tower, a 4,000 space multi-storey car park, a hotel, rail links, a spur road from the M25, even a diversion of two rivers.

Promat's input includes the largest ever specification of a DURASTEEL® fire barrier. It is being used in the main terminal building, the satellites and in the railway station – in some areas forming barriers 14m high.

Promat supplied the 80,000m² of DURASTEEL® in 9.5mm sheet for insulated fire barriers. It features prominently below apron level, lining the tunnel-like service corridors, the cavernous baggage handling areas, lift pits, workshops and plant rooms. The continuous barriers of silver Promat DURASTEEL®, punctuated by apertures for doors and services, provides a purposeful presence throughout all these areas.

Promat DURASTEEL® easily met the specification for EI 120 fire resistance. But that's not the only reason it was chosen. The system was installed well before the dry envelope stage, so it had to be exceptionally tough and durable.

MACE Solutions – the fixed price service provider within Mace Intrastructure Sector – are the package contractor responsible for the design and construction of the compartment walls below the main terminal.

And the architects working in partnership with MACE Solutions, Bryden Wood Associates, cite Promat's technical expertise in helping to develop the specification, including wind loadings for the tall barriers and developing systems such as barriers with a plasterboard facing for office areas.

The Promat DURASTEEL® barriers' high impact resistance was another key factor. "The barriers must withstand the impact of trolleys and baggage systems," says project architect Dan Cunliffe. "Promat DURASTEEL® was the best product for the project, based on its versatility across a wide range of performance and other functional criteria."

The Promat DURASTEEL® walls were constructed from pre-cut kits fabricated in R&S's factory in Essex, and delivered in meticulously labeled, pre-assembled kit form. They are installed section by section using scissor lifts.

John Allsop, the senior site agent for R&S, says "Promat DURASTEEL® is as easy to install as plasterboard, but of course it's far more durable and robust."

"We have a close association with both Promat and MACE Solutions," says R&S Group's managing director Colin Bland. "This unique relationship has ensured that delivery of the contract has run smoothly and efficiently for the client BAA. It's on time, within budget and in accordance with the T5 project principles."

Promat DURASTEEL® High Performance Systems

White City Development, West London

The tallest ever DURASTEEL® firewall in the UK is providing protection for power plants within the refurbished Grade II-listed west DIMCO building, a central component of the regeneration.

Westfield London is a retail, leisure and lifestyle development by the world's largest retail property group, Australian-owned Westfield. The development is a 46-acre site between Shepherd's Bush and White City tube stations, until recently an industrial wasteland. When it is completed in 2008, the £1.6 billion development will contain the largest shopping centre in Europe along with leisure facilities, 14-screen cinema, a spa and gymnasium, bars, restaurants, new transport links and affordable housing. Westfield London aims to become the capital's premier retail, leisure and lifestyle destination.

On Westfield London, Promat DURASTEEL® came through with flying colours. The Grade II-listed DIMCO building was built more than 100 years ago, originally to house Europe's first electricity generating facility. Its refurbishment has been an ambitious and complex task involving extensive temporary works for the complete roof and roof structure replacement. A DURASTEEL® barrier provides 120 minutes fire compartmentation protection for the electricity sub-station within the west DIMCO structure, which supplies power to the new development.

At 25m high, the barrier installed is the tallest to date, and one of the most complex in terms of detailing and installation. Promat's expertise was key.

London based Towns-Wadey is Westfield's building contractor for the DIMCO project. Design Manager James Wraight said: "The DURASTEEL® wall has a completely bespoke design which is completely independent from the listed DIMCO building fabric, new roof and roof structure, offering 2 hour fire compartmentation and fire protection to the supporting steel structure. To keep the wall independent, we worked closely with Promat, specialist contractor Sharpfibre and the Architect to achieve working movement details whilst maintaining a practical and safe installation process. We were able to use the system to hide the complex supporting steel structure, eliminating further fire protection providing value engineering options for our client".

"DURASTEEL® was the right product for the job and Promat offered good design advice," says Sharpfibre.

So why Promat DURASTEEL®?

"It's a very versatile material, offering a high level of fire protection...

...The fire barrier comes as a complete system, so you don't need to specify an additional fire stopping material for services penetrations. The contemporary aesthetic of the DURASTEEL® complements the industrial character of the DIMCO building."

Lisa Pemberton, project architect for Ian Ritchie Architects.

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