

Promat

PROMATECT®-XS for structural fire protection of steel structures

Installation guideline



Promat is the leading manufacturer of fire resistant materials that offers solutions for passive fire protection of steel structures. The complete solution range of fire protection of steel structures can be delivered by a single supplier. With our support during the design and application you can choose the optimal solution for your project. Safe, economical and peace of mind.

We ensure high fire resistance during the time. Considering the working life foreseen in Eurocodes, our products with high proven durability reduce maintenance costs throughout the designed life of a building. Promat is a large company with strong traditions and long history. We can offer long-term fire safety in your buildings, giving you peace for mind.

Thanks to the synergy between different technologies used in the Etex Group, Promat has developed a new fire protective product called PROMATECT®-XS. It is the outcome of an intense R&D work involving our best internal experts in material science, passive fire protection and manufacturing processes, reinforced by our 50 years of proven track records in delivering durable fire compartmentation solutions to ensure fire safety in buildings.

Description of PROMATECT®-XS

PROMATECT®-XS is an innovative high performing fire protective board, specifically designed for the fire protection of structural steel elements such as columns, beams in either opened or hollow sections, when high fire protection performance is required.

PROMATECT®-XS can be applied directly on the steel structures, without the need of any secondary substructures like steel angles, clips or other ancillary products.

PROMATECT®-XS is a non-combustible product, based on a unique proven technology, which contributes to the fire rating of steel structures, tested according to the most severe international standards. The degree of fire protection depends on mass factor (S/V) and the required critical design temperature of the metal element. This in turn dictates the thickness of PROMATECT®-XS.

PROMATECT®-XS is strong, highly moisture resistant, non-combustible and has improved workability compared to traditional steel encasement products.

PROMATECT®-XS has a durability of at least 25 years, that is the highest design working life foreseen by the EU regulation, and is extremely easy to maintain and repair (reparation doesn't affect the fire resistance).

Mechanical stability, long durability, easy to cut/apply, good quality of finish and excellent fire behaviour are the main characteristics of PROMATECT®-XS.

PROMATECT®-XS is characterised by very good mechanical properties such as impact resistance, stiffness as well as bending strength and compressive strength.

It does not contain dangerous compounds - it is environmentally friendly and recyclable.

Applications

Fire protective board for steel structures (beams and column) with either open or hollow sections, from R30 up to R240

Advantages of PROMATECT®-XS

- Promat new fire protective board, based on the 50 years Promat experience in steel protection.
- Promat brand + technical support = Peace of mind.
- Extremely good fire performance/system price ratio.
- Outstanding performances for steel protection up to R 240: one of the thinnest board's solution on the market for fire protection.
- Less material to order, less material to stock, less material to install, less material to handle, cut and fix, less waste of material to remove from the jobsite.
- Mass factor up to 390 m⁻¹ and critical temperatures from 350°C up to 750 °C.
- Fully incombustible with a reaction to fire class A1 according EN 13501-1.
- High durability (25 years) for internal and external semi exposed applications.
- CE marked as fire protective board (intended use: fire resistance) according EAD 350142-00-1106 (former ETAG 018-4), under full ETA certification.
- Tests carried out by official laboratories with random product selection, manufacturing plant under third party factory production control.
- The steel columns and beams encasement does not require any additional substructure, which significantly increases the efficiency of the solution and reduces the assembly costs.
- Quick and simple installation using staples and wedge soldiers, no steel angles nor metallic clips required.
- Lightweight (5% - 7% lighter than alternative boards). The low weight of the system (panels) influences the speed of the executed works and the work comfort.
- Maintenance and repairs system tested and approved in fire condition.

General processing instructions, handling, cutting and fixing

- Store on flat surface, in a dry area.
- the boards are delivered on pallets.
- The boards shall be horizontally stacked on a flat surface in a dry and ventilated space.
- The boards shall always be manipulated from the stack by two persons and then be transported vertically.

Choice of thickness

- The required thickness of the fire protective cladding depends on the required fire resistance, the design temperature of the steel structure (the maximum allowed /critical/ temperature of the steel member) and the A_p/V ratio. Please refer to the separate documentation to determine the required thickness of PROMATECT®-XS.
- Increasing the thickness of the cladding is allowed from the fire safety point of view.
- The thinner board should always be mounted on the thicker board.

Protection of columns

General

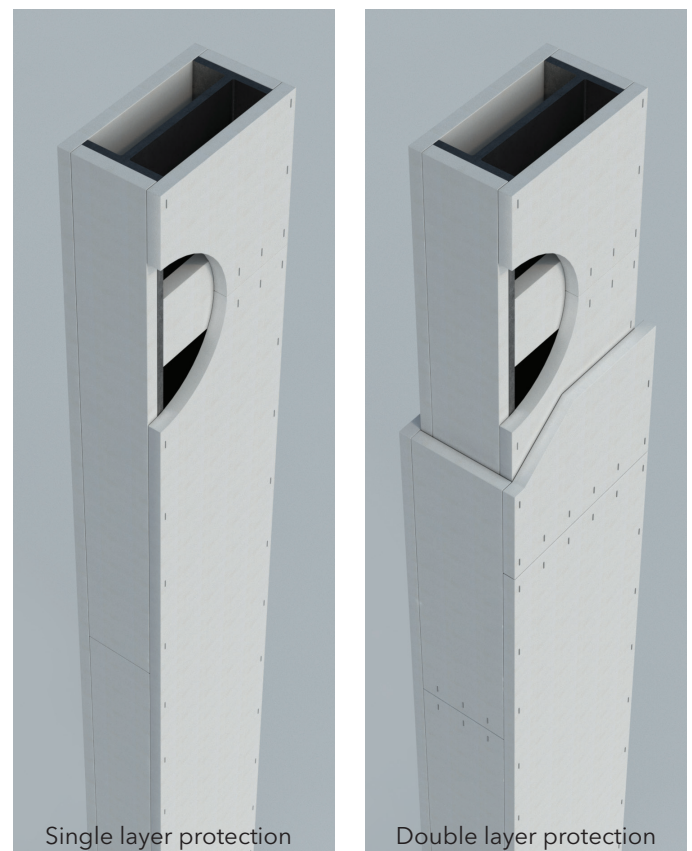
- Cladding of steel column is generally done from four sides.
- The joints of boards are arranged with the offset of 500mm to each other.
- The protection of the fixing as well as specific joint treatment between board of PROMATECT®-XS boards are not required.
- At uneven bottom sides of solid floors, the joints between PROMATECT®-XS cladding and the solid floor should be filled with Promat® filler.

Installation of single layer of PROMATECT®-XS for columns

- The PROMATECT®-XS boards are installed using PROMATECT®-XS 120 x 20mm wedge soldiers with a maximum centre distance of 1200mm.
- The boards parallel to the flange are in between the boards parallel to the web, on the flanges there is no joint cover.
- The boards are stapled to the wedge soldiers and the other boards with staples with a maximum centre distance of 100mm, for staple length see table at next page.

Installation of double layer of PROMATECT®-XS for columns

- Between the first and the second layer the joints are staggered over 600mm.
- The boards are installed on PROMATECT®-XS 120 x 20mm wedge soldiers with a maximum centre distance of 1200mm, and installed behind the joints of the first layer.
- The boards parallel to the flanges is installed in between the boards parallel to the web.
- The boards are stapled to the wedge soldiers and the other boards with staples with a maximum centre distance of 100mm, for staple length see table at next page.



Protection of beams

General

- Cladding of steel beams is generally done from three sides.
- PROMATECT®-XS soldiers shall be adjusted in such a way that their outer surfaces protrude about 5mm over the support flange. The cladding shall be fastened to the soldiers. At beams heights ≥ 600 mm one stabilising perpendicular bridge shall be mounted on each soldier and fitted together with the soldier tightly between the flanges of the steel section. The drawings show the standard detail for three-sided cladding of steel beams.

Installation of single layer of PROMATECT®-XS for beams:

- The boards are installed on PROMATECT®-XS 120 x 20mm wedge soldiers with a maximum centre distance of 1200mm, and behind the vertical joints.
- The lower board is installed in between the 2 side boards, and has no joint cover.
- The boards are stapled to the wedge soldiers and the other boards with staples with a maximum centre distance of 100m, for staple length see table at right.
- See drawing of the installation in the test configuration:



Installation of double layer of PROMATECT®-XS for beams:

- Within one layer, the boards are installed with the joints at the same place (Not staggered).
- Between the first and the second layer the joints are staggered over 600mm.
- The boards are installed on PROMATECT®-XS 120 x 20mm wedge soldiers with a maximum centre distance of 1200mm, and installed behind the joints of the first layer.
- The lower board is installed in between the side boards.
- The boards are stapled to the wedge soldiers and the other boards with staples with a maximum centre distance of 100m, for staple length see table at right.
- See drawing of the installation in the test configuration:



Staple length for board thickness:

Single and double layer cladding:

Type	staples
Material	Steel
Dimensions	
for 12.5mm thick boards	Length 30mm, bridge 5.85mm, wire 1.27 x 1.05mm
for 15mm thick boards	Length 35mm, bridge 10.5mm, wire 1.45 x 1.30mm
for 20mm thick boards	Length 40mm, bridge 10.5mm, wire 1.45 x 1.30mm
for 25mm thick boards	Length 50mm, bridge 10.5mm, wire 1.45 x 1.30mm

Providing fire protection of steel structures at the construction site

- The required fire resistance is achieved only after proper and professional application of the construction product.
- Applicator is responsible for the proper installation of the fire protective product and the applied material thickness, therefore responsible for the actually achieved fire resistance.
- Applicator must comply with the technological procedure and conditions of the installation of the construction products of the manufacturer.
- The applicator is not allowed to install a construction product which is not suitable for that case.
- Contractor of the fire structure must be a trained professional or company. For details on installation guidelines, please contact your local Promat office.