Promat

An Illustrated Guide to: Structural Steel Fire Protection

As industry demand for durability, design flexibility, speed, and resistance to degradation mounts, steel framed construction is rapidly gaining popularity across Australia.

For all designers and specifiers:

FIRE SAFETY IS EMERGING AS A PRIMARY CONCERN

This means that inadequate fire protection of steel may cause building collapse in the event of a fire.

Most high-rise fires burn at 593ºC

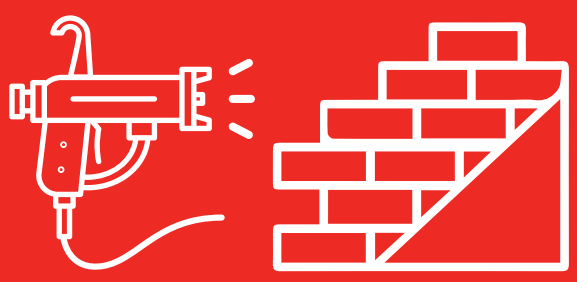
Steel softens at 1000ºC

Steel begins to lose its design margin of safety at 550ºC

Passive fire protection methods contain fire at its point of origin and prevent it from spreading. The three main passive fire protection methods for structural steel are:

- Spray applied vermiculite sprays
- Board encasement systems
- Intumescent coatings

The scale and type of construction will determine which of the above is most suitable.



Before specifying fire protection for steel DESIGNERS MUST CONSIDER:

- The steel serial size, or the profile and dimensions of the steel member
- The number of exposed sides of the steel member
- The Fire Resistance Level (FRL) that must be met in accordance with the National Construction Code
- The critical temperature used by the structural engineer in their design

ADVANTAGES OF PASSIVE FIRE PROTECTION

Spray applied vermiculite sprays can be rapidly applied to large areas where cost and speed are critical. They can meet FRL requirements up to 240/-/-

Board encasement systems allow uniform thickness and therefore protection, and can be colour matched to blend in with surrounding ceiling and wall surfaces. They can meet FRL requirements up to 240/-/-

Intumescent coating systems consist of a primer, intumescent, and top coat – meaning that they provide both protection and a high quality finish with no further treatment requirements. Ideal where the exposure of structural steel is required, these coatings can meet FRL requirements up to 120/-/-

For more than 60 years, Promat has been a global leader in sophisticated fire science technology. The Promat brand is synonymous with reliable, high performance fire protection for a breadth of sectors and project types, and specialises in passive fire protection. Promat has developed solutions in each of the three major passive fire steel protection categories, and can seamlessly interface with two or more of these in one project.

Promat Australia