SPECIFYING STRUCTURAL STEEL FIRE PROTECTION: FAQS

What do you need to know about the Steel before you can specify fire protection?

- Steel Size and Profile: This helps you determine the 'Section Factor' of your steel beams or columns
- Limiting steel temperature: Your structural engineer should be able to provide this. (most common temperatures are 550°C for beams and 500°C for columns)
- The fire protection requirement, in minutes. This could be defined in building regulations or by the structural engineer. General guidance can be found in Approved Document B

Have you got all the fire test evidence required?

Encasement systems should be fire tested to the most recent EN standards (EN 13381-4). The test should be carried out by a UKAS accredited 3rd party laboratory and a classification report (written to EN 13501-2) or third-party certification summarising the result, should be made available. (As recommended in Approved Document B)

Is the steel going to be exposed to weather?

There could be projects where the structural steel is scheduled to be encased before the building is weathertight. You should ensure that the lining material that you are specifying to encase the steels can withstand these conditions as prolonged exposure to unpredictable elements can result in product deterioration that could impact its performance.

Does the steel you are trying to protect fall on a compartment line?

Where fire compartmentation is required as well as fire protection to the steel, fire integrity and insulation must be provided across the beam or column to the criteria of EN 1364-1. Not all structural steel protection products can provide compartmentation, therefore if this occurs on your project, you should ensure that the manufacturer can provide evidence of this.
Learn more about compartmentation here.

Are there any partitions on the project that meet a steel beam or column?

Quite often a partition will meet a piece of structural steel that needs fire protection. There is no test standard for the junction: while there are standards for steel protection and for partitions, they're both treated in isolation. This creates an issue where interfaces occur, as there can often be a lack of clarity around the required level of protection for the junction itself.

You should ask if bespoke fire tests have been conducted to evidence any interface detailing provided.

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Does your encasement need to maintain acoustic performance?

There may be instances where encasements need to maintain the acoustic performance of the partition abutting it. Ask the encasement manufacturer if they have any acoustic details.

Do you need to extend the encasement?

Where a partition doesn't fall directly in line with the structural steel, the encasement may require additional framing to allow it to be extended. Your manufacturer should be prepared to offer guidance and clear details for a range of scenarios.

How are the linings for structural steel encasements installed?

Most plasterboard encasements require the boards to be fixed to a metal clip frame attached to the flanges of the steel. There are some encasement systems that are 'direct' fixed, where no framing is required, and the boards can be edge fixed into each other, making the install easier and quicker.

Is your manufacturer offering any guarantees?

At minimum, manufacturers should provide fire tested and warrantied solutions - where if the products have been installed as per the design issued by the manufacturer they will warrant its performance. Some manufacturers may offer an extra layer of security by taking on design liability for the detail. Otherwise, approval from the design team will need to be sought.

Do you have more complex steel protection scenarios?

If there are more complex steel protection scenarios such as encasing cellular beams or fire stopping services that run through these encasements, seek expert advice and always ask for evidence to back up any detail.

For any other queries on structural steel protection or to see how we could help, speak to the experts. Siniat for simplified encasement systems or Promat for complex and bespoke solutions

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