

ADVISORY NOTE 27

ASFP Position Paper on the fire protection of corrugated web beams.

Background to Yellow Book

The ASFP publication “Fire protection for structural steel in buildings” better known as the Yellow Book has been used as the industry leading guide for those involved in the manufacture, test, specification and use of passive fire protection for structural steel.

First published in 1976, the 5th Edition was published in July 2014.

The 5th Edition of the Yellow book was published to enable adoption of new European testing and assessment methods – alongside amendments to the pre – existing UK test and assessment methods. The UK amendments were needed to keep pace with steel design practices such as adoption of the Steel Eurocodes and use of Multi-Temperature Analysis (MTA) and Structural Fire Engineering.

Corrugated Web Beams

Recently there has been a development towards the use of fabricated sections which use a corrugated web. One of the benefits of these sections is that a much thinner web can be used, than would normally be used in a plain steel rolled section or fabricated plate section.

Whilst this can represent a significant weight saving against traditional sections, these sections sit outside the standard test and assessment methods for fire resistance of structural steel. Indeed it may also be the case that the behaviour of these sections in fire is unclear.

Therefore, when considering the structural fire resistance of these beams it is essential to consult the manufacturers of these sections in the first place to determine critical failure temperature considering all modes of structural failure.

Once this data has been achieved, it is also essential to consult the fire protection manufacturer for further details. It may well be that for a thin corrugated web, it is inappropriate to use product certification based on testing of rolled sections. In fact, if the web is so slender that it falls outside the elemental web certification, then it would be inappropriate to use any structural passive fire protection system without further testing.

Disclaimer

©2022 Association for Specialist Fire Protection – All Rights Reserved.

This publication and its content are the copyright of the Association for Specialist Fire Protection © (Company number 01292282) ("ASFP") 2022. ASFP is the owner or the licensee of all intellectual property rights in this publication, and in the material published in it. These works are protected by copyright laws and treaties around the world.

To view the full ASFP Copyright and Disclaimer statement(s), please view via the link: [Disclaimer and Copyright](#)