

Coatings for fire protection of building elements —

**Part 2: Code of practice for the use of
intumescent coating systems to metallic
substrates for providing fire resistance**

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/209, General building codes, to Subcommittee B/209/4, Coatings and claddings for insulation of buildings, upon which the following bodies were represented:

- Association of Metropolitan Authorities
- Association of Specialist Fire Protection Contractors and Manufacturers
- British Steel Industry
- Department of the Environment (Building Research Establishment)
- Department of the Environment for Northern Ireland
- Department of Transport (Marine Directorate)
- Fibre Cement Manufacturers' Association Limited
- Institution of Structural Engineers
- Loss Prevention Council
- Warrington Fire Research Centre

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Foreword

This Part of BS 8202 has been prepared under the direction of Technical Committee B/209. It gives guidance on the use of intumescent coating systems for the fire protection of structural elements.

In 1983 the Fire Research Station and the Greater London Council prepared some guidelines for fire testing and evaluation of performance of intumescent coating systems. Subsequently the first draft of this standard was prepared by a group of manufacturers, in conjunction with the Fire Research Station.

In an industry where public safety is the prime consideration, it is strongly recommended that manufacturers, suppliers and application specialists of intumescent coating systems have a quality assurance scheme conforming to BS 5750.

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 8202 gives recommendations for the use of intumescent materials as a coating to provide fire resistance and fire protection to metallic substrates. It includes:

- a) guidance on compatibility with primer systems and finishing coats;
- b) guidance on appraisal of fire test data from standard cellulosic fires (see BS 476-20);
- c) methods of assessing durability and ageing;
- d) methods of application and site quality control procedures;
- e) recommendations for maintenance in use.

NOTE Similar performance parameters may be used for the selection of intumescent materials to provide fire resistance and fire protection to non-metallic substrates (e.g. wood, concrete and GRP), but they are outside the scope of this standard.

2 References

2.1 Normative references

This Part of BS 8202 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 8202 only when incorporated in it by updating or revision.

2.2 Informative references

This Part of BS 8202 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 8202 the definitions given in BS 476-20:1987 and BS 5950-1:1990 apply together with the following.

3.1

intumescent coating

coating which reacts under the influence of heat by swelling in a controlled manner to many times its original thickness and typically producing a layer of carbonaceous char or foam which acts as an insulating layer for the substrate

3.2

primer

interface coating(s) between the intumescent coating (see 3.1) and the substrate

3.3

top sealer coat

material applied to the surface of the intumescent coating as a protection against environmental degradation

3.4

decorative coat

material used for decorative purposes only

3.5

intumescent coating system

system comprising a primer (see 3.2), an intumescent coating (see 3.1), a top sealer coat (see 3.3) and/or a decorative coat (see 3.4)

NOTE It is possible that a single coating may perform one or more of the functions described in 3.1 to 3.5.

3.6

mechanical retention

use of mechanical system(s) to retain the coating system in-situ

3.7

thermal response factor (H_p/A)

measure of heat sink by the ratio of section perimeter (in m) to cross-sectional area (in m²) ranging from 26 (large heat sink) to 400 (small heat sink) with 180 being a typical average figure

4 Validation

4.1 Performance

For specification purposes an appropriate independent validation should be provided to support the stated parameters of durability and fire resistance.

Independent validation should be based on fire test data derived from fully loaded fire tests in accordance with BS 476-21:1987, supplemented, if required, by fire test data determined in accordance with BS 476-20:1987.

4.2 Quality

The manufacture and supply of intumescent coating materials should be supported by a quality system in accordance with BS 5750-2:1987.

Application of the coating on site should be conducted to an equivalent level of quality assurance, adopting the criteria detailed in this standard.