



## Technical information

# Reaction to fire

### European classification documents explained

#### 01 What is European reaction to fire classification document?

An EN 13501-1 classification document verifies that a product has demonstrated a certain level of performance when tested to European reaction to fire tests. This can be classifications of A1, A2, B, C, D, E or F. Classifications are used and accepted throughout Europe and internationally (on a case-by-case basis).

A classification is not the same as the certification of a product, which is used to demonstrate a product's compliance with specific criteria that could be unrelated to those required by a classification document.

#### 02 How is a classification document produced?

A product is tested to European reaction to fire test standards, and test reports are produced. A classification

document brings together the results of these tests (and often additional rules from harmonised product standards and information in a referenced extended application report) in order that a classification can be given (see TI-03: Reaction to fire - testing and classification). On their own, the test reports cannot demonstrate the product's European reaction to fire classification.

#### 03 What does a classification document include?

The classification achieved is valid for the product as it is described in the classification document and the associated test reports. The following should all be present in a classification document:

- product name
- product description
- references to any test reports and extended application documents that it is based on

- the classification itself
- field of application
- end use application
- authorisation signatures

The document should look the same throughout Europe, regardless of which laboratory produced it. Classification documents include a statement that they should be reviewed if over five years old to check if any recent changes to standards have affected the classification.

**04 How is a classification document used?**

- The classification document is used by product manufacturers and their clients to demonstrate that the product has achieved the required level of performance. This can be for compliance with national Building Regulations, CE marking, or individual specifications provided by groups such as insurers, railways, the military or the marine industry.

- The manufacturer may use the classification document to demonstrate enhanced performance over competing products in their market place.
- The purchaser of the product should have a copy of the classification document to satisfy themselves that the product meets their requirements or the requirements of their own clients. The manufacturer must be able to provide this document when claiming a European reaction to fire classification.

**05 What is classification without further testing?**

Some products have such well established performance that they are classified without further testing. This means the manufacturer can refer to a relevant European commission decision, or a harmonised product standard to verify the product’s performance. This method of verification will include details on the product parameters and end use application which must be followed. Examples include timber (Class D) and gypsum plaster board (Class A2) which have density and thickness limitations beyond which full testing and classification is required.

**06 What does a classification look like?**

**B**

The main part of a classification is its letter: A1, A2, B, C, D, E and F. A1 represents the highest level of performance. F represents the lowest level of ‘No performance determined’.

**s3**

There is a smoke classification of s1, s2 and s3. s1 represents the highest level of performance. s3 represents the lowest level of performance.

**B<sub>L</sub>-s3,d0**

**L**

There may or may not be a subscript next to the letter. A subscript “fl” means the product has been classified for use as flooring. A subscript “L” means the product has been classified for use as a linear pipe thermal insulation product. The absence of a subscript means the product is for use on walls or ceilings.

**d0**

There is a classification for flaming droplets and particles during the tests of d0 to d2. d0 represents the highest level of performance. d2 represents the lowest level of performance.

## 07 Classification checklist

Use the table below to see if the product you are using is suitable for your application:

| THINGS TO LOOK OUT FOR   |  | YES | NO | NOT APPLICABLE IN MY APPLICATION |
|--|--|-----|----|----------------------------------|
| Have you been able to view the classification document in its entirety?  |  |     |    |                                  |
| Is the product name on the classification document the same as the product name you are using?   |  |     |    |                                  |
| <b>PRODUCT DESCRIPTION</b><br><br>Check that the description of the product matches the product you are checking, including details such as timber species.      | Colour   |     |    |                                  |
|  | Thickness  |     |    |                                  |
|  | Density or mass per unit area  |     |    |                                  |
|  | Material or materials  |     |    |                                  |
|  | Fire retardant used (percentage and type, if used)   |     |    |                                  |
|  | Form of construction/arrangement of the materials  |     |    |                                  |
|  | Which surface has been classified  |     |    |                                  |
| <b>FIELD OF APPLICATION</b><br><br>Check that the end use applications listed in the classification document, include the end use application which you require. | Substrate (what materials can be present behind the product)                                   |     |    |                                  |
|  | Air gap (if the substrate can be used mounted on a substrate with an air gap or free standing) |     |    |                                  |
|  | Mounting and fixing details  |     |    |                                  |
|  | Can the edges of a sheet product be exposed in the end use?                                    |     |    |                                  |
|  | Can the product have horizontal or vertical joints?  |     |    |                                  |

If you answer NO to any of the above, contact the manufacturer or a laboratory for more information. If some of the details are not clear, you can ask for further information from the supplier of the product. Test laboratories must treat their clients' work as confidential, but will be able to answer questions about classifications and testing in general and when provided with a classification produced by themselves can verify its validity.

## 08 Further information

- Technical information sheet: TI-03: Reaction to fire - testing and classification.

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