

GUIDANCE NOTE

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Issue 1: February 2023

Understanding Fire Protection Terms

Classification without further testing (CWFT)

Reaction to Fire Testing

There are four recognised stages in the development of any fire: **Ignition, Spread and Growth, Flash point** into a fully developed fire and **Eventual Decay**. During the early stages, when a fire is still becoming established, the key factors are:

- **Ignitability** – how readily will a material ignite and catch fire?
- **Spread of flame** – once ignited, how quickly will flames spread across the surface of that material?
- **Heat release** – once alight, how much heat energy will be generated by the burning material?
- **Smoke production** – how much smoke will be generated by the burning material?
- **Flaming droplets** – will the burning material disintegrate and produce burning droplets or debris?

These factors are elements of a material's **reaction to fire** properties and can be measured, tested and if necessary enhanced by flame retardant treatment. Reaction to fire test results are expressed as **Euroclass** classifications in accordance with EN 13501-1.

For further details on this classification system, see **Guidance Note WPA FR2 'Combustibility'**.

Products Classified Without Further Testing (CWFT)

In some cases, it is possible to classify **untreated wood-based products** without further testing as long as these products meet the requirements set out in the relevant **harmonised technical specification**. Such products must have a well-established **reaction to fire** performance and have been agreed by the **EU Standing Committee on Construction**.

Flame retardant treated wood-based products always need to have a Reaction to Fire Classification to EN 13501-1.

Agreements relating to products which may be '**classified without further testing**' (CWFT) are published in the **Official Journal of the European Union**. CWFT is a list of **generic products**, not a list of **proprietary products**.

Five **wood product groups** appear on this listing:

Wood-based panels

Structural timber

Glulam

Wood panelling and cladding

Wood flooring

Default Classes are **D-s2, d0** (and for floorings **Dfl-s1 or Cfl-s1**) and the relevant classification is included in the product group harmonised product standard. Products not covered by CWFT decisions may be tested and obtain higher classifications.



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Timber Cladding and BS EN14915

Timber behaves very predictably in fire situations, and there are well established parameters for its use in building construction. The fire performance of **wood panelling** which has not been treated with a flame retardant, can be defined under the established CWFT rules as set out in BS EN14915 'Solid wood panelling and cladding - Characteristics, requirements and marking'.

The reaction to fire performance of solid wood depends on the **type of wood, its density, thickness, arrangement and installation**.

A Euroclass D rating for cladding can be achieved under CWFT rules where the following conditions are met:

- Profiles are of nominal thickness $\geq 18\text{mm}$
- Species density is over 390kg/m^3
- Back wall/substrate is A1/A2 fire rating and minimum density 10kg/m^3 *
- Where the cavity is non ventilated with a depth $<20\text{mm}$ or no airgap (eg internal wall panelling), a Euroclass D- s2, d0 substrate may be used.
- The cladding arrangement is of closed jointed type

*Open jointed arrangements may be classified as D-s2,d0 under CWFT rules in certain specific arrangements, see EN-14915.

BS 8605 and the UK Cladding Market

The CWFT criteria in BS EN 14915 listed above, enable the **reaction to fire** performance of some types of external timber cladding assembly to be classified on the basis of **published test results**.

However, CWFT is not applicable to timber rainscreen cladding assemblies where the cavity has to be **well ventilated**, and the rear face of the cavity is made of **combustible materials**.

It is not valid to claim a CWFT reaction to fire performance classification in such circumstances because such products do not meet the criteria listed in BS EN 14915. The BS 8605 series gives clear guidance on the reaction to fire classifications that are appropriate for external timber cladding in the UK.

Some UK produced cladding is fitted with an **open airgap, ventilation top and bottom** (where the airgap is greater than 20mm as the minimum recommended batten size is 25mm). In such circumstances, **for CWFT to BS EN 14915 to apply**, the supplier would need to provide:

- Euroclass A2 (minimum) rear cavity facing, such as MgO or MgS board.
- A total board thickness of at least 18mm.

If a designer or manufacturer wishes to create a product or structure which does not meet these CWFT criteria, then **flame retardant treated wood** can be specified. Flame retardant manufacturers can advise on suitable timbers and supply test data.

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