

**EUROPEAN FIRE STANDARDS**

European Standard EN13501-1 provides the reaction to fire classification procedure for all products and building elements.

Construction products are classified according to the harmonized test methods in Euroclasses of A1, A2, B, C, D, E and F.

Products classified in any given class are deemed to satisfy all the requirements of any lower class. Products / systems classified in A1 are non-combustible. A2 are limited combustibility\*. Products / systems classified from B to F are combustible in ascending order.

\* In Scotland A2 is considered as non-combustible.

Classification according to European Standard EN 13501-1		
Classification	Definition	Description
A1	Non-combustible	No contribution to fire
A2 - s1 d0 to A2 - s3 d2	Limited combustibility	Very limited contribution to fire
B - s1 d0 to B - s3 d2	Combustible	Limited contribution to fire
C - s1 d0 to C - s3 d2	Combustible	Minor contribution to fire
D - s1 d0 to D - s3 d2	Combustible	Medium contribution to fire
E or E - d2	Combustible	High contribution to fire
F	Combustible	Easily flammable

External Wall Insulation  
Systems

There is also additional classifications for all products / systems obtaining A2, B, C, and D fire classification. The additional classification is for smoke emission (s) and for flaming droplets and / or particles (d).

Additional Class		Level Definition	
smoke emission during combustion	s	1	quantity/speed of emission absent or weak
		2	quantity/speed of emission of average intensity
		3	quantity/speed of emission of high intensity
production of flaming droplets/particles	d	0	no dripping
		1	slow dripping
		2	high dripping

Most external wall insulation systems will meet the reaction to fire classification of B-s3 d2 or higher. It is recommended that the exact classification is obtained from the system manufacturer as the insulation and render composition will have an affect of the overall classification.

**BRITISH STANDARDS**

There are two overlapping test systems, either of which is acceptable for Building Regulations.

The British Standard (BS 476) categorises products by numbers 0 - 4 with 0 being the least flammable and 4 being the most.

Below is a table which transposes the British Standard Classification and the European Standard Classification to show where the two systems overlap.

Classification Transposing Table	
British Standard Classification	European Standard Classification
Not Applicable	A
0	B
1 & 2	C
3	D
4	E
Unclassifiable	F

BR 135 is an alternative fire classification quoted on cladding product from the BRE (British Research Establishment). BR 135 does not use the numeric or alphabetic fire classification system, but instead, tests a cladding system resistance to fire during a specific time frame.

For BR 135 classification to be undertaken, the system must be tested to the full test-duration requirements of BS 8414-2 without any early termination of the full fire-load exposure period. Early termination will occur if one of the following events are identified.

- 1) The flame spread extends above the test apparatus at any time during the test duration (60 minutes after the ignition of the fuel source); or
- 2) There is a risk to the safety of personnel or impending damage to equipment.