

EUROPEAN STANDARD

European Standard EN 13501-1 provides the reaction to fire classification procedure for all products and building elements. According to this Standard, reaction to fire is the response of a product in contributing by its own decomposition to a fire to which it is exposed, under specified conditions (not to be confused with the fire resistance).

Products are considered in relation to their end use application are divided into three main categories:

- construction products;
- flooring;
- linear pipe thermal insulation products (not considered here).

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

Products classified in a given class are deemed to satisfy all the requirements of any lower class.

Products classified in A1 and A2 classes are non-combustible (cement, concrete, minerals, glass, fiberglass, rock wool, ceramic, etc.), materials certified from B to F are combustible in ascending order.

Flooring materials are classified according to the same classes A1, A2, B, C, D, E and F followed by the abbreviation "fl" flooring.

Definition	Classification according to European Standard EN 13501-1				
	Construction products			Floorings	
non-combustible materials	A1			A1 _R	
	A2 - s1 d0	A2 - s1 d1	A2 - s1 d2	A2 _R - s1	A2 _R - s2
	A2 - s2 d0	A2 - s2 d1	A2 - s2 d2		
A2 - s3 d0	A2 - s3 d1	A2 - s3 d2			
combustible materials - very limited contribution to fire	B - s1 d0	B - s1 d1	B - s1 d2	B _R - s1	B _R - s2
	B - s2 d0	B - s2 d1	B - s2 d2		
	B - s3 d0	B - s3 d1	B - s3 d2		
combustible materials - limited contribution to fire	C - s1 d0	C - s1 d1	C - s1 d2	C _R - s1	C _R - s1
	C - s2 d0	C - s2 d1	C - s2 d2		
	C - s3 d0	C - s3 d1	C - s3 d2		
combustible materials - medium contribution to fire	D - s1 d0	D - s1 d1	D - s1 d2	D _R - s1	D _R - s1
	D - s2 d0	D - s2 d1	D - s2 d2		
	D - s3 d0	D - s3 d1	D - s3 d2		
combustible materials - highly contribution to fire	E		E - d2	E _R	
combustible materials - easily flammable	F			F _R	

Additional classifications

All the materials classified A2, B, C, D obtain an additional classification regarding the emission of smoke and the production of flaming droplets and/or particles.

- "s" Smoke emission level:
values range from 1 (absent/weak) to 3 (high)

- "d" flaming Droplets and/or particles production:
values range from 0 (absent) to 2 (high)

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 during combustion	d	0	no dripping
		1	slow dripping
		2	high dripping