

Reaction to fire of Kaindl Products with fire retardant feature

Kaindl Info_E
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Stand: July 2022

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An EU classification serves as the standard of evaluation for the reaction to fire of constructions and building materials. The European classification system for fire protection was approved in the year 2001 by the European Committee for Standardisation (CEN) with the EN 13501 series of standards. It establishes uniform Europe-wide requirements for fire protection in order to facilitate the unrestricted trade of construction products throughout Europe. In the EN 13501 Part 1 series of standards, the reaction to fire of construction and building materials is divided into several classes (Euro class A1, A2 and B through F).

For complete building elements (wall, window or door) on the other hand, fire resistance is defined as the decision criterion in the standard EN 13501 Part 2. The classes REI 30, REI 60 and REI 90 specify the time a building element has to last in case of fire – 30, 60 or 90 minutes. The performance of a building element can be derived from this classification (load capacity – R, impermeability to smoke and flame – E, insulating effect – I). Evidence is provided in the form of a fire test conducted on the complete building element with a corresponding test certificate according to EN 13501 Part 2.

Overview Kaindl Products with fire retardant feature:

Product	Classification	Standard
Raw Chipboard B-s2 / P2 E1	B-s2,d0	EN 13501-1
Raw MDF B-s2 / E1	B-s2,d0	EN 13501-1
MF chipboard B-s1 P2 / E1	B-s1,d0	EN 13501-1
MF MDF B-s1 / E1	B-s1,d0	EN 13501-1
Raw CDF C-s2	C-s2, d0	EN 13501-1
MF CDF C-s2	C-s2, d0	EN 13501-1

Overview fire classes acc. to EN 13501-1:

Class	Fire scenario
A1	Products of the class A1 will not contribute in any stage of the fire including the fully developed fire.
A2	Satisfying the same criteria as class B. In addition, under conditions of a fully developed fire these products will not significantly contribute to the fire load and fire growth.
B	As class C but satisfying more stringent requirements.
C	As class D but satisfying more stringent requirements. Additionally, under the thermal attack by a single burning item they have limited lateral spread of flame.
D	Products satisfying criteria for class E and capable of resisting, for a longer period, a small flame attack without substantial flame spread.



E	Products capable of resisting, for a short period, a small flame attack without substantial flame spread.
F	Products for which no reaction to fire performances are determined or which cannot be classified in one of the classes A1, A2 , B , C , D , E .

Comparison of the fire behavior of building materials and products acc. to DIN EN 13501-1 and DIN 4102:

General building designation	Additional requirements		Class acc. to EN 13501-1	Class acc. to DIN 4102-1
	No smoke Rauch	No burning droplets		
No flammable without parts of flammable materials	X	X	A1	A1
No flammable with parts of flammable materials	X	X	A2 - s1, d0	A2
Flame retardant	X	X X X	B / C - s1, d0 A2 / B / C - s2, d0 A2 / B / C - s3, d0 A2 / B / C - s1, d1 A2 / B / C - s1, d2 A2 / B / C - s3, d2	B1
Normal flammable		X X X	D - s1, d0 D - s2, d0 D - s3, d0 D - s1, d2 D - s2, d2 D - s3, d2 E - d2 E	B2
Easily inflammable			F	B3

s = smoke development („smoke“), classes s1, s2 und s3

s1 no/ little smoke development

s2 moderate smoke development

s3 strong smoke development (there are no restrictions regarding smoke development)

d = burning droplets, classes d0, d1 und d2

d0 no droplets /particles

d1 defined droplets /particles

d2 strong droplets /particles