

Test standards for Reaction to fire

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Test standards for Reaction to fire

EN ISO 1182	Non-combustibility test
EN ISO 1716	Determination of the gross calorific value
EN 13823	Building products excluding floorings – Thermal attack by a single burning item (SBI) – Main test for most products
EN ISO 9239-1 :	Determination of the burning behaviour using a radiant heat source
EN ISO 11925-2	Ignitability when subjected to direct impingement of flame

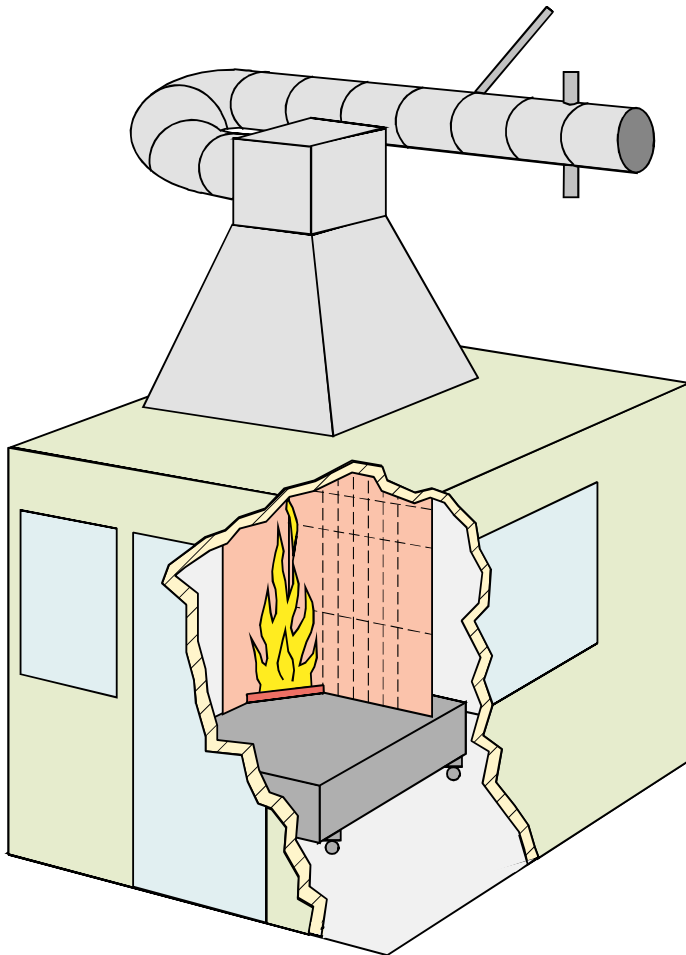
Classification standard

EN 13501-1

Fire classification of construction products and building elements –

Part 1: Classification using test data from reaction to fire tests

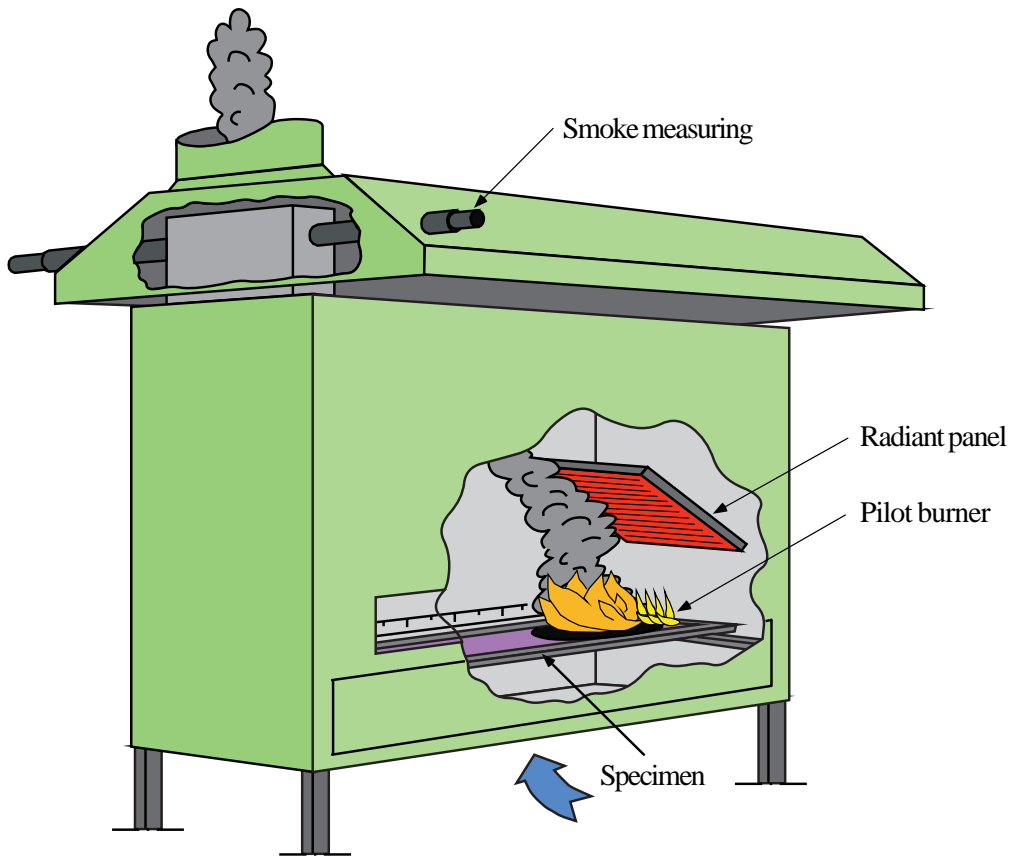
SBI Single Burning Item test



Sample size:
1,5 x 1,5 m (corner)

Measured:
Fire Growth Rate - FIGRA
Total Heat Release during first 600 s
- THR600s
Lateral Flame Spread - LSF
Smoke Growth Rate - SMOGRA
Total Smoke Production during first 600 s
- TSP600s

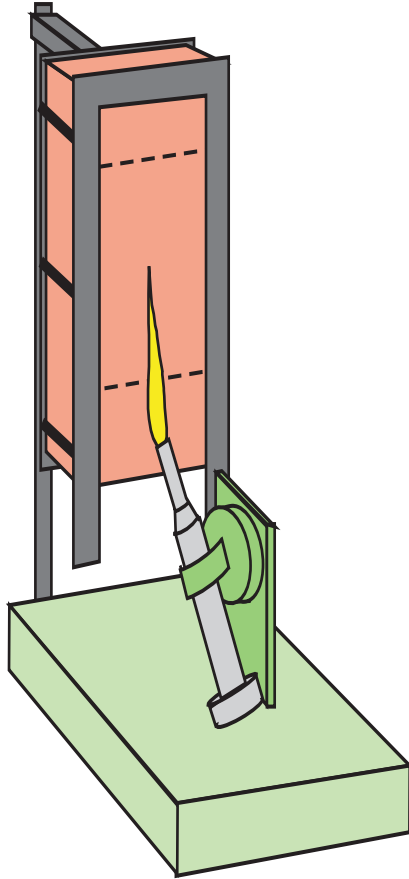
RP Radiant Panel test (for floorings)



Sample size:
1,05 x 0,23 m

Measured:
CHF Critical Heat Flux
IoS Integral of Smoke
Obscuration

Small flame test, EN ISO 11925-2 (basic screening test)



**Sample size:
0,25 x 0,009 m**

**Measured:
Flame spread
within 20-60 s**

Test methods used for determining the European reaction to fire classes of combustible building products

Test method	Construction products excl. floorings, i. e. wall and ceiling linings	Floorings	Main fire properties measured and used for the classification
Small flame test EN ISO 11925-2	X	X	Flame spread within 60 or 20 s.
Single Burning Item test, SBI EN 13823	X	-	- FIGRA, Fire Growth Rate; - SMOGRA, Smoke Growth Rate; - Flaming droplets or particles
Radiant panel test EN ISO 9239-1	-	X	- Critical heat flux; - Smoke production

Reaction to fire classes for building products (excl. floorings)

Main class	Smoke class	Burning droplets class	Requirements according to			FIGRA	
			Non comb	SBI	Small flame		
A1	–	–	x	–	–	–	Non combustible
A2	s1 - s3	d0 - d2	x	x	–	≤ 120	- “ -
B	s1 - s3	d0 - d2	–	x	x	≤ 120	
C	s1 - s3	d0 - d2	–	x	x	≤ 250	
D	s1 - s3	d0 - d2	–	x	x	≤ 750	
E	–	- or d2	–	–	x	–	
F	–	–	–	–	–	–	No performance determined

Reaction to fire classes for floorings

Main class	Smoke class	Requirements according to			Critical flux kW/m ²	
		Non comb	RP	Small flame		
A1_{fl}	–	x	–	–	–	Non combustible
A2_{fl}	s1 – s2	x	x	–	≤ 120	- “ -
B_{fl}	s1 – s2	–	x	x	≤ 120	
C_{fl}	s1 – s2	–	x	x	≤ 250	
D_{fl}	s1 – s2	–	x	x	≤ 750	
E_{fl}	–	–	–	x	–	
F_{fl}	–	–	–	–	–	No performance determined