



The Single-Flame Source Test

EN ISO 11925-2



THE BENCHMARK IN FIRE TESTING



The Single-Flame Source Test

The test is required as part of the European construction products directive classification of reaction to fire performance for wall and roofing products and floor-coverings. "The Single Flame Source Test" (Ignitability Apparatus) is built in accordance with EN ISO 11925-2.

Full classification and performance criteria can be found in a separate FTT document "New European Fire Testing Classification for Construction Products."



EN ISO 11925-2: Reaction to fire tests – Ignitability of building products subjected to direct impingement of flame – Part 2: Single-flame source test.

Product Classification

The European Construction Products Directive classification criteria for all building products, has performance classes from A-F. Although other tests are required for assessment, the single flame source apparatus is needed for qualifying all types of construction products to classes B, C, D and E. The classification criteria for each product group are shown in the tables below.

Classification for construction products excluding floorings

CLASS	CLASSIFICATION CRITERIA	ADDITIONAL CLASSIFICATION	OTHER TEST METHOD
B	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
C	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
D	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
E	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	Flaming droplets/particles	-

Classification for flooring products

CLASS	CLASSIFICATION CRITERIA	ADDITIONAL CLASSIFICATION	OTHER TEST METHOD
B_{fl}	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	Smoke production	EN ISO 9239-1
C_{fl}	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	Smoke production	EN ISO 9239-1
D_{fl}	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	Smoke production	EN ISO 9239-1
E_{fl}	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	-	-

Classification for linear pipe thermal insulation products

CLASS	CLASSIFICATION CRITERIA	ADDITIONAL CLASSIFICATION	OTHER TEST METHOD
B_L	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
C_L	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
D_L	$F_s \leq 150\text{mm}$ within 60s (Exposure = 30s)	Smoke production and Flaming droplets/particles	EN 13823
E_L	$F_s \leq 150\text{mm}$ within 20s (Exposure = 15s)	Flaming droplets/particles	-

The FTT Ignitability Apparatus

EN ISO 11925-2 is based on the Kleinbrenner method for determining ignitability of building products in the vertical orientation by direct small flame impingement under zero impressed irradiance.

The FTT Ignitability Apparatus is supplied as a complete easy-to-use system incorporating safety features. It has large front and side doors for easy access. These are glazed with toughened glass for full view of the specimen during a test.



Fully Adjustable Burner



An extensively adjustable burner assembly, mounted on runners enables the small premixed flame to be tilted at an angle of 45° to the specimen and offered to it in one fluid movement.

A fully adjustable specimen support frame facilitates lateral and vertical movement of the specimen holder so that the flame can be applied at the correct position for either surface exposure or edge exposure.



Specimen Holder

The specimen holders are capable of housing the specimens up to and including 60 mm thick. The FTT ignitability apparatus is supplied with two different specimen holders:



Standard sample holder



Sample holder used for products which melt or shrink away from the flame without being ignited

Accurate Measurement

A digital anemometer/thermometer and a stopwatch are incorporated for simple but accurate measurement of the flow, temperature and time.





Technical Specification

Measuring Principle	Ignitability from small flame source
Cabinet Dimensions (exterior)	700mm (W) x 400mm (D) x 800mm (H)
System Dimensions	1500mm (W) x 1200mm (D) x 900mm (H)
Sample holder	Standard holder and holder for products which melt or shrink included
Anemometer	± 0.1 m/s accuracy
Stopwatch	Accuracy better than 1 second in 60 minutes

Services

Test Room	The ignitability apparatus should be situated in a draught free environment at $23 \pm 5^{\circ}\text{C}$ and a relative humidity of $50 \pm 20\%$.
Gas Supply	A supply of natural gas of minimum 95% purity. In order to obtain flame stability the gas pressure shall be between 10kPa and 50kPa.
Hood	The combustion chamber should be situated under a suitable extraction system.

Due to the continuous development policy of FTT technical changes could be made without prior notice.

Other Euroclass Test Methods

Detailed product catalogues are also available for:

- **Single Burning Item**

EN 13823 Reaction to fire tests for building products excluding floorings exposed to thermal attack by a single burning item, the SBI

- **Oxygen Bomb Calorimeter**

EN ISO 1716 Reaction to fire tests for building products – Determination of the heat of combustion.

- **Non Combustibility Apparatus**

EN ISO 1182 Reaction to fire tests for building products – Non combustibility test.

- **Flooring Radiant Panel**

EN ISO 9239-1 Reaction to fire tests for building products – Horizontal surface spread of flame for floor coverings.