Basic information for **the classification of fire proof construction elements.**

One of the most important advantages and the most common selection criteria for the mineral wool panels is their fire rating. That's why we list the most important identifying information and performance comparison of the panels against fire.
The classification of all construction products in EU, including the panels, in relation to the fire, is determined by the Harmonized European Standard EN 13501.

A) Reaction to fire acc. to EN 13501-1

This standard 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 and specifically the gases released (smoke) and the change in structure (drops) during combustion.
All panels of the series Lava, Optimum and ThermA1 have been classified for their Re- action to fire with the highest classification A1 as non-combustible.
In practical terms, that means that in case of fire panels:
- Do not burn
- Do not contribute and are not feeding the fire
- Do not emit toxic gases
- Do not show structural alterations

classification acc. EN13501-1

EUROCLASSES		SMOKE EMISSION **smoke** s1 / s2 / s3	FLAMING DROPLETS **drops** d0 / d1 / d2
A1	non-combustible	/ no further testing	/ no further testing
A2	non-combustible	s1 absent or limited	d0 no dripping
B	decreasing performance levels from B to E	s2 average intesity	d1 slow dripping
C			
D		s3 high intesity	d2 high dripping
E		E NPD	E NPD
F	no performance detimerned (NPD)		

B) fire resistance (EN 13501-2)

This standard provides the fire resistance classification procedure for all products and building elements.
According to this standard, construction products are classified according to the resistance time to fire they deliver. The details of the individual criteria used for the classification of the resistance to fire are the following:

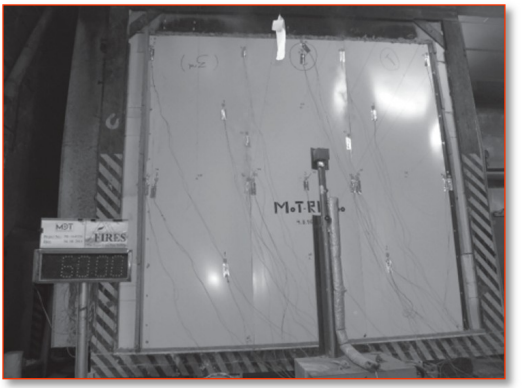
R: Load bearing capacity. Applies only to roof panels, which according to EN1365-2 must bear loading throughout the fire resistance test.

E: Integrity. This criterion ensures that the joints of the panels will not split open during the test, allowing the flame or hot gases to pass through.

I: Thermal insulation. This criterion evaluates the thermal performance of the building material. Non-exposed to fire side must not develop spot temperature above 180°C and on average on the whole surface above 140°C.

All fire related tests have to be carried out in accredited laboratories, recognized throughout the European Union.

A comprehensive fire safety solution requires a combination of the resistance time as well as the reaction to fire performance of all structural components.
European statistics show that each year more than 4,000 people lose their lives and other 70,000 get hospitalized because of fires. More than 50% of these cases- fatal and non- are caused by the inhalation of toxic gasses emitted by the fire and not from burns.
In the context of the protection of the human life, the environment, and the property, the combination of the two criteria is vital in order to guarantee the best conditions for timely and effective battle with fire, by the appropriate construction of buildings and infrastructure.



5th minute of testing of panel combustion of panel combustion classified as **B-s2, d0**

121st minute of testing classified as **A**