Fire resistance REI 90 according to EN 13501-2

Trapezoidal roof systems are very cost effective, lightweight and suited to a wide variety of applications, including new build and refurbishment. The load-bearing capacity of corrugated steel without fire protection is 15 – 45 minutes depending on the structure and insulation used on the top of the steel sheet. The steel sheet bends and if the anchoring to the support is good enough if uses advantages of membrane and the load-bearing capability remains for a significant amount of time.

When there is no insulation used on top of the corrugated steel sheet, the heat goes through the metal and dissipates upwards and the steel temperature rises slower.

When corrugated steel is used as a load-bearing structure for the roof construction and insulation is installed on top of the corrugated steel board, the temperature of the metal rises very quickly. ISOVER FireProtect® is a simple and reliable system that limits the temperature rise in the steel sheet and helps roof to withstand longer from collapse.

Figure 9. System ISOVER FireProtect® for fire protection of corrugated steel is characterized by light weight and small height, but also a direct fixing to the corrugated steel without need of help of suspension construction

Fire classification

Fire protection system ISOVER FireProtect® was officially tested in PAVUS, a.s., authorized body AO 216. It is possible to protect roof made of corrugated steel up to fire resistance REI 90. Classification according to the latest standard EN 13501-2: 2016, testing based on EN 1365-2: 2015.

Figure 10. Sample after 30 minutes – fire protection system ISOVER FireProtect® fulfils its function for 100 %, roof is without any deformation (bending stress, the same as would be under cold conditions)

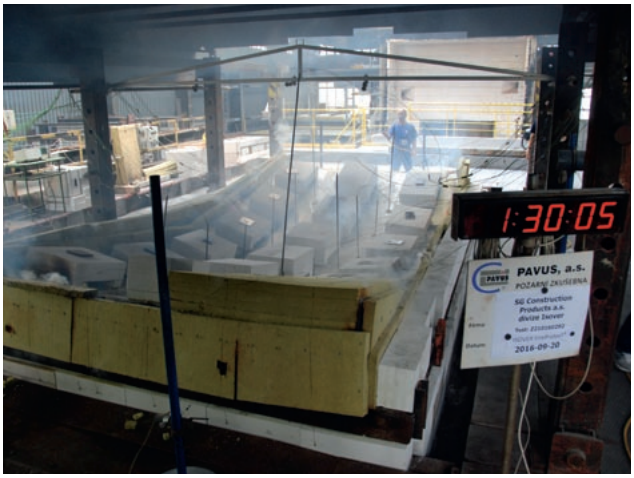

Figure 11. Sample after 90 minutes – roof deformation protected with ISOVER FireProtect® is close to limit deformation given by test standard EN 1365-2 (fluent transition from bending stress to membrane)

Fixing

Assembly of slabs ISOVER FireProtect® 150 in thickness 60 mm is quick and simple and secure system with easily worked materials and simple fixing – stud-welded pins or pins and washers in maximal distance of 300 mm. Maximum distance from the cladding's edges is 75 mm. Approximate pin's quantity is 13 pcs/m^2.