FRIC Report
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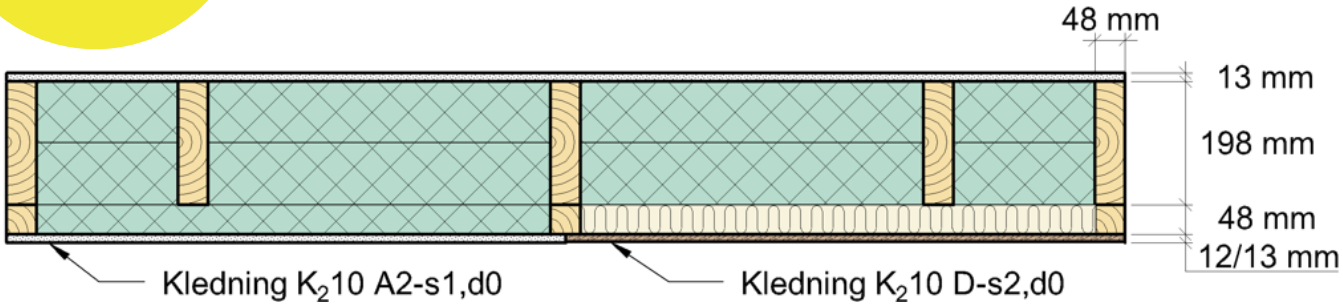


# Results from fire tests with two different types of fire protection for EPS insulation in wall and roof construction

**As part of a series of fire tests conducted in FRIC, we studied whether the solutions described in SINTEF Building Research Design Guide 520.339 *Use of combustible insulation in buildings* provided sufficient fire protection for EPS in constructions.**

## Fire testing

Fire testing showed that protecting the EPS insulation with a 13 mm gypsum board type A with class $K_2$10 A2-s1,d0 prevented melting and combustion of the EPS insulation for at least 10 minutes when exposed to a standard time-temperature fire curve. However, protecting the EPS with a 12 mm plywood board with class $K_2$10 D-s2,d0 and 50 mm glass wool did not provide sufficient protection to prevent melting and combustion of the EPS insulation during the first 10 minutes of the fire.

## Calculations of alternative covering

Calculations performed according to the method in *Brandsäkra trähus* resulted in the following alternative solutions with wooden board cladding:

- A 16 mm particle board with a density of 500 kg/m³ and 50 mm mineral wool insulation behind provides 12.7 minutes of protection.
- An 18 mm plywood board with a density of 400 kg/m³ and 50 mm mineral wool insulation behind provides 12.4 minutes of protection.

## Links to more information

You find the entire report here: www.fric.no

FRIC
FIRE RESEARCH & INNOVATION CENTRE

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