

## 2. REINFORCED CONCRETE PROTECTION

Used in most of modern buildings, concrete is part of today's landscape because of its multiple applications. However, concrete strength could be seriously impaired when exposed to fire, reducing its resistance when temperature exceeds 300 °C and losing it almost completely above 550 °C. In the case of reinforced concrete, framework resistance decreases after 250 °C, damaging the adherence between steel and concrete.

**Mercor tecresa**® markets **Tecplaster**® mortar, tested pursuant to standard UNE ENV 13381-3, this test determines its capacity to provide protection against fire, to remain cohesive and fixed to concrete and to provide data on the temperature distribution in the entire protected concrete element when exposed to standard temperature/time curve.

The temperature information obtained in the tests performed is used to provide:

- The relation among concrete temperature, time and thickness of the fire protection material.
- Concrete equivalent thickness.

Light, normal or heavy concrete could be used, strength classes being 20/25 (LC/C/HC) to 50/60 (LC/C/HC). The member can contain steel reinforcing bars.

TECPLASTER® MORTAR

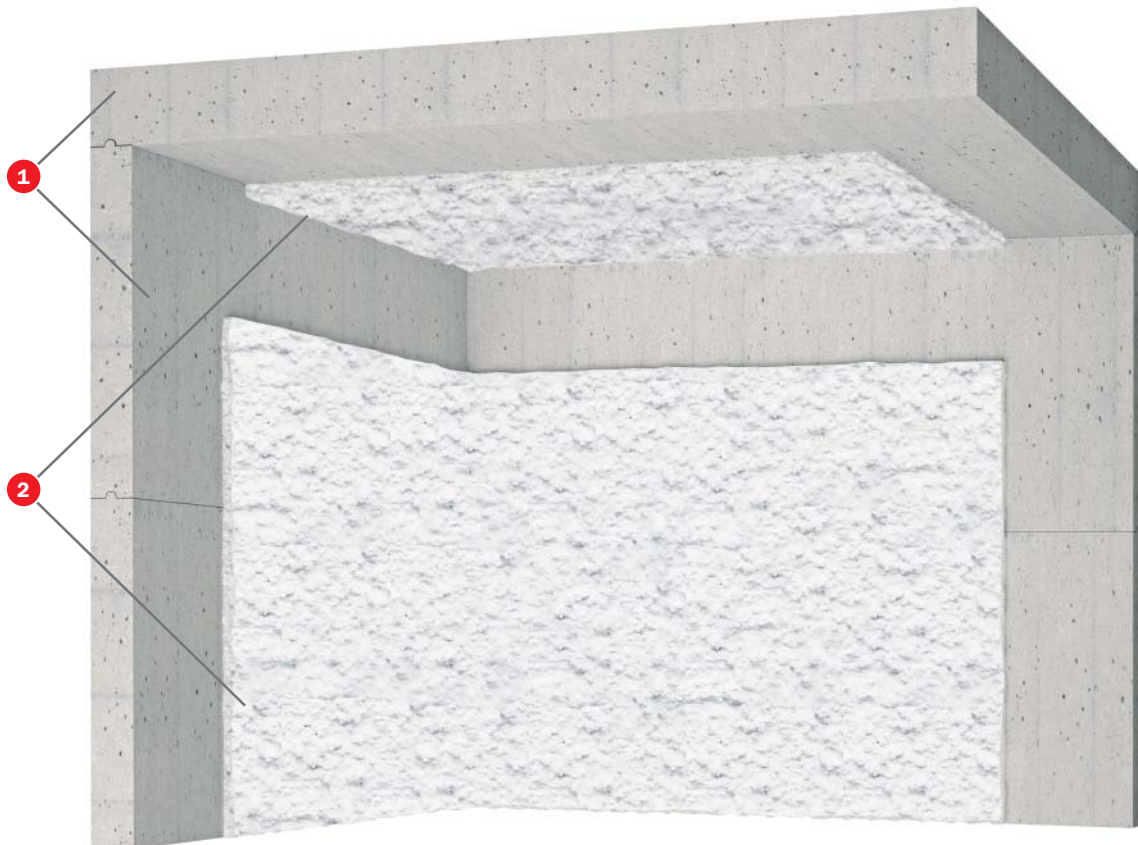
**CONSTRUCTIVES**  
S O L U T I O N S

# TECPLASTER® MORTAR

REINFORCED CONCRETE PROTECTION

## TECPLASTER® MORTAR

SLABS, FLOORS, ROOFS AND WALLS PROTECTION



### TESTS

**Standard:** UNE EN 13381-3

**Laboratory:** EMI

**Test No:** K-1/2010

### SOLUTION

- 1 Concrete
- 2 **Tecplaster®** (thickness according to concrete thickness and fire resistance time required)

### APPLICATIONS

**Tecplaster®** is usually applied by means of a mortar projection machine with a wet screw pump. For manual application, it is advisable to first fit a deployable steel mesh properly attached to the surface to be coated.

**Preparing Tecplaster® Mortar:** Add water to the mortar at a proportion of 1 kg of dry mortar to 1 litre of water.

The ratio between water and **Tecplaster® Mortar** determines the required consistency.

**Surface preparation:** Surface must be free of grease, dust and loose debris. Metal surfaces must be primed and concrete surfaces should not contain

any remains of stripping agent.

**Tecplaster® Mortar** usually has a rough finish from spray projection. In special cases, it can be smoothed. It can be painted with topcoat.

**Tecplaster® Mortar** is applicable indoors between 5°C and 40°C, provided relative humidity is not too high in the environment.

**Tecplaster®** should be stored on flat surfaces, never outdoors, and the material covered from sunlight and moisture.

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### Table of equivalent thickness of concrete

**Thickness table.** Protection of concrete elements according to standard **EN 13381-3**.

Thickness of TECPLASTER® mortar	Fire resistance value (minutes)							
	15	30	45	60	90	120	180	240
Dp min= <b>Tecplaster® 10,6 mm</b> thick	58,5	60	70	79	86	91	--	--
Dp max= <b>Tecplaster® 29,5 mm</b> thick	90	114	138	141	147	149	151	154

Equivalent **thickness chart** between reinforced concrete and **TECPLASTER® mortar**.

