

# 1. STEELWORK PROTECTION

## Fire Resistance of Structural Members

Steel structures are a construction system used worldwide.

One of the main advantages is that they have great resistance per weight unit, which provides them with tremendous versatility and the possibility of creating complex yet light structures..

By contrast, one of the drawbacks of steel is its high thermal conductivity. Therefore, in the event of a fire, the progressive increase in temperature plus steel high heat transmission result in a reduction of the structure's bearing capacity and mechanical resistance. The resistance and elastic limit are modified after 250 °C, and after approximately 500 °C the drop in resistance is significant enough so as not to support its design capacity.

To avoid this, **mercor tecresa**® introduces **Teclack-W**® intumescent paint, tested pursuant to standard **UNE EN 13501-2**, to determine the mortar fire protection properties when applied to steel structural elements: beams, pillars or tension members.

**Teclack-W**® has been designed and tested to cover a great variety of steel profiles characterised by their section factors. Likewise, it is tested for several design temperatures specified in the standard

TECLACK-W® PAINT

# CONSTRUCTIVES SOLUTIONS

# TECLACK-W® PAINT

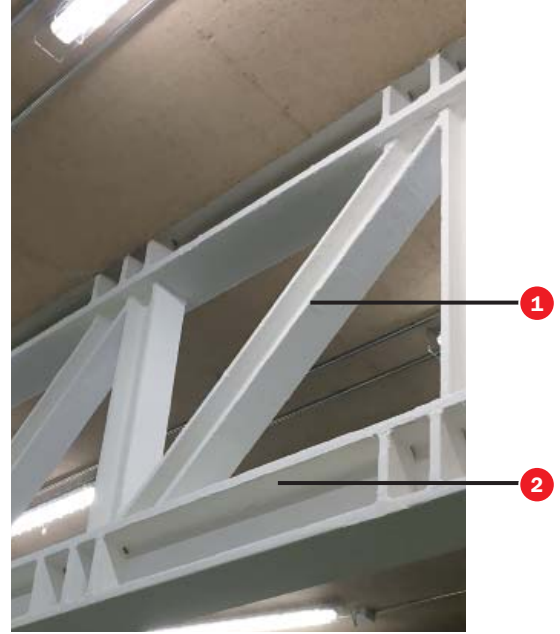
## STEELWORK PROTECTION

### TECLACK-W® PAINT

#### COLUMN



#### BEAM



#### TESTS

**Standard:** UNE EN 13381-8

**Laboratory:** Fplus Ltd

**Test No:** CR-61-01, CR 91-01 y

ETA-16/0359 de 27/05/2016

#### SOLUTION

- 1 Steel profile.
- 2 **Teclack-W®** (thickness according to the profile's section factor and fire resistance time required).

#### APPLICATION

**Teclack-W®** is applied through airless spray: **nozzle size:** 0,48 – 0,63 mm: 800 – 1000 µm of fresh paint per coat; and **brush, roller:** 300 – 500 µm of fresh paint per coat.

**Applying Teclack-W® paint:** it should be applied undiluted or with a maximum dilution of 3 % with water after proper stiming with mixing machine.

Spraying equipment should be cleaned with water after use and it may also be necessary to carry out intermediate cleaning during the working day depending on the amount of paint applied, temperature and stoppage times.

**Average drying time at 23 °C for a layer of 250 µm thickness:** Watertight after 1 hour and dry to touch after 24 hours.

**Repainting interval:** with same paint, after 8 hours' drying and with topcoat, after 24 hours' drying.

**Surface preparation:** Surfaces to be

treated must be completely dry and free of all contaminating particles (dust, grease, oils, etc.); they should also have an anti-corrosion primer compatible with intumescent paint with a fire reaction grading of bs1d0 or better.

The recommended anti-corrosion primers compatible with this intumescent paint are one component Alkyds.

Galvanised surfaces should be treated with a suitable adhesion product.

Unpainted surfaces coated with **Teclack-W®** fire-retardant, intended for use **type Y<sup>1</sup>**, **shouldn't be exposed** to weathering (e.g. rain, moisture, or heavy condensation).

**Teclack-W®** paint has a working life of 10 years according to ETA

Consult Technical Department.

<sup>1</sup> **Type Y:** Reactive coating system intended for internal and semi-exposed conditions. Semi-exposed includes temperatures below zero, but no exposure to rain and limited exposure to UVE (but UV is not assessed).

**Type Z1:** Reactive coating system intended for internal conditions (excluding temperatures below zero) with high humidity.

**Type Z2:** Reactive coating system intended for internal conditions (excluding temperatures below zero) with humidity classes other than Z1.