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construction chemicals

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Teknorep 450

Cement Based, Fire Resistant Mortar

CE TS EN 1504 – 3, R1

Product Description

It is a special mixture containing hydraulic binders, low weighted aggregates and special additives, which can be used on inner and outer walls due to its fire resistant and thermo-acoustic insulation properties.

Areas of Usage

- Hospitals, security buildings,
- In sections where fire resistance is required,
- In sections of the cable ducts,
- To prevent the fire on the shafts of dwellings, shopping malls, etc.

Features and Benefits

- It has fire protection properties. It has been verified that it protects any surface (brick, concrete, iron, wood, etc.) from fire.
- If a thick plaster is required, it can be applied with a layered plaster process.
- It can be painted on.
- When applied in the appropriate thickness; while allowing wall transparency on the inner and outer surfaces, increases thermal and acoustic isolation.
- It prevents mold formation on inner surfaces.
- After applying and drying, it is easily discharges moisture from within the body.

Application Instructions

Surface Quality: The surfaces must be clean, smooth, solid, free from any antiadhesive substance such as dust, oil, dirt, rust, mold oil, detergent and waste. Weak parts on the surface should be removed.
Surface Preparation: Cement slurry and weakened parts should be removed, and there should be no materials such as oil dirt and rust on the surface. Absorbent surfaces must be pre-wetted, but there should be no water accumulations. Mixing: Clean, clear water received from normal ambient temperature into a clean container which is free from all kinds of materials which prevent adhesion. TEKNOREP 450 in powder is poured into a container filled with water. The product is mixed with a low speed mixer until a homogeneous mixture without lumps is obtained. Mixing time should be at least 5 minutes, the mortar obtained at the end of the process should be rested for 3 minutes and mixed again until it becomes homogenous for 2 minutes. After the material has entered the reaction, it should not be mixed again with water.

Application Notes / Restrictions

- For outdoor applications, the first 3 hours of sunshine should be protected from rain and frost.
- In cement based products, reaction times are affected by ambient and ground temperatures. Reaction times are shortened in a hot environment, and extend in a cold environment.
- Hot water should be used in cold conditions.
- In hot environments, cold mixing water should be used.
- During the application of the product, work clothes suitable for occupational health and safety rules should be worn and appropriate glasses and masks should be used.
- Prepared mortar is applied by trowel, if desired, feather application is made to make the application smoother.

- It must be protected after application against adverse weather conditions such as direct sunlight, high air temperature (above +35°C), rain and frost. The product should be cleaned thoroughly with water and detergent before it is fully cured and hardened.
- Immediately after application, before hardened, the equipment should be cleaned with water. After the product is hardened, it should be cleaned by mechanical methods.

Technical Data

General Information	
Appearance	Light grey
Shelf Life	12 months in unopened package in dry environment
Package	10 kg kraft bag
Application Information	
Application Temperature	(+5°C) - (+35°C)
Mixture Ratio	6,0 - 6,5 lt water / 10 kg powder
Pot Life	Min. 30 min.
Time to Put into Service	1 day
Performance Information	
Flexural Strength (EN 12808-3)	≥ 1,5 N/mm²
Compressive Strength (EN 12808-3)	≥ 9 N/mm²
Temperature Resistance	+900°C
Hazardous Substances (EN 12004)	See the safety data sheet.
Fire Response	A1

Consumption Table

Teknorep 450	Mixture Density (kg / lt)	1 mm/ 1m² Powder Consumption (kg)	Mixture Water Amount (lt)
10 kg kraft bag	~1,325	0,83	4,5 – 5,5

Technical data are approximate values obtained from the laboratory study of Tekno Construction Chemicals for finished products obtained at +20°C air temperature and 50% relative air humidity and valid for its performance after 28 days.

Teknorep 450 Experiment results

Plates formed with Teknorep 450 product in 30x30 cm dimensions and different thicknesses were exposed to 550°C temperature, and the temperatures formed on their back surfaces were examined;

Thickness (cm)	Time (min)	Temperature °C
4 cm	30 min	85ºC
2 cm	30 min	91ºC
1,2 cm	15 min	90ºC
1,2 cm	20 min	98ºC
1,2 cm	21 min	100ºC