

## Chelfix Grout EXTRA

High Fatigue Strength, Non- Shrink, Flowable Grout and Repair Mortar

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### Product Description

Chelfix Grout EXTRA is a cement based, pre-mixed chloride free non-shrink, flowable repair and bedding mortar with very high strength and especially developed for wind turbines, machine rails and special kind of foundations.

### Areas of Application

- Machinery foundations and machine beds.
- It is used in fixing wind turbines.
- In machine rails and foundations.
- In cold conditions and cold storehouses.
- In repairing concrete floors which are exposed to vehicle and pedestrian traffic Joints.
- Filling of shutter tie rod openings.
- Between anchors of steel constructions.
- Mounting of tanks and silo columns.
- Pile top re-profiling.
- Exterior concrete, partition and column heads, determination of track beds.
- Fixing of the industrial machines on the foundations.
- Filling of hollows and craters in concrete.



### Advantages

- Mixed with only water and can be applied easily.
- It gains strength even at temperatures under zero.
- It has broad application areas since it does not shrink
- Ultra high compressive strength.
- No decomposition and water formation.
- Perfect adhesion and strength.
- High application thickness as much as possible by adding aggregate with proper size.
- High stiffness and high abrasion resistance.
- It is resistant against various chemicals.
- It works with the old concrete as monolithic since it has high adherence.
- Application thickness can be between 10 mm and 150 mm.

- It has high protection of reinforcement and carbonation resistance.
- Resistant to water and weather conditions.
- It has freeze-thaw resistance.
- Non-shrink.

## Application Instructions

**Surface Preparation:** The surfaces must be clean, smooth, solid, free from any antiadhesive substance such as dust, oil, dirt, rust, mold oil, detergent and waste. The repairing corners should be cut vertically with 10 mm deepness. The reinforcements should be changed with the new ones because of structural reasons if they have serious damage or the cross sections are below the necessary safety limit. When auxiliary reinforcement is applied, the thickness of the reinforcement should be 2 cm minimum. The surface ice should be melted completely before Chelfix Grout EXTRA is applied. Even if Chelfix Grout EXTRA is applicable at low temperatures as +5°C, the surface temperature should be higher than +5°C and lower than +40°C. Absorbent surfaces should be wetted in advance but there should not be any remaining water drops. **Mixing:** 3.0-3.5 lit clean, clear water is added into a clean container which is free from all kinds of materials that prevent adhesion. 25 kg Chelfix Grout EXTRA is poured into the container filled with water. The product is mixed with a low speed mixer until a homogeneous mixture without lumps is obtained. The mixing time should be 3 minutes minimum. The mortar obtained at the end of this process should be placed immediately. After the reaction of the material complete, it should not be mixed again with water. The mixture should be placed in 2.5 min. depending on the temperature and the amount of water. Chelfix Grout EXTRA should be poured from one side to fill the gaps surrounded on four sides and covered. So it discharges air and prevents gaps. It can be pushed from one side with a long piece of iron during casting to speed up the flow.

The thickness of the casting should be between 10 mm and 150 mm layer thickness at a time. It is recommended to carry out a preliminary test, if small diameters anchors will be used.

For applications thicker than 150 mm, it is possible to add aggregates with the diameter of 5–12 mm at a rate of 30% of the material. Aggregate addition can be done by two ways:

- The aggregate is added into prepared mortar. The addition continues until a homogenous mixture is obtained.
- Aggregate is poured or spread on the application floor. Then the prepared Chelfix Grout EXTRA mixture is poured onto it. The self-leveling mortar surround all around the aggregate and a high strength cement is obtained.

## Application Notes/ Restrictions

- The reaction time of cement based products are affected by the air and surface temperatures. The reaction times decrease in warm conditions and increase in cold condition.
- Hot water should be used in cold conditions.
- Cold water should be used in warm conditions.
- 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.
- The prepared mixture should be placed in 5 minutes depending on the temperature and the amount of water.

- Do not apply at temperatures below +5°C and above +40°C.
- Do not apply Chelfix Grout EXTR if it is expected for the temperature to decrease below +5°C during the application or during 24 hours after the application.
- After the application it must be protected after application against adverse weather conditions such as direct sunlight, high air temperature (above +40°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

Property:	
Appearance:	Grey
Shelf Life	12 months in unopened package in dry conditions
Grain Size	D <sub>max</sub> : 3 mm
Application surface temperature	(+5°C) - (+35°C)
Mixture Ratio	3,0 – 3.5 lit water / 25 kg powder
Application Thickness	10 mm to 150 mm
Workability Time	Max. 15 - 20 min.
Mortar Density	2.3 ± 0. 10 kg/lit
Shrinkage	< 0.30 mm/m
Pressure Resistance	24 hours : ≥ 50 N/mm <sup>2</sup> 28 day : ≥ 90 N/mm <sup>2</sup>
Tensile Strength	> 2.0 N/mm <sup>2</sup>
Chloride Ion Content	0.05 %
Elastic Modulus	> 30 GPa
Capillary Water Absorption	Less than 0.1 kg/(m <sup>2</sup> .h <sup>0.5</sup> )

*Values are obtained in +23°C and %50 relative humidity conditions. Higher temperatures decrease the time, lower temperatures increase the time*

## Consumption Table

Chelfix Grout EXTRA	Mixture Density (kg/lit)	1m <sup>3</sup> Powder Consumption for Fresh Mortar (kg)	Amount of Mixture Water (lit)
25 kg kraft bag	~2.3	~2,0	3.0 – 3.5

## Standards

Chelfix Grout EXTRA Complies with TS EN 1504 - 3, R4.

## Packaging

Chelfix Grout EXTRA is available in 25 Kg bags.

## Storage

Chelfix Grout EXTRA has a shelf life of 12 months from date of manufacture if stored at temperatures between +2 °C to 50 °C