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Technical data sheet

CHRYSO® NS Grout Additive

Non-shrink powder additive for cementitious grouts and concrete

Description

A non-shrink powder additive for cementitious grouts and concrete, **CHRYSO®NS Grout Additive** is a combination between a plasticising agent and a gas producing expansion medium.

Advantages

- Durability: The plasticising agent allows for the use of a low water/cement ratio with subsequent high strengths and durability. It ensures low permeability and increased density.
- Shrinkage compensation: The gas expansion medium counteracts the natural settlement and plastic shrinkage of the grout and aids stability and cohesion with a high degree of interfacial contact.
- The controlled positive expansion in unset grouts incorporating **CHRYSO®NS Grout Additive** overcomes plastic settlement when measured in accordance with ASTM C827. An unrestrained expansion of 1%- 4% is typical.
- Fluidity: Gives high grout fluidity with a low water/cement ratio, for ease of placement or injection.
- Iron-free and chloride free: No metallic content to corrode and cause staining or deterioration due to rust expansion in the grout.
- Can improve compressive strengths by ±15% when cured under restraint.
- Does not significantly affect the setting times of cement based grouts.

Physical and chemical properties

- Physical state (@25°C): powder
- Colour: grey
- pH: > 12
- Specific gravity (@25°C): >1
- Water solubility: partially soluble
- Non flammable

Application guidelines

Cement

CHRYSO®NS Grout Additive is compatible with all types of Portland cement except high Alumina cement.

Use

CHRYSO®NS Grout Additive is an additive for cementitious grouts where a low water/cement ratio and positive expansion is required.

- Bed grouting
- Duct grouting
- Non-shrink infilling
- Jointing

Directions

Dosage:

- The optimum dosage of **CHRYSO®NS Grout Additive** can only be established after trial tests.
- For grout, mortar or concrete mixes the recommended ratio is to use 225 g of **CHRYSO®NS Grout Additive** per 50 kg of cement.
- Drastic overdosing of **CHRYSO®NS Grout Additive** may increase expansion and cause frothing.

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Typical mixes:

OPC	50 kg	50 kg
5 mm sand content	-	50 kg
Water content	20 – 22 ℓ	22 – 24 ℓ
CHRYSO®NS Grout Additive	225 g	225 g
Approximate yield	36 ℓ	57 ℓ

Mixing

- For best results, a mechanically powered grout mixer must be used.
- For quantities up to 50 kg, a slow speed drill fitted with a high shear paddle is suitable. Larger quantities will require a high shear vane mixer.
- It is essential that machine mixing capacity and labour availability is adequate to allow for the grouting operation to be carried out continuously.
- A holding tank with the provision for gentle agitation to maintain fluidity may be required.
- The selected water content should be accurately measured into the mixer.
- Slowly add the cement (and sand if required).
- Add **CHRYSO®NS Grout Additive**
- Mix continuously for 5 minutes, making sure that a smooth consistency is obtained.

Application:

- Areas to be grouted should be prepared in the usual way to ensure clean, sound and pre-wetted substrates.
- Place the grout within 20 minutes of mixing time to gain the full benefit of the expansion process. Adopt usual placing and pumping procedures, ensuring a continuous operation.
- Time for expansion: 15 minutes – 2 hours. Temperatures above 20°C may slightly reduce these times.
- Pressure needed to restrain plastic expansion: ±0.0004 MPa
- On completion of the grounding operation, exposed areas that are not cut back should be thoroughly cured by a **CHRYSO®Curing** agent.
- Cleaning – grouts containing **CHRYSO®NS Grout Additive** should be removed from tools and equipment immediately after use with clean water.

Health and safety

CHRYSO will provide onsite assistance when requested. Refer to the material safety data sheet.