

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 $\pm 15\%$ 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

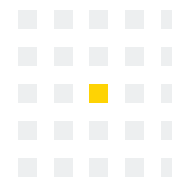
CHRYSO®NS Grout Additive is an additive for cementitious grouts where a low water/cement ratio and positive expansion is required.

- 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 450 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.

Disclaimer: The information contained in this document is given to the best of **CHRYSO's** knowledge and is the result of extensive testing. However, this document will not under any circumstances be considered as a warranty involving **CHRYSO's** liability in case of misuse. Tests should be carried out before any use of the product to ensure that the methods and conditions of use of the product are satisfactory. **CHRYSO** specialists are at the disposal of the users in order to help them with any problems encountered.