

# Nonset 50/50 SR/50 FF

**Cement-based mortar for anchoring bolts, grouting and injection**

## AREA OF USE

**Nonset 50** is an expanding mortar for grouting rock bolts, and can be used on ribbed bar, tubular, CT bolts etc. Also ideal for injection into wide cracks and grouting.

## TECHNICAL CHARACTERISTICS

**Nonset 50** is a thixotropic cement-based, non-setting dry mortar, which expands 1 – 3% before setting. Nonset 50 is composed of Portland cement, with  $D_{max}$ -0.2 mm expanding, plasticising and stabilising additives.

**Nonset 50 SR** is based on sulphate-resistant cement.

**Nonset 50 FF** (frost free) is a variant intended for use at temperatures down to -10°C.

The mortar requires only the addition of water. The expanding component makes the compound expand by 1 – 3% when fresh. Expansion ensures excellent cavity filling and packing around bolts. The compound must be placed no later than 40 minutes after mixing to obtain the full benefit of expansion. The expansion pressure does not affect the construction after binding.

**Nonset 50** meets the requirements defined by EN 1504-9 “Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - General principles for the use of products and systems” and the minimum requirements claimed by EN 1504-6 “Anchoring reinforcement steel”.

## APPLICATION PROCEDURE

**Nonset 50** is mixed most effectively with a forced mixer. A drill and whisk can be used for smaller quantities. Add 9 - 11 litres of water per sack, and mix the compound to a smooth consistency. Do not use more water than necessary to securely put the mortar in place. For bolting, the consistency should be creamy.

NB: The more you use, the lower the density. Too much water will weaken the compound and mean poor bolt grouting.

**Nonset 50** must be used at temperatures over +5°C. NB! Use **Nonset 50 FF** at lower temperatures.

Mix **Nonset 50 FF** with luke warm water to give the mixed compound a temperature of approx. 25 °C.

Use suitable pump equipment for rock bolting (piston or monopump), insert the pump hose all the way into the drill hole and extract slowly as the mortar is pumped in. Place the bolt in the hole immediately. Adjust the amount of mortar fill to avoid any surplus being squeezed out when the bolt is inserted. If using special bolts, always follow the bolt manufacturer's instructions.

If using injection, add the max. amount of water when starting to reduce the amount of water in the mix, depending on crack sizes etc. Use injection rods with packers and start injection from the lowest point. If grouting, use shuttering to a height that exceeds the crevice to be grouted, and fill from one side.



| TECHNICAL DATA (typical values)  |   |  |  |   |
|--|---|--|--|---|
| <b>PRODUCT IDENTITY</b>  |   |  |  |   |
| Type:  | CC  |  |  |   |
| Consistency:   | powder  |  |  |   |
| Colour:  | grey  |  |  |   |
| Dmax (mm):   | 0.2   |  |  |   |
| Density (kg/m <sup>3</sup> ):  | approx. 1,200   |  |  |   |
| Dry solids content (%):  | 100   |  |  |   |
| Chloride ion content - minimum requirement $\leq$ 0.05% according to EN 1015-17 (%): | $\leq$ 0.05   |  |  |   |
| <b>PROPERTIES (at +20°C-50%RH)</b>   |   |  |  |   |
| Colour of mix:   | grey  |  |  |   |
| Mixing ratio, 25 kg sack:  | <b>Nonset 50:</b> 100 parts to 36-44 parts water (9-11 l per sack)<br><b>Nonset 50 SR:</b> 100 parts to 38-44 parts water (9.5-11 l per sack)<br><b>Nonset 50 FF:</b> 100 parts to 38-44 parts lukewarm water (9.5-11 l per sack) |  |  |   |
| Consistency of mix:  | creamy to fluid   |  |  |   |
| Density of mix (kg/m <sup>3</sup> ):   | approx. 1,900   |  |  |   |
| pH of mix:   | $>$ 12  |  |  |   |
| Temperature range for use:   | from +5°C to +35°C  |  |  |   |
| Application temperature range, Nonset 50 FF:   | from -10°C to +5°C  |  |  |   |
| Expansion according to EN-445 (%):   | 1 - 3   |  |  |   |
| Bleeding according to EN-445 (%):  | $\leq$ 0.5  |  |  |   |
| Application time:  | approx. 40 minutes  |  |  |   |
| <b>MIXED PROPERTIES (36% water)</b>  |   |  |  |   |
| Performance characteristics  | Test method   | Minimum requirement according to EN 1504-6 | Performance of product                                   |   |
| <b>Compressive strength (MPa):</b>   | EN 12190  | 80% of values declared by the manufacturer | +20°C  | +5°C  |
|  |   |  | 20 (1 day)<br>30 (2 days)<br>35 (7 days)<br>45 (28 days) | 3 (1 day)<br>15 (2 days)<br>30 (7 days)<br>45 (28 days) |
| <b>Flexural strength (MPa):</b>  | EN 196-1  | None                                       | 3 (1 day)<br>5 (2 days)<br>7 (7 days)<br>8 (28 days)     | 1 (1 day)<br>2 (2 days)<br>5 (7 days)<br>6 (28 days)    |
|  |   |  | <b>Pull extraction (mm):</b>                             | EN 1881   |
| <b>Fire resistance:</b>  | Euroclass   | Declared by manufacturer                   | A1   |   |

### CLEANING

Mortar that has not yet hardened can be removed from tools with water. After setting, cleaning can only be done mechanically.

### CONSUMPTION

1.13 kg per litre mixed mortar.

### PACKAGING

Nonset 50 is supplied in 25 kg sacks,

1200 kg per pallet and 1000 kg big-bags.

### STORAGE

Must be stored dry, and can in original unopened packaging be stored for 12 months.

Nonset 50 complies with the requirements of Annex XVII of (EC) N. 1907/2006 (REACH), part 47.

## **SAFETY INSTRUCTIONS FOR PREPARATION AND USE**

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website [www.mapei.com](http://www.mapei.com)

PRODUCT FOR PROFESSIONAL USE

### **WARNING**

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.*

Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.no](http://www.mapei.no)

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**All relevant references  
for the product are available  
upon request and from  
[www.mapei.no](http://www.mapei.no)**

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**10033/10039/10049-03-2017 (GB)**