

NONSET 400

Expanding mortar for foundations and concrete repairs



WHERE TO USE

Nonset 400 is used for all types of foundations and concrete repairs. Mixed mortar must be placed within 40 minutes after mixing to avoid losing expansion. If a denser foundation mix is required, use **Mapefill N**.

Examples of use

- Structural rebuilding of reinforced concrete beams and pillars
- Foundations and installation of concrete elements
- Foundations for installation of machinery
- Foundations for sleepers and crane rails
- Grouting of horizontal non-moving joints

TECHNICAL DATA

Nonset 400 is a cement-based dry mortar, which expands 1 - 3 % before setting. The mortar is composed of cement, well-graded sand, expanding, stabilising and plastifying substances. The mortar is viscous and requires tight shuttering.

Nonset 400 complies with the principles of EN 1504-9 "Products and systems for reparation of concrete structures: Definitions, requirements, quality control and evaluation of compliance. General rules for the use of products and systems", and the requirements of EN 1504-3 "Repair mortar for load bearing and non-load bearing repairs, class R4".

RECOMMENDATIONS

- Do not use **Nonset 400** on vertical surfaces (use **Redirep 45 RSF** or **Mapegrout T40**)
- Do not add cement or other additives to **Nonset 400**
- Do not add water once the mix has begun to set
- Do not use **Nonset 400** if the sack is damaged or has been previously opened
- Do not use **Nonset 400** at temperatures below +5°C

GUIDELINES FOR USE

TECHNICAL INFORMATION FOR THE APPLICATION

Mixing ratio:	100 kg of Nonset 400 12 - 16 l of water
Max. layer thickness for each application:	150 mm
Application temperature range:	surrounding temperature and substrate temperature from +5°C to +35°C
Pot life of mix:	approx. 40 min. (at +20°C)
Environment of use (climatic and geographical conditions):	the product can be used in the environmental conditions pursuant to the following exposure classes (EN 206- table F.1): X0/XC4/XS1/XD2/XF3/XA1

Preparation

Remove loose concrete and contaminants on the surface. The surface must be free of dust, oil and grease which can reduce adhesion. The casting surface must be sufficiently coarse. Wet the surface with clean water to make it slightly absorbant.

Mixing

Nonset 400 only needs water added. Add 3 - 4 l per 25 kg sack and mix for min. 3 minutes to a smooth consistency. Do not use more water and soften the mix more than necessary to avoid separation, reduction of firmness and poor results. Use a drill and mortar whisk for mixing small amounts. Use a standard cement mixer for large volumes. For thicknesses exceeds 150 mm, gravel 8 - 16 mm can be added to reduce shrinkage. Instructions for the preparation of the mortar to create samples for Lab testing are contained in the TECHNICAL DATA table

APPLICATION

Construct shuttering which is sealed, adheres well and projects 25 - 50 mm above the top surface level. The shuttering must be arranged for easy filling. Leave 10 - 20 mm clearance at the sides, to make it easy to check filling and to blend the mixture properly. Filling from one side is important, to allow air to escape. When using a pump, place the hose in the middle of the mould so that the mix flows to all edges. Pour the mix into the mould when casting foundations. Carefully hammer the shuttering side, and insert a long thin object (e.g. reinforcement rod) into the mix to make it flow better and avoid air pockets. Mixing and casting must be performed non-stop until the mould is full. Suitable pumping equipment is recommended for large jobs.

Finish

We recommend applying **Mapecure 1** (curing membrane) immediately to all exposed surfaces, and to apply water over the next 3 - 4 days. Covering with plastic sheet is also effective, and is preferable when a finish will be applied to the surface.

CLEANING

Fresh mortar can be removed from tools and equipment using water. Hardened material must be removed mechanically.

MIX

1.8 - 1.9 kg mortar per litre mix.

PACKAGING

Nonset 400 is supplied in 25 kg sacks, 1200 kg big-bags and bulk.

STORAGE

Store in a dry place. Shelf life 12 months in unopened packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.no

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTIFICATION DATA

Class according to EN 1504-3:	R4
Type according to EN 1504-1:	CC
Consistency:	powder
Colour:	grey
Maximum size of aggregate:	4 mm
Chloride ions content – minimum requirements ≤ 0.05 % - according to EN 1015-17:	≤ 0.05 %

TECHNICAL INFORMATION FOR PRODUCT PREPARATION

Composition of the mix of the mix:	100 parts in weight of Nonset 400 with 14.8 % of water
Preparation of the mix:	according to EN 196-1

CHARACTERISTICS OF THE FRESH MIX (at +20°C and 50 % R.H.)

Colour of mix:	grey
Consistency of mix:	fluid
Density of mix:	2250 kg/m ³
Bleeding:	≤ 0.5 %
Expansion:	1 - 3 %

FINAL PERFORMANCE

According to curing defined in the test methods

Performance characteristics	Test method	Requirements according to EN 1504-3 R4	Product performance
Compressive strength: - 1 day - 7 days - 28 days	EN 12190	- - ≥ 45 N/mm ²	20 MPa 35 MPa 50 MPa
Flexural strength: - 1 day - 7 days - 28 days	EN 196-1	not requested	> 4 MPa > 7 MPa > 8 MPa
Modulus of elasticity in compression:	EN 13412	≥ 20 GPa	26 GPa
Adhesion to concrete by pull-off:	EN 1542	≥ 2.0 MPa	> 2.0 MPa
Capillary absorption:	EN 13057	≤ 0.5 kg/m ² ·h ^{0.5}	≤ 0.5 kg/m ² ·h ^{0.5}
Resistance to accelerated carbonation:	EN 13295	carbonation depth $\leq$ than reference concrete	test passed
Thermal compatibility – freeze-thaw cycles using de-icing salts (50 cycles):	EN 13687-1	≥ 2.0 MPa	> 2.0 MPa
Reaction to fire:	EN 13501-1	Euroclass	A1

NOTES: Preparation of samples: compaction according to EN 196-1.

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. The values declared in the TECHNICAL DATA table (typical values) were obtained in compliance with test methods and curing cycles defined in the technical standards referenced therein. Therefore, please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

Please refer to the current version of the technical data sheet, available from our web site www.mapei.no

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10035-6-2024-gb

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