

Expocrete [NA]

Expansive Agent for Shrinkage-Compensating Concrete



NORTH AMERICA [NA]

FOR PROFESSIONAL USE ONLY

DESCRIPTION

Expocrete [NA] is a powdered product added to the other ingredients of concrete in order to compensate for drying shrinkage. According to ACI 223 ("Guide for the Use of Shrinkage-Compensating Concrete"), *Expocrete* [NA] is a Type G expansive agent.

WHERE TO USE

For the production of shrinkage-compensating concrete and mortar

Some application examples

The main applications of *Expocrete* [NA] are as follows:

- Water tanks and cisterns
- Diaphragm walls
- Industrial floors and road paving
- Sewage treatment plants
- Concrete embankments
- Concrete tubes
- Tunnel linings

TECHNICAL CHARACTERISTICS

The expansion degree depends on the amount of the expansive agent used, the water-cement ratio, the aggregate size and type, and the cement type and content. Expansion is also affected by mixing time, temperature, curing method and time.

Test *Expocrete* [NA] before usage in order to confirm that the chosen dosage will generate the expected expansion.

The proper distribution of the reinforcements prevents the concrete from cracking. The minimum percentage of the reinforcements (that is, the rebars area) and the concrete ratio cannot be lower than 0.15%.

Concrete expansion caused by *Expocrete* [NA] generates tensile stresses in the steel and compressive stresses in the mix.

The “pre-stress” induced by the expansive agent can avoid the tensile stresses caused by shrinkage in the mix from exceeding the tensile strength of the material, thus preventing the concrete from cracking.

RECOMMENDATIONS

- Do not use *Expocrete* [NA] for concrete that is not reinforced.
- Do not use *Expocrete* [NA] for mortar cast on site without mesh reinforcement.
- Do not use *Expocrete* [NA] to make mortar for renders.
- Do not use *Expocrete* [NA] for consolidating slurry for injection.

APPLICATION PROCEDURE

Preparing the mix

Expocrete [NA] must be added in the mixer right before the other ingredients to ensure proper dispersion with the other ingredients.

The mixing time for concrete and mortars containing *Expocrete* [NA] is the same as for normal concrete and mortars.

Superplasticizing admixtures may be added when the cement, the aggregates and *Expocrete* [NA] have already been mixed with water. This makes the superplasticizer more effective.

DOSAGE

Expocrete [NA] can be used at a dosage of 2% to 8% by weight of cement (2 to 8 kg per 100 kg of cement).

The amount used must be decided according to the degree of expansion desired in the mortar or in the concrete and tested according to ACI 223 guidelines.

Different dosages from those suggested must be previously tested through concrete trials, in addition to consulting with MAPEI's Technical Services Department.

CURING AND EXPANSION

Expansion in concrete admixed with *Expocrete* [NA] can only occur if curing takes place in a moist environment. Complete expansion normally occurs within the first 2 days.

The longer the humid curing, the better the performance of concrete containing *Expocrete* [NA].

The surface of the pour should be frequently wetted with water or covered with plastic for the first 7 days. Otherwise, apply *Mapecrete*™ *Film*, an anti-evaporation compound in water emulsion, provided that the surface is not to be covered with rendering, paint, ceramic tiles, etc.

COMPATIBILITY WITH OTHER PRODUCTS

Expocrete [NA] is compatible with all MAPEI products for preparing quality concrete.

MAPEI's Technical Services Department is available to evaluate which admixture or admixture packages are most suitable for any specific need. For best results, each admixture must be dispensed separately into the concrete. Contact MAPEI's Technical Services Department for further advice.

PACKAGING

Expocrete [NA] is available in 20-kg bags and 1 000-kg super sacks.

STORAGE

Expocrete [NA] can be stored for 1 year in its original, sealed packaging in a dry place.

Technical Data

(typical values)

Physical state	Powder
Color	Light gray
Dry solids content	100%
Primary function	Expansive agent for shrinkage-compensating concrete and mortar
Chlorides	Absent

ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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