

Expanscrete

Expansive agent for shrinkage-compensating concrete

DESCRIPTION

Expanscrete is a powdered product added to the other ingredients of concrete in order to compensate drying shrinkage.

WHERE TO USE

For the production of shrinkage-compensating concrete and mortar.

Some application examples

The main applications of **Expanscrete** 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 **Expanscrete** before usage, in order to allow the above mentioned factors, as well as the reinforcements, to work.

The proper distribution of the reinforcements prevents the concrete from cracking.

The minimum percentage of the reinforcements, i.e. the rebars area and the concrete ratio cannot be lower than 0.15%.

Concrete expansion caused by **Expanscrete**, 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 **Expanscrete** for a concrete that is not reinforced.
- Do not use **Expanscrete** for mortar cast on site without mesh reinforcements.
- Do not use **Expanscrete** to make mortar for renders.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	light grey
Dry solids content (%):	100
Main action:	expansive agent for shrinkage-compensating concrete and mortar
Chlorides:	absent

- Do not use **Expancrete** for consolidating slurry for injection.

APPLICATION PROCEDURE

Preparing the mix

Expancrete must be added to the mixer at the same time as the other ingredients (cement, aggregates, water).

The mixing time for concrete and mortars containing **Expancrete** is the same as for normal concrete and mortars.

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

A good rule of thumb is to start adding the admixture after at least 70% of the water has already been poured into the mix.

DOSAGE

Expancrete can be used at a dosage of 5% to 8% by weight of cement (5 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.

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

Curing and expansion

Expansion in concrete admixed with **Expancrete** 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 **Expancrete**.

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

COMPATIBILITY WITH OTHER PRODUCTS

Expancrete is compatible with other MAPEI products for special concrete, especially with:

- air-entraining admixture from the **Mapear AE** range resistant to freeze/thaw cycles.
- **Mapecure PZ500** powder admixture based on micro-silica and superplasticiser for “top-quality” concrete with mechanical strength, impermeability and durability;
- fly-ash for concrete with artificial pozzolan;
- superplasticizers from the **Dynamon** and **Chronos** ranges;
- form-release agent from the **Mapecure Eco** and **DMA** ranges for easy release of formwork from concrete;
- curing compounds from the **Mapecure** range to avoid rapid evaporation of the

mix water from concrete cast without formwork (paving).

PACKAGING

Expancrete is available in 20 kg bags.

Also available in bulk quantities upon request.

STORAGE

Expancrete can be stored for 12 months in its original sealed packaging in a dry place.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND INSTALLATION

Expancrete is irritant for the skin and the respiratory system and may cause damages to eyes. During use wear protective gloves and goggles and take the usual precautions for handling chemical products. If the product comes in contact with the eyes or the skin wash immediately with plenty of water and seek medical attention. Wear suitable protection for the respiratory system when pouring off the product or in case of poor ventilation. For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

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.com

LEGAL NOTICE

The contents of this Technical Data Sheet (“TDS”) may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.

The most up-to-date TDS can be downloaded from our website www.mapei.com.

ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

All relevant references for the product are available upon request and from www.mapei.com



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