Expancrete is a powdered inorganic product to be added to the other ingredients of concrete to compensate for drying shrinkage.

**WHERE TO USE**
For the production of shrinkage-compensated concrete and mortar.

**Some application examples**
Expancrete is primarily used for:
- water tanks and cisterns;
- diaphragm walls;
- industrial floors and road paving;
- sewage treatment plants;
- concrete embankments;
- concrete tubes;
- tunnel linings.

**TECHNICAL CHARACTERISTICS**
The degree of expansion depends on the amount of expansive agent used, the water-cement ratio, the size and type of aggregate, and the type and content of the cement.

Expansion is also affected by the mixing time, temperature, and the method and length of curing.

As a rule, all factors which accelerate the rate of hydration of the cement mix cause a decrease in the degree of expansion. Part of this reaction occurs when the mix is still in the plastic state: for example, prolonged mixing time, high temperatures or high water-cement ratios cause a decrease in the degree of expansion.

For this reason, the amount of Expancrete to be used must first be tested, allowing for the above mentioned factors as well as the percentage of reinforcing called for in the concrete. The expansion must be countered by the proper distribution of reinforcing to prevent the concrete from cracking.

The minimum percentage of reinforcing, i.e. the ratio of rebars to the section of concrete cannot be lower than 0.15%.

The expansion of the concrete caused by Expancrete, when countered by the rebars, generates tensile stresses in the steel and compressive stresses in the mix.

The “pre-compression” induced by the expansive agent can prevent the tensile stresses caused by shrinkage in the mix from exceeding the tensile strength of the material, thus preventing the concrete from cracking.
### TECHNICAL DATA (typical values)

<table>
<thead>
<tr>
<th>PRODUCT IDENTITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance:</strong></td>
<td>powder</td>
</tr>
<tr>
<td><strong>Colour:</strong></td>
<td>light grey</td>
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<tr>
<td><strong>Dry solid content:</strong></td>
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<tr>
<td><strong>Specific action:</strong></td>
<td>expansive agent for shrinkage-compensated concrete and mortar</td>
</tr>
<tr>
<td><strong>Chlorides:</strong></td>
<td>absent</td>
</tr>
</tbody>
</table>

### RECOMMENDATIONS
- Do not use **Expancrete** for un-reinforced concrete.
- Do not use **Expancrete** for mortar cast on site without mesh reinforcing.
- Do not use **Expancrete** to make mortar for renders.
- Do not use **Expancrete** for consolidating slurry for injection.

### 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.

Naturally, the longer the moist cure, 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** 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:
- **Mapefluid PZ500** powder additive based on micro-silica and super-plasticiser for “top-quality” concrete with mechanical strength, impermeability and durability;
- **fly-ash** for concrete with artificial pozzolan;
- the super-plasticisers of the **Dynamon**, **Chronos** and **Mapefluid** Lines;
- **Form Release Agent DMA 1000**, **DMA 2000** and **DMA 3000** for easy release of formwork from concrete;
- **Mapecure E**, **Mapecure S** or **Mapecure CA** curing compounds

### APPLICATION PROCEDURE

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

Mixing time for concrete and mortar containing **Expancrete** is the same as for normal concrete and mortar.

Super-plasticising admixtures may be added as needed when the cement, the aggregate and the **Expancrete** have already been mixed with water. The super-plasticiser is then at its most effective.

A good rule of thumb is to start adding the admixture with an automatic dispenser 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 concrete.
to prevent rapid evaporation of the mix water from concrete cast without formwork (floors).

**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

**PACKAGING**
Expancrete is available in 20 kg bags.
Also available as bulk upon request.

**STORAGE**
Store Expancrete in its original sealed packaging in a dry place.

**SAFETY INSTRUCTIONS FOR THE PREPARATION AND INSTALLATION**
Expancrete is irritant in contact with the skin. In contact with the eyes, it could cause serious damage. Do not inhale the powder and avoid contact with the eyes and skin by using suitable protections. In case of contact with the skin or with the eyes, rinse immediately with plenty of water and seek medical advice.
For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.

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