

STABILMAC

Expansive agent for the production of shrinkage-compensating concrete

DESCRIPTION

Stabilmac is an inorganic product in powder form to be used in addition to the other components of concrete for producing shrinkage-compensating concrete. It is a special clinker, burnt at high temperature, rich in free lime and whose minor compounds are calcium silicates, aluminates, ferroaluminates and sulphates. When the calcium oxide comes in contact with the mix water it transforms into calcium hydroxide which causes an expansion. This expansion can be stored by an internal or an external restraint and can thus be used for compensating the subsequent shrinkage of the concrete.

The clinking temperature of **Stabilmac**, its particle size and distribution and the presence of the minor compounds coating the calcium oxide enable the hydration rate and therefore, the expansive process to be properly regulated. The suggested dosage rate of **Stabilmac** is 10 to 40 kg/m³ of concrete. It must be added together with the cement and aggregates and then water and other admixtures. It is compatible with admixtures of the **Glenium**, **Rheobuild**, **Pozzolith** and **Micro Air** line of products.

The use of superplasticisers is particularly recommended when using **Stabilmac** as they significantly reduce the water content and thus the potential shrinkage of the concrete to be compensated.

Curing compounds such as **Masterkure** and concrete floor hardeners such as **Mastertop 200** and **Mastertop 100** may be used in conjunction with **Stabilmac**.

RECOMMENDED FOR

The use of **Stabilmac** for shrinkage compensating concrete is recommended in the following applications:

Hydraulic Works

- Tanks
- Reservoirs and swimming-pools
- Water treatment plants
- Wharves and structures subject to sea-water attacks
- Jetties and blocks for sea works
- Containers for liquids and/or gases
- Prestressed circular structures
- Sewers, tunnels and canals
- Injections for sealing of concrete elements

Reinforced and Prestressed Concrete Structures

- Long structures
- Thin solid structures
- Prestressed concrete beams
- Annular beams for sports facilities
- Finke, Mohnier and Vierendel beams
- Floors for cold storage warehouses
- Bridge decks
- Filling of cavities
- Industrial floors
- Floor for sports centres (skating-rinks, tennis courts, sport tracks, etc)
- Weakly reinforced hyperstatic structures

- Boats in reinforced concrete
- Shields for nuclear plants
- Road and railway tunnel vaults
- Underwater and underground structure
- Foundations and underpinnings
- Hyperstatic arc-bridges
- Box culverts, domes and thin structures in reinforced concrete
- Roofs and covers in architectural concrete

Prefabrications

- Repairs of vertical structures and loaded pillar
- Additional members to sustain existing structures
- Rock consolidation

NOT RECOMMENDED FOR

Stabilmac must not be used in those applications where a highly precise control of dimensional variations of concrete, mortar or grout is required, as even a small change in the dosage of the expansive agent could impair the success of the work. Typical examples of such are applications are machinery grouting, structural repairs of deteriorated surfaces and prefabricated joints.

Moreover, in these cases, bleed water must be eliminated completely. As in the case of grouting operations, for example, the water will be trapped beneath the metallic bedplate of the machine.

For all these applications, we recommend the use of ready-to-use **Emaco** products, whose components have been proportioned adequately and subjected to accurate quality control tests.

Stabilmac must not be used in non-reinforced or non-confined concretes. The use of **Flowcable** ready-to-use product is recommended in the filling of post-tensioned cable ducts.

CURING AND EXPANSION

The main advantage of **Stabilmac** with respect to other expansive agents whose mechanism of action is based on the formation of ettringite is the shorter curing time required to guarantee expansion. Any expansive agent can cause a volume increase only if concrete is kept in a damp ambient which supplies the water necessary for the reaction which causes expansion.

The reaction which leads to the formation of ettringite needs approximately 7 days of curing in a humid atmosphere to reach maximum expansion while, using **Stabilmac**, 1 day of curing is sufficient to obtain almost complete expansion.

Obviously, the longer the moist curing period is, the better is the quality of concrete containing **Stabilmac**.

Unlike other expansive agents, the expansion in concrete containing **Stabilmac** is not hindered for the lack of curing, but it is good practice to damp cure the concrete for at least 7 days or to protect the concrete with a curing compound such as **Masterkure**.



The Chemical Company

STABILMAC

PACKAGING

Stabilmac is available in 20kg bags.

STORAGE

Store the product in a dry and sheltered place. Do not use the product if bag is damaged.

PRECAUTIONS

It is recommended that gloves be worn when handling the product.

All BASF Construction Chemicals Australia & New Zealand data sheets are updated on a regular basis, it is the user's responsibility to obtain the most recent issue **ASTabilmac/2/1106**

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF Construction Chemicals** publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by **BASF Construction Chemicals** either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not **BASF Construction Chemicals**, are responsible for carrying out procedures appropriate to a specific application.

BASF Construction Chemicals Australia Pty Ltd	Newcastle	(02) 4961 3819	Adelaide	(08) 8139 7500
Incorporated in NSW A.B.N. 46 000 450 288	Canberra	(02) 6280 6010	Perth	(08) 9366 2600
Head Office: 11 Stanton Road Seven Hills, NSW 2147	Brisbane	(07) 3633 9900	Darwin	(08) 8984 3269
Ph. (02) 8811 4200	Townsville	(07) 4774 7344	Kalgoorlie	0417 772 355
	Melbourne	(03) 9549 0300		

BASF Construction Chemicals New Zealand Ltd Head Office: 45 William Pickering Drive, Albany, Auckland Ph: (09) 414 7233
BASF WEB SITES www.basf-cc.com.au www.basf-cc.co.nz www.basf-ugc.com