

DYNAMON NRG 100

**Superplasticizer,
hardening accelerating
admixture for precast
concrete, based
on modified acrylic
polymer**

DESCRIPTION

Dynamon NRG 100 is a modified acrylic polymer admixture specially designed for the precast concrete industry, an evolution of the MAPEI **Dynamon SP** system.

The **Dynamon SP** system is based on DPP (*Designed Performance Polymer*) technology, a chemical process that can model the admixture's properties in relation to the specific performance required for the concrete. This process is developed by means of a complete design and production of monomers (an exclusive MAPEI know-how).

WHERE TO USE

Concrete with **Dynamon NRG 100** has a high level of workability (consistency class S4 or S5, according to EN 206-1), and is consequently easy to apply when fresh. At the same time it provides excellent mechanical performances when hardened.

Dynamon NRG 100 is especially suitable for precast concrete and wherever there is the need for a strong water reduction and relatively high mechanical strengths at early age, in different consistency classes.

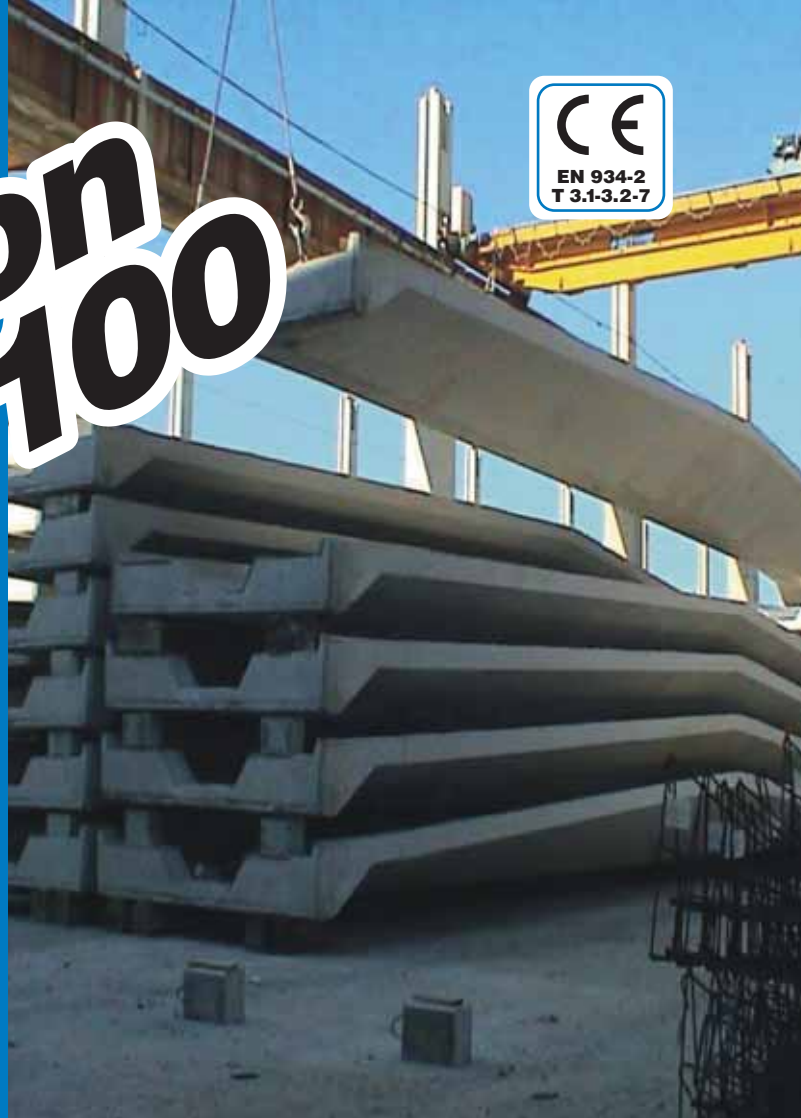
Dynamon NRG 100 allows the elimination of accelerated steam curing treatment, even at very low external temperatures.

Its characteristics make it particularly suitable for manufacturing self-compacting concrete, by ensuring high workability and the accelerated development of mechanical strength.

For self-compacting concrete **Dynamon NRG 100** can be used together with **Viscofluid SCC** or **Viscofluid SCC/10**, viscosity modifying admixtures, in order to avoid the risk of segregation and ensure the mixture's homogeneity even with a very high slump-flow.

The main applications of **Dynamon NRG 100** for concrete are as follows:

- to produce concrete with a high level of workability for manufacturing precast reinforced beams with a minimum compressive strength, R_{ckj} , to cut the prestressed tendons, equal to 35 N/mm²;
- to produce concrete with a high level of workability for manufacturing prestressed reinforced concrete roofing slabs with an excellent appearance and a minimum compressive strength, R_{ckj} , to cut the prestressed tendons, equal to 35 N/mm²;
- to produce concrete with a high level of workability for manufacturing cladding panels, having an excellent visual appearance;



TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Appearance:	liquid
Colour:	amber
Density according to ISO 758 (g/cm³):	1.05 ± 0.02 at +20°C
Dry content according to EN 480-8 (%):	20.8 ± 1
Specific action:	increase workability and/or reduction of mixing water and very strong acceleration of mechanical strengths at early age and at low temperatures
Classification according to EN 934-2:	high range water reducing, hardening accelerating, superplasticizer, tables 3.1, 3.2 and 7
Chlorides soluble in water according to EN 480-10 (%):	< 0.1 (absent according to EN 934-2)
Alkali content (Na₂O equivalent) according to EN 480-12 (%):	< 2.0
pH according to ISO 4316:	6.5 ± 1
Storage:	12 months, protect from frost
Hazard classification according to EC 1999/45:	none. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
Customs class:	3824 40 00

- self-compacting concrete for precasting. Together with the **Viscofluid SCC** or **Viscofluid SCC/10**, viscosity modifying admixtures, **Dynamon NRG 100** is suitable for manufacturing self-compacting concrete which can be poured without vibration. Its characteristics of fluidity and resistance to segregation are also suitable for a fast casting procedure.

TECHNICAL CHARACTERISTICS

Dynamon NRG 100 consists of a water solution containing 20.8% of new generation acrylic polymers. The polymers efficiently disperse the cement grains and facilitate a fast temperature increase within the concrete.

It is possible to use the dispersing action of **Dynamon NRG 100** in the following three advantageous ways:

- a) to reduce the amount of water at the same workability;

- b) to increase workability at the same water-cement ratio;

- c) to reduce both water and cement at the same water-cement ratio and the same workability.

APPLICATION PROCEDURE

Dynamon NRG 100 develops maximum dispersing action when added after the other mixture ingredients (cement, aggregates, mineral addition or filler and at least 80% of the mixing water) and before **Viscofluid SCC** or **Viscofluid SCC/10**.

COMPATIBILITY WITH OTHER PRODUCTS

Dynamon NRG 100 admixture is compatible with other products for preparing special concretes, especially with:

- **Dynamon HAA**, hardening accelerating chloride free admixture for reaching very high mechanical strengths at early age;

- **Viscofluid SCC** or **Viscofluid SCC/10**, viscosity modifying admixtures for manufacturing self-compacting concretes;
- **Mapeplast SF**, silica fume based powder admixture for manufacturing high quality concrete (strength, impermeability, durability);
- **Expacrete**, expansive agent for manufacturing shrinkage compensated concrete;
- fly ash for manufacturing standard and self-compacting concrete;
- different types of limestone fillers for manufacturing self-compacting concrete;
- **DMA 1000, DMA 2000** or **DMA 3000 Form-Release Agents**, for releasing concrete from formworks;
- **Mapecure E** and **Mapecure S** curing emulsions to protect form-released concrete structures from rapid water evaporation.

Our Technical Assistance department is available to evaluate which admixture is the most suitable to manufacture freeze/thaw cycles resistant concretes, depending on the type of cement used.

DOSAGE

Dosage by volume

For traditional systems - from 0.5 to 1.5 l per 100 kg of cement.

PACKAGING

Dynamon NRG 100 is available in bulk, 200 l drums, 1000 l tanks.

STORAGE

Store for 12 months in sealed containers and protect from frost.

Exposure to direct sunlight can provoke variations of the colour tone without altering in any way the performances of the product.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Dynamon NRG 100 is not considered as dangerous according to the European regulation regarding the classification of preparations. It is however recommended to use gloves, eyes protection and to take the usual precaution taken when handling chemical products are recommended. The Safety Data Sheet is available upon request for professional users.

FOR PROFESSIONALS.

WARNING

Although the technical details and recommendations contained in this product report 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 any case the user alone is fully responsible for any consequences deriving from the use of the product.

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

**Dynamon
NRG 100**



740-6-2007

Any reproduction of texts, photos and illustrations published here is prohibited and subject to prosecution

(GB) A.G. BETA