

Dynamon SP5

Superplasticizer based on modified acrylic polymer for precast concrete with low water/cement ratio and high mechanical strengths at early age in winter weather

DESCRIPTION

Dynamon SP5 is an admixture based on modified acrylic polymer specially designed for the precast concrete industry, belonging to the new MAPEI **Dynamon SP** system.

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

WHERE TO USE

Concretes manufactured with **Dynamon SP5** have a high level of workability (consistency class S4 or S5, according to EN 206-1), and are consequently easy to apply when fresh. At the same time they offer excellent mechanical performances when hardened.

Dynamon SP5 is especially suitable for the precast concrete industry and wherever there is the need for a strong water reduction, along with considerably high development of mechanical strengths at early ages, even at very low external temperatures.

As a matter of fact it is at the lowest temperatures (< 10°C) that **Dynamon SP5** promotes the mechanical strength increase therefore a reduced use of steam curing even during the winter months.

The advantages of this news consists in the reduction of the steam costs and in an improved use of the concrete caused by the elimination of thermal treatment.

Its performances make it particularly suitable for manufacturing self-compacting concretes. In this case, with **Dynamon SP5** it is necessary to use **Viscofluid SCC** or **Viscofluid SCC/10**, viscosity modifying admixtures, in order to avoid the risk of segregation and ensure the mixture homogeneity even with very high slump-flow.

The main applications of **Dynamon SP5** for concrete are as follows:

- for manufacturing prestressed reinforced concrete elements with a high level of workability and minimum compressive strength to cut the prestressed tendons, equal to 35 N/mm²;
- self-compacting concrete for precasting. Together with **Viscofluid SCC** or **Viscofluid SCC/10** viscosity modifying admixtures, **Dynamon SP5** is suitable for manufacturing self-compacting concrete which can be poured without vibrations. Its characteristics of fluidity and resistance to segregation are also suitable for a fast casting procedure.

TECHNICAL CHARACTERISTICS

Dynamon SP5 consists of a water solution

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	liquid
Colour:	amber
Density according to ISO 785 (g/cm³):	1.08 ± 0.02 at +20°C
Dry content according to EN 480-8 (%):	27.7 ± 1.4
Specific action:	increase workability and/or reduction of mixing water and very strong acceleration of mechanical strengths at early age and at temperatures <10°C
Classification according to EN 934-2:	high range water reducing, hardening accelerating superplasticizer according to 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 (%):	< 2.5
Hazard classification according to 99/45/CE:	none. Before using refer to the "Safety instructions for the preparation and application" paragraph and the information on the packing and Safety Data Sheet
Customs class:	3824 40 00

containing 27.7% acrylic polymers (with no formaldehyde) that can efficiently disperse the cement grains.

It is possible to use the dispersing action of **Dynamon SP5** 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 SP5 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 SP5 is compatible with other products for preparing special concretes, especially with:

- **Dynamon HAA**, hardening accelerating admixture for reaching very high mechanical strengths at early age;
- **Viscofluid SCC** or **Viscofluid SCC/10**, viscosity modifying admixtures for manufacturing self-compacting concrete;

- **Mapeplast SF**, silica fume based powder admixture for manufacturing “top-quality” concrete (strength, impermeability, durability);
- **Expancrete**, expansive agent for manufacturing shrinkage compensated concrete;
- different types of limestone fillers for manufacturing self-compacting concrete and any other type of concrete that requires these fillers;
- **DMA 1000, DMA 2000 or DMA 3000 Form Release Agent** for releasing concrete from formworks;
- **Mapecure E** and **Mapecure S** curing emulsions to protect form-released concrete structures from rapid water evaporation (floorings).

DOSAGE

Dosage by volume

For traditional mixtures - from 0.8 to 1.6 l per 100 kg of cement.

For self-compacting concrete - from 0.8 to 1.6 l per 100 kg of fine particles (max. 0.1 mm diameter).

PACKAGING

Dynamon SP5 is available in bulk, 200 l drums, 1000 l tanks.

STORAGE

Store 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 THE PREPARATION AND APPLICATION

Dynamon SP5 is not hazardous according to the ruling norms on the classification of mixtures. It is recommended to take the usual precautions for handling chemical products. The Safety Data Sheet is available on request for professional users.

FOR PROFESSIONALS.

WARNING

While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

**All relevant references
of the product are available
upon request**



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