

Dynamon SP1

Superplasticizer based on acrylic polymer for precast concrete

DESCRIPTION OF PRODUCT

Dynamon SP1 is an admixture based on modified acrylic polymer specially designed for the precast concrete industry, part of the MAPEI **Dynamon SP** system.

WHERE TO USE

Concrete with **Dynamon SP1** 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 offers excellent mechanical performances when hardened.

Dynamon SP1 is especially suitable for precast concrete and wherever there is the need for a strong water reduction, along with a relatively high acceleration of mechanical strengths at an early age in different consistency classes and at curing temperatures above +15°C or with accelerated steam curing treatment. Its performance makes it particularly suitable for manufacturing self-compacting concrete since **Dynamon SP1** can ensure high workability. At the same time it does not significantly slow down the development of mechanical strengths at early age. The main applications of **Dynamon SP1** are the production of concrete for:

- manufacturing pre-stressed reinforced beams with a high level of workability and a minimum compressive strength, R_{ckj} , to cut the prestressed tendons, equal to 35 N/mm²;
- manufacturing pre-stressed reinforced concrete roofing slabs, with a high level of workability, and a minimum R_{ckj} , to cut the prestressed tendons, equal to 35 N/mm² and with an excellent appearance;
- manufacturing cladding panels with a high level of workability, a very refined surface and an excellent appearance;

- self-compacting concrete for precasting. Together with **Viscofluid SCC/10** or **Viscostar 3K**, viscosity modifying admixtures, **Dynamon SP1** 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 SP1 consists of a water solution containing acrylic polymers (with no formaldehyde). The polymers can efficiently disperse the cement grains.

APPLICATION PROCEDURE

Dynamon SP1 develops maximum dispersing action when added after other mixture ingredients (cement, aggregates, mineral additions or filler and at least 80% of the mixing water) and before **Viscofluid SCC/10** or **Viscostar 3K**.

COMPATIBILITY WITH OTHER PRODUCTS

Dynamon SP1 admixture is compatible with other products for preparing special concretes, especially with:

- hardening accelerating chloride-free admixtures from the **Mapefast** range for reaching very high mechanical strengths at early ages;
- air entraining admixtures from the **Mapeair AE** range used in the production of concrete resistant to freeze/thaw cycles;
- **Viscofluid SCC/10** or **Viscostar 3K**, viscosity modifying admixtures for manufacturing self-compacting concretes;
- **Mapeplast SF**, silica fume based powder admixture for manufacturing “top-quality” concrete (strength, impermeability, durability);

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	liquid
Colour:	amber
Density according to ISO 758 (g/m ³):	1.08 ± 0.02 at +20°C
Main action:	increased workability and/or reduction of mixing water and rapid development of mechanical strengths at early ages and at T > 15°C
Classification according to EN 934-2:	high range water reducing, hardening accelerating, superplasticizer, tables 3.1, 3.2 and 7
Classification according to ASTM C494:	type F and type C
Classification according to ASTM C1017:	type I
Chlorides soluble in water according to EN 480-10 (%):	< 0.1 (absent according to EN 934-2)
Alkali content (Na ₂ O equivalent) according to EN 480-12 (%):	< 3.0
pH content according to ISO 4316:	6.5 ± 1.0

- **Expancrete**, 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 and any other type of concrete that require these fillers;
- **DMA** and **Mapeform Eco** form-release agents, for releasing concrete from formworks;
- curing compounds from **Mapecure** range to protect form-released concrete structures from rapid mixing water evaporation (floorings).

Our technical services 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.

CONSUMPTION

Dosage by volume:

from 0.6 to 1.2 l per 100 kg of cement.

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

PACKAGING

Dynamon SP1 is available in bulk, 200 l drums, 1000 l tanks

STORAGE

Dynamon SP1 may be stored 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 THE PREPARATION AND APPLICATION

Dynamon SP1 is not considered dangerous according to the European regulation regarding the classification of mixtures. It is recommended to wear gloves and goggles and to take the usual precautions taken for the handling of chemicals. 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

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



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