

# Dynamon SX 18

## Superplasticizing hardening accelerator for concrete

### DESCRIPTION

**Dynamon SX 18** is a liquid superplasticizing admixture for high quality concrete (waterproof and durable) with an accelerating effect on the development of its mechanical strength.

**Dynamon SX 18** is a completely formaldehyde-free admixture for concrete based on non-sulphonated acrylic polymers.

### WHERE TO USE

Because of its high workability (consistency classes S4 or S5 according to EN 206-1) and reduced amount of mixing water, concrete prepared with **Dynamon SX 18** is easy to place in the fresh state and has high mechanical strength when hardened.

**Dynamon SX 18** is especially recommended for all applications which require a great reduction of mixing water.

**Dynamon SX 18** is mainly used for:

- waterproof and durable concrete with exposure class in compliance with EN 206-1;
- ready-mixed concrete with high mechanical performance and good acceleration in the development of mechanical strength;
- concrete that is pumpable.

### Some application examples

Because of its high reduction of mixing water and its capacity of accelerating mechanical strength, **Dynamon SX 18** is a superplasticizer especially recommended for:

- ready-mixed concrete for waterproof structures in the presence of aggressive agents, including chemicals (sewage treatment tanks, digesters, reservoirs, canals, tunnels, etc.);
- ready-mixed concrete in winter climates;
- pumped concrete.

### TECHNICAL CHARACTERISTICS

**Dynamon SX 18** is a water solution of acrylic polymers that can effectively disperse cement granules with secondary components that significantly improve the cohesion and the pumpability of concrete.

The dispersing action of **Dynamon SX 18** can be used to great advantage in three ways:

- a) to reduce mixing water compared with that of concrete with no admixture for the same workability with a consequential increase in mechanical strength, reduced permeability to water and an increase in durability;

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

Appearance:	liquid
Colour:	pearl
Density according to ISO 758 (g/cm <sup>3</sup> ):	1.18 ± 0.03 at +20°C
Main action:	reduction of water with accelerating action
Secondary action:	improved pumping
Classification according to EN 934-2:	high range water reducing, superplasticiser, hardening accelerator, according to tables 3.1, 3.2 and 7
Classification according to ASTM C494:	type F and type C
Chlorides soluble in water according to EN 480-10 (%):	< 0.1 (absent according to EN 934-2)
Alkali content (Na <sub>2</sub> O equivalent) according to EN 480-12 (%):	< 10
pH content according to ISO 4316:	5.5 ± 1.5

b) to improve workability compared with that of concrete with no admixture, with good performance characteristics (mechanical strength, waterproofing, durability) but otherwise is difficult to place (dry or plastic concrete);

c) to reduce both water and cement (in equal proportions) so that the water/cement ratio and concrete performance and workability are not changed in comparison with those of standard concrete without admixture: in this case there are technical advantages such as a reduction in drying shrinkage, creep and thermal stress caused by the heat developed during cement hydration. This method of use is especially recommended for concrete with a high cement factor (> 350 kg/m<sup>3</sup>).

Dynamon SX 18's special action can therefore be adjusted to obtain the required results (increased strength, improved workability, reduced cement factor) by varying the admixture dosage between 0.8-2% by weight of cement. The greater the dosage, the greater the effect.

Retention of workability also increases with the amount of admixture used, as does the retarding effect on setting.

### APPLICATION PROCEDURE

Dynamon SX 18 develops maximum dispersing action when added to the concrete after the other components (cement, aggregates, minerals or fillers and at least 80% of mixing water).

### COMPATIBILITY WITH OTHER PRODUCTS

Dynamon SX 18 admixture is compatible with other MAPEI products for producing special concrete, especially with:

- hardening accelerating admixtures from the **Mapefast** range to achieve very high mechanical strength, including after short curing cycles;
- aerating agents from the **Mapesair** range used in the production of concrete resistant to freeze/thaw cycles;
- **Mapelast SF**, micro-silica powder admixture for producing top quality concrete with strength, durability and impermeability;

- **Mapecure SRA 25** shrinkage-reducing admixture and **Expacrete** expansive agent used in the production of shrinkage-compensating concrete;
- **Mapeplast PZ300** powdered admixture used in the production of concrete with artificial pozzolan and self-compacting concrete;
- form-release compounds from the **Mapeform Eco** and **DMA** ranges used to strip form-work from concrete;
- curing agents from the **Mapecure** range to protect concrete structures without form-work against quick evaporation of the mixing water (floors).

### CONSUMPTION

#### Dose by volume:

from 0.8 to 2 l per 100 kg of cement. Different dosage rates, can be recommended by the MAPEI Technical Services Department according to the type of use.

### PACKAGING

**Dynamon SX 18** is supplied in 200 l drums and 1000 l tanks. Bulk quantities are also available upon request.

### STORAGE

Store **Dynamon SX 18** in sealed containers and protect from frost. Exposure to direct sunlight can provoke variations of the colour tone without altering the performance of the product.

### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Dynamon SX 18** is irritant. It may cause

eye damage. During application it is recommended to use protective gloves and goggles and to take the usual precautions for handling chemical products. In case of contact with 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 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](http://www.mapei.com)**

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**

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