

Dynamon SX-A170

Superplasticiser

PRODUCT DESCRIPTION

Dynamon SX-A170 is a highly effective superplasticiser, based on modified acrylic polymers.

The product is included in the **Dynamon System**, which is based on DPP technology (DPP = Designed Performance Polymers) developed by Mapei, which customises the admixture's properties for various concrete-related purposes.

The **Dynamon System** was originally developed from Mapei's own formulation and production of monomers.

AREAS OF APPLICATION

Dynamon SX-A170 is custom made for production of concrete with Swedish cement. **Dynamon SX-A170** is used to achieve a looser consistency with improved workability and/or a reduction in the volume of water demand.

Some special uses include:

- Concrete subject to strict requirements for durability, water resistance and aggressive environments.
- Concrete subject to strict requirements for workability (consistency classes S4 and S5, according to SS-EN 206-1).
- Self-compacting concrete (SCC) with requirements for long open time. If required, SCC can be stabilised using a viscosity-enhancing admixtures, e.g. **Viscofluid SCC/10** or **Viscostar 3K**.

Thanks to its effectiveness and high slump retention, **Dynamon SX-A170** does not normally require any

re-dosing at the construction site.

TECHNICAL CHARACTERISTICS

Dynamon SX-A170 is an aqueous solution of active acrylic polymers that very efficiently disperses clusters of cement grains.

This effect can in principle be used in the following three ways:

1. To reduce the amount of added water, yet retain the same workability. Lower water to cement ratio means higher mechanical strength, reduced permeability and increased durability.
2. To increase workability compared to concrete with equal water to cement ratio. With the same mechanical strength the casting is facilitated.
3. To reduce both the amount of water and the amount of cement without changing the concrete's mechanical strength. In this way it is possible to reduce the total cost of the concrete (less cement), reduce the concrete's shrinkage potential for (less water) and reduce the possibility of cracks due to temperature gradients (less hydration heat). Especially with concretes that normally have high amounts of cement, this effect is very important.

COMPATIBILITY WITH OTHER PRODUCTS

Dynamon SX-A170 can be combined with other Mapei admixtures, such as **Mapefast** accelerators and **Mapetard** set retarders.

Dynamon SX-A170 is compatible with **Mapeair** air-entraining agents to frost resistant concrete.

Dynamon SX-A170

The choice of air entrainer is based on other constituents i.e. cement and aggregates. Please note that pre-testing must always be done with the actual material and concrete composition to ensure that the correct effect is achieved.

DOSAGE

Add **Dynamon SX-A170** to obtain the prescribed properties (i.e. strength, durability, workability, cement reduction),

Dynamon SX-A170 is added in dosages between 0.3 and 2.0 % of cement weight. Increased dosages will also increase the slump retention, i.e. the time to be able to work with the concrete.

Higher dosages and lower temperatures will delay the setting of the concrete. To obtain correct knowledge, tests with actual parameters are advisable, especially before larger pours.

As opposed to traditional superplasticisers based on melamines or naphtalenes, the maximum effect of **Dynamon SX-A170** is obtained regardless of when it is added during the mixing procedure, but the time of addition can influence the mixing time. If at least 80 % of the mixing water is added before **Dynamon SX-A170** the required mixing time will generally be shortest. It is nevertheless important to perform using the actual mixing equipment.

Dynamon SX-A170 can also be added directly into the truck on site. The concrete should then be mixed at full speed at least for one minute per m³ of concrete, and never shorter than 5 minutes.

PACKAGING

Dynamon SX-A170 is available in 25 liter cans, 200 liter drums, 1000 liter IBC tanks and in tank.

STORAGE

The product must be stored at temperatures between +8 and +35°C, and will retain its properties for at least one year if stored unopened in its original packaging. If the product is exposed to direct sunlight, colour variation may occur, but this will not affect the technical properties of the product.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.no

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 web site www.mapei.no

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation. The most up-to-date TDS can be downloaded from our website www.mapei.no

ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

All relevant references for the product are available upon request and from www.mapei.no

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	liquid
Colour:	yellowish brown *
Viscosity (Brookfield Viscometer DV-1, LV1, 100 rpm at 20 ± 2°C):	low viscosity; < 20 mPa·S
Dry content (%):	21 ± 1
Density (g/cm³):	1.06 ± 0.02
pH:	6.5 ± 1
Chloride content, (%):	< 0.05
Alkali content (Na₂O-equivalents) (%):	< 2.0

* Colour variation may occur if the product is exposed to direct sunlight; this does not affect the product's performance.

EXAMPLE OF PROPERTIES (Pre-testing with actual constituents required)

As a liquid superplasticiser (consistency-improver)

Cement volume (kg/m³) (Cementa Byggcement):	320
Dynamon SX-A170 (in % by weight of cement):	0.7
w/c-ratio:	0.55
Air content:	2.4
Workability, mm:	
- slump value, 5 min	230
- slump value, 60 min	220
Compressive strength (N/mm²):	
- 1 day	19
- 28 days	45