

# Mapeplast N11

## Plasticiser and water resisting admixture for concrete with low loss of workability

### DESCRIPTION

**Mapeplast N11** is a liquid plasticizing and water resistant admixture for concrete.

### WHERE TO USE

**Mapeplast N11** is especially recommended for applications which require a retarded rate of cement hydration at early ages. Its principal uses are for:

- ready-mix concrete (especially in hot weather);
- pumped concrete;
- mass concrete;
- water resistant concrete.

### Some application examples

In addition to its plasticizing effect, **Mapeplast N11** has a slight retarding action on the hydration of cement and is therefore especially recommended for:

- ready-mix quality concrete for structures with a compressive strength higher than 20 MPa;
- ready-mix concrete for watertight structures (with a water/cement ratio no higher than 0.55): purification plants, reservoirs, canals, tunnels, etc;
- mass pours in concrete elements where it is necessary to reduce thermal peaks caused by the heat generated in cement hydration: dams, foundations-mats for high-rise buildings, etc.

### TECHNICAL CHARACTERISTICS

**Mapeplast N11** is a water solution of active polymers which disperse cement granules (see "Technical Data" table).

**Mapeplast N11's** dispersing action can be used in three ways:

- A)** to reduce mixing water only (from 5% to 10%) compared with that of plain concrete with the same workability, for increased mechanical strength, reduced permeability to water and improved durability (see "Concrete Performance" table);
- B)** to improve workability (from 50 mm to 100 mm of slump) compared with that of plain concrete with good performance (in strength, impermeability and durability) that is otherwise difficult to place (stiff or plastic concrete);
- C)** to reduce both water and cement in equal proportions (from 5% to 10%) so that the water/cement ratio and concrete performance are not changed in comparison with those of plain concrete without admixture: in this case, there are both economic advantages (the cost of the admixture is lower than the saving on cement), and technical improvements, due to reduction in drying shrinkage, creep and thermal stress caused by the heat developed during cement hydration. This method is especially recommended for concrete with a high cement factor ( $> 350 \text{ kg/m}^3$ ).

Fig. 1 illustrates three ways of using **Mapeplast N11**. The admixture's special action can be adjusted to

achieve the results required (increased strength, improved workability, reduced cement factor) by varying the dosage between 0.2% and 1% by weight of cement: the greater the dosage, the greater the effect. Retention of workability and set-retardation increase as the admixture dosage is increased.

## APPLICATION PROCEDURE

It is preferable to add **Mapeplast N11** into the mixer after all the other ingredients (water, cement, aggregates). The action of the admixture is more effective when added later.

**Mapeplast N11** is most effective when cement and aggregate particles are already wet, and least effective when the admixture is mixed with dry solids, especially if porous, which partially absorb it. It is advisable to begin adding the admixture with an automatic dispenser when at least half the water required for the mix has been introduced into the mixer.

## Compatibility with other products

**Mapeplast N11** is compatible with other products for producing special concrete, and especially with:

- **Mapeair AE** range air-entraining agents for producing concrete resistant to freeze-thaw cycles;
- fly ash for producing concrete with artificial pozzolan;
- **Mapeform Eco** and **DMA** range form-release agents for stripping concrete formwork;
- **Mapecure** range, curing compounds for preventing rapid evaporation of mix water in concrete flatwork (e.g. floors).

## DOSAGE

### Dosage by volume:

from 0.2 to 1 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

**Mapeplast N11** is available in 25 kg cans, 200 l drums, 1,000 l tanks and in bulk.

## STORAGE

12 months if stored in closed containers; protect from frost and direct sunlight.

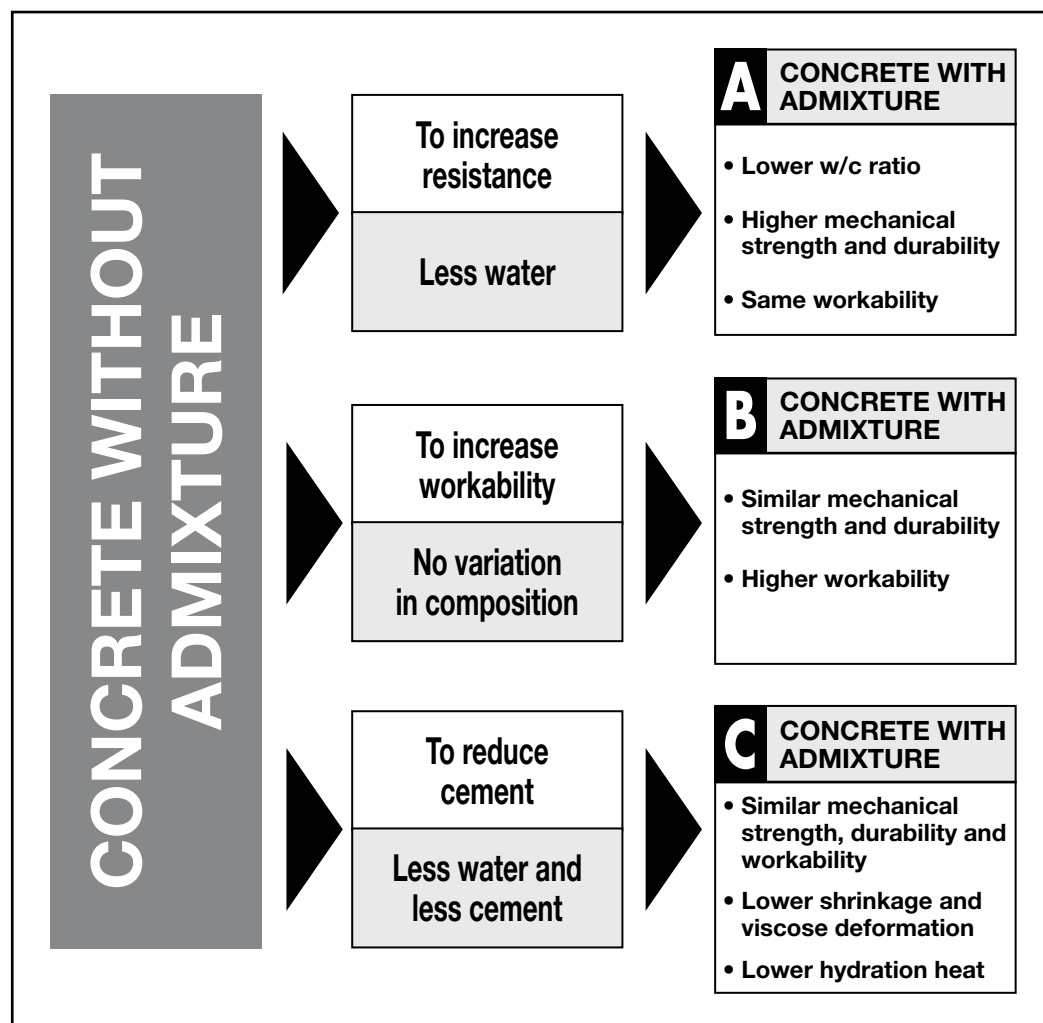


Fig. 1 - Three different ways to take advantage of Mapeplast 11 admixture

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

Consistency:	liquid
Colour:	brown
Density according to ISO 758 (g/m <sup>3</sup> ):	1.18 ± 0.03 at +20°C
Principal action:	reduction of water and/or increase of workability
Secondary action:	delay in the initial hydration, conservation of workability
Classification according to EN 934-2:	water reducing, plasticizer, water resisting admixture, tables 2 and 9
Classification according to ASTM C494:	type A
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 (%):	< 5.0

### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapeplast N11** 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](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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**766-3-2014**

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