

Superplasticising admixture

AREA OF USE

Mapefluid® RN-15 is a highly effective superplasticising admixture based on acrylic polymers.

The product contains no formaldehyde.

Mapefluid® RN-15 can be used in all kinds of concrete to increase workability and/ or to reduce the water to cement ratio.

Some specific areas of use are:

- Waterproof concrete requiring high or very high strength, with an exacting specification for durability in aggressive environments.
- Prestressed concrete elements with accelerated hardening.
- Self-compacting concrete requiring a long time to first set, specially for long transports or warm weather.
- **Mapefluid® RN-15** can be used in concrete floors to improve workability. Large doses can retard the concrete slightly.
- **Mapefluid® RN-15** is admirably suited to producing frost-resistant concrete.

Mapefluid® RN-15 is different to traditional melamine and naphthalene based admixtures, partly because you need a much lower dosage to achieve the same effect. The timing of its addition is less important. As concrete that has had **Mapefluid® RN-15** added to it has a longer pot life and less workability loss than traditional superplasticising admixtures, the concrete can be finished at the batching plant, and "refreshing" with superplasticizing products is less necessary. There is nevertheless no problem with putting the agent directly into the automixer. Generally you need a slightly longer mixing time with the new polymers than for traditional admixtures.

PROPERTIES

Mapefluid® RN-15 is a formaldehyde-free water solution of active polymers that effectively break up cement clusters. This dispersing effect can in principle be used in three ways:

1. to reduce the quantity of water added, whilst maintaining the concrete's workability, thereby increasing the strength, density and durability of the concrete (lower water/ cement ratio).
2. to improve the workability compared to normal concrete that otherwise has good properties (strength, water tightness, durability), but which is difficult to pour (same water/ cement ratio).
3. to reduce both the water and cement quantities so that the water/ cement ratio (the relationship by weight between water and total cementitious material) remains the same.

The concrete's inherent good qualities (strength, density, durability) can thereby be retained. There are many benefits: lower costs (less cement), less risk of shrinkage (less water),

less risk of temperature stress on account of less heat generation during hydration (less cement). This last method is particularly recommended for concretes with a high cement content. (> 350 kg/m³).

PLEASE NOTE

Mapefluid® RN-15 can be combined with other admixtures, e.g. setting or hardening admixtures. The effect of other water reducing admixtures is diminished if **Mapefluid® RN-15** is used. It is therefore neither usual nor necessary to use other plasticising or superplasticising substances when using **Mapefluid® RN-15**.

PACKAGING

Mapefluid® RN-15 is supplied in 25 litre

DOSAGE

Mapefluid® RN-15's properties can be adjusted to achieve the required result (increased strength, improved workability, less cement) by varying the dosage between 0.4 and 2.0 % of the weight of the cement. Increasing the dosage also increases the pot life



Produsent:

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(the time that the concrete is workable) and the setting time.
Higher dosages and lower concrete temperatures retard the concrete. We always recommend trial pours with the relevant parameters. In contrast to conventional melamine or naphthalene based admixtures, which are more effective the later they are added, **Mapefluid® RN-15** produces the maximum effect regardless of when it is added (with the water or after the water has been added). **Mapefluid® RN-15** can also be put directly into the automixer at construction sites. The concrete should in that case be mixed for at least 5 minutes, plus 1 minute per m³.

WARNING

Although the technical details and recommendations contained in this product report 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 longterm practical applications; 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.

All deliveries from Rescon Mapei are made in accordance with the sale and delivery conditions applicable at the time, and these conditions are taken to be accepted on placement of an order.

TECHNICAL DATA	
Product specifications:	
Consistency:	Liquid
Colour:	Yellowish
Viscosity:	Low; < 20 cP
Dry solids, %:	18,0 ± 1,0
Bulk density, g/cm ³ :	1,05 ± 0,02
pH value:	7 ± 1
Chloride content, %:	≤ 0.01
Alkali content (Na ₂ O equivalent), %:	≤ 1.5
PROPERTIES WHEN USED IN CONCRETE	
As a plasticizing/ water reducing admixture (same slump)	
Quantity of cement, kg/m ³ (Norcem Standard)	350 350
Admixture added (% of cement weight):	0 1.0
Water/ cement ratio	0.51 0.41
Estimated air (in %)	2.5 2.2
Water reduction	- 20
Compressive strength (N/mm ²)	
after 24 hours	19 30
after 7 days	34 47
after 28 days	40 57
As superplasticizer (increased slump):	
Quantity of cement, kg/m ³ (Norcem Standard)	350 350
Admixture added (% of cement weight):	0 1.0
Water/ cement ratio	0.48 0.48
Estimated air (%)	2.1 1.4
Slump, mm	
Slump, 5 min	25 210
Slump, 30 min	15 180
Slump spread, 5 min	- 450
Slump spread, 30 min	- 360

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