

MAPEFLUID R104

Superplasticizer and retarding admixture for concrete



DESCRIPTION

Mapefluid R104 is a liquid superplasticizing admixture for quality concrete (watertight, durable and high-strength) with low slump loss.

WHERE TO USE

Because of the high workability (consistency class S4 and S5 according to EN 206-1) obtained without excess water in the mix, concrete with **Mapefluid R104** admixture is easy to place when fresh and has high-performance characteristics when hardened.

Mapefluid R104 is suitable for all applications which require high retention of workability (low slump loss) and/or retarding of cement hydration at early ages.

Its principal uses are:

- for ready-mixed concrete (especially in warm weather);
- for pumped concrete;
- for mass concrete.

Some application examples

In addition to its plasticizing effect, **Mapefluid R104** has a slight retarding action on the hydration of cement and is therefore particularly suitable for:

- ready-mixed concrete for watertight structures: purification plants, reservoirs, canals, tunnels, etc;
- ready-mixed concrete for structures in reinforced and pre-stressed concrete exposed to aggressive agents: beams, columns, bridge-decks and viaducts;
- ready-mixed quality concrete for structures with R_{ck} higher than 25 MPa;
- mass pours where it is necessary to reduce thermal stresses caused by the heat generated in cement hydration: dams, foundation-mats for high-rise buildings, etc.

TECHNICAL CHARACTERISTICS

Mapefluid R104 is a water solution of active polymers that disperse cement granules.

RECOMMENDATIONS

Although there are no specific uses for which **Mapefluid R104** is unsuitable, the following are advantageous alternatives:

- for cold-weather concreting, use **Mapefluid N200** or **Mapefluid IF328** which develop early strength more rapidly;
- for precast concrete, use **Mapefluid N200**, **Dynamon NRG** or **Dynamon SP**, which are more suitable for maturing cycles used in precasting.

APPLICATION PROCEDURE

It is preferable to add **Mapefluid R104** into the mixer after all the other ingredients (water, cement, aggregates). The action of the admixture is more effective when added later.

COMPATIBILITY WITH OTHER PRODUCTS

Mapefluid R104 is compatible with other products for producing special concrete, and especially with:

- air-entraining agents from the **Mapeair AE** range for producing concrete resistant to freeze-thaw cycles;
- **Mapeplast SF**, micro-silica powder admixture for producing top-quality concrete with strength, durability and impermeability;
- **Expacrete**, expansive agent for producing shrinkage-compensated concrete;
- fly ash for producing concrete with artificial pozzolan;
- form-release agents from the **Mapeform Eco** and **DMA** ranges for stripping concrete formwork;
- curing compounds from **Mapecure** range for preventing overly rapid evaporation of mix water.

DOSAGE

Dosage by volume:

from 0.5 to 1.5 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

Mapefluid R104 is available in bulk, in 200 l drums, 25 kg buckets and 1,000 l tanks.

STORAGE

Mapefluid R104 stored 12 months in closed containers; protect from frost and direct sunlight.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapefluid R104 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.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	liquid
Colour:	brown
Density according to ISO 758 (g/cm ³):	1.18 ± 0.03 at +20°C
Main action:	high-range water reduction and/or improved workability
Collateral action:	initial retarding of hydration, retention of workability
Classification according to EN 934-2:	set retarding, high range water reducing, superplasticizer, tables 11.1 and 11.2
Classification according to ASTM C494:	Type G
Classification according to ASTM C1017:	Type II
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 (%):	< 6.0
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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

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