**DESCRIPTION**

Mapefast Ultra is a chloride-free liquid hardening accelerator of the latest generation for mortar and concrete developed in the MAPEI research laboratories. Mapefast Ultra is a water suspension containing nanoparticles of complex hydrated silicates, obtained through an exclusive synthesis process, characterised by its very high specific surface area (> 400 m²/g).

**WHERE TO USE**

Mapefast Ultra is an admixture that may be used in all concrete mixes prepared in pre-cast plants and concrete mixing units. Although there are no particular limitations as far as resistance class is concerned, Mapefast Ultra is particularly suitable for heavy pre-cast elements and where there are particular requirements, such as:
- high mechanical strength after brief curing cycles;
- a reduction or elimination of steam curing cycles;
- when the surrounding temperature is lower than +10°C;
- to optimise production cycles;
- to make stripping of formwork easier and more efficient.

**TECHNICAL CHARACTERISTICS**

Unlike traditional organic and inorganic salt-based accelerants, Mapefast Ultra acts as a catalyst for the nucleation and growth process of hydration products of the cement and rapidly accelerates the development of strength during short curing cycles, including at low temperatures. Due to its extremely small size (from a few tenth of nanometres to several hundred nanometres), the particles of Mapefast Ultra act as a catalyst for the formation of the hydration products both on the surface of the particles and inside the capillary pores of the cement paste, to improve the micro-structure of the cementitious paste itself and the durability of structures.

**HOW TO USE**

To get the best performance, we recommend adding Mapefast Ultra to concrete that has already been admixed with an acrylic-based superplasticizer and to continue mixing until it is thoroughly blended into the mix, remembering to take the following precautions when mixing concrete in cold weather:
- make sure the temperature of the components in the mix is higher than +5°C;
- pour concrete to exploit the rise in temperature during the day;
- do not pour concrete if the temperature drops to less than -10°C;
- use cement that develops its mechanical strength rapidly;
- keep the water/cement ratio as low as possible;
- protect cast concrete from losing the hydration heat generated by the concrete.

**COMPATIBILITY WITH OTHER PRODUCTS**

Mapefast Ultra is compatible with other MAPEI products used in the production of special concrete, especially the following:
- all the super-plasticizing admixtures from the Dynamon, Mapefluid and Chronos ranges;
- Viscostar and Viscofluid ranges of viscosity modifiers used in the production of self-compacting concrete;
• Mapeplast SF silica fume-based powdered admixture used in the production of highly durable concrete and mortar;
• aerating agents from the Mapeair AE range used in the production of concrete resistant to freeze/thaw cycles;
• form-release compounds from the Mapeform Eco range and DMA for stripping formwork from concrete;
• all other types of mineral admixtures used in the production of self-compacting concrete.

Tests have also demonstrated the excellent compatibility between Mapefast Ultra and modified acrylic-based super-plasticizing admixtures from the Dynamon NRG range, reaching very high mechanical properties after brief curing cycles.

**CONSUMPTION**

**Dosage in volume:**
The recommended dosage varies from 2 to 5 litres every 100 kg of cement, depending on the surrounding temperature and the mechanical properties required. Different amounts to those recommended above must be tested beforehand on concrete and, in all cases, only after consulting MAPEI S.p.A. Technical Services Department.

**PACKAGING**
Mapefast Ultra is available in bulk quantities, 200 litre drums and 1,000 litre tanks. Store in sealed containers protected from frost.

**STORAGE**
Mapefast Ultra may be stored for up to 6 months in sealed containers protected from frost. If exposed to direct sunlight the colour of the product may change without affecting its performance characteristics.

**SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION**
Mapefast Ultra is not considered hazardous according to current norms and guidelines regarding the classification of mixtures. It is recommended to use protective gloves and goggles and to take the usual precautions for handling 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