ULTRATOP INDUSTRIAL

Ultra-fast self-levelling cementitious mortar for substrates and industrial flooring, thickness from 5 to 40 mm

DESCRIPTION

Ultra-fast setting, self-levelling mortar based on special hydraulic binders for abrasion-resistant industrial substrates and flooring, thickness from 5 to 40 mm.

TECHNICAL CHARACTERISTICS

Ultratop Industrial is a self-levelling product in powder form available in standard colour (beige going on light brown), made up of special quick-drying and quick setting binders, specially graded silica sand, synthetic resins and special additives developed in MAPEI's own R&D Laboratories.
When mixed with water **Ultratop Industrial** becomes a self-levelling compound which is easy to apply either by hand or pump in thicknesses from 5 to 40 mm.
After setting, which takes place in only a few hours, **Ultratop Industrial** has a high level of compressive and flexural strength, bonds perfectly to the substrate and thanks to its special composition, dries quickly so that any further finishing coat may be applied after a very short time.
Ultratop Industrial complies with the requirements according to EN 13813 "Screed material and floor screeds - Screed material - Properties and requirements", which defines the requirements to be applied to materials for screeds used in the construction of internal floors.
Ultratop Industrial fulfills GEV EMICODE EC 1^{Plus} requirements.

ADVANTAGES

- Fast to apply by rendering machine.
- Ultra-fast hardening, ready for pedestrian traffic after 3-4 hours from application (at +23°C).
- Reduces production downtime.
- Versatile: the new flooring can be left exposed or can be coated with resin systems from **Mapecoat** or **Mapefloor** range.

WHERE TO USE

Ultratop Industrial is used internally in industrial environments for levelling and smoothing new or existing concrete substrates.
Ultratop Industrial, due its high mechanical strength and resistance to abrasion, can be used for:

- the creation of new flooring or refurbishment of existing industrial surfaces made of concrete and/or cementitious screeds, provided they possess mechanical resistance tailored to their intended use in environments such as warehouses, logistics areas, goods storage facilities, production areas, and other industrial settings requiring excellent abrasion-resistant exposed finished flooring;

- the creation and restoration of substrates for industrial floors to be superficially protected with paintings or epoxy coatings inside warehouses, plants, and production areas.

RECOMMENDATIONS

- Do not add more water to the mix once **Ultratop Industrial** starts to set.
- Do not add lime, cement, gypsum or other binders to the **Ultratop Industrial** mix.
- Do not use **Ultratop Industrial** on substrates which are subject to rising damp or with residual moisture higher than 4%.
- Do not use **Ultratop Industrial** as a floating screed; **Ultratop Industrial** must always be anchored to a solid and compact substrate.
- Do not use **Ultratop Industrial** on wet surfaces.
- Do not use **Ultratop Industrial** on metallic surfaces.
- Do not use **Ultratop Industrial** at temperatures lower than +5°C or higher than +35°C.
- The colours of floors made using **Ultratop Industrial** are not always uniform, a typical feature of cementitious-based products. Apart from the inherent nature of this kind of product, colour variations may also be caused by the way the product is applied. Also, it must be cast continuously without long pauses, in order to guarantee perfect flatness.
- The temperature of the substrate during the application and the hardening must be at least 3°C higher than the dew-point temperature. The air relative humidity must be max. 80%.

APPLICATION PROCEDURE

Preparation of the substrate

Substrates must be dry, solid and free of dust, loose and detached parts, paint, wax, oil and all other pollutants. The substrate must have a minimum compressive strength of 25 N/mm^2 and its tensile strength must be at least 1.5 N/mm^2; the mechanical strengths of the substrate, however, must be suitable for the intended use and the expected loads on the flooring. The substrate's moisture content must not be higher than 4% and there should be no capillary rising damp.
Before starting the preparation of **Ultratop Industrial** apply special compressible band around the perimeter of the rooms to be laid and around any vertical elements which pass through the floor (such as pillars and columns).
Concrete surfaces must be prepared by grinding with diamond tools, shot-blasting or milling depending on the characteristics of the substrate, primed with **Primer SN** and, where required, reinforced with **Rete 320** (alkali-resistant glass fibre mesh), followed by a full broadcast of **Quartz 1.2**. After the application, allow **Primer SN** to dry for 12-24 hours, depending on the temperature. Before casting **Ultratop Industrial**, remove excess sand with a vacuum cleaner.
Instead of **Primer SN**, absorbent concrete substrates may be primed with 1-2 coats of **Primer LT** diluted with water at a ratio of 1:1 by weight. Let the primer dry (from 2 to 5 hours, depending on the temperature and the humidity of the environment), before applying **Ultratop Industrial**.
Any defects present in the surface, such as holes, pitting, cracking, etc., must be repaired, for example, with **Primer SN** fillerized with quartz sand or thickened with Additix PE, or with **Mapefloor JA** or **Mapefloor JA Fast** depending on the width and depth of the defects or cracks. To repair highly deteriorated areas and joints, fill large hollows and to create or slightly modify the slope in confined areas, use **Mapefloor EP19**, pre-dosed, three component, epoxy mortar.

Preparing the mix

Pour the content of a 25 kg bag of **Ultratop Industrial** into a container with 4.25-4.75 l of clean water and continue mixing with a low-speed electric mixer until a smooth, flowable, lump-free mix is formed. Let it stand for 2-3 minutes and before applying, remix the blend for a few minutes more. Only prepare the amount of **Ultratop Industrial** which will be applied within 15 minutes at a temperature of +23°C. The pot life of the mix varies according to the temperature and reduces as the temperature increases. If **Ultratop Industrial** is to be applied on medium to large-sized surfaces, larger quantities may be prepared using a vertical shaft mixer pump. If it is mixed using mechanical means, the amount of water required is the same as when mixing by hand. Mix the product until the blend is completely homogenous before laying. A mechanical mixer is indispensable when **Ultratop Industrial** is applied using a rendering machine. This is the only method which guarantees that there is a continuous flow of material while casting.

Laying the mix

Immediately after mixing, apply **Ultratop Industrial** in a single layer from 5 to 40 mm thickness using a smooth metal trowel or rake.
Make sure that the material is cast in a regular, continuous flow without interruptions, to avoid defects in flatness and particularly visible differences in colour. When applying the product, respect the expansion joints in the substrate and form distribution joints at least every 50 m^2 with geometry as close to square as possible. With heated floors, the bay size must be no more than 25-30 m^2.
Seal joints with **Mapeflex PU 45 FT** rapid-hardening, paintable, polyurethane sealant and adhesive with a high modulus of elasticity for movements up to 20%. Insert **Mapefoam** closed-cell polyethylene foam cord in the joint beforehand to obtain the required depth and avoid the sealant sticking to the bottom of the joint.
After approximately 3 days from application (depending on environmental conditions), the surface of **Ultratop Industrial** can be used in industrial environments either as the ideal substrate for the installation of resin coatings from the **Mapecoat** and **Mapefloor** range or as a finished exposed floor.
In the latter case, **Ultratop Industrial** must always be protected and made non-absorbent through the application of a suitable finishing product from the **Mapefloor Finish** range. The choice of the most appropriate product will depend on the required wear resistance and the desired aesthetic effect.

CLEANING

While still fresh, **Ultratop Industrial** may be cleaned from hands and tools with water.

CONSUMPTION

Ultratop Industrial used pure: 16.5-17.5 kg/m^2 per cm of thickness.

PACKAGING

25 kg bags.

STORAGE

12 months in original sealed packaging, stored in a covered, dry place. Protect from humidity.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Consistency:	powder
Colour:	standard
Bulk density:	1,300 kg/m^3
Dry solids content:	100 %
EMICODE:	EC1 Plus

APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing ratio:	approx. 17-19 parts water per 100 parts by weight of **Ultratop Industrial**
Thickness:	from 5 a 40 mm
Density of mix:	2,000-2,100 kg/m^3
pH of mix:	approx. 11
Application temperature range:	from +5°C to +35°C
Pot life:	approx. 15 minutes
Setting time:	approx. 60 minutes
Set to light foot traffic:	approx. 3 hours

FINAL PERFORMANCES (at +23°C - 50% R.H.)		
Taber abrasion resistance expressed as loss in weight in grams (H22 wheel - 500 g - 200 revs) (ASTM C1803):	7 d 28 d	0.7 g 0.6 g
Compressive strength (EN 13892-2):	24 h 72 h 7 gg	>20 N/mm^2 >25 N/mm^2 >30 N/mm^2
Flexural strength (EN 13892-2):	24 h 72 h 7 gg	>5 N/mm^2 >7 N/mm^2 >9 N/mm^2

Essential characteristics	Test method	Requirements according to EN 13813 for cementitious screeds	Typical values
Compressive strength:	EN 13892-2	from C5 to C80	C40
Flexural strength:	EN 13892-2	from F5 to F50	F10
Abrasion resistance Böhme:	EN 13892-3	from A1.5 to A22	A9
Reaction to fire:	EN 13501-1	Declared value	$A2_{FL}$-s1

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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TECHNICAL SPECIFICATIONS

Supply and installation of self-levelling mortar based on special hydraulic binders, with ultra-fast hardening and high abrasion resistance, to be applied in thicknesses from 5 to 40 mm (such as **Ultratop Industrial** by Mapei S.p.A.), for the creation and restoration of substrates and industrial floors. Concrete or cement-based screed substrates, properly cured, must be clean, dry, sound, compact, and possess the appropriate mechanical strengths for the intended use. The dust-free and cleaned surfaces will be mechanically prepared, then primed with the special two-component epoxy fillerized primer (such as **Primer SN** by Mapei S.p.A.), which will be fully broadcast with appropriate quartz sand (such as **Quartz 1.2** by Mapei S.p.A.) while still fresh. The surface of the hardened mortar can be used either as a substrate for the installation of resin coatings (such as products from the **Mapecoat** and **Mapefloor** range by MAPEI S.p.A.) or as a finished exposed floor. In the latter case, the cementitious flooring must always be protected and made non-absorbent through the application of a suitable two-component polyurethane finish (such as products from **Mapefloor Finish** range by MAPEI S.p.A.). The choice of the most suitable finishing product will depend on the wear resistance and the desired aesthetic effect.
The levelling material must have the following characteristics:

Density of mix:	2,000-2,100 kg/m^3
Compressive strength (EN 13892-2): - at 24 h: - at 72 h: - at 7 gg: - at 28 gg:	 >20 N/mm^2 >25 N/mm^2 >30 N/mm^2 >40 N/mm^2

Flexural strength (EN 13892-2): - at 24 h: - at 72 h: - at 7 gg: - at 28 gg:	 >5 N/mm^2 >7 N/mm^2 >9 N/mm^2 >10 N/mm^2
Taber abrasion resistance expressed as loss in weight in grams (H22 wheel - 500 g - 200 revs) (ASTM C1803):	 – after 7 days: 0.7 g – after 28 days: 0.6 g
Abrasion resistance Böhme (EN 13892-3):	– after 28 days: 9 $cm^3/50\ cm^2$
Reaction to fire class (EN 13501-1):	$A2_{FL}$-s1
Fulfills GEV-EMICODE EC 1Plus requirements	

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