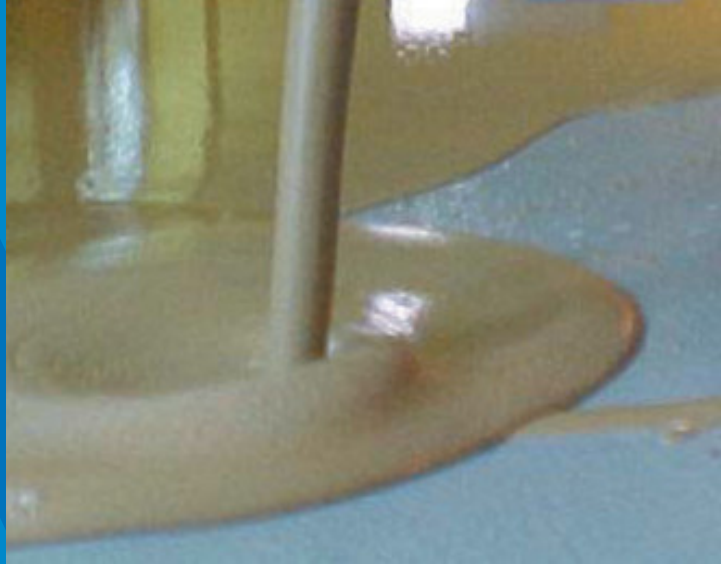


ULTRATOP N

Rapid-curing, pigmented, self-levelling floor compound based on special hydraulic binders designed for decorative wearing layers in layer thicknesses from 5 - 30 mm



PRODUCT DESCRIPTION

Levelling layers of **Ultratop N**, applied according to the specifications in this Technical Data Sheet are classified as CT-C40-F10-A9-A2_{FL}-s1 in compliance with EN 13813 standards. CT refers to a cementitious product, C40 and F10 refer respectively to compressive strength and flexural strength after 28 days, A9 is the Böhme coefficient for wear resistance, and A2_{FL}-s1 is the fire-class.

Ultratop N is a pigmented, cementitious, pumpable, fast-curing, self-levelling product for decorative floors. The product is available in four different colours; white, light grey, Nordic grey and anthracite.

Ultratop N is ready to use, has high mechanical strength and resistance to abrasion.

Ultratop N is delivered as a self-levelling product in powder form, made up of special quick-drying and quick-setting binders, specially graded sand, polymers and special additives developed in MAPEI's own R&D laboratories.

When mixed with water, **Ultratop N** becomes a self-levelling compound with good flow properties which is easy to apply, cures quickly and bonds perfectly to the substrate.

Ultratop N can be mixed and applied either by hand or pump, and spread across large surfaces in thicknesses from 5 to 30 mm. After setting, which takes place in only a few hours, **Ultratop N** has a high level of compressive- and flexural strength, resistance to abrasion and thanks to its special composition, any further finishing coat may be applied after a very short time.

Around 2 - 3 days after application, **Ultratop N** may be dry-grinded and dry-polished using diamond grinding discs to get a shiny, reflective finish similar to natural stone. **Ultratop N** may also be used to make flooring with a "Terrazzo alla Veneziana" effect, in which the dry grinding process brings out the characteristics of the aggregates (colour, shape and size) to create flooring with an exclusive, original finish which is quick and easy to install.

Ultratop N complies with the requirements according to EN 13813 "Screed material and floor screeds – Screed material – Properties and requirements", which defines the requirements applied to materials for screeds used in the construction of internal floors.

WHERE TO USE

Ultratop N is used internally in residential, commercial and public buildings, for levelling and smoothing new or existing concrete and screed substrates in thicknesses from 5 to 30 mm, to make them suitable for heavy pedestrian use in shopping centres, offices, shops, showrooms and areas where rubber-wheeled vehicles are in use.

Ultratop N is suitable for numerous applications in the decorating sector of buildings for civil use, due to its high mechanical strength, resistance to abrasion and its versatility.

Some application examples

- New floors in shopping centres, supermarkets, restaurants, shops and showrooms.
- Abrasion-resistant floors on concrete, cementitious screed substrates, old terrazzo, ceramic tiles and natural stones.
- New, grinded and polished floors inside shopping centres, showrooms, shops, restaurants, and residential homes.
- New, grinded and polished floors, such as "*Terrazzo alla veneziana*", inside residential homes, offices, shops, museums, caf  es, theaters and exhibition halls when used in combination with natural aggregates.

RECOMMENDATIONS

- Do not add more water to the mix once **Ultratop N** starts to set.
- Do not add lime, cement, gypsum or other binders to the **Ultratop N** mix.
- Do not use **Ultratop N** on substrates which are subject to rising damp (consult the MAPEI Technical Services Department).
- Do not use **Ultratop N** for floating screeds. **Ultratop N** must always be fixed to a solid, compact substrate.
- Do not use **Ultratop N** on wet surfaces.
- Do not use **Ultratop N** on metallic surfaces, textiles and elastic coverings, or other deformable substrates, wooden substrates, etc.
- Do not use **Ultratop N** at temperatures lower than +10  C or higher than +35  C.

IMPORTANT INFORMATION

- Avoid exposing the surface to draughts and direct sunlight before, during and 1 - 3 days after application.
- Avoid using dehumidifiers before, during and 3 days after application.
- Avoid using gas heating before, during and after application.
- The specified minimum layer thickness of 5 mm applies to local high points. When applying large areas with a mixer pump or pump truck, and where the substrate is relatively flat, a layer thickness of at least 8 - 10 mm is recommended to achieve a satisfactory result.
- The colour of floors made using **Ultratop N** 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.
- Please note that fine, barely visible hairline cracks may occur since **Ultratop N** is a cement-based material, but that such cracks do not affect the function of the floor.
- Please note that if the temperature is too low below +10  C or if the humidity is too high above 70 % during curing, light deposits may occur on the surface.
- Temperature and relative humidity should always be measured and recorded in the laying protocol before application.

APPLICATION PROCEDURE

Preparing of the substrate

Substrates must have sufficient load-bearing capacity, be dry, clean and free of dust, laitance, loose and detached parts, paint, wax, grease, oil, rust, plaster residues and all other pollutants that can reduce adhesion. Remains of old coverings and coatings, and other pollutants should be removed mechanically, if necessary, for example by shot blasting, milling or grinding.

Surface tensile strength of the substrate must be at least 1.5 N/mm   (MPa).

Apply a compressible band and carefully seal around the perimeter of the rooms to be laid and around any vertical elements which pass through the floor (such as pillars, columns, and drainages).

Cracks in the substrate must be repaired beforehand using **Maepoxy BI-IMP** or a suitable injection product and where required reinforced with **Rete 320**.

Priming

Concrete and/or ceramic or natural stone surfaces must be prepared by shot-blasting, milling, or grinding and primed with **Primer SN** and, where required, reinforced with **Rete 320** (glassfibre mesh) followed by a full broadcast of dry quartz sand **Sand 0,8 - 1,2 mm**. After application, leave the **Primer SN** to dry for 12 - 24 hours, according to the surrounding temperature. Before casting the **Ultratop N**, remove excess quartz sand with a vacuum.

Instead of **Primer SN**, absorbent concrete and screed 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 N**.

Mixing

Pour the content of a 20 kg bag of **Ultratop N** into a container with 3.8 liters of clean water (19 %). Mix with a low-speed electric mixer for min. 2 - 3 minutes until a homogenous, 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 N** which will be applied within 15 minutes at a temperature of approx. +23°C and 50% R.H.

Ultratop N can also be mixed using a suitable automatic mixer pump or pump truck.

During mixing, check the water content by testing the flow ratio. If the water content is correct, the flow ratio should be 125 - 135 mm (acc. to EN 12706, flow ring 30 x 50 mm) or 140 - 155 mm (acc. to SS 923519, flow ring 50 x 22 mm) for the colours White and Light Grey, and 130 - 145 mm (acc. to EN 12706, flow ring 30 x 50 mm) or 145 - 160 mm (acc. to SS 923519, flow ring 50 x 22 mm) for the colours Nordic Grey and Anthracite. While testing the flow ratio, also check that the blend is free of separation and completely homogenous before applying.

Smoothen the blend within approx. 20 minutes (at approx. +23°C and 50% R.H.). The pot life of the mix varies according to the temperature and reduces as the temperature increases.

Do not add more water than the amount required to achieve a good result. Too much water reduces the strength properties of the compound which again could lead to a weaker surface as well as higher shrinkage which increases the risk for cracks.

Application of the mix to achieve a “natural” effect and a “polished” effect

Spread **Ultratop N** by hand or with a pump in a single layer of 5 to 30 mm, and whilst working smooth the surface with a wide flat smoother trowel for a natural finish. Make sure that the material is cast in a regular, continuous flow without interruptions, to avoid defects in flatness and differences in colour. Thanks to its self-levelling properties, **Ultratop N** eliminates surface imperfections left by the smoother.

Adapt the width of the spread to the capacity of the mixer pump and layer thickness, normally no more than 10 - 12 meters without dividers. If there are high demands for flatness of the surface, the width should be as narrow as possible.

Use a static after-mixer and a sieve mesh on the end of the pump hose.

When applying the product, respect the expansion joints in the substrate and form distribution joints at least every 50 m². With heated floors, the bay size must be no more than 25 - 30 m².

If **Ultratop N** is applied in residential homes, offices, shops, civil buildings, etc. where the rooms are smaller than 50 m², include distribution joints in correspondence with door-sills, stairwells, elevator shafts, or where there is a significant variation in volume in the rooms to be applied.

Seal joints with **Mapeflex PU35 CR**, a single component, quick-hardening thixotropic polyurethane sealant and adhesive with a high modulus of elasticity for sealing expansion and distribution joints. 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.

Floors made using **Ultratop N** may be left as they are or may be polished if a particular aesthetic effect is required.

In the first case (floor left as it is without grinding and polishing), approx. 2 - 3 days after application at approx. +23°C and 50% R.H. (drying times vary according to the ambient temperatures and moisture level), the surface of **Ultratop N** must be protected and then made non-absorbent using one of the finishing products from the **Mapefloor Finish** range. To reduce the absorption of dirt and spills, and other liquids and contaminants, as well as simplifying cleaning and maintenance, choose the most suitable finishing system according to the finish aesthetic effect or level of wear-resistance required. Please refer to MAPEI Technical Services Department for information.

In the second case (floor with grinded and polished surface), apply **Mapecrete Stain Protection** after completing the dry-grinding and -polishing operations. Finally, apply a coat of **Mapelux Lucida** or **Mapelux Opaca** metallic wax to make successive cleaning and maintenance operations simpler.

Dry grinding- and polishing process

Procedure

Dry grinding and -polishing with a diamond-equipped grinder may be carried out 2 - 3 days after applying the mix. The surface obtained will be completely smooth and shiny, which reflects light, very similar to natural stone such as granite.

After the first grinding steps, which will lead to the formation of surface micro-porosities, the floor must be grouted with **Ultratop Stucco**, a special pore filler product for this type of porosity which typically forms after the preliminary treatment. **Ultratop Stucco** is available in the same colours as **Ultratop**.

Complete the grinding- and polishing operations using the remaining tools and then finish off the surface by applying **Mapecrete Stain Protection**, a specific stain-proof, water and oil-repellent product.

In order to make successive cleaning and maintenance operations easier, apply an even layer of **Mapelux Lucida** or **Mapelux Opaca**, metallic wax over the entire surface of the floor.

"Terrazzo alla Veneziana" with natural aggregates type floors

Procedure

Prepare the substrate mechanically as described in the "APPLICATION PROCEDURE – Preparation of the substrate and Priming" sections.

Prime the surface with **Primer SN** (reinforced with **Rete 320** if required) and fully broadcast the surface with quartz sand **Sand 0.8 - 1.2 mm**.

Leave **Primer SN** to dry for 12 - 24 hours, according to the surrounding temperature. Remove excess sand with a vacuum cleaner.

Apply a coat of **Mapecoat Universal Thix** (two-component epoxy binder) to act as a bonding promoter with a short-haired roller on the primed substrate and prepare the mix comprising **Mapecoat Universal Thix** and natural aggregates (with particles no smaller than 1 cm), at a ratio of 1:20 in a cement mixer.

N.B.: This ratio may be used for aggregates with a particle size of 1 to 1.5 cm. For particles larger than 1.5 cm, we recommend carrying out preliminary tests.

Mix for several minutes and pour the mix on the surface just after priming it with **Mapecoat Universal Thix** (spread out the mix while **Mapecoat Universal Thix** is still fresh).

Compact the mix immediately after spreading it out with a trowel or a power trowel.

Leave it to harden for at least 24 hours (at approx. +20°C - +23°C). Lower temperatures lead to longer hardening times.

Prepare **Ultratop N** as described in the "APPLICATION PROCEDURE - Mixing" section and apply the fresh **Ultratop N** on the hardened surface of the aggregates, making sure that all the voids between the aggregates are completely filled. Carry out this operation with the help of a rubber trowel or spreader to help the levelling compound penetrate into the previously prepared substrate.

Dry grinding- and polishing process

Procedure

Dry grinding and -polishing with a diamond-equipped grinder may be carried out 2 - 3 days after applying the **Ultratop N** mix. The surface obtained will be completely smooth and shiny, which reflects light, very similar to "Terrazzo alla Veneziana" floors.

As described previously, the floor must be grouted using **Ultratop Stucco** after the first grinding cycle.

Finishing grinding and polishing the floor and then finish off the surface by applying **Mapecrete Stain Protection**, a specific stain-proof, water and oil-repellent product.

After the finishing treatment, apply a coat of **Mapelux Lucida** or **Mapelux Opaca** metallic wax to make successive cleaning and maintenance operations simpler.

Note: For more information regarding tools required for the dry-polishing process, please contact MAPEI Technical Services Department.



Preparation of the substrate by shot-blasting



Preparation of the product with a drill



Preparation of Ultratop N in a mixer



Mechanical application of Ultratop N



Smoothing Ultratop N immediately after spreading



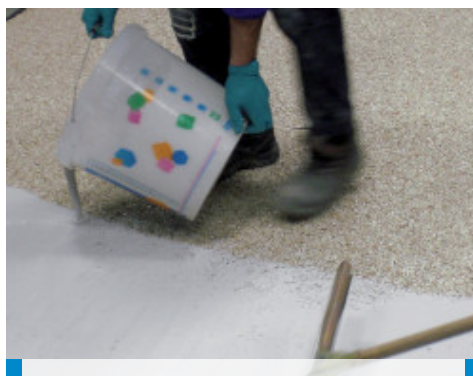
The final result of a floor made using Ultratop N



"Terrazzo alla veneziana" effect.
Application of Mapecoat Universal Thix



Application of the mixture of natural aggregates + Mapecoat Universal Thix



Application of Ultratop N on the hardened surface of the mixture made of natural aggregates + Mapecoat Universal Thix

CLEANING

Whilst still fresh, tools and machines may be cleaned with plenty of water. If the material has hardened, tools and machines can only be cleaned mechanically.

CONSUMPTION

Ultratop N used pure: 1.7 kg/m² per mm of layer thickness.

Ultratop N used for the "Terrazzo alla Veneziana" system: according to the granulometric size of the natural aggregate used.

PACKAGING

Ultratop N is available in 20 kg bag, 1000 kg big-bag and bulk.

STORAGE

Ultratop N remains stable for 6 months if stored in its original packaging in a cool dry place. It is recommended to use the product in big-bags immediately and avoid storage for longer periods.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.no

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	CT - C40 - F10 - A9 - A2 _{FL} -s1
Consistency:	powder
Colour:	White, Light Grey, Nordic Grey and Anthracite
Bulk density:	1 300 kg/m ³
Dry solids content:	100 %
Emissions classification:	M1 and EC1 Plus - very low emission
Grain size (D _{max}):	1 mm

APPLICATION DATA (at +23°C and 50 % R.H.)	
Layer thickness:	from 5 - 30 mm
Recommended water amount:	3.8 liters per 20 kg bag (19 %)
Density of the mix:	2 050 - 2 150 kg/m ³
pH-value of the mix:	approx. 12
Application temperature range:	from +10°C to +30°C
Pot life:	approx. 15 minutes
Setting time:	60 minutes
Set to light foot traffic:	approx. 3 - 4 hours
Ready for covering:	earliest after 48 hours
Curing time before full traffic load:	approx. 1 week

FINAL PERFORMANCES

Essential characteristics	Test method	Requirements according to EN 13813 for cementitious screeds	Typical values		
Compressive strength:	EN 13892-2	5 < N/mm ² < 80 (28 days)	24 h 72 h 7 days 28 days	+5°C ≥ 12 ≥ 18 ≥ 23 ≥ 30	+23°C ≥ 20 ≥ 25 ≥ 30 ≥ 40
Flexural strength:	EN 13892-2	1 < N/mm ² < 50 (28 days)	24 h 72 h 7 days 28 days	+5°C ≥ 3 ≥ 4 ≥ 5 ≥ 7	+23°C ≥ 5 ≥ 7 ≥ 9 ≥ 11
Surface tensile strength (pull-off):	EN 13454-2	acc. to GBR-trade standard	28 days	≥ 3 N/mm ²	
Shrinkage:	EN 13872	< 10 mm	28 d	< 0.5 ‰ (mm/m)	
Adhesion to concrete:	EN 13892-8	> 1.5 N/mm ²	24 h 28 days	+23°C 2.5 (substrate failure) 2.5 (substrate failure)	
Abrasion resistance Taber-abrasion test (H22 wheel, 500 g, 200 rev./min.):	NS-EN ISO 5470-1		7 days 28 days	+5°C 1.7 1	+23°C 0.7 0.6
Abrasion resistance Böhme-abrasion test:	EN 13892-3	1.5 < cm ³ /50 cm ² < 22	28 days	+23°C 9	
Reaction to fire:	EN 13501-1	value declared by producer	A2 _{FL} -s1		
pH-value for hardened material:			≤ 10		
Flow ratio at 19 % water:	EN 12706	flow ring 30 x 50 mm	White and Light Grey: 125 - 135 mm Nordic Grey and Anthracite: 130 - 145 mm		
Flow ratio at 19 % water:	SS 923519	flow ring 50 x 22 mm	White and Light Grey: 140 - 155 mm Nordic Grey and Anthracite: 145 - 160 mm		

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 web site www.mapei.no

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.no

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.

Mapei AS

Vallsetvegen 6, 2120 Sagstua, Norge



+47 62 97 20 00



www.mapei.no



post@mapei.no

8962-11-2023-gbxno

Any reproduction of texts, photos and illustrations published here is prohibited and subject to prosecution

