

Ultratop

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



WHERE TO USE

Ultratop is used internally in public and industrial buildings, for levelling and smoothing new or existing concrete and ceramic substrates in thickness from 5 to 40 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 may be left as a finished floor due to its high mechanical strength and resistance to abrasion and thanks to its versatility, is suitable for numerous applications in the decorating sector of buildings for civil use.

Some application examples

- New floor coverings in shopping centres, supermarkets, restaurants, shops and showrooms.
- Abrasion-resistant floor coverings on concrete, old terrazzo, ceramic tiles and natural stone.
- Industrial floor coverings that must be protected with epoxy coatings and paints in chemical and food processing plants, textile mills and tanneries.
- New, polished floors inside shopping centres, showrooms, shops, restaurants and flats.

- New floors, such as “terrazzo alla veneziana”, inside homes, offices, shops, museums, theatres and exhibition halls when used in combination with **Dynastone Color** artificial aggregates.

TECHNICAL CHARACTERISTICS

Ultratop is a self-levelling product in powder available in light grey, white, beige, rust red, anthracite and standard (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** becomes a self-levelling compound which is easy to apply either by hand or pump in thickness from 5 to 40 mm.

After setting, which takes place in only a few hours, **Ultratop** 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 is classified as CT-C40-F10-A9 according to EN 13813:2002 Standards. CT refers to a cementitious-based product, C40 and F10 refer to the compressive strength and flexural strength, respectively, after 28 days and A9 is the Böhme abrasion-resistance coefficient.

Ultratop



Preparation of the substrate by shot basting



Preparation of the product with a drill



Mechanical preparation of the product before pumping

Around 3 days after application, **Ultratop** may be dry-polished using diamond grinding disks in order to obtain a completely smooth finish.

In addition, thanks to **Ultratop**'s high chemical affinity with **Dynastone Color** artificial aggregates, it is also very quick and easy to create floors such as "terrazzo alla veneziana", where the dry-polishing process brings out the quality of the aggregates to give the floor its exclusive, original finish.

RECOMMENDATIONS

- Do not add more water to the mix once **Ultratop** starts to set.
- Do not add lime, cement, gypsum or other binders to the **Ultratop** mix.
- Do not use **Ultratop** on substrates which are subject to rising damp (consult the MAPEI Technical Assistance Department).
- Do not use **Ultratop** for floating screeds. **Ultratop** must always be fixed to a solid, compact substrate.
- Do not use **Ultratop** on wet surfaces.
- Do not use **Ultratop** on metallic surfaces.
- Do not use **Ultratop** at temperatures lower than +5°C or higher than +35°C.
- The colours of floors made using **Ultratop** are not always uniform, a typical feature of cementitious-based products. Apart from the inherent nature of this kind of product, differences in the various colours 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.

APPLICATION PROCEDURE

Preparing the substrate

The substrate must be dry, sound and free of dust, loose areas, paint, waxes, oil, rust or any other contaminants which could affect the bond.

Concrete surfaces must be prepared mechanically by shot blasting or milling and treated with two or three coats of **Primer G**: the first coat diluted 1:1, the second and the third one diluted 1:1 or 1:2 (depending on the absorption of the substrate).

Ceramic or natural stone surfaces must be treated with a coat of **Mapeprim SP**, after cleaning with a suitable cleaner and mechanical abrasion as, for example, the polishing process.

Apply **Ultratop** before **Mapeprim SP** is completely set (1 to 3 hours, at +23°C and 50% R.H. - when touched, it must be still sticky).

Mixed surfaces, such as concrete/ceramic or concrete/natural stone, for example, will benefit if primed beforehand using **Primer SN** reinforced with **Mesh 320** followed by a sprinkling of **Quartz 1.2**. This process helps to even out the characteristics of the various materials used.

After applying **Primer SN**, leave it to dry out for 12-24 hours, depending on the temperature.

Before laying **Ultratop**, remove excess sand with a vacuum cleaner.

Primer SN sprinkled with **Quartz 1.2** may also be used instead of **Primer G** on absorbent substrates, or instead of **Mapeprim SP** on non-absorbent substrates.

Cracks in the substrate must be repaired beforehand with **Eporip**.

Preparing the mix

Pour the contents of a 25 kg bag of **Ultratop** into a container with 5.0 to 5.5 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.

Only prepare the amount of **Ultratop** 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** is to be applied on medium to large-sized surfaces, larger quantities may be prepared using a vertical-shaft mixer. 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** 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 TO OBTAIN A "NATURAL" EFFECT AND A "POLISHED" EFFECT

Spread **Ultratop** by hand or with a

TECHNICAL DATA (typical values)

In compliance with:

– EN 13813 : 2002
– CT - C40 - F10 - A9

PRODUCT IDENTITY

Consistency:	fine powder
Colour:	light grey, standard, white, beige, rust red and anthracite
Bulk density (kg/m³):	1,300
Dry solids content (%):	100
Storage:	12 months in original packaging in a cool dry place
Hazard classification according to CE 1999/45:	none. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
Customs class:	3824 50 90

COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C and 50% R.H.)

Mixing ratio:	approx. 20-22 parts water per 100 parts in weight of Ultratop
Thickness (mm):	from 5 to 40
Self-levelling:	yes
Density of mix (kg/m³):	2,000 to 2,100
pH of mix:	approx. 12
Application temperature range:	from +5°C to +35°C
Pot life:	15 minutes
Setting time:	80 minutes
Set to light foot traffic:	3-4 hours

FINAL PERFORMANCES

Compressive strength (N/mm²):	(at +5°C)	(at +23°C)	(Ultratop+Dynastone Color- 1:1 at +23°C)
– after 1 day:	≥ 12	≥ 20	≥ 30
– after 3 days:	≥ 18	≥ 25	≥ 40
– after 7 days:	≥ 23	≥ 30	≥ 50
– after 28 days:	≥ 30	≥ 40	≥ 55
Flexural strength (N/mm²):	(at +5°C)	(at +23°C)	(Ultratop+Dynastone Color- 1:1 at +23°C)
– after 1 day:	≥ 3	≥ 5	≥ 6
– after 3 days:	≥ 4	≥ 7	≥ 7
– after 7 days:	≥ 5	≥ 9	≥ 9
– after 28 days:	≥ 7	≥ 11	≥ 10
Adhesion to concrete (prEN 13892-8) (N/mm²):			
– after 1 day:	2.5 (substrate failure)		
– after 28 days:	2.5 (substrate failure)		
Abrasion resistance Taber abrasion test (H22 disk - 500 g - 200 rpm) expressed as loss in weight (g):	(at +5°C)	(at +23°C)	
– after 7 days:	1.7	0.7	
– after 28 days:	1.0	0.6	
Abrasion resistance according to EN 13813 : 2002 Böhme abrasion test expressed as reduction of thickness (mm):	(Ultratop pure)	(Ultratop+Dynastone Color - 1:1)	
– after 7 days:	1.7	1.8	
– after 28 days:	1.5	1.4	



Mechanical application of Ultratop



Smoothing Ultratop immediately after spreading



Spreading Ultratop and Dynastone Color mix

mechanical means (rendering machine with a worm-screw feeder) in a single layer of 5 to 40 mm and a smoother for a natural finish, or at a thickness between 10 and 40 mm if the floor is to be polished.

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. Thanks to its self-levelling properties, **Ultratop** eliminates all imperfections left by the smoother.

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

In the first case, approximately 3 days after application, the surface of **Ultratop** must be protected and then made non-absorbent using one of the following finishing systems:

- **Mapecoat I 600 W**, two-component water dispersed epoxy finishing product.
- **Mapefloor Finish 50**, two-component, aliphatic, hygro-hardening transparent polyurethane finishing product;
- **Mapefloor Finish 52 W**, two-component water dispersed polyurethane finishing product with low yellowing properties.

After treatment with **Mapecoat I 600 W** and **Mapefloor Finish 50**, the floor will have a “wet-look” finish, whereas **Mapefloor Finish 52** has little or no effect on the colour of the surface.

In the second case, the protective layer must be laid after polishing.

Polishing process Procedure

Dry-polishing with a diamond-tipped 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 “roughing” treatment, which will lead to the formation of surface micro-porosity, the floor must be grouted with **Ultratop Stucco**, a

special sealing 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 polishing cycle using the remaining tools, then apply two coats of **Keraseal** finishing treatment with a clean cloth, to leave a transparent, protective layer which reduces the absorption of the floor.

In order to make successive cleaning and maintenance operations easier, apply an even layer of wax over the entire surface of the floor.

“Terrazzo alla veneziana” type floors

Procedure

Mix **Ultratop** with **Dynastone Color** aggregates in a cement mixer at a ratio of 1:1 in weight, and add water at a rate of approximately 10% of the total mix weight.

Mix for a few minutes to blend the various ingredients uniformly.

Spread out the mix on the substrate by hand with a straight edge and a trowel. The substrate must be primed beforehand using the same products as described in the “Preparation of the Substrate” section. To make the successive polishing operations easier and quicker and to guarantee a perfect finish, we recommend that the mix is spread out on the surface evenly, without dips or other defects in the surface (holes, irregularities or roughness).

Dry-polishing with a diamond-tipped 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 “*terrazzo alla veneziana*” floors.

As described previously, the floor must be grouted using **Ultratop Stucco** after the “roughing” cycle.

Complete the polishing cycle, then apply two coats of **Keraseal** finishing treatment with a clean cloth, to leave a transparent, protective layer which reduces the absorption of the floor.

After the finishing treatment, apply a coat of wax to make successive cleaning and maintenance operations simpler.



Flattening and compacting Ultratop mixed with Dynastone Color aggregates



Dry-polishing process of Ultratop/Dynastone Color mix after hardening



Final step of dry-polishing process of a floor made using Ultratop/Dynastone Color



Roberto Cavalli showroom realized with Ultratop

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

Cleaning

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

CONSUMPTION

Ultratop used pure: 16.5-17.5 kg/m² per cm of thickness;

Ultratop mixed with **Dynastone**

Color aggregates: 10 kg/m² per cm of thickness.

PACKAGING

Ultratop is available in 25 kg bags.

STORAGE

Ultratop remains stable for at least 12 months if stored in a cool dry place. If stored for longer periods, the setting time of **Ultratop** may increase but without affecting its final characteristics. Manufactured in compliance with the regulations of the 2003/53/EC Directive.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Ultratop contains cement that, when in contact with perspiration or other body

fluids, may cause an irritating alkaline reaction. Use protective gloves and goggles.

For further information, please refer to the Safety Data Sheet which is available upon request for professional users.

FOR PROFESSIONALS.

WARNING

While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

All relevant references for the product are available upon request and from www.mapei.com



Two different shades of Ultratop followed by polishing operation



Floor made using Ultratop, then dressed using the self-levelling Mapefloor System 33



Floor made using red Ultratop in the Berlaymont Centre, Brussels

Ultratop



517-1-2007

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