

# ULTRATOP SYSTEM "Polished Effect"

SELF-LEVELLING, ULTRA-FAST SETTING CEMENTITIOUS SYSTEM APPLIED AT A THICKNESS FROM 10 TO 40 mm TO CREATE POLISHED FLOORS

## Products used:

*Primer SN or Primer LT*

*Quartz 0.5 - Quartz 1.2*

*Ultratop*

*Ultratop Stucco*

*Mapecrete Stain Protection or Mapecrete U-Protector*

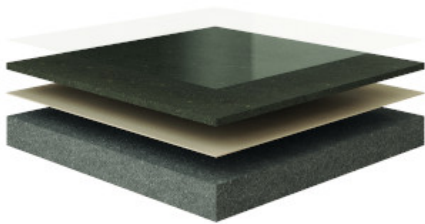
*Mapelux Opaca or Mapelux Lucida*

## DESCRIPTION

**ULTRATOP SYSTEM** "polished effect" is a self-levelling, ultra-fast setting cementitious system which may be polished just 2-3 days after being applied to form flat, smooth reflective floors inside civil and industrial buildings subject to only light traffic.

The polishing cycle is carried out using the dry technique with special diamond-tipped tools.

**ULTRATOP SYSTEM** "polished effect" floorings are left on view to form finished floors and may be used in a wide variety of applications in the decorative sectors of buildings for civil use.



- 1 concrete
- 2 Primer SN + Quartz 0,5 + Broadcast of Quartz 1,2
- 3 Ultratop + Ultratop Stucco
- 4 Mapecrete Stain Protection or Mapecrete U-Protector

## WHERE TO USE

Decorative floorings inside civil and industrial buildings and for smoothing and levelling layers on new and old substrates to make them suitable for pedestrian traffic in shopping centres, showrooms, restaurants, offices, shops and apartments.

**ULTRATOP SYSTEM** "polished effect" is used in:

- all areas of showrooms, shops, restaurants and apartments;
- pedestrian areas in shopping centres.

## PERFORMANCE AND ADVANTAGES OF THE SYSTEM

- May be applied manually or with a worm-screw rendering machine with a mixing hopper at a thickness from 10 to 40 mm.
- Fast drying, polishing operations may be carried out approximately 2 days after application.
- The dry polishing technique allows different colours of **ULTRATOP** to be used alongside.
- Guarantees perfectly flat, smooth, reflective surfaces similar, in appearance, to natural stones ones.

## COLOURS AVAILABLE

**ULTRATOP** is available in the following colours: light grey, white, beige, red, anthracite and standard (beige to light brown).

Floors made using **ULTRATOP** may have an uneven colour, typical of cementitious products.

## CONSUMPTION

### Primer:

**PRIMER SN** 0.3-0.6 kg/m<sup>2</sup> per layer, according to the characteristics of the substrate

**QUARTZ 0.5** 0.06-0.12 kg/m<sup>2</sup>

**QUARTZ 1.2** 3-4 kg/m<sup>2</sup> broadcast on wet primer

**PRIMER LT** 0.1-0.2 kg/m<sup>2</sup>

### Self-levelling mortar:

**ULTRATOP** 16.5-17.5 kg/m<sup>2</sup> per cm of thickness

### Finishing layer:

**MAPECRETE STAIN PROTECTION** 0.1-0.3 kg/m<sup>2</sup>

or

**MAPECRETE U- PROTECTOR** 0.05-0.40 kg/m<sup>2</sup> depending on absorption and environmental conditions during application

### Waxing:

**MAPELUX OPACA** 50 g/m<sup>2</sup>

or

**MAPELUX LUCIDA** 50 g/m<sup>2</sup>

The consumption figures for the primer consider application on a shot-blasted surface.

Consumption increases if the primer is applied on rougher or highly porous surfaces.

# PREPARATION OF THE SURFACE

## 1. Characteristics of the substrate

Before applying **ULTRATOP SYSTEM** “polished effect” the substrate on which the flooring is to be applied must be carefully analysed. To obtain a good finish, the following must be checked:

That there are no materials which could potentially prevent the bond of the successive layers, such as:

- cement laitance;
- dust or detached or loose portions;
- protective wax, curing products, paraffin or efflorescence;
- oil stains or layers of resin;
- traces of paint or chemical products.

Any other kind of pollutant which may compromise the bond of the coating must be removed before applying the product. If the substrate is polluted by such elements, it **MUST** be prepared by carrying out a special preparation cycle. If required, contact the Technical Assistance Department for advice on the most suitable preparation cycle.

- The level of residual moisture in the substrate must be lower than 4% and a suitable vapour barrier must be installed. **ULTRATOP** must never be applied on substrates subject to capillary rising damp.
- The compressive strength must be at least 25 N/mm<sup>2</sup> and its tear strength must be higher than 1.5 N/mm<sup>2</sup>.
- If all the above conditions are respected, **ULTRATOP SYSTEM** “polished effect” may be applied on concrete industrial floors, conventional or polymer-modified cementitious screeds, controlled-shrinkage screeds such as those made using **MAPECEM PRONTO** or **TOPCEM PRONTO** and old cement, ceramic or natural stone tiles provided preliminarily prepared.

## 2. Preparation of the substrate

It is very important that the surface is prepared correctly to guarantee correct installation and get the best performance from **ULTRATOP SYSTEM** “polished effect”.

The most suitable method to prepare the surface is by shot-blasting or milling. All dust must then be removed with a vacuum cleaner. Do not use chemical preparation methods, such as acid rinsing, or aggressive percussion tools, otherwise the substrate may be damaged.

Any defects present, such as holes, pitting and cracking, must be repaired beforehand using either **EPORIP** or **PRIMER SN**, eventually fillerised with quartz sand or made thixotropic with **ADDITIX PE** or using **MAPEFLOOR JA** or **MAPEFLOOR JA FAST**, according to the width and depth of the defects.

To repair highly deteriorated areas, fill large hollows and depressions use **MAPEFLOOR EP19**, pre-dosed three component epoxy mortar. If it is necessary to consolidate the substrate use **PRIMER MF**, applied by roller in one or more coats, until the substrate is completely saturated.

Ceramic, natural stone or cement tile floors must be perfectly stable and anchored to the substrate, undamaged, sound and clean, properly prepared by mechanical roughening treatment as diamond grinding. Before applying **ULTRATOP**, cementitious and/or ceramic or natural stone surfaces must be primed with **PRIMER SN**, and where necessary, reinforced with **RETE 320** glass fiber mesh and fully blinded with **QUARTZ 1.2**.

As an alternative to **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. For the application details of **PRIMER SN** and **PRIMER LT** refer to point 4. “Preparation and application of the products”.

## 3. Preliminary checks before application

Make sure that all the checks indicated in point 1 “Characteristics of the substrate” have been carried out, and that all the operations indicated in point 2 “Preparation of the substrate” have been carried out correctly.

The surrounding temperature must be between +5°C and +35°C.

## 4. Preparation and application of the products

Carefully follow the preparation instructions indicated in the Technical Data Sheet for each single product which forms the complete cycle.

### Primer for concrete/ceramic/natural stone surfaces (PRIMER SN)

Pour component A into component B and mix well with a low-speed drill with a spiral mixing attachment to form a smooth, homogenous blend. While mixing, add approx. 20% by weight of **QUARTZ 0.5** to the blend as soon as it has been prepared and keep on mixing for some minutes to form a smooth, even compound. Apply an even layer of **PRIMER SN** on the surface with a metal trowel or smooth rake. Where required, embed **RETE 320** glass fiber mesh in the layer of primer. Immediately after application, the fresh surface of **PRIMER SN**

must be fully blinded with **QUARTZ 1.2** to form a perfect bond with the next layer. Leave **PRIMER SN** dry for 12-24 hours, according to the surrounding temperature. Before casting **ULTRATOP**, remove excess sand with a vacuum cleaner.

#### **Primer for cementitious substrates (PRIMER LT)**

Apply **PRIMER LT** diluted with water in the ratio of 1:1 by weight until an homogeneous solution is obtained. Spread **PRIMER LT** in an even coat using a roller or a brush. Wait until the product has dried off before applying **ULTRATOP** (normally from 2 to 5 hours according to the surrounding temperature and humidity). In case of particularly absorbent surfaces make sure the porosity has been completely sealed after applying **PRIMER LT**. In fact, if the porosity is not completely sealed, air bubbles may form on the **ULTRATOP** surface.

#### **Spreading the smoothing and levelling mortar (ULTRATOP)**

Pour a 25 kg bag of **ULTRATOP** into a container with 5-5.5 liters of clean water while mixing and keep mixing mix with a low-speed electric mixer to form a smooth, lump-free, self-levelling blend. Let it stand for 2-3 minutes and mix the blend again before application. Spread on **ULTRATOP** in a single layer from 10 mm to 40 mm thickness with a metal trowel or a smooth rake. If larger quantities of the product are required for medium to large surfaces, we recommend mixing the product in a vertical mixer. When preparing the product in a mixer, the amount of water required for blending the product is the same as for manual mixing. Keep mixing the product until it is completely blended before spreading it on the surface. **ULTRATOP** must be blended in a mixer when it is to be cast with a rendering machine. This is the only technique which guarantees a continuous supply of the product during casting.

**N.B.** The amount of **ULTRATOP** to be prepared each time must be applied within 15 minutes at +23°C. Workability time varies according to the surrounding temperature and reduces as the temperature increases. When applying the product, follow the pattern of the expansion joints in the substrate. On particularly large surfaces, form distribution joints at least every 50 m<sup>2</sup>, which must be reduced to 25-30 m<sup>2</sup> on heated floors. Seal the joints with **MAPEFLEX PU 45 FT** rapid-hardening, paintable, polyurethane sealant and adhesive with a high modulus of elasticity 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.

#### **Polishing the floor**

2-3 days after applying the mix, the surface may be dry-polished (around 5 passes are required). Use a polishing machine with diamond-tipped disks until a smooth, shiny reflective surface is formed, similar to natural stone such as granite. After the first "roughing" pass which exposes the surface porosity, clean the surface of the floor with a damp sponge and grout with **ULTRATOP STUCCO** in the same colour as **ULTRATOP**. Wait until **ULTRATOP STUCCO** is completely dry (approximately 12 hours) before carrying out the final polishing cycle with special polishing equipment.

#### **Finishing treatment**

After dry polishing **ULTRATOP** to a smooth appearance, apply a finishing treatment using **MAPECRETE STAIN PROTECTION**, a specific water and oil-repellent product to protect the surface from stains.

Spray more coats of **MAPECRETE STAIN PROTECTION** till saturation over the **ULTRATOP** with an airless spray-gun after dry polishing the surface and leave it to absorb into the floor; use a microfiber cloth or wax spreader to help the product to be soaked into the floor.

As an alternative to **MAPECRETE STAIN PROTECTION**, **MAPECRETE U-Protector** can be used. It forms a microfilm which confers the surfaces an anti-stain and water-repellent protection.

For the use of **MAPECRETE U-Protector** please refer to the relevant Technical Data Sheet.

If, on the other hand, the surface is not fully polished (the **ULTRATOP** has a moderate rough aspect after going over the surface 3 or 4 times with the diamond disks), the surface may be finished off with a product from the **MAPEFLOOR FINISH** range. Choose the most suitable finishing product according to the aesthetic effect or the wear-resistance required. Please contact MAPEI Technical Services for further information.

#### **Waxing**

In order to make routine cleaning and maintenance operations easier, it's possible to apply an even coat of **MAPELUX OPACA** or **MAPELUX LUCIDA** special metal-filled, high resistance, cross bond floor wax over the entire surface of the floor.

#### **5. Hardening and step-on times**

Before polishing, at +23°C **ULTRATOP** sets to foot traffic after 3-4 hours. The floor may be used approximately 24 hours after the impregnation treatment. Lower temperatures lead to longer hardening and step-on times.

## **CLEANING AND MAINTENANCE**

Regular cleaning and maintenance operations increase the life of the treated floor, improves its appearance and reduces its capacity to collect dirt. Floors created using **ULTRATOP SYSTEM "polished effect"** are generally easy to wash with neutral detergents, or with alkali detergents diluted at a concentration of from 5 to 10% in water. **MAPEFLOOR MAINTENANCE KIT** is available for maintenance operations, and includes



**MAPELUX LUCIDA** metal-filled wax, **MAPEFLOOR WAX REMOVER** and **MAPEFLOOR CLEANER ED** detergent for daily cleaning operations.

## NOTE

Recommendations regarding safe handling of the products are contained in the Safety Data Sheet for each single component in the cycle. However, the use of protective gloves and goggles is recommended when mixing and applying the products.

If the cycle is applied on different surfaces to those mentioned above, or in climatic conditions and/or final uses not mentioned above, please contact the Technical Assistance Department at MAPEI S.p.A.

## TECHNICAL DATA (a +23°C)

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Workability time:	15 minutes
Setting time:	60 minutes
Set to light foot traffic:	3÷4 hours
Colours available:	light grey, white, beige, red, anthracite and standard
Compressive strength (EN 13892-2) (N/mm <sup>2</sup> ):	after 7 days ≥ 30 after 28 days ≥ 40
Flexural strength (EN 13892-2) (N/mm <sup>2</sup> ):	after 7 days ≥ 9 after 28 days ≥ 11
Taber Abrasion resistance (H 22 disc - 500 g - 200 revs), expressed as loss in weight (ASTM D4060) (g):	after 7 days 0.7 after 28 days 0.6
Resistance to abrasion Böhme abrasion test (EN 13892-3) (cm <sup>3</sup> /50 cm <sup>2</sup> ):	after 28 days 9

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**4003-11-2022-GB**

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