

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 G or Mapeprim SP
Ultratop - Ultratop Stucco
Mapecrete Stain Protection
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.

CLASSIFICATION ACCORDING TO EN 13813

Smoothing layers of **ULTRATOP** applied as specified in this System Technical Data Sheet are classified as CT - C40 - F10 - A9 - A2_{fl}-s1 in compliance with EN 13813 Standards.

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, show-rooms, restaurants, offices, shops and apartments.

ULTRATOP SYSTEM

“polished effect” is used in:

- all areas of show-rooms, 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.
- Controlled-shrinkage hardening.
- 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.

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/m² per layer, according to the characteristics of the substrate
0.1-0.2 kg/m²
0.1-0.2 kg/m²

PRIMER G MAPEPRIM SP

Self-levelling mortar:

ULTRATOP

16.5-17.5 kg/m² per cm of thickness

Finishing layer:

MAPECRETE STAIN PROTECTION

0.1-0.3 kg/m²

Waxing:

MAPELUX OPACA

50 g/m²

MAPELUX LUCIDA

50 g/m²

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



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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 humidity in the substrate must be no higher than 4% and a suitable vapour barrier must be installed.
- The tear strength of the substrate must be more than 1.5 N/mm².

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** or **TOPCEM** and old cement and ceramic tiles, if prepared correctly.

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 cracks, must be repaired beforehand using either **EPORIP** or **EPOJET**, according to the width and depth of the defects.

If the floor is in a particularly poor condition or if there are holes or pitting, use **MAPEGROUT SV** as it is or mixed with **MORTAR GRAVEL**. 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 fibre mesh and sprinkled with **QUARTZ 1.2**. After applying **PRIMER SN** let it dry out for 12-24 hours, according to the surrounding temperature. Before casting the

TECHNICAL DATA (a +23°C)

Workability time:	15 minutes	
Setting time:	80 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 ²):	after 7 days ≥ 30	after 28 days ≥ 40
Flexural strength (EN 13892-2) (N/mm ²):	after 7 days ≥ 9	after 28 days ≥ 11
Taber Abrasion resistance (H 22 disk - 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 ³ /50 cm ²):	after 28 days 9	

ULTRATOP, remove excess sand with a vacuum cleaner.

As an alternative to **PRIMER SN**, absorbent concrete substrates may be primed with 2-3 coats of **PRIMER G**: the first coat diluted with water at a ratio of 1:1 and the second and third coats, according to the absorbency of the substrate, at a ratio of 1:1 or 1:2.

Surfaces which are not absorbent such as ceramic or natural stone, on the other hand, may be treated with a coat of **MAPEPRIM SP** after cleaning the surface with a suitable detergent and abrading it mechanically, such as by grinding. Spread on the **ULTRATOP** before **MAPEPRIM SP** has completely hardened (from 1 to 3 hours at +23°C and 50% R.H. - when touched, it must be still sticky).

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. Apply an even layer of **PRIMER SN** on the surface with a metal trowel or smooth rake. Where required, embed **RETE 320** glass fibre mesh in the layer of primer. Immediately after

application, the fresh surface of **PRIMER SN** must be sprinkled 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 G)**

Apply a first coat of **PRIMER G** diluted with water in the ratio of 1:1. For the second and third coats, dilute one part of **PRIMER G** with one or two parts of water to form a homogenous white blend. Spread on **PRIMER G** in an even coat using a roller, by spray with a low-pressure pump or a large brush. Wait until the product has dried off before applying **ULTRATOP** (normally 2-3 hours according to the surrounding temperature). In case of particularly absorbent surfaces make sure the porosity has been completely sealed after applying **PRIMER G**. If the porosity is not completely sealed, air bubbles may form on the **ULTRATOP** surface.

- **Primer for ceramic or natural stone floors (MAPEPRIM SP)**

Pour component B into component A and mix well with a low-speed drill with a spiral mixing attachment to form a smooth, homogenous blend. Apply **MAPEPRIM SP** with a roller, rubber rake or smooth trowel. Before applying **ULTRATOP** wait until the primer becomes transparent, it must be still sticky (from 1 to 3 hours at +23°C and 50% R.H.).

- **Spreading on the smoothing and levelling mortar (ULTRATOP)**

Pour a 25 kg sack of **ULTRATOP** into a

container with 5÷5.5 litres 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 with a metal trowel or 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 m², which must be reduced to 25-30 m² on heated floors. Seal the joints with **MAPEFLEX PU45** one-component, thixotropic, quick-hardening 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.

• **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**

– **MAPECRETE STAIN PROTECTION**

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

N.B.: if 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** line. 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, we recommend applying 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.



