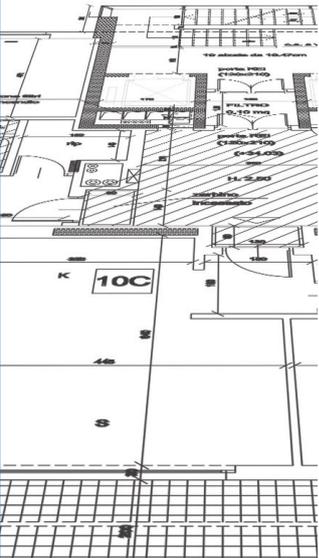


# INSTALLATION OF CONTINUOUS CEMENTITIOUS AND RESIN FLOORING



## **D** specifications of **INSTALLATION AND REPAIR OF SEAMLESS RESIN FLOORING**

### ***D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN***

- D.1.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN**
- D.1.2 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH NO VAPOUR BARRIER, INCLUDING FLOORING WITH LOW RESISTANCE TO CHEMICALS, USING SOLVENT-FREE EPOXY RESIN**
- D.1.3 RESTORATION OF DETERIORATED INDUSTRIAL FLOORING WITH HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN**
- D.1.4 INSTALLATION OF NEW FLOORING IN CIVIL ENVIRONMENTS USING EPOXY COATING**
- D.1.5 COATING SYSTEMS FOR INDUSTRIAL FLOORING, INCLUDING FLOORING WITH HIGH CHEMICAL RESISTANCE, USING POLYURETHANE-CEMENTITIOUS FORMULATE**
- D.1.6 ANTI-DUST AND ANTI-OIL TREATMENT FOR CONCRETE INDUSTRIAL FLOORING**
- D.1.7 COATING AND ELASTOMERIC WATERPROOFING SYSTEM FOR FLOORING IN MULTI-STOREY CAR-PARKS SUBJECT TO INTENSE TRAFFIC**

### ***D.2 INSTALLATION AND REPAIR OF SEAMLESS CEMENTITIOUS FLOORING***

- D.2.1 RESTORATION OF OLD FLOORING AND INSTALLATION OF NEW FLOORING IN CIVIL AND INDUSTRIAL ENVIRONMENTS USING SELF-LEVELLING, ULTRA RAPID-HARDENING CEMENTITIOUS MORTAR**

## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

#### D.1.1.1 Multi-layered non-slip system for light to medium traffic - Mapefloor System 31

Supply and installation of non-slip coating for industrial flooring with a vapour barrier, by applying a 0.8 to 1.2 mm thick coat of two-component, neutral-coloured epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.) mixed with quartz sand with a maximum grain size of 0.25 mm (such as **Quartz 0.25** produced by MAPEI S.p.A.). During the preparation phase, the product may be coloured using suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after treating the surface with two-component epoxy primer with fillers (such as **Primer SN** produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.).

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 grams) (mg):	55
Coefficient of thermal expansion (DIN 53752) (°K):	16×10 <sup>-5</sup>
Modulus of elasticity (DIN 1048) (N/mm <sup>2</sup> ):	7,200
Resistance to temperature (open air) (°C):	-20 ± 50
Appearance:	shiny
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.1.2 Multi-layered non-slip system for medium to heavy traffic - Mapefloor System 32

Supply and installation of non-slip coating for industrial flooring with a vapour barrier, by applying a 3 to 3.5 mm thick coat of two-component, neutral-coloured epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.) mixed with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). During the preparation phase, the product may be coloured using suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after treating the surface with two-component epoxy primer with fillers (such as **Primer SN** produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). Finish off the coating with roller-applied, two-component, neutral-coloured epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.) mixed with quartz sand with a maximum grain size of 0.25 mm (such as **Quartz 0.25** produced by MAPEI S.p.A.), and coloured using suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.).

The system must have the following performance characteristics (after 7 days at +23°C):

Modulus of elasticity (DIN 1048) (N/mm <sup>2</sup> ):	10,000
Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 grams) (mg):	55
Coefficient of thermal expansion (DIN 53752) (°K):	5×10 <sup>-3</sup>
Compressive strength after 28 days (DIN EN 196) (N/mm <sup>2</sup> ):	85
Flexural strength after 28 days (DIN EN 196) (N/mm <sup>2</sup> ):	45
Resistance to temperature (open air) (°C):	-20 ± 60
Appearance:	shiny
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.1.3 Self-levelling system for medium to heavy traffic - Mapefloor System 33

Supply and installation of self-levelling coating for industrial flooring with a vapour barrier, by applying a 2 to 4 mm thick coat of two-component, neutral-coloured epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.) mixed with quartz sand with a maximum grain size of 0.25 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). During the preparation phase, the product may be coloured using suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after treating the surface with two-component epoxy primer with fillers (such as **Primer SN** produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.).

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 grams) (mg):	70
Coefficient of thermal expansion (DIN 53752) (°k):	86×10 <sup>-6</sup>
Compressive strength (UNI EN 196/1) (N/mm <sup>2</sup> ):	67
Flexural strength (UNI EN 196/1) (N/mm <sup>2</sup> ):	28
Compressive modulus of elasticity (DIN 1048) (N/mm <sup>2</sup> ):	6,504
Resistance to temperature (open air) (°C):	-20 ± 60
Appearance:	shiny
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.1.4 Anti-dust and anti-oil coating system for light traffic - Mapefloor System 34

Supply and installation of anti-dust and anti-oil coating for industrial flooring with a vapour barrier subject to light traffic, by roller-applying a thickness of 0.6 to 1 mm in two coats of two-component, neutral-coloured epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.). During the preparation phase, the product may be coloured by adding suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.). To obtain a slightly non-slip finish, add 5-10% in weight of special micro-grained fillers (such as **Mapefloor Filler** produced by MAPEI S.p.A.) to the final coat of the two-component epoxy formulate.

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 grams) (mg):	98
Resistance to temperatures (open air) (°C):	-20 ± 40
Appearance:	shiny
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.2 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH NO VAPOUR BARRIER, INCLUDING FLOORING WITH LOW RESISTANCE TO CHEMICALS, USING SOLVENT-FREE EPOXY RESIN

#### D.1.2.1 Multi-layered non-slip system for light to medium traffic - Mapefloor System 51

Supply and installation of non-slip coating for industrial flooring with no vapour barrier, by applying a coat approximately 3 mm thick of two-component, multi-purpose, vapour-permeable epoxy formulate in water dispersion (such as **Mapefloor I 500 W** produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). The formulate may be coloured during the preparation phase by adding suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after preparing the substrate with a suitable mechanical treatment and wetting the surface with water. Finish off the coating with a smooth trowel or spreader to apply the two-component, multi-purpose, vapour-permeable epoxy formulate in water dispersion (such as **Mapefloor I 500 W** produced by MAPEI S.p.A.), coloured during the preparation phase with suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), followed by smoothing over the surface with a roller.

The system must have the following performance characteristics:

Taber Test EN ISO 5470-1

(CS17 disk - 1,000 cycles - 1,000 g) (mg):	110
Bond strength (UNI EN 13892-8; 2004) (N/mm <sup>2</sup> ):	3.10
Wear resistance (BCA UNI EN 13892-4) (µm):	20
Impact strength (UNI EN ISO 6272) (Nm):	20
Permeability to water vapour (UNI EN 12086) (µ):	1199
Appearance:	opaque

Total price for installation according to specification:

– per square metre ..... (€/m<sup>2</sup>)



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.2.2 Multi-layered non-slip system for medium to heavy traffic - Mapefloor System 52

Supply and installation of non-slip coating for industrial flooring with no vapour barrier, by applying a coat approximately 5 mm thick of two-component, multi-purpose, vapour-permeable epoxy formulate in water dispersion (such as **Mapefloor I 500 W** produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). The formulate, applied using a notched trowel or rake, may be coloured during the preparation phase by adding suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after preparing the substrate with a suitable mechanical treatment and wetting the surface with water. Finish off the coating with a smooth trowel or spreader to apply a coat of two-component, multi-purpose, vapour-permeable epoxy formulate in water dispersion (such as **Mapefloor I 500 W** produced by MAPEI S.p.A.), coloured during the preparation phase with suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.).

The system must have the following performance characteristics:

Taber Test EN ISO 5470-1

(CS17 disk - 1,000 cycles - 1,000 g):	110 mg
Bond strength (UNI EN 13892-8; 2004 (N/mm <sup>2</sup> ):	3.10
Wear resistance (BCA UNI EN 13892-4) (µm):	20
Impact strength (UNI EN ISO 6272) (Nm):	20
Permeability to water vapour (UNI EN 12086) (µ):	1199
Appearance:	opaque
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.2.3 Self-levelling system for medium to heavy traffic - Mapefloor System 53

Supply and installation of self-levelling coating for industrial flooring with no vapour barrier, by applying a coat approximately 4 mm thick of two-component, multi-purpose, vapour-permeable epoxy formulate in water dispersion (such as **Mapefloor I 500 W** produced by MAPEI S.p.A.). During the preparation phase, the formulate may be coloured using suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), and must only be applied after treating the surface with two-component, transparent epoxy primer in water dispersion (such as Mapecoat I 600 W produced by MAPEI S.p.A.) dusted to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.).

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 grams) (mg):	105
Coefficient of thermal expansion (DIN 53752) (°k):	16×10 <sup>-5</sup>
Compressive strength (UNI EN 196/1) (N/mm <sup>2</sup> ):	50
Flexural strength (UNI EN 196/1) (N/mm <sup>2</sup> ):	30
Modulus of elasticity (DIN 1048) (N/mm <sup>2</sup> ):	5,000
Resistance to temperature (open air) (°C):	-20 ± 60
Appearance:	smooth, opaque
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.3 RESTORATION OF DETERIORATED INDUSTRIAL FLOORING WITH HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

#### D.1.3.1 Trowel-applied, saturated, non-slump mortar for medium to heavy traffic - Mapefloor System 91

Supply and installation of solvent-free epoxy coating for the restoration of old industrial flooring subject to heavy traffic, by using an aluminium straight edge and levelling shims to apply non-slump mortar, suitable also for damp substrates, mixed with two-component epoxy binder (such as **Mapefloor I 900** produced by MAPEI S.p.A.) and quartz sand with a maximum grain size of 1.9 mm (such as **Quartz 1.9** produced by MAPEI S.p.A.) at a ratio of 1:8 to 1:13. Spread the mortar on a clean, concrete substrate with no traces of oil, grease or loose or detached material; after applying a coat of suitable primer (such as **Primer SN** produced by MAPEI S.p.A.). After preparing the mortar, level off the fresh mix with a straight edge and compact and smooth over the surface with a vibro-compact. Skim and finish off the surface of the mortar with a trowel or roller to apply two coats of two-component epoxy formulate with fillers (such as **Mapefloor I 300 SL** produced by MAPEI S.p.A.) mixed with quartz sand with a maximum grain size of 0.25 mm (such as **Quartz 0.25** produced by MAPEI S.p.A.), and coloured by adding suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.).

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk - 1,000 revs - 1,000 g) (mg):	90
Flexural strength (DIN 1048) (N/mm <sup>2</sup> ):	30
Compressive strength (DIN 1164) (N/mm <sup>2</sup> ):	70
Coefficient of thermal expansion (DIN 50014) (°k):	4×10 <sup>-5</sup>
Modulus of elasticity (DIN 1048) (N/mm <sup>2</sup> ):	18,000
Resistance to temperature (open air) (°C):	-20 ± 60
Appearance:	shiny
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.4 INSTALLATION OF NEW FLOORING IN CIVIL ENVIRONMENTS USING EPOXY COATING

#### D.1.4.1 Decorative system with a trowelled or mottled finish - Decor System 70

Supply and installation of decorative flooring with a trowelled or mottled finish in civil environments, such as showrooms, shops, apartments, offices, etc., using two-component, solvent-free, epoxy paste in water dispersion with high resistance to abrasion and chemicals (such as **Mapefloor Decor 700** produced by MAPEI S.p.A.). Protect the surface of the floor by spreading on a coat of a specific finishing product (such as **Mapefloor Finish 50**, **Mapefloor Finish 52 W**, **Mapefloor Finish 53 W/L** or **Mapefloor Finish 54 W/S** produced by MAPEI S.p.A.). To make routine cleaning and maintenance operations easier, apply an even coat of double-reticulation metallised wax (such as **Mapelux Lucida** or **Mapelux Opaca** produced by MAPEI S.p.A.) over the entire surface.

The system must have the following performance characteristics (after 7 days at +23°C):

Adhesion (DIN ISO 4624) (N/mm <sup>2</sup> ):	> 1.5
Taber abrasion resistance (CS17 disk) (mg):	50
Coefficient of thermal expansion (DIN 50014) (°K):	86×10 <sup>-6</sup>
Compressive strength (DIN EN 196) (N/mm <sup>2</sup> ):	85
Flexural strength (DIN 1048) (N/mm <sup>2</sup> ):	35
Resistance to temperature (open air) (°C):	-20/+60
Appearance:	shiny/opaque
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.4.2 Self-levelling system with a coloured granular finish - Mapefloor I 320 SL Concept

Supply and installation of self-levelling coating for civil flooring with a vapour barrier, by applying a 2 to 4 mm thick coat of self-levelling, coloured epoxy formulate with a granular effect characterised by its high strength and high resistance to wear (such as **Mapefloor I 320 SL Concept** produced by MAPEI S.p.A.). Apply the system on solid substrates with no traces of dust, dirt, paint, wax or any other pollutant, after treating the surface with two coats of two-component primer with fillers (such as **Primer SN** produced by MAPEI S.p.A.) dusted with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.). Colour the second coat of primer with suitable colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.), using a similar colour to that of the self-levelling epoxy formulate.

The system must have the following performance characteristics:

Density of mix (kg/m <sup>3</sup> ):	1,320
Viscosity of mix (mPa·s):	9,300
Compressive strength (DIN EN 196-1) after 7 days at +23°C (N/mm <sup>2</sup> ):	52
Flexural strength (DIN EN 196-1) after 7 days at +23°C (N/mm <sup>2</sup> ):	31
Bond strength to concrete (UNI EN 13892-8) (N/mm <sup>2</sup> ):	3.20
Surface hardness (shore D):	75
Taber abrasion resistance (EN ISO 5470) (CS17 disk - 1,000 g - 1,000 revs) expressed as loss in weight after 7 days (mg):	80
BCA wear resistance (UNI EN 13892-4) (µm):	0
Impact strength (UNI EN ISO 6272) (Nm):	20
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.5 COATING SYSTEMS FOR INDUSTRIAL FLOORING, INCLUDING FLOORING WITH HIGH CHEMICAL RESISTANCE, USING POLYURETHANE-CEMENTITIOUS FORMULATE

#### D.1.5.1 Self-levelling system 3 to 4 mm thick - Mapefloor CPU/MF

Supply and installation of coating for industrial flooring with high strength, high resistance to chemicals, abrasion and excellent resistance to temperature, by applying a 3 to 4 mm thick coat of three-component polyurethane resin and cement formulate (such as **Mapefloor CPU/MF** produced by MAPEI S.p.A.). Concrete substrates must be clean, sound and compact and must not be subject to capillary rising damp. Before treating the surface with a suitable two-component primer with fillers (such as **Primer SN** produced by MAPEI S.p.A.) and then dusting the primer to saturation point with quartz sand with a maximum grain size of 0.5 mm (such as **Quartz 0.5** produced by MAPEI S.p.A.), make hooking cuts for the formulate near to all the main vertical points and a 2 cm deep cut along the diagonals of the areas to be coated.

The system must have the following characteristics:

Colour of mix:	beige, grey, ochre yellow, red or green
Consistency of mix:	thick fluid
Density of mix (kg/m <sup>3</sup> ):	1,900
Viscosity of mix (# 5 - 20 rpm) (mPa·s):	20,000
Pot life of mix at +20°C:	15 min.
Surface temperature:	from +8°C to +30°C
Dust dry at +23°C and 50% R.H.:	2 - 4 hours
Set to foot traffic at +23°C and 50% R.H.:	24 h
Final hardening time:	4 days
Taber Test after 7 days (at +23°C - 50% R.H.) (CS17 disk - 1,000 cycles/1,000 g) (mg):	70
Flexural strength after 28 days (N/mm <sup>2</sup> ):	21
Compressive strength after 28 days (N/mm <sup>2</sup> ):	60
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.5.2 Mortar system - Mapefloor CPU/HD

Supply and installation of coating for industrial flooring with high strength, high resistance to chemicals and excellent resistance to temperatures, by applying a 6 to 9 mm thick coat of three-component polyurethane resin and cement mortar (such as **Mapefloor CPU/HD** produced by MAPEI S.p.A.). Concrete substrates must be clean, sound and compact and must not be subject to capillary rising damp. Before applying the product, make hooking cuts for the mortar near to all the main vertical points and a 2 cm deep cut along the diagonals of the areas to be coated.

The system must have the following characteristics:

Colour of mix:	beige, grey, ochre yellow or red
Consistency of mix:	thick
Density of mix (kg/m <sup>3</sup> ):	1,900
Pot life of mix at +20°C:	25 min.
Surface temperature:	from +8°C to +30°C
Dust dry at +23°C and 50% R.H.:	2-4 hours
Step-on time at +23°C and 50% R.H.:	8 h
Final hardening time:	4 days
Flexural strength after 28 days (N/mm <sup>2</sup> ):	16
Compressive strength after 28 days: (N/mm <sup>2</sup> ):	65
Tensile strength after 28 days (N/mm <sup>2</sup> ):	7
Tear strength after 28 days (N/mm <sup>2</sup> ):	> 2.5
Taber Test after 28 days (at +23°C - 50% R.H.) (H22 disk - 1,000 cycles/1,000 g) (mg):	1,490
Total price for installation according to specification: – per square metre	..... (€/m <sup>2</sup> )



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.6 ANTI-DUST AND ANTI-OIL TREATMENT FOR CONCRETE INDUSTRIAL FLOORING

#### D.1.6.1 Solvent-free, aliphatic, transparent polyurethane system permeable to vapour for industrial floors and for impregnating Ultratop - Mapefloor System PU 65

Supply and installation of anti-dust and anti-oil treatments for concrete flooring and for epoxy coatings in internal environments, by applying a 60 to 100 µm thick coat of two-component, aliphatic, non-saponifiable, air-hardening transparent polyurethane finish (such as **Mapefloor Finish 50** produced by MAPEI S.p.A.). To obtain a non-slip finish, mix highly-resistant, micro-grained fillers (such as **Mapefloor Filler** produced by MAPEI S.p.A.) with the epoxy formulate.

The system must have the following performance characteristics:

Colour of mix:	transparent
Consistency of mix:	fluid
Dry substances content (%):	98
Density of mix (kg/m <sup>3</sup> ):	1,140
Density of the mix + <b>Mapefloor Filler</b> (kg/m <sup>3</sup> ):	1,180
Viscosity of mix (mPa·s):	195
Viscosity of the mix + <b>Mapefloor Filler</b> (mPa·s):	235
Workability time:	20 min.
Surface temperature:	from +8°C to +35°C
Bucholz hardness after 7 days at +23°C:	90
Tack free time (at +23°C and 50% R.H.):	6 h
Set to foot traffic (at +23°C and 50% R.H.):	12 h
Final hardening time:	7 days
Taber abrasion resistance test (after 7 days at +23°C - 50% R.H.): (CS17 disk - 1,000 g - 1,000 cycles) (mg):	20
Total price for installation according to specification: – per square metre ..... (€/m <sup>2</sup> )	



## D.1 COATING SYSTEMS FOR INDUSTRIAL FLOORING WITH A VAPOUR BARRIER AND HIGH RESISTANCE TO CHEMICALS USING SOLVENT-FREE EPOXY RESIN

### D.1.7 COATING AND ELASTOMERIC WATERPROOFING SYSTEM FOR FLOORING IN MULTI-STOREY CAR-PARKS SUBJECT TO INTENSE TRAFFIC

#### D.1.7.1 Solvent-free, multi-layered, elastic, seamless polyurethane system - Mapefloor Parking System

Supply and installation of waterproof, elastic coating on internal and external flooring such as multi-storey car-parks subject to intense traffic and bridges and service ramps for vehicle use, by applying a 3 to 3.5 mm thick solvent-free, non-slip, multi-layered, elastic, seamless polyurethane system comprising an elastic, waterproof system with high resistance to wear and abrasion and good resistance to mechanical stress (such as **Mapefloor Parking System** produced by MAPEI S.p.A.). After preparing concrete surfaces by grinding or shot-blasting, they must be clean, dry, sound, compact and not subject to capillary rising damp, and then treated with a suitable primer (such as **Primer SN** produced by MAPEI S.p.A.). Apply the first intermediate layer by spreading on a coat of high-elasticity polyurethane formulate (such as **Mapefloor PU 400** produced by MAPEI S.p.A.), mixed with sufficient quartz sand (such as **Quartz 0.25** produced by MAPEI S.p.A.). Apply the second layer by spreading on a coat of medium-elasticity polyurethane formulate (such as **Mapefloor PU 410** produced by MAPEI S.p.A.), mixed with sufficient quartz sand (such as **Quartz 0.25** produced by MAPEI S.p.A.). Protect the coating by applying a specific finishing product (such as **Mapefloor Finish 51** produced by MAPEI S.p.A.). To obtain a more attractive finish, polyurethane-based products may be coloured using pre-dispersed colouring paste (such as **Mapecolor Paste** produced by MAPEI S.p.A.).

The system must have the following performance characteristics:

Tear strength*	
after 28 days at +23°C (DIN 53515) (N/mm <sup>2</sup> ):	27
Tear strength**	
after 28 days at +23°C (DIN 53515) (N/mm <sup>2</sup> ):	21
Elongation at failure*	
after 28 days at +23°C (DIN 53504) (%):	470
Elongation at failure**	
after 28 days at +23°C (DIN 53504) (%):	180
Shore A* hardness (DIN 53505):	70
Shore A** hardness (DIN 53505):	89
Shore D hardness of system:	59
Crack Bridging at -+10°C: (UNI EN 1062-7 Method A static)	Class A1 > 100 µm
Crack Bridging at +23°C: (UNI EN 1062-7 Method B dynamic)	Class B2

\* Values refer to **Mapefloor PU 400** elastic membrane mixed with 30% **Quartz 0.25**

\*\* Values refer to **Mapefloor PU 410** elastic membrane mixed with 30% **Quartz 0.25**

Total price for installation according to specification:

– per square metre ..... (€/m<sup>2</sup>)



**D.2 INSTALLATION AND REPAIR OF SEAMLESS CEMENTITIOUS FLOORING****D.2.1 RESTORATION OF OLD FLOORING AND INSTALLATION OF NEW FLOORING IN CIVIL AND INDUSTRIAL ENVIRONMENTS USING SELF-LEVELLING, ULTRA RAPID-HARDENING CEMENTITIOUS MORTAR****D.2.1.1 In layers 5 to 40 mm thick, for light to medium traffic - Ultratop System "Natural Finish"**

Supply and installation of internal flooring subject to abrasion using self-levelling, ultra rapid-setting mortar made from special hydraulic binders in layers 5 to 40 mm thick (such as **Ultratop** produced by MAPEI S.p.A.). Substrates must be clean, dry, sound, compact and primed with a suitable product (such as **Primer SN** or **Primer G** or **Mapeprim SP** produced by MAPEI S.p.A.). Protect the flooring using specific finishing products (such as **Mapefloor Finish 50**, **Mapefloor Finish 52 W**, **Mapefloor Finish 53 W/L**, **Mapefloor Finish 54 W/S** or **Mapefloor Finish 630** produced by MAPEI S.p.A.) to improve the wear resistance and reduce the absorption of the flooring. To make routine cleaning and maintenance operations easier, apply an even coat of double-reticulation metallised wax (such as **Mapelux Lucida** or **Mapelux Opaca** produced by MAPEI S.p.A.) over the entire surface.

The system must have the following characteristics (at +23°C):

Workability time:	15 min.
Setting time:	60 min.
Set to foot traffic:	3-4 hours
Colour:	light grey, white, beige, red, anthracite and standard
Applied thickness (mm):	from 5 to 40
Compressive strength (N/mm <sup>2</sup> ):	
after 28 days:	≥ 40
Flexural strength (N/mm <sup>2</sup> ):	
after 28 days:	≥ 11
Abrasion resistance	
Taber abrasion-meter (H22 disk - 500 g - 200 revs)	
expressed as loss in weight (g):	
after 7 days:	0.7
after 28 days:	0.6
Resistance to abrasion according to EN 13813: 2002	
Böhme abrasion-meter (cm <sup>3</sup> /50 cm <sup>2</sup> ):	
after 28 days:	9
Total price for installation according to specification:	
– per square metre	..... (€/m <sup>2</sup> )



**D.2.1.2 In layers 10 mm to 40 mm thick, followed by dry sanding, for light traffic - Ultratop System “diamond polished finish”**

Supply and installation of internal flooring in civil environments subject to light traffic, using self-levelling, ultra rapid-setting mortar made from special hydraulic binders in layers from 10 to 40 mm thick (such as **Ultratop** produced by MAPEI S.p.A.). 2 or 3 days after application, dry sand the hardened mortar to obtain a flat, smooth, light-reflective surface. Substrates must be clean, dry, sound, compact and primed with a suitable product (such as **Primer SN**, **Primer G** or **Mapeprim SP** produced by MAPEI S.p.A.). Protect the flooring by spreading on a specific finishing product (such as **Keraseal** produced by MAPEI S.p.A.). To make routine cleaning and maintenance operations easier, apply an even coat of double-reticulation metallised wax (such as **Mapelux Lucida** or **Mapelux Opaca** produced by MAPEI S.p.A.) over the entire surface.

The system must have the following characteristics (at +23°C):

Workability time:	15 min.
Setting time:	60 min.
Set to foot traffic:	3-4 hours
Colour:	light grey, white, beige, red, anthracite and standard
Applied thickness (mm):	from 10 to 40
Compressive strength (N/mm <sup>2</sup> ):	
after 28 days:	≥ 40
Flexural strength (N/mm <sup>2</sup> ):	
after 28 days:	≥ 11
Abrasion resistance	
Taber abrasion-meter (H22 disk - 500 g - 200 revs)	
expressed as loss in weight (g):	
after 7 days:	0.7
after 28 days:	0.6
Resistance to abrasion according to EN 13813: 2002	
Böhme abrasion-meter (cm <sup>3</sup> /50 cm <sup>2</sup> ):	
after 28 days:	9
Total price for installation according to specification:	
– per square metre	..... (€/m <sup>2</sup> )



**D.2.1.3 ULTRATOP TO CREATE POLISHED FLOORS WITH A FINISH SIMILAR TO “VENETIAN TERRAZZO”**

Supply and installation of internal floors in civil environments, such as homes, offices, shops, museums, theatres and exhibition areas, by spreading compound made from natural aggregates at least 1 cm in diameter and two-component, transparent epoxy binder (such as Mapefloor I 910 by Mapei S.p.A.) mixed together at a ratio of 20:1 by weight, over a fresh coat of special two-component, transparent, epoxy bonding promoter (such as Mapefloor I 910 by Mapei S.p.A.). The gaps in the aggregate-binder are then filled by spreading on mortar made from special, ultra rapid-hardening hydraulic binders (such as Ultratop by Mapei S.p.A) to form a layer with an average thickness of 15 mm to 20 mm. 2 or 3 days after applying the mortar, the surface is dry polished using a special machine with diamond-tipped disks to form a smooth, flat, shiny reflective surface similar to “Venetian Terrazzo”. Before applying the system, substrates must be clean, dry, sound and compact, treated with a coat of two-component epoxy primer (such as Primer SN by MAPEI S.p.A.) and broadcast with quartz sand (such as Quartz 1.2 by Mapei S.p.A.). The surface of the floor is then protected by impregnating it with a special stain-resistant and oil and water-repellent finish (such as Mapecrete Stain Protection by Mapei S.p.A.).

In order to make routine cleaning and maintenance operations easier, an even coat of special metallic wax (such as Mapelux Lucida or Mapelux Opaca by MAPEI S.p.A.) is then applied over the entire surface.

The material must have the following characteristics:

Compressive strength (Ultratop + natural aggregates – ratio 1:1)

(EN 13982-2) (N/mm<sup>2</sup>):

– after 28 days: ≥ 55

Flexural strength (Ultratop + natural aggregates – ratio 1:1)

(EN 13892-2) (N/mm<sup>2</sup>):

– after 28 days: ≥ 10

Böhme abrasion resistance (Ultratop + natural aggregates – ratio 1:1)

(EN 13892-2) (cm<sup>3</sup>/50 cm<sup>2</sup>)

– after 28 days: 9

Thickness per layer (mm):

15 to 20

Consumption (kg/m<sup>2</sup>):

Ultratop:

10 (per cm of thickness)

Natural aggregates:

10 (per cm of thickness)