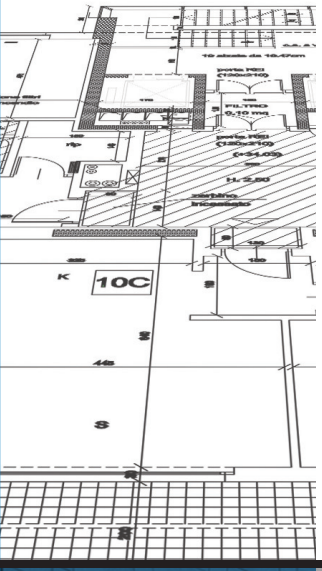
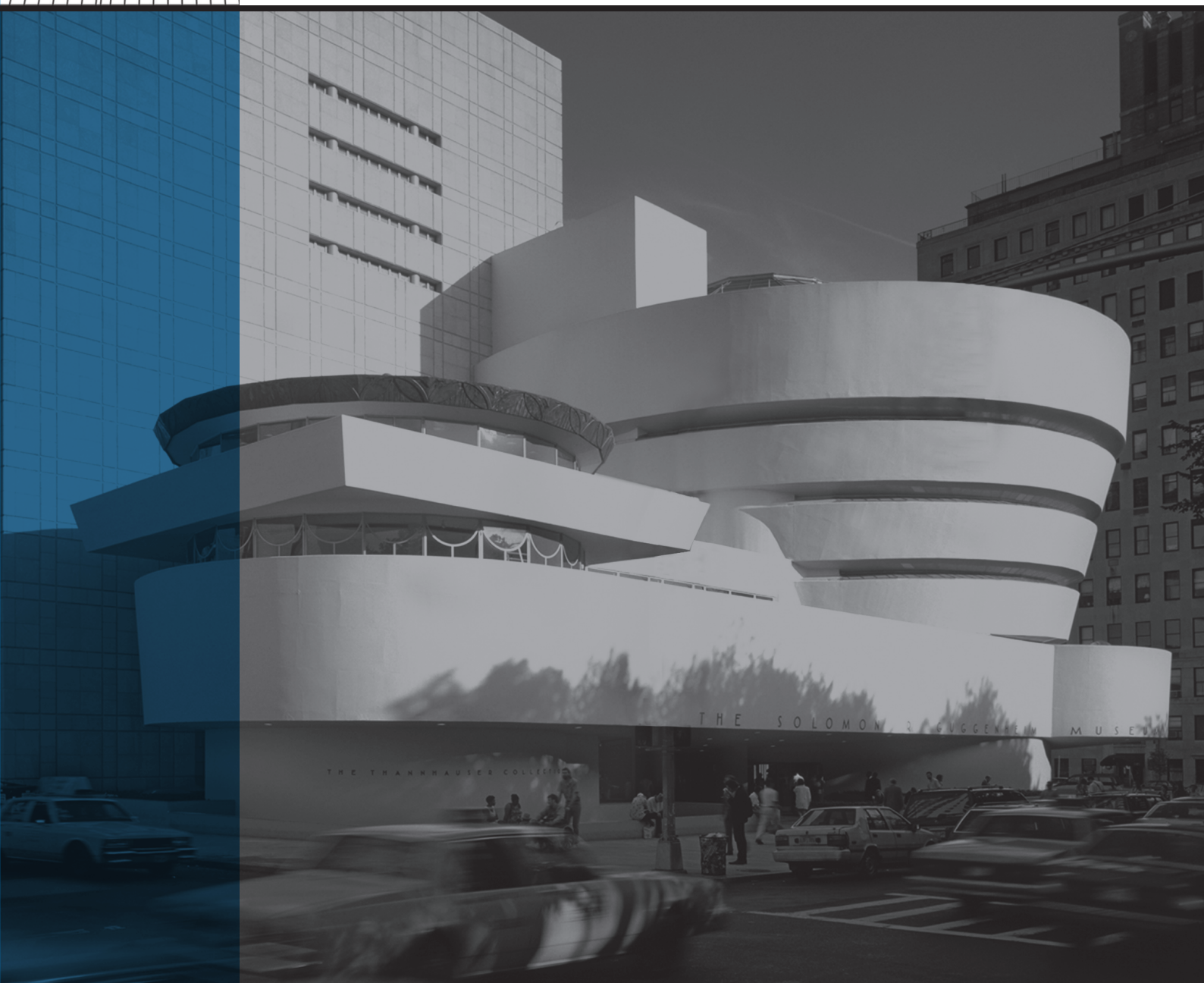
ARCHITECTURAL SOLUTIONS

DESIGN GUIDE



PROTECTING AND DECORATING BUILDINGS



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MAPEI®

ADHESIVES • SEALANTS • CHEMICAL PRODUCTS FOR BUILDING

specifications of

PROTECTING AND DECORATING BUILDINGS

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.1 OLD WALLS PAINTED WITH TRANSPIRANT WATER-BASED PAINT - SUBSTRATES WITH A "CRUMBLY" SURFACE

Procedure

Prepare the walls by mechanically removing all traces of surface dust and or areas where surface is loose or detached portions to obtain a clean, solid, strong substrate. Restore the areas where surface has been removed to bring the substrate back to its original condition.
Wait until the skimming mortar has completely cured, if applied, and prime the substrate.
If no areas of substrate need to be restored, or if priming only is deemed sufficient after checking the condition of the substrate, apply a coat of **Malech** primer (see section ***I.2.1.1***) or **Silancolor Primer** (see section ***I.2.1.2***). Apply the primer neat or diluted, according to the state of the substrate.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.1.1 Natural-finish, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of natural-finish, grey or white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected quartz aggregates and special powdered additives (such as **Planitop 530** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to the surface of clean substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.5 (Failure mode: FP = B)
Adhesion to substrate (render) (EN 1015-12) (N/mm²):	≥ 0.3 (Failure mode: FP = C)
Capillary action water absorption (EN 1015-18) [kg/(m²·min·$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 18
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.54
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.25

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.1.2 Natural-finish, cementitious skimming mortar for “cured” internal and external concrete and render

Supply and application of natural-finish, grey or white, cementitious skimming mortar for “cured” internal and external concrete and render, made from cementitious binders, selected aggregates in a granulometric curve, special powdered additives and powdered synthetic polymers (such as **Planitop 540** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
Apply the product on to the surface of clean, damp substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.

The product must comply with the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR for protecting concrete, classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength (EN 12190) (MPa):	15 (after 28 days)
Adhesion to substrate (EN 1542) (MPa):	> 1 (after 28 days)
Impermeability expressed as coefficient of permeability to free water (EN 1062-3) ($kg/m^2 \cdot h^{0.5}$):	W < 0.1 - Class III (low permeability to water) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (EN ISO 7783-1) (m):	S_D = 0.1 - Class I (permeable to water vapour)
Reaction to fire (EN 13501-1) (Euroclass):	E
Consumption (per mm of thickness) (kg/m^2):	approximately 1.2

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm
– *per square metre* ..... *(€/m²)*

I.1.1.3 Fine-grained, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of fine-grained, white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected fine-grained limestone sand, special additives and powdered synthetic polymers (such as **Planitop 560** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to the surface of clean substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.4 (Failure mode: FP = B)
Capillary action water absorption (EN 1015-18) [kg/(m²·min·$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 20
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.45
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.1

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application and finishing off the surface of the mortar with a smooth, metal trowel.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.1.4 Lime and gypsum skimming mortar for “cured” and “dry” internal gypsum or anhydrite render

Supply and application of fine-grained, white, lime and gypsum skimming mortar for “cured” or “dry” internal and external traditional rough-finish or pre-blended gypsum, anhydrite or lime-cement render, made from hydrated lime, gypsum, ultra-fine marble powder, rheologic additives and powdered synthetic polymers (such as **Planitop 580** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
Apply the product on to dry surfaces with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must have the following performance characteristics:

Compressive strength after 28 days (N/mm²):	> 2
Flexural strength after 28 days (N/mm²):	> 1.4
Adhesion to substrate after 28 days (N/mm²):	≥ 0.5
Consumption (per mm of thickness) (kg/m²):	approximately 0.8

Included and calculated in the price for work carried out according to specification:
– application and finishing off the surface of the mortar with a smooth, metal trowel.
Average thickness 2 mm
– per square metre ..... *(€/m²)*

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.2 OLD WALLS PAINTED WITH WASHABLE WATER-BASED PAINT - SUBSTRATES WITH A COHESIVE SURFACE

Procedure

Prepare the walls by mechanically removing all traces of surface dust and loose or detached portions to obtain a solid, strong substrate. Restore the areas where portions have been removed.
Wait until the skimming mortar has completely cured, if applied, and prime the substrate.
If no areas of substrate need to be restored, apply a coat of **Malech** primer (see section ***I.2.1.1***) or **Silancolor Primer** (see section ***I.2.1.2***) diluted according to requirements.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.2.1 Natural-finish, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of natural-finish, grey or white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected quartz aggregates and special powdered additives (such as **Planitop 530** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to the surface of clean substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.5 (Failure mode: FP = B)
Adhesion to substrate (render) (EN 1015-12) (N/mm²):	≥ 0.3 (Failure mode: FP = C)
Capillary action water absorption (EN 1015-18) [kg/(m²·min$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 18
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.54
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.25

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.2.2 Natural-finish, cementitious skimming mortar for “cured” internal and external concrete and render

Supply and application of natural-finish, grey or white, cementitious skimming mortar for “cured” internal and external concrete and render, made from cementitious binders, selected aggregates in a granulometric curve, special powdered additives and powdered synthetic polymers (such as **Planitop 540** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
Apply the product on to the surface of clean, damp substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.
The product must comply with the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR for protecting concrete, classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength (EN 12190) (MPa):	15 (after 28 days)
Adhesion to substrate (EN 1542) (MPa):	> 1 (after 28 days)
Impermeability expressed as coefficient of permeability to free water (EN 1062-3) ($kg/m^2 \cdot h^{0.5}$):	W < 0.1 - Class III (low permeability to water) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (EN ISO 7783-1) (m):	S_D = 0.1 - Class I (permeable to water vapour)
Reaction to fire (EN 13501-1) (Euroclass):	E
Consumption (per mm of thickness) (kg/m^2):	approximately 1.2

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm
– per square metre ..... *(€/m²)*

I.1.2.3 Fine-grained, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of fine-grained, white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected fine-grained limestone sand, special additives and powdered synthetic polymers (such as **Planitop 560** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to the surface of clean substrates with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.4 (Failure mode: FP = B)
Capillary action water absorption (EN 1015-18) [kg/(m²·min$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 20
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.45
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.1

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application and finishing off the surface of the mortar with a smooth, metal trowel.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.2.4 Lime and gypsum skimming mortar for “cured” and “dry” internal gypsum or anhydrite render

Supply and application of fine-grained, white, lime and gypsum skimming mortar for “cured” or “dry” internal and external traditional rough-finish or pre-blended gypsum, anhydrite or lime-cement render, made from hydrated lime, gypsum, ultra-fine marble powder, rheologic additives and powdered synthetic polymers (such as **Planitop 580** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
Apply the product on to dry surfaces with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must have the following performance characteristics:

Compressive strength after 28 days (N/mm²):	> 2
Flexural strength after 28 days (N/mm²):	> 1.4
Adhesion to substrate after 28 days (N/mm²):	≥ 0.5
Consumption (per mm of thickness) (kg/m²):	approximately 0.8

Included and calculated in the price for work carried out according to specification:
– application and finishing off the surface of the mortar with a smooth, metal trowel.
Average thickness 2 mm
– per square metre ..... *(€/m²)*

I.1.3 NEW WALLS PAINTED WITH TRANSPIRANT WATER-BASED PAINT - SUBSTRATES WITH A "CRUMBLY" SURFACE

Procedure

With this kind of structure, surfaces are usually in good condition and do not need to be restored. If, however, the surfaces need to be evened out with cementitious skimming mortar, use one of the products indicated in sections ***I.1.1.1***, ***I.1.1.2***, ***I.1.1.3***, and ***I.1.1.4***.

If no areas of substrate need to be restored, or if only priming is deemed sufficient after checking the condition of the substrate, apply a coat of **Malech** primer (see section ***I.2.1.1***) or **Silancolor Primer** (see section ***I.2.1.2***). Apply the primer neat or diluted, according to the state of the substrate.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.4 NEW WALLS PAINTED WITH WASHABLE WATER-BASED PAINT - SUBSTRATES WITH A COHESIVE SURFACE

Procedure

Prime the substrate directly with a coat of **Malech** primer (see section ***I.2.1.1***) or **Silancolor Primer** (see section ***I.2.1.2***) diluted according to requirements.

I.1.5 UNPAINTED NEW WALLS SKIMMED WITH GYPSUM-BASED MORTAR

Procedure

If the surfaces are smooth and shiny (a “glassy” surface), they must be roughened by abrading the surface with abrasive paper.

Then prime the substrate directly with a coat of **Malech** primer (see section ***I.2.1.1***) or **Silancolor Primer** (see section ***I.2.1.2***) diluted according to requirements.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.6 UNPAINTED NEW WALLS SKIMMED WITH CEMENT-BASED MORTAR

Procedure

Prime the substrate directly with a coat of **Malech** primer (see section ***I.2.1.1***), **Silexcolor Primer** (see section ***I.2.1.3***) or **Silancolor Primer** (see section ***I.2.1.2***) diluted according to requirements.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.7 UNPAINTED NEW WALLS WITH A ROUGH-RENDER FINISH REQUIRING SKIMMING

Procedure

Dampen the substrate with water and even out the surface with one of the skimming products below. Wait for the skimming mortar to cure and then prime the substrate with a coat of **Malech** primer (see section ***I.2.1.1***), **Silexcolor Primer** (see section ***I.2.1.3***) (except if the surface has been skimmed with **Planitop 580**) or **Silancolor Primer** (see section ***I.2.1.2***) diluted according to requirements.

I.1 INTERNAL WALLS: PREPARATION OF SUBSTRATES

I.1.7.1 One-component, fine-grained, cementitious mortar for skimming and forming a natural finish on internal and external concrete, cementitious and lime-mortar render, old quartz paint and scratch-effect plastic coating

Supply and application of one-component, fine-grained, high-adhesion, grey or white cementitious mortar, made from special high-strength binders, selected fine-grained aggregates, special additives and powdered synthetic polymers (such as **Planitop 200** produced by MAPEI S.p.A.), for skimming and forming a natural finish on internal and external concrete, cementitious and lime-mortar render, old quartz paint and scratch-effect plastic coating. Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly. If the substrate is painted, the paint must be even and must be well adhered to the substrate.
Apply the product on clean, damp substrates.If applied on absorbent surfaces (concrete and render), or dry substrates e.g. old paintwork, apply with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.
Thicker layers, up to a maximum of 6 mm, must be applied in two layers. Place alkaline-resistant glass fibre mesh (compliant with ETAG 004 guidelines), with a mesh size of 4 x 4.5 mm and a weight of 150 g/m² (such as **Mapenet 150** produced by Mapei S.p.A.), between the 1° and 2° layers. Overlap the edges of each strip of glass fibre mesh by at least 5 cm.
The product must comply with the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR for protecting concrete, classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength (EN 12190) (MPa):	> 20 (after 28 days)
Flexural strength (EN 196/1) (MPa):	> 5.0 (after 28 days)
Adhesion to substrate (EN 1542) (MPa):	> 2 (after 28 days)
Thermal compatibility measured as adhesion according to EN 1542 (MPa):	
– freeze-thaw cycles with de-icing salts (EN 13687/1):	≥ 1
– storm cycles (EN 13687/2):	≥ 1
Impermeability expressed as coefficient of permeability to free water (EN 1062-3) ($kg/m^2 \cdot h^{0.5}$):	W < 0.1 - Class III (low permeability to water) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (EN ISO 7783-1) (m):	S_D < 0.5 - Class I (permeable to water vapour)
Abrasion after 28 days (air) – loss in weight (ISO 5470) (g):	< 5 (after 100 cycles)
Reaction to fire (EN 13501-1) (Euroclass):	E
Consumption (per mm of thickness) (kg/m^2):	approximately 1.3

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

a) Average thickness 2 mm

– *per square metre* ..... *(€/m²)*

b) Average thickness 4 mm with **Mapenet 150**

– *per square metre* ..... *(€/m²)*

I.1.7.2 One-component, coarse-grained, cementitious mortar for skimming and forming a natural finish on internal and external concrete, cementitious and lime-mortar render, old quartz paint and scratch-effect plastic coating

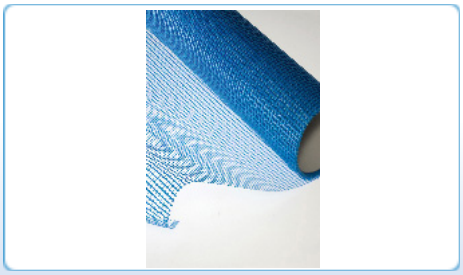
Supply and application of one-component, coarse-grained, high-adhesion, grey or white cementitious mortar, made from special high-strength binders, selected coarse-grained aggregates, special additives and powdered synthetic polymers (such as **Planitop 207** produced by MAPEI S.p.A.), for skimming and finishing off internal and external concrete, cementitious and lime-mortar render, old quartz paint and scratch-effect plastic coating.

Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly. If the substrate is painted, the paint must be even and must be well adhered to the substrate. Apply the product on clean, damp substrates.If applied on absorbent surfaces (concrete and render), or dry substrates e.g. old paintwork, apply with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.

Thicker layers, up to a maximum of 6 mm, must be applied in two layers. Place alkaline-resistant glass fibre mesh (compliant with ETAG 004 guidelines), with a mesh size of 4 x 4.5 mm and a weight of 150 g/m² (such as **Mapenet 150** produced by Mapei S.p.A.), between the 1° and 2° layers. Overlap the edges of each strip of glass fibre mesh by at least 5 cm.

The product must comply with the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR for protecting concrete, classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength (EN 12190) (MPa):	> 25 (after 28 days)
Adhesion to substrate (EN 1542) (MPa):	> 2 (after 28 days)
Impermeability expressed as coefficient of permeability to free water (EN 1062-3) ($kg/m^2 \cdot h^{0.5}$):	W < 0.1 - Class III (low permeability to water) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (EN ISO 7783-1) (m):	S_D < 0.5 - Class I (permeable to water vapour)
Reaction to fire (EN 13501-1) (Euroclass):	E
Consumption (per mm of thickness) (kg/m^2):	approximately 1.5



I.1.7.3 Natural-finish, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of natural-finish, grey or white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected quartz aggregates and special powdered additives (such as **Planitop 530** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to the surface of clean substrate surface with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.5 (Failure mode: FP = B)
Adhesion to substrate (render) (EN 1015-12) (N/mm²):	≥ 0.3 (Failure mode: FP = C)
Capillary action water absorption (EN 1015-18) [kg/(m²·min·$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 18
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.54
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.25

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.7.4 Natural-finish, cementitious skimming mortar for “cured” internal and external concrete and render

Supply and application of natural-finish, grey or white, cementitious skimming mortar for “cured” internal and external concrete and render, made from cementitious binders, selected aggregates in a granulometric curve, special powdered additives and powdered synthetic polymers (such as **Planitop 540** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.

Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.

Apply the product on to clean, damp substrate surface with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel or a sponge float.

The product must comply with the minimum requirements of EN 1504-2 coating (C) according to principles MC and IR for protecting concrete, classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength (EN 12190) (MPa):	15 (after 28 days)
Adhesion to substrate (EN 1542) (MPa):	> 1 (after 28 days)
Impermeability expressed as coefficient of permeability to free water (EN 1062-3) ($kg/m^2 \cdot h^{0.5}$):	W < 0.1 - Class III (low permeability to water) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S_D (EN ISO 7783-1) (m):	S_D = 0.1 - Class I (permeable to water vapour)
Reaction to fire (EN 13501-1) (Euroclass):	E
Consumption (per mm of thickness) (kg/m^2):	approximately 1.2

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application of the mortar with a smooth, metal trowel;
- finishing off the surface with a smooth, metal trowel or sponge float.

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.7.5 Fine-grained, lime-cement skimming mortar for “fresh” and “cured” internal and external render

Supply and application of fine-grained, white, lime-cement skimming mortar for “fresh” or “cured” internal and external traditional rough-finish render or pre-blended render, made from hydraulic and aerated binders, selected fine-grained limestone sand, special additives and powdered synthetic polymers (such as **Planitop 560** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
If applied on “cured” render, dampen the substrate beforehand.
Apply the product on to clean substrate surface with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must be classified according to EN 998-1 standards as GP-type for skimming mortar, category CS IV, and must have the following performance characteristics:

Compressive strength after 28 days (EN 1015-11) (N/mm²):	Category CS IV (≥ 6)
Adhesion to substrate (brickwork) (EN 1015-12) (N/mm²):	≥ 0.4 (Failure mode: FP = B)
Capillary action water absorption (EN 1015-18) [kg/(m²·min$^{0.5}$)]:	Category W 0
Coefficient of permeability to water vapour (EN 1015-19) (μ):	≤ 20
Thermal conductivity (EN 1745) (λ$_{10,dry}$) (W/m·K):	0.45
Reaction to fire (EN 13501-1) (Euroclass):	A1
Consumption (per mm of thickness) (kg/m²):	1.1

Included and calculated in the price for work carried out according to specification:

- hydro-cleaning of adhesion surfaces to obtain a damp substrate before applying the mortar;
- application and finishing off the surface of the mortar with a smooth, metal trowel;

Average thickness 2 mm

– per square metre ..... *(€/m²)*

I.1.7.6 Lime and gypsum skimming mortar for “cured” internal gypsum or anhydrite render

Supply and application of fine-grained, white, lime and gypsum skimming mortar for “cured” or “dry” internal and external traditional rough-finish or pre-blended gypsum, anhydrite or lime-cement render, made from hydrated lime, gypsum, ultra-fine marble powder, rheologic additives and powdered synthetic polymers (such as **Planitop 580** produced by MAPEI S.p.A.), before decorating with thin coats of mineral or synthetic paint or coatings.
Apply the mortar after adequate preparation of the substrate (not included) by removing all crumbly or detached areas to obtain a solid substrate. Remove all traces of dust or other elements which could prevent the product adhering correctly.
Apply the product on to dry surfaces with a smooth, metal trowel in layers of 1 to 3 mm thickness per coat, then finish off the surface with the same trowel.
The product must have the following performance characteristics:

Compressive strength after 28 days (N/mm²):	> 2
Flexural strength after 28 days (N/mm²):	> 1.4
Adhesion to substrate after 28 days (N/mm²):	≥ 0.5
Consumption (per mm of thickness) (kg/m²):	approximately 0.8

Included and calculated in the price for work carried out according to specification:
– application and finishing off the surface of the mortar with a smooth, metal trowel.
Average thickness 2 mm
– per square metre ..... *(€/m²)*

I.2 INTERNAL WALLS: PRIMING

I.2.1 PRIMING INTERNAL SURFACES
Procedure

After waiting the specific curing time of the skimming products used for restoration work, the substrates may be primed by applying one of the products indicated below:

– **Malech** (see section ***I.2.1.1***);
– **Silancolor Primer** (see section ***I.2.1.2***);
– **Silexcolor Primer** (see section ***I.2.1.3***).

I.2 INTERNAL WALLS: PRIMING

I.2.1.1 Water-based acrylic primer for smoothing out surfaces and promoting adhesion

Supply and application of high-penetration, micronised, acrylic resin fixing primer in water dispersion for new, well-cured substrates and old substrates which are not particularly absorbent (such as **Malech** produced by MAPEI S.p.A.). Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Density (g/cm³):	1.01
Dry solids content (%):	15
Average theoretical consumption (kg/m²):	0.10-0.15
Drying time:	24 hours at +20°C
Waiting time before painting over:	24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.2 INTERNAL WALLS: PRIMING

I.2.1.2 Transpirant siloxane primer with a smooth finish

Supply and application of silane and siloxane primer in water dispersion (such as **Silancolor Primer** produced by MAPEI S.p.A.), applied on surfaces to make the absorption of the substrate uniform and promote adhesion. Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Appearance:	fluid liquid
Dry solids content (%):	12
Density (g/cm³):	approx. 1.01
Theoretical yield:	6-10 m²/kg
Waiting time before painting over:	12-24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.2 INTERNAL WALLS: PRIMING

I.2.1.3 Highly transpirant silicate primer with a smooth finish

Supply and application of modified potassium silicate primer in water solution (such as **Silexcolor Primer** produced by MAPEI S.p.A.) to prepare substrates before applying products from the Silexcolor range. Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Consistency:	fluid liquid
Colour:	transparent, colourless
Density (g/cm³):	approx. 0.9
Dry solids content (%):	14
Waiting time before painting over:	24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3 INTERNAL WALLS: PAINTING SUBSTRATES

I.3.1 PAINTING INTERNAL SURFACES WITH WATER-BASED PAINT

I.3.1.1 Washable water-based wall paint for internal use

Supply and application of washable, water-based, modified acrylic paint in water dispersion with good covering properties and a smooth, matt finish (such as **Dursilite** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by spray after applying a suitable primer (such as **Malech** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.50
Theoretical yield per coat (m²/kg)	5-6
Damp abrasion UNI 10560 (Gardner cycles)	> 5,000
Vapour diffusion resistance coefficient (UNI EN ISO 7783-2) (μ)	40
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m)	0.06
Dirt retention (UNI 10792)	< 2 (low)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.1.2 Transpirant water-based wall paint for internal use

Supply and application of transpirant, water-based, synthetic resin paint in water dispersion with good covering properties and a smooth finish (such as **Colorite Matt** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by spray after applying a suitable primer (such as **Malech** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.65
Theoretical yield per coat (m²/kg):	5-6
Vapour diffusion resistance coefficient: (UNI EN ISO 7783-2) (μ):	20
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m)	0.03

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.1.3 Protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by spray after applying a suitable primer (such as **Malech** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant: (S_D> 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1.2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D< 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant: W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire		
EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions		
UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.2 PAINTING INTERNAL SURFACES DAMAGED BY MOULD Procedure

Preparation of substrates

Before painting surfaces with the presence of mould, clean them with **Silancolor Cleaner Plus** (see section ***I.3.2.1***), an anti-mildew and anti-mould product in water solution, applied by brush or with a manual spray gun. Dilute the product with water at a ratio of 1:3.

Repeat this operation several times, leaving the product on the surface for a few minutes to allow it to penetrate deep down into the substrate. Then remove the mildew, mould and fungi with a stiff brush.

After cleaning the surface, use a brush, roller or spray gun to apply an anti-mildew and anti-mould, silane and siloxane-based insulating primer in watery emulsion (such as **Silancolor Primer Plus**) (see section ***I.3.2.2***), used to even out the absorption of substrates and make them suitable for painting with products from the Silancolor Plus range. The product is supplied ready to use.

Finishing off substrates

For a mould and fungi-resistant finish, apply a coat of **Silancolor Paint Plus** (see section ***I.3.2.3***), a highly protective, highly transpirant, highly water-repellent, siloxane resin paint in water dispersion for internal and external use. Prepare the product by diluting it with 15%-20% of water and then apply it on the surface with a roller, brush or by spray.

I.3 INTERNAL WALLS: PAINTING SUBSTRATES

I.3.2.1 Anti-mildew and anti-mould cleaning product in water solution

Supply and application of an anti-mould and anti-mildew product in water solution (such as **Silancolor Cleaner Plus** produced by MAPEI S.p.A.) to clean the surface of walls before applying a suitable protective system (from the Silancolor Plus range).
The product must have the following characteristics:

Appearance:	transparent solution
Density (g/cm³):	approx. 1.01
Theoretical yield (m²/kg):	1-10
Preparation:	1 to 3 in water
Drying:	by air
Ready for painting over:	8-12 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3 INTERNAL WALLS: PAINTING SUBSTRATES

I.3.2.2 Mould and mildew-resistant siloxane hygienising primer with a smooth finish

Supply and application of mould and mildew-resistant, silane and siloxane, insulating primer in watery emulsion (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.), used to make the absorption of substrates uniform and promote adhesion before painting with a suitable finishing product (Silancolor Plus range).
The primer must have the following characteristics:

Appearance:	milky fluid liquid
Dry solids content (%):	5 ± 0.5
Density (g/cm³):	approx. 1.01
Theoretical yield (m²/kg):	6-10
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.2.3 Hygienising siloxane paint for internal and external use

Supply and application of highly transpirant, highly water-repellent, mould and mildew-resistant siloxane resin paint in water dispersion (such as Silancolor Paint Plus produced by MAPEI S.p.A.). Apply at least two coats of paint by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.55
Damp abrasion:	> 10,000 cycles
Change in colour after 1,000 hours exposure to a Weather-Ometer (according to ASTM G 155 cycle 1), white colour:	ΔE < 1
Change in colour after 1,000 hours exposure to a Weather-Ometer (according to ASTM G 155 cycle 1), grey colour:	ΔE < 1
Vapour diffusion resistance coefficient (DIN 52615) (μ):	339
Resistance to the passage of vapour of a 0.20 mm thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.07
Capillary action water absorption coefficient (W_{24})(DIN 52617) [kg/(m²h$^{0.5}$)]:	0.09
$S_D \cdot W_{24}$ =:	0.006 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore Silancolor Paint Plus respects Kuenzle's Theory (DIN 18550).
All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.3 PAINTING INTERNAL SURFACES IN DAMP ENVIRONMENTS

I.3.3.1 Siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply two coats of paint one after the other by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air: S_D (DIN 52615):	0.06
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in [kg/(m²·h$^{0.5}$)]:	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.3.2 Protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by spray after applying a suitable primer (such as **Malech** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1.2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant: W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire		
EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions		
UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.3.3 Two-component, anti-acid, non-toxic epoxy paint

Supply and application of two-component epoxy paint (such as **Mapecoat DW 25** produced by MAPEI S.p.A.) in compliance with the requirements of Ministerial Decree dated 06-04-2004 n° 174 Paragraph 2, art. 5 for contact with drinking water, with the capacity of resisting the action of slightly aggressive saturated solutions and acids.
The product must have the following special characteristics:

Mixing ratio:	component A : component B = 4 : 1
Density of mix (kg/m³):	1,300
Viscosity of mix (mPa·s):	1,500 (rotor 5 - 20 revs)
Workability time:	30'-40' (at +23°C)
Setting time of film:	4-5 h (at +23°C)
Final hardening time:	3 days (at +23°C)
Consumption (g/m²):	400-600 (per coat)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3 INTERNAL WALLS: PAINTING SUBSTRATES

I.3.4 PAINTING AND COATING INTERNAL SURFACES WITH A HIGH LEVEL OF RISING DAMP

I.3.4.1 Silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply two coats of the product one after the other by brush, with a roller or by spray after applying a coat of suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air: (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·$h^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.4.2 Thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm thick layer in equivalent metres of air: (S_D) (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before painting over:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.5 PAINTING AND COATING INTERNAL SURFACES IN LISTED BUILDINGS Procedure

Preparation of substrates

Make sure there is no old paint on the surface and that the substrate is sufficiently smooth, even and cured. Complete preparation of the substrate by applying a coat of **Silexcolor Primer** modified potassium silicate primer in water solution (see section ***I.2.1.3***) with a brush, roller or manual spray gun to even out the absorption of the substrate and make it suitable for painting with products from the Silexcolor range.

Finishing off substrates

Where surfaces are coloured, decorative,or have decorative finishes with an antique effect created using **Silexcolor Marmorino** modified potassium silicate, mineral plaster are required, may be finished off using various application techniques to form a variety of effects, such as:

CLASSICAL EFFECT (see section ***I.3.5.2***)

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.
- When the first layer dries, apply the second coat of **Silexcolor Marmorino** with the same circular movement.
- When the second layer is dry, go over particularly irregular areas on the surface with abrasive paper, and then polish the surface using the blade edge of the steel trowel.

ENCAUSTO EFFECT (see section ***I.3.5.3***)

- Apply a layer of **Silexcolor Tonachino** in a colour similar to that of the finishing product. Pass over the surface with a sponge float to create an even granulated effect while the **Silexcolor Tonachino** is drying.
- Spread on a thin layer of **Silexcolor Marmorino** with a steel trowel to create an even surface through which the **Silexcolor Tonachino** shows through.

VENEZIANO EFFECT (see section ***I.3.5.4***)

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel to form an evenly-thick layer.
- When it is dry, go over the surface with fine-grained abrasive paper, and apply a second layer of **Silexcolor Marmorino** in a different colour to the first layer (normally the same tone) using a triangular plasterer's trowel.
- Repeat the operation several times according to requirements, going over the surface with abrasive paper between each layer.
- Polish the surface using the blade edge of a steel trowel.

I.3 INTERNAL WALLS: PAINTING SUBSTRATES

I.3.5.1 Silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply two coats of the product one after the other by brush, with a roller or by spray after applying a coat of suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistanceto the passage of vapour of a 100 μm thick layer (W_{24}) in equivalent metres of air (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.5.2 "Classical effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).
Spread on the first coat of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.
When the first layer dries, apply the second coat of **Silexcolor Marmorino** with the same circular movement. When the second layer is dry, go over particularly irregular areas on the surface with abrasive paper, and then polish the surface using the blade edge of the steel trowel.
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006 kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.5.3 "Encausto effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

Apply a coat of **Silexcolor Tonachino** (see section ***I.3.4.2***) in a colour similar to that of the finishing product. Pass over the surface with a sponge float to create an even granulated effect while the **Silexcolor Tonachino** is drying.

Spread on a thin layer of **Silexcolor Marmorino** with a steel trowel to create an even surface through which the **Silexcolor Tonachino** shows through.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006 kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.5.4 "Veneziano effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).
Spread on the first layer of **Silexcolor Marmorino** using a steel trowel to form an evenly-thick layer. When it is dry, go over the surface with fine-grained abrasive paper, and apply a second layer of **Silexcolor Marmorino** in a different colour to the first layer (normally the same tone) using a triangular plasterer's trowel.
Repeat the operation several times according to requirements, going over the surface with abrasive paper between each layer.
Polish the surface using the blade edge of a steel trowel.
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6 PAINTING AND COATING INTERNAL SURFACES TO CREATE DECORATIVE FINISHES Procedure

Decorative finishes using Silexcolor Marmorino (Colour Project)

- **MARMORINO "CLASSICAL EFFECT"** (see section ***I.3.6.1***) application of **Silexcolor Marmorino** in 3 layers with a stainless steel trowel and polishing of the surface with a stainless steel trowel.
- **MARMORINO "ENCAUSTO EFFECT"** (see section ***I.3.6.2***)application of **Silexcolor Tonachino** with a stainless steel trowel, followed by application of **Silexcolor Marmorino** with a stainless steel trowel and polishing of the surface with a stainless steel trowel.
- **MARMORINO "VENEZIANO EFFECT"** (see section ***I.3.6.3***) application of **Silexcolor Marmorino** in 3 layers with a 10 cm steel trowel and polishing of the surface with a stainless steel trowel.
- **MARMORINO "TEXTURE EFFECT"** (see section ***I.3.6.4***) application of **Silexcolor Marmorino** in 1 layers with a stainless steel trowel and polishing of the surface with 1000 grit sandpaper.
- **MARMORINO "GYPSUM EFFECT"** (see section ***I.3.6.5***) application of **Silexcolor Marmorino** in 2 layers with a stainless steel trowel, no polishing required.

Decorative finishes using paint from the Dursilite, Colorite Matt, Colorite Performance, Silancolor, Silexcolor**,** Elastocolor or Quarzolite **ranges (Colour Project)**

- **"BRUSH EFFECT" PAINT** (see sections ***I.3.6.6***; ***I.3.6.7***; ***I.3.6.8***; ***I.3.6.9***; ***I.3.6.10***; ***I.3.6.11***; ***I.3.6.12***) **application of paint in two coats in the colour indicated in the specifications. Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast**.
- **"NUVOLATO EFFECT" PAINT** (see sections ***I.3.6.13***; ***I.3.6.14***; ***I.3.6.15***; ***I.3.6.16***; ***I.3.6.17***; ***I.3.6.18***; ***I.3.6.19***) application of paint in two coats in the colour indicated in the specifications. Once dry, apply a light coat of paint diluted 1:1 with water on the substrate using a napped painting mitt. Use a colour suitable to create sufficient contrast.

Decorative finishes using thick coating products from the Quarzolite**,** Silancolor or Silexcolor **ranges (Colour Project)**

- **TONACHINO "TEXTURE EFFECT"** (see sections ***I.3.6.20***; ***I.3.6.21***; ***I.3.6.22***) application of Quarzolite, Silancolor or **Silexcolor Tonachino** with a stainless steel trowel. Once dry, apply a light coat of neat Quarzolite, Silancolor or Silexcolor Paint with a sponge.
- **TONACHINO "BRUSH EFFECT"** (see sections ***I.3.6.23***; ***I.3.6.24***; ***I.3.6.25***) application of Quarzolite, Silancolor or **Silexcolor Tonachino** diluted with 10% of water by brush. Once dry, apply a light coat of Quarzolite, Silancolor or Silexcolor Paint with a sponge.
- **TONACHINO "NUVOLATO EFFECT"** (see sections ***I.3.6.26***; ***I.3.6.27***; ***I.3.6.28***) application of Quarzolite, Silancolor or **Silexcolor Tonachino** with a plastic trowel. Once dry, apply a light coat of Quarzolite, Silancolor or Silexcolor Paint diluted 1:1 with water using a sponge.
- **TONACHINO "GLITTER EFFECT"** (see sections ***I.3.6.29***; ***I.3.6.30***; ***I.3.6.31***)application of Quarzolite, Silancolor or **Silexcolor Tonachino** 0.7 mm with a plastic trowel. Once dry, apply **Mapelux Lucida** mixed with 5% of **MapeGlitter** by spray fitted with a 1.5/2.0 nozzle.
- **TONACHINO "BRICK EFFECT"** (see section ***I.3.6.32***; ***I.3.6.33***; ***I.3.6.34***) application of Quarzolite, Silancolor or Silexcolor Paint as a base coat with a roller or by brush. Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints. Apply Quarzolite, Silancolor or **Silexcolor Tonachino** with a stainless steel trowel and then tamp the surface with a sponge float. After application, remove the masking tape.

I.3.6.1 "Classical effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.the surface using the blade edge of a steel trowel.
- When the first layer dries, apply the second coat of **Silexcolor Marmorino** with the same circular movement.
- When the second layer is dry, go over particularly irregular areas on the surface with abrasive paper.
- Polish

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.2 "Encausto effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

– Apply a coat of **Silexcolor Tonachino** (see section ***I.3.4.2***) in a colour similar to that of the finishing product. Pass over the surface with a sponge float to create an even granulated effect while the **Silexcolor Tonachino** is drying.

– Spread on a thin layer of **Silexcolor Marmorino** with a steel trowel to create an even surface through which the **Silexcolor Tonachino** shows through.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24} = 0.050 \cdot 0.11$:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.3 "Veneziano effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel to form an evenly-thick layer.
- When it is dry, go over the surface with fine-grained abrasive paper, and apply a second layer of **Silexcolor Marmorino** in a different colour to the first layer (normally the same tone) using a triangular plasterer's trowel.
- Repeat the operation several times according to requirements, going over the surface with abrasive paper between each layer.
- Polish the surface using the blade edge of a steel trowel.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·$h^{0.5}$:	0.110
$S_D \cdot W_{24} = 0.050 \cdot 0.11$:	0.006kg/m·$h^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.4 "Texture effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.
- Polish the surface using 1,000 grit sandpaper.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.5 "Gypsum effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement.
- When dry, apply the second coat of **Silexcolor Marmorino**, no polishing required.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006 kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.6 "Brush effect" washable water-based wall paint for internal use

Supply and application of washable, water-based, modified acrylic paint in water dispersion with good covering properties and a smooth, matt finish (such as **Dursilite** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.50
Theoretical yield per coat (m²/kg):	5-6
Damp abrasion UNI 10560 (Gardner cycles):	> 5,000
Vapour diffusion resistance coefficient (UNI EN ISO 7783-2) (μ):	40
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m):	0.06
Dirt retention (UNI 10792):	< 2 (low)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.7 "Brush effect" transpirant water-based wall paint for internal use

Supply and application of transpirant, water-based, synthetic resin paint in water dispersion with good covering properties and a smooth finish (such as **Colorite Matt** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.65
Theoretical yield per coat (m²/kg)	5-6
Vapour diffusion resistance coefficient (UNI EN ISO 7783-2) (μ)	20
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m)	0.03

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.8 "Brush effect" protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency		thick liquid
Dry solids content (EN ISO 3251) (%)		approx. 61
Density (EN ISO 2811-1) (g/cm³)		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1,2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire		
EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.9 "Brush effect" siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.10 "Brush effect" silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.11 "Brush effect" protective elastomeric paint with crack-bridging properties

Supply and application of elastic acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		ΔE < 2.5
Permeability to CO_2	μ	1,272,581
(UNI EN 1062-6)	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2193
(UNI EN 7783-1,2)	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing: 7 days at +70°C		
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (μm)	1333
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B2
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.12 "Brush effect" acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	⊠E < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.13 "Nuvolato effect" washable water-based wall paint for internal use

Supply and application of washable, water-based, modified acrylic paint in water dispersion with good covering properties and a smooth, matt finish (such as **Dursilite** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.50
Theoretical yield per coat (m²/kg):	5-6
Damp abrasion UNI 10560 (Gardner cycles):	> 5,000
Vapour diffusion resistance coefficient (UNI EN ISO 7783-2) (μ):	40
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m):	0.06
Dirt retention (UNI 10792):	< 2 (low)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.14 "Nuvolato effect" transpirant water-based wall paint for internal use

Supply and application of transpirant, water-based, synthetic resin paint in water dispersion with good covering properties and a smooth finish (such as **Colorite Matt** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.65
Theoretical yield per coat (m²/kg):	5-6
Vapour diffusion resistance coefficient (UNI EN ISO 7783-2) (μ):	20
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m):	0.03

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.15 "Nuvolato effect" protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart	
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1.2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²$h^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.16 "Nuvolato effect" siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.17 "Nuvolato effect" silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.18 "Nuvolato effect" protective elastomeric paint with crack-bridging properties

Supply and application of elastic acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid.
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		ΔE < 2.5
Permeability to CO_2 (UNI EN 1062-6)	μ	1,272,581
	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour (UNI EN 7783-1.2)	μ	2193
	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water (UNI EN 1062-3)	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing: UNI EN 1062-11 4.1	7 days at +70°C result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity UNI EN 1062-7	crack-bridging (μm)	1333
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity UNI EN 1062-7	result/class	B2
Direct traction adherence test UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.19 "Nuvolato effect" acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	⊠E < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.20 "Texture effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Quarzolite Paint** (see section ***I.6.2.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.21 "Texture effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Silancolor Paint** (see section ***I.3.3.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.22 "Texture effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Silexcolor Paint** (see section ***I.3.4.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·$h^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.23 "Brush effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Quarzolite Paint** (see section ***I.6.2.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.24 "Brush effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Silancolor Paint** (see section ***I.3.3.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	2.0-3.5 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.25 "Brush effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Silancolor Paint** (see section ***I.3.4.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.26 "Nuvolato effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of **Quarzolite Paint** (see section ***I.6.2.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.27 "Nuvolato effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of **Silancolor Paint** (see section ***I.3.3.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·$h^{0.5}$):	0.12
$S_D \cdot W_{24}$ = 0.267·0.12:	0.032 kg/(m·$h^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.28 "Nuvolato effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of **Silexcolor Paint** (see section ***I.3.4.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in [kg/(m²·h$^{0.5}$)]:	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.29 "Glitter effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** 0.7 mm in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply **Mapelux Lucida** (produced by MAPEI S.p.A.) mixed with 5% of **MapeGlitter** (produced by MAPEI S.p.A.) in the colour indicated in the specifications by spray fitted with a 1.5/2.0 nozzle.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.30 "Glitter effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** 0.7 mm in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply **Mapelux Lucida** (produced by MAPEI S.p.A.) mixed with 5% of **MapeGlitter** (produced by MAPEI S.p.A.) in the colour indicated in the specifications by spray fitted with a 1.5/2.0 nozzle.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*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CE
EN 15824
V1 W3
A2-s1 d0
GREEN INNOVATION
Drop Effect


MAPEI


MAPEI
Silancolor
GREEN INNOVATION


MAPEI


MAPEI
MapeGlitter

I.3.6.31 "Glitter effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** 0.7 mm in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply **Mapelux Lucida** (produced by MAPEI S.p.A.) mixed with 5% of **MapeGlitter** (produced by MAPEI S.p.A.) in the colour indicated in the specifications by spray fitted with a 1.5/2.0 nozzle.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*


MAPEI
Silexcolor
Tonachino
CE
EN 15824
V1 W2
A2-s1 d0
GREEN INNOVATION


MAPEI


MAPEI
Silexcolor
GREEN INNOVATION


MAPEI


MAPEI
MapeGlitter

I.3.6.32 "Brick effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Quarzolite Paint** (see section ***I.6.2.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.33 "Brick effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Silancolor Paint** (see section ***I.3.3.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.6.34 "Brick effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Silexcolor Paint** (see section ***I.3.4.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Silexcolor Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dusty dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.7 PAINTING INTERNAL SURFACES WITH HYGIENE AND SANITARY REQUIREMENTS

I.3.7.1 Protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by spray after applying a suitable primer (such as **Malech** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1,2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.3.7.2 Two-component, anti-acid, non-toxic epoxy paint

Supply and application of two-component epoxy paint (such as **Mapecoat DW 25** supplied by MAPEI S.p.A.) in compliance with the requirements of Ministerial Decree dated 06-04-2004 n° 174, Paragraph 2 art. 5 for contact with drinking water, with the capacity of resisting the action of slightly aggressive saturated solutions and acids.
The product must have the following special characteristics:

Mixing ratio:	component A:component B = 4:1
Density of mix (kg/m³):	1,300
Viscosity of mix (mPa·s):	1,500 (rotor 5 - 20 revs)
Workability time:	30'-40' (at +23°C)
Setting time of film:	4-5 h (at +23°C)
Final hardening time:	3 days (at +23°C)
Consumption (g/m²):	400-600 (per coat)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.4 PREPARATION OF EXTERNAL SUBSTRATES

I.4.1 UNPAINTED, RENDERED FAÇADES ON OLD BUILDINGS
Procedure

Preparation of substrates

If there is any mould or mildew on the substrate, the surfaces must be washed before carrying out restoration work with **Silancolor Cleaner Plus**, an anti-mildew and anti-mould product in water solution for cleaning the surface of walls (see section ***I.3.2.1***).

Prepare façades by mechanically eliminating all loose parts from the substrate (loose render, dust, etc.) (see section ***F.1.1.2***) and by high-pressure hydro-cleaning (see section ***F.1.1.4***) to obtain a strong, solid, clean substrate.

Serious cracks (not due to hygrometric shrinkage of the render) must be repaired by demolishing the first 20 cm of render along the sides of the crack, and placing zinc-plated mesh fastened in place mechanically at half the thickness of the area of render to be reconstructed.

Restoration operations

Reconstruct the areas where render has been removed using one of the following products:

- **Nivoplan** levelling mortar for walls mixed with **Planicrete** synthetic latex partially replacing some of the mixing water (2 kg of **Planicrete** per 25 kg of **Nivoplan**) to improve adhesion;
- **Planitop Fast 330** rapid-setting, fibre-reinforced, thixotropic cementitious mortar, applied in layers of 3 to 30 mm thickness to level off internal and external vertical and horizontal substrates (see section ***A.1.3.3.2***);
- **Mape-Antique Intonaco NHL** transpirant natural hydraulic lime and Eco-pozzolan rendering mortar (see section ***H.8.1***).
- If the surfaces are not very flat even after reconstructing the render, skim the surface using one of the following products:
- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 530** natural-finish, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.8***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and “cured” internal and external render (see section ***F.9.1.9***);
- **Planitop 560** fine-grained, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.10***).

After waiting the specified curing time for the product used to restore the substrate, apply one of the following finishing cycles:

SILICATE CYCLE

Prime the surface of the substrate with a coat of **Silexcolor Primer**, a highly transpirant silicate primer for smoothing out surfaces (see section ***I.2.1.3***) or **Silexcolor Base Coat** coloured silicate primer (see section ***I.5.1.7***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silexcolor Paint** silicate paint for internal and external use (see section ***I.3.4.1***);
- **Silexcolor Marmorino** fine-grained, satin-finish silicate coating for internal and external use (see section ***I.3.5.2***);
- **Silexcolor Tonachino** thick silicate coating for internal and external use (see section ***I.6.4.2***);
- **Silexcolor Graffiato** scratch-effect silicate coating for internal and external use (see section ***I.6.4.3***).

SILOXANE CYCLE

Prime the surface of the substrate with a coat of **Silancolor Primer**,a transpirant siloxane primer for smoothing out surfaces (see section ***I.2.1.2***) or **Silancolor Base Coat** coloured siloxane primer (see section ***I.5.1.5***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silancolor Paint** siloxane paint for internal and external use (see section ***I.6.2.7***);
- **Silancolor Tonachino** thick siloxane coating for internal and external use (see section ***I.6.2.8***);
- **Silancolor Graffiato** scratch-effect siloxane coating for internal and external use (see section ***I.6.2.9***).

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech** a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer** fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.2 PAINTED, RENDERED FAÇADES ON OLD BUILDINGS
Procedure

Preparation of substrates

If there is any mould or mildew on the substrate, the surfaces must be washed before carrying out restoration work with **Silancolor Cleaner Plus**, an anti-mildew and anti-mould product in water solution for cleaning the surface of walls (see section ***I.3.2.1***).

Prepare façades by mechanically eliminating all loose parts from the substrate (loose render, dust, etc.) (see section ***F.1.1.2***) and by high-pressure hydro-cleaning (see section ***F.1.1.4***) to obtain a strong, solid, clean substrate.

Serious cracks (not due to hygrometric shrinkage of the render) must be repaired by demolishing the first 20 cm of render along the sides of the crack, and placing zinc-plated mesh fastened in place mechanically at half the thickness of the area of render to be reconstructed.

Restoration operations

Reconstruct the areas where render has been removed using one of the following products:

- **Nivoplan** levelling mortar for walls mixed with **Planicrete** synthetic latex, partially replacing some of the mixing water (2 kg of **Planicrete** per 25 kg of **Nivoplan**) to improve adhesion;
- **Planitop Fast 330** rapid-setting, fibre-reinforced, thixotropic cementitious mortar, applied in layers from 3 to 30 mm thick to level off internal and external vertical and horizontal substrates (see section ***A.1.3.3.2***);
- **Mape-Antique Intonaco NHL** transpirant natural hydraulic lime and Eco-pozzolan rendering mortar (see section ***H.8.1***).
- If the surfaces are not very flat and even after reconstructing the render, skim the surface using one of the following products:
- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 530** natural-finish, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.8***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and “cured” internal and external render (see section ***F.9.1.9***);
- **Planitop 560** fine-grained, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.10***).

After waiting the specified curing time for the product used to restore the substrate, apply one of the following finishing cycles:

SILICATE CYCLE

Prime the surface of the substrate with a coat of **Silexcolor Primer**, a highly transpirant silicate primer for smoothing out surfaces (see section ***I.2.1.3***) or **Silexcolor Base Coat** coloured silicate primer (see section ***I.5.1.7***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silexcolor Paint** silicate paint for internal and external use (see section ***I.3.4.1***);
- **Silexcolor Marmorino** fine-grained, satin-finish silicate coating for internal and external use (see section ***I.3.5.2***);
- **Silexcolor Tonachino** thick silicate coating for internal and external use (see section ***I.6.4.2***);
- **Silexcolor Graffiato** scratch-effect silicate coating for internal and external use (see section ***I.6.4.3***).

SILOXANE CYCLE

Prime the surface of the substrate with a coat of **Silancolor Primer**, a transpirant siloxane primer for smoothing out surfaces (see section ***I.2.1.2***) or **Silancolor Base Coat** coloured siloxane primer (see section ***I.5.1.5***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silancolor Paint** siloxane paint for internal and external use (see section ***I.6.2.7***);
- **Silancolor Tonachino** thick siloxane coating for internal and external use (see section ***I.6.2.8***);
- **Silancolor Graffiato** scratch-effect siloxane coating for internal and external use (see section ***I.6.2.9***).

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech**, a water-based acrylic primer for smoothing surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**, a water-based acrylic primer for smoothing surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer** fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.3 RENDERED FAÇADES ON OLD BUILDINGS WITH CAPILLARY RISING DAMP
Procedure

Preparation of substrates

Demolish the old render to up to 50 cm above the maximum level of the rising damp, and in all cases, to a height of at least twice the thickness of the wall.

After demolishing the damp render, dissolve and remove the saline concentrations in the masonry by hydro-cleaning the surface thoroughly several times.

Restoration operations

Reconstruct the demolished render by applying a de-humidifying, cementitious restoration mortar from the PoroMap range or a lime and Eco-Pozzolan mortar from the Mape-Antique range.

CEMENTITIOUS CYCLE POROMAP.

Any areas of render which have been demolished and/or which are missing must be reconstructed (using the cladding or patching technique) with natural material taken from previous demolition work or purchased locally.

Reconstruct the render demolished previously using **PoroMap Rinzaffo** mortar made from special pozzolan-reaction, salt-resistant hydraulic binders (see section ***H.6.2***).

As soon as the **PoroMap Rinzaffo** starts to set, and before it has completely hardened, apply a layer of **PoroMap Intonaco** dehumidifying render made from special pozzolan-reaction, salt-resistant hydraulic binders (see section ***H.7.2.4***).

If the surfaces are not very flat and even after reconstructing the render, skim the surface using **PoroMap Finitura** transpirant, pozzolan-reaction, salt-resistant, fine-grained skimming mortar (see section ***H.10.4***).

LIME AND ECO-POZZOLAN CYCLE MAPE-ANTIQUE

Any areas of render which have been demolished and/or which are missing must be reconstructed (using the cladding or patching technique) with natural material taken from previous demolition work or purchased locally.

Reconstruct the areas where render has been removed using **Mape-Antique Rinzaffo** lime and Eco-pozzolan mortar (see section ***H.6.1***).

As soon as the **Mape-Antique Rinzaffo** starts to set, and before it has completely hardened, apply a layer of **Mape-Antique MC** white, salt-resistant, lime and Eco-pozzolan dehumidifying render (see section ***H.7.2.2***)

If the surfaces are not very flat and even after reconstructing the render, skim the surface using Mape-Antique FC transpirant, pozzolan-reaction, salt-resistant, ultra fine-grained lime and Eco-pozzolan skimming mortar (see section ***H.10.1***).

After waiting the product's specified curing time apply one of the following finishing cycles:

SILICATE CYCLE

Prime the surface of the substrate with a coat of **Silexcolor Primer**,a highly transpirant silicate primer for smoothing out surfaces (see section ***I.2.1.3***) or **Silexcolor Base Coat** coloured silicate primer (see section ***I.5.1.7***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silexcolor Paint** silicate paint for internal and external use (see section ***I.3.4.1***);
- **Silexcolor Marmorino** fine-grained, satin-finish silicate coating for internal and external use (see section ***I.3.5.2***);
- **Silexcolor Tonachino** thick silicate coating for internal and external use (see section ***I.6.4.2***);
- **Silexcolor Graffiato** scratch-effect silicate coating for internal and external use (see section ***I.6.4.3***).

SILOXANE CYCLE

Prime the surface of the substrate with a coat of **Silancolor Primer**,a transpirant siloxane primer for smoothing out surfaces (see section ***I.2.1.2***) or **Silancolor Base Coat** coloured siloxane primer (see section ***I.5.1.5***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silancolor Paint** siloxane paint for internal and external use (see section ***I.6.2.7***);
- **Silancolor Tonachino** thick siloxane coating for internal and external use (see section ***I.6.2.8***);
- **Silancolor Graffiato** scratch-effect siloxane coating for internal and external use (see section ***I.6.2.9***).

I.4.4 UNPAINTED, RENDERED FAÇADES ON NEW BUILDINGS
Procedure

Preparation of substrates

With this kind of structure, surfaces are usually in good condition and do not need to be restored. If, however, the surfaces need to be evened out with cementitious skimming mortar, use one of the following products:

- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 530** natural-finish, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.8***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and “cured” internal and external render (see section ***F.9.1.9***);
- **Planitop 560** fine-grained, lime and cement skimming mortar for “fresh” or “cured” internal and external render (see section ***F.9.1.10***).

SILICATE CYCLE

Prime the surface of the substrate with a coat of **Silexcolor Primer**, a highly transpirant silicate primer for smoothing out surfaces (see section ***I.2.1.3***) or **Silexcolor Base Coat** coloured silicate primer (see section ***I.5.1.7***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silexcolor Paint** silicate paint for internal and external use (see section ***I.3.4.1***);
- **Silexcolor Marmorino** fine-grained, satin-finish silicate coating for internal and external use (see section ***I.3.5.2***);
- **Silexcolor Tonachino** thick silicate coating for internal and external use (see section ***I.6.4.2***);
- **Silexcolor Graffiato** scratch-effect silicate coating for internal and external use (see section ***I.6.4.3***).

SILOXANE CYCLE

Prime the surface of the substrate with a coat of **Silancolor Primer** transpirant siloxane primer for smoothing out surfaces (see section ***I.2.1.2***) or **Silancolor Base Coat** coloured siloxane primer (see section ***I.5.1.5***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Silancolor Paint** siloxane paint for internal and external use (see section ***I.6.2.7***);
- **Silancolor Tonachino** thick siloxane coating for internal and external use (see section ***I.6.2.8***);
- **Silancolor Graffiato** scratch-effect siloxane coating for internal and external use (see section ***I.6.2.9***).

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**, a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer** fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.5 SURFACES OF OLD REINFORCED CEMENT BUILDINGS/STRUCTURES WHICH HAVE NEVER BEEN PAINTED
Procedure

Preparation of substrates

Prepare surfaces by mechanically removing all deteriorated and loose concrete from the substrate (see section ***F.1.1.2***), by high-pressure hydro-cleaning (see section ***F.1.1.4***) or other suitable means, to obtain a strong, solid, clean, rough substrate (minimum roughness 5 mm).

Any steel reinforcement exposed following demolition operations must be cleaned by brushing to bring it back to a bare metal finish. If any damaged steel reinforcement needs to be replaced, see section ***F.1.2.1***.

Restoration operations

After removing all the rust from the exposed steel reinforcement, protect it by brush-applying two coats of **Mapefer 1K** one-component, anti-corrosion, re-alkalising cementitious mortar (see section ***F.2.1.1***) or **Mapefer**, a two-component, anti-corrosion cementitious mortar (see section ***F.2.1.2***).

Reconstruct the areas where the concrete has been removed using one of the products from the Mapegrout range or a specific product for restoring concrete from the Planitop range (Planitop Smooth & Repair, **Planitop 400** or **Planitop 430**). Apply the mortar on substrates saturated with water leaving a dry surface (s.s.d.). For further information, we recommend consulting sections *F3*, *F4* and *F5* in *Design guide: Restoration and protection of reinforced concrete*.

Once the restoration mortar is cured, if the surfaces need to be evened out with cementitious skimming mortar, use one of the following products:

- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and “cured” internal and external render (see section ***F.9.1.9***);
- **Mapelastic** two-component, elastic cementitious mortar for protecting and waterproofing concrete surfaces (see section ***F.9.2.1***);
- **Mapelastic Smart** two-component, elastic cementitious mortar applied by brush or with a roller for waterproofing concrete surfaces and protecting against aggressive agents (see section ***F.9.2.2***);
- **Monofinish** one-component, normal-setting cementitious mortar for skimming concrete and cementitious render (see section ***F.9.1.2***);
- **Mapefinish** two-component cementitious mortar with good resistance to abrasion and high resistance to sulphates (see section ***F.9.1.3***).

Wait until the skimming mortar has completely cured, if used, and then apply one of the following finishing cycles on a clean, dry substrate:

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer** fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.6 SURFACES OF OLD REINFORCED CEMENT BUILDINGS/STRUCTURES WHICH HAVE ALREADY BEEN PAINTED
Procedure

Preparation of substrates

Prepare surfaces by mechanically removing all deteriorated and loose concrete from the substrate (see section ***F.1.1.2***), by high-pressure hydro-cleaning (see section ***F.1.1.4***) or other suitable means, to obtain a strong, solid, clean, rough substrate (minimum roughness 5 mm).

Any steel reinforcement exposed following demolition operations must be cleaned by brushing to bring it back to a bare metal finish. If any damaged steel reinforcement needs to be replaced, see section ***F.1.2.1***.

Restoration operations

After removing all the rust from the exposed steel reinforcement, protect it by brush-applying two coats of **Mapefer 1K** one-component, anti-corrosion, re-alkalising cementitious mortar (see section ***F.2.1.1***) or **Mapefer**, a two-component, anti-corrosion cementitious mortar (see section ***F.2.1.2***).

Reconstruct the areas where the concrete has been removed using one of the products from the Mapegrout range or a specific product for restoring concrete from the Planitop range (Planitop Smooth & Repair, **Planitop 400** or **Planitop 430**). Apply the mortar on substrates saturated with water leaving a dry surface (s.s.d.). For further information, we recommend consulting sections *F3*, *F4* and *F5* in *Design guide: Restoration and protection of reinforced concrete*.

Once the restoration mortar is cured, if the surfaces need to be levelled with a cementitious skimming mortar, use one of the following products:

- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and “cured” internal and external render (see section ***F.9.1.9***);
- **Mapelastic** two-component, elastic cementitious mortar for protecting and waterproofing concrete surfaces (see section ***F.9.2.1***);
- **Mapelastic Smart** two-component, elastic cementitious mortar applied by brush or with a roller for waterproofing concrete surfaces and protecting against aggressive agents (see section ***F.9.2.2***);
- **Monofinish** one-component, normal-setting cementitious mortar for skimming concrete and cementitious render (see section ***F.9.1.2***);
- **Mapefinish** two-component cementitious mortar with good resistance to abrasion and high resistance to sulphates (see section ***F.9.1.3***).

Wait until the skimming mortar has completely cured, if used, and then apply one of the following finishing cycles on a clean, dry substrate:

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**, a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer** fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.7 SURFACES OF NEW REINFORCED CEMENT BUILDINGS/STRUCTURES WHICH HAVE NEVER BEEN PAINTED
Procedure

Preparation of substrates

With this kind of structure, surfaces are usually in good condition and do not need to be restored. If, however, the surfaces need to be evened out with cementitious skimming mortar, use one of the following products:

- **Planitop 200** one-component, fine-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.5***);
- **Planitop 207** one-component, coarse-grained, cementitious mortar for skimming and creating a natural finish on the surface of concrete, cementitious and lime-mortar render, old quartz paintwork and scratch-effect plastic coating (see section ***F.9.1.6***);
- **Planitop 540** natural-finish, cementitious skimming mortar for concrete surfaces and "cured" internal and external render (see section ***F.9.1.9***);
- **Mapelastic** two-component, elastic cementitious mortar for protecting and waterproofing concrete surfaces (see section ***F.9.2.1***);
- **Mapelastic Smart** two-component, elastic cementitious mortar applied by brush or with a roller for waterproofing concrete surfaces and protecting against aggressive agents (see section ***F.9.2.2***);
- **Monofinish** one-component, normal-setting cementitious mortar for skimming concrete and cementitious render (see section ***F.9.1.2***);
- **Mapefinish** two-component cementitious mortar with good resistance to abrasion and high resistance to sulphates (see section ***F.9.1.3***).

Wait until the skimming mortar has completely cured, if used, and then apply one of the following finishing cycles on a clean, dry substrate:

ACRYLIC CYCLE

Prime the surface of the substrate with a coat of **Malech**,a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***) or **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Colorite Performance** protective acrylic paint for internal and external use (see section ***I.6.1.4***);
- **Quarzolite Paint** acrylic paint with micro-granular quartz for internal and external use (see section ***I.6.2.1***);
- **Quarzolite Tonachino** thick acrylic coating for internal and external use (see section ***I.6.2.2***);
- **Quarzolite Graffiato** thick, scratch-effect acrylic coating for internal and external use (see section ***I.6.2.3***).

ELASTOMERIC CYCLE

Prime the surface of the substrate with a coat of **Malech**, a water-based acrylic primer for smoothing out surfaces and promoting adhesion (see section ***I.2.1.1***), **Quarzolite Base Coat** coloured acrylic primer (see section ***I.5.1.3***) or **Elastocolor Primer**, a fixing and consolidating, solvent-based penetrative primer (see section ***I.5.1.1***).

The day after applying the primer, complete the finishing cycle with one of the following products:

- **Elastocolor Paint** protective elastomeric paint with crack-bridging properties for internal and external use (see section ***I.6.1.1***);
- **Elastocolor Rasante** elastomeric, fibre-reinforced finishing product with filling properties (see section ***I.6.1.2***);
- **Elastocolor Rasante SF** elastomeric, fibre-reinforced, thick-coated finishing product (see section ***I.6.1.3***).

I.4.8 FAÇADES COATED WITH "EXPOSED-FINISH" STONE OR BRICKWORK

Procedure

Prepare the façades by eliminating all traces of dirt, dust and grease by high pressure hydro-cleaning (see section ***I.1.1.4***).

If the exposed stone or bricks are crumbly and/or weak, consolidate them using **Consolidante 8020**, a high-penetrating, polymer nano-solution in solvents with excellent resistance to alkalis (see section ***I.3.2***).

Protect exposed-finish dressings using one of the following products:

- **Antipluviol** water-repellent, colourless, impregnator made from silicone composites in water solution (see section ***I.6.6.1***);
- **Antipluviol W** water-repellent, colourless, impregnator made from silane and siloxane in a watery emulsion, for protecting brick, natural stone and artificial stone dressings from heavy rain, with the capacity to penetrate deep down into the substrate (see section ***I.6.6.3***);
- **Antipluviol S** water-repellent, colourless, impregnator made from silane and siloxane in solvents for protecting concrete from heavy rain, with the capacity to penetrate deep down into the substrate (see section ***I.6.6.2***).

I.5 PRIMING EXTERNAL SUBSTRATES

I.5.1 PRIMING EXTERNAL SURFACES

Wait for the skimming mortar used to restore the substrate to cure, and then prime the surface with one of the following products:

I.5 PRIMING EXTERNAL SUBSTRATES

I.5.1.1 High-penetration, consolidating and fixing solvent-based primer for crumbly and dusty substrates

Supply and application of high-penetration, consolidating and fixing solvent-based primer (such as **Elastocolor Primer** produced by MAPEI S.p.A.) applied by brush, with a roller or by spray.
The product must have the following special characteristics:

Density (g/cm³):	0.96
Dry solids content:	10%
Average theoretical consumption:	100-150 g/m²
Waiting time before painting over:	5-6 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5 PRIMING EXTERNAL SUBSTRATES

I.5.1.2 Water-based acrylic primer for smoothing out surfaces and promoting adhesion

Supply and application of high-penetration, micronised, acrylic resin fixing primer in water dispersion for new, well-cured substrates and old substrates which are not particularly absorbent (such as **Malech** produced by MAPEI S.p.A.). Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Dry solids content (%):	15
Density (g/cm³):	1.01
Average theoretical consumption (kg/m²):	0.10-0.15
Drying time:	24 hours at +20°C
Waiting time before painting over:	24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5.1.3 Coloured acrylic primer

Supply and application of smooth, coloured, acrylic resin, filling primer in water dispersion with micro-granular quartz and selected fillers (such as **Quarzolite Base Coat** produced by MAPEI S.p.A.). Apply at least one coat of primer by brush, with a roller or by spray.
The primer must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Viscosity of product (mPa·s):	17000 ± 1000
Dry solids content (%):	65 ± 2
Density (g/cm³):	1.68 ± 0.02
Consumption (kg/m²):	0.3-0.5 per coat
Vapour diffusion resistance coefficient (UNI EN ISO 7783) (μ):	428
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m) (UNI EN ISO 7783):	0.06
Capillary action water absorption coefficient (W_{24}) [kg/(m²h$^{0.5}$)] (UNI EN 1062-3):	0.53

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5.1.4 Transpirant siloxane primer with a smooth finish

Supply and application of silane and siloxane primer in water dispersion (such as **Silancolor Primer** produced by MAPEI S.p.A.), applied on surfaces to make the absorption of the substrate uniform and promote adhesion. Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Appearance:	fluid liquid
Dry solids content (%):	12
Density (g/cm³):	approx. 1.01
Theoretical yield:	6-10 m²/kg
Waiting time before painting over:	12-24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5.1.5 Coloured siloxane primer

Supply and application of smooth, coloured, siloxane resin primer in water dispersion with micro-granular quartz and selected fillers with high filling properties (such as **Silancolor Base Coat** produced by MAPEI S.p.A.). Apply at least one coat of primer by brush, with a roller or by spray.
The primer must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Viscosity of product (mPa·s):	17000 ± 1000
Dry solids content (%):	65 ± 2
Density (g/cm³):	1.68 ± 0.02
Consumption (kg/m²):	0.3-0.5 per coat
Vapour diffusion resistance coefficient (UNI EN ISO 7783) (μ):	300
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m) (UNI EN ISO 7783):	0.04
Capillary action water absorption coefficient (W_{24}) [kg/(m²h$^{0.5}$)] (UNI EN 1062-3):	0.24
$S_D \cdot W_{24} = 0.04 \times 0.24 =$	0.0096 [kg/(m²h$^{0.5}$)]

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Base Coat** respects Kuenzle's Theory (DIN 18550).
All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5 PRIMING EXTERNAL SUBSTRATES

I.5.1.6 Highly transpirant silicate primer with a smooth finish

Supply and application of modified potassium silicate primer in water solution (such as **Silexcolor Primer** produced by MAPEI S.p.A.). Apply the primer by brush, with a roller or by spray.
The product must have the following characteristics:

Consistency:	fluid liquid
Colour:	transparent, colourless
Density (g/cm³):	approx. 0.9
Dry solids content (%):	14
Waiting time before painting over:	24 hours at +20°C

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.5 PRIMING EXTERNAL SUBSTRATES

I.5.1.7 Coloured silicate primer

Supply and application of smooth, coloured, potassium silicate primer in water dispersion with micro-granular quartz and selected fillers with high filling properties (such as **Silexcolor Base Coat** produced by MAPEI S.p.A.). Apply at least one coat of primer by brush, with a roller or by spray.
The primer must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Viscosity of product (mPa·s):	18500 ± 1000
Dry solids content (%):	65 ± 2
Density (g/cm³):	1.61 ± 0.02
Consumption (kg/m²):	0.3-0.5 per coat
Vapour diffusion resistance coefficient (μ) (UNI EN ISO 7783) (μ):	149
Resistance to the passage of vapour of a 0.15 mm thick dry layer S_D (m) (UNI EN ISO 7783):	0.02
Capillary action water absorption coefficient (W_{24}) [kg/(m²h$^{0.5}$)] (UNI EN 1062-3):	0.80

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6 PAINTING EXTERNAL SUBSTRATES

I.6.1 PAINTING REINFORCED CEMENT

I.6.1.1 Protective, elastomeric, crack-bridging paint

Supply and application of elastic, acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply two coats of the product with a brush, roller or by spray after applying a coat of suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		ΔE < 2.5
Permeability to CO_2	μ	1,272,581
(UNI EN 1062-6)	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2193
(UNI EN 7783-1.2)	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²$h^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²

Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (µm)	1333
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B2
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²
Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.1.2 Fibre-reinforced elastomeric finishing product with good filling properties

Supply and application of ready-to-use, one-component, fibre-reinforced, elastomeric finish with good filling properties (such as **Elastocolor Rasante** produced by MAPEI S.p.A.). Apply the product by trowel or, if diluted with 5-10% of water, by brush or with a honeycomb or bristle roller, after applying a coat of suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The product must have the following special characteristics:
border="0" cellspacing="0" cellpadding="0">
Consistency:
thick liquid
Dry solids content (EN ISO 3251) (%):
approx. 67
Density (EN ISO 2811-1) (g/cm³):
approx. 1.35
Consumption (kg/m²)
0.4-0.7 (per coat)
Permeability to CO_2
μ
611,487
(UNI EN 1062-6)
S_D for a 0.00040 m thick dry layer (m)
245
result/class
compliant (S_D > 50 m)
Permeability to water vapour
μ
1417
(UNI EN 7783-1,2)
S_D for a 0.00040 m thick dry layer (m)
0.6
result/class
I (S_D < 5m)
Permeability to water
W_{24} [(kg/(m²$h^{0.5}$)]
0.02
(UNI EN 1062-3)
result/class
compliant (W_{24} < 0.1)
Thermal compatibility to ageing:
7 days at +70°C
UNI EN 1062-11 4.1
result/class
compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles ith immersion in de-icing salts
UNI EN 13687-1
result/class
compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles
UNI EN 13687-2
result/class
compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts
UNI EN 13687-3

result/class
compliant: adherence ≥ 0.8 N/mm²

Supply and application of elastic, acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply two coats of the product with a brush, roller or by spray after applying a coat of suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		compliant
	penetration (mm)	0
		ΔE < 2.5
Permeability to CO_2	μ	1,272,058
(UNI EN 1062-6)	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2193
(UNI EN 7783-1.2)	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²

Crack resistance, static crack bridging capacity
UNI EN 1062-7 — crack bridging (μm) — 1333
result/class — A4 (> 1.25 mm)

Crack resistance, dynamic crack bridging capacity
UNI EN 1062-7 — result/class — B2

Direct traction adherence test
UNI EN 1542 — result/class — compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1 — Euroclass — B-s1,d0

Exposure to artificial atmospheric agents
UNI EN 1062-11:2002 4.2 — result/class — compliant

Diffusion of chloride ions UNI 7928 — result/class — compliant

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (µm)	1427
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B 3.1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²
Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.1.3 Fibre-reinforced elastomeric finishing product applied in thick coats

Supply and application of one-component, fibre-reinforced, elastomeric, acrylic resin coating with fine-grained quartz spheres in water dispersion with good filling properties (such as **Elastocolor Rasante SF** produced by MAPEI S.p.A.), after applying a coat of suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 77
Density (EN ISO 2811-1) (g/cm³):		approx. 1.47
Consumption (kg/m²)	trowel:	0.7-0.8 (per coat)
	brush or roller:	0.3-0.5 (per coat)
Permeability to CO_2	μ	130,569
(UNI EN 1062-6)	S_D for a 0.00060 m thick dry layer (m)	78
	result/class	compliant ($S_D > 50$ m)
Permeability to water vapour	μ	1242
(UNI EN 7783-1,2)	S_D for a 0.00060 m thick dry layer (m)	0.7
	result/class	I ($S_D < 5$ m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.04
(UNI EN 1062-3)	result/class	compliant ($W_{24} < 0.1$)
Thermal compatibility to ageing:	7 days at 70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²

Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (µm)	1000
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B2
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²
Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.1.4 Protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply at least two coats of the product with a brush, roller or by spray after applying a suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.)
The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1,2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²$h^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²

Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²
Reaction to fire EN 13501-1	euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.1.5 Semi-transparent acrylic paint

Supply and application of semi-transparent, pure acrylic resin paint in water dispersion (such as **Colorite Beton** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller, spray or mixed air-airless spray after applying a suitable primer (such as **Malech** or **Elastocolor Primer** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 59
Density (EN ISO 2811-1) (g/cm³):		approx. 1.27
Consumption (kg/m²)		0.25-0.3 (in 2 coats)
Colour variation after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1): colour chart colours F.M. 4001, F.M. 4002, F.M. 4003 and F.M. 4004		ΔE < 1
Permeability to CO_2	μ	4,124,820
(UNI EN 1062-6)	S_D for a 0.00010 m thick dry layer (m)	412
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	3609
(UNI EN 7783-1,2)	S_D for a 0.00010 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.02
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²

Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (µm)	1117
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²
Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6 PAINTING EXTERNAL SUBSTRATES

I.6.2 PAINTING AND COATING RENDER WHICH HAS NEVER BEEN PAINTED

I.6.2.1 Acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply the product by brush, with a roller or by spray after applying a coat of suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	ΔE < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.2 Thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	85
Density (g/cm³):	1.65-1.95 (according to grain size)
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.3 Scratch-effect acrylic coating for internal and external use

Supply and application of scratch-effect acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Graffiato** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	85
Density (g/cm³):	1.65-1.95 (according to grain size)
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	supplied ready to use
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.4 Silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply two coats of the product one after the other by brush, with a roller or by spray after applying a coat of suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Brookfield viscosity (mPa s):	14,000 (rotor 6 - 20 revs)
Dust dry:	20-30 min.
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before applying other coats:	12 hours (at +20°C)
Drying time:	24 hours
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.5 Thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.6 Scratch-effect silicate coating for internal and external use

Supply and application of transpirant, scratch-effect, modified potassium silicate mineral paste coating (such as **Silexcolor Graffiato** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	80
Density (g/cm³):	1.7-1.8
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.7 Siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply two coats of paint one after the other by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.8 Thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.2.9 Scratch-effect siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Graffiato** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm thick layer in equivalent metres of air:	
S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient:	
(W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24}$ = 0.267·0.12:	0.032 kg/(m·h$^{0.5}$)
The value of S_D W_{24} is less than 0.1, therefore **Silancolor Graffiato** respects Kuenzle's Theory (DIN 18550).	
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification
..... *(€/m²)*

I.6 PAINTING EXTERNAL SUBSTRATES

I.6.3 PAINTING AND COATING RENDER WHICH HAS ALREADY BEEN PAINTED

I.6.3.1 Acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply at least two coats of the product using a brush, roller or by air-spray after applying a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	ΔE < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification
..... *(€/m²)*

I.6.3.2 Thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply one or more coats of the product with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.3.3 Scratch-effect acrylic coating for internal and external use

Supply and application of scratch-effect acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Graffiato** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8 (according to grain size)
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	supplied ready to use
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.3.4 Siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply two coats of paint one after the other by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.3.5 Thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.3.6 Scratch-effect siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Graffiato** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.)
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24}$ = 0.267·0.12:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Graffiato** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4 PAINTING AND COATING EXTERNAL SURFACES AND DEHUMIDIFYING RENDER

I.6.4.1 Silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply two coats of the product one after the other by brush, with a roller or by spray after applying a coat of suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Brookfield viscosity (mPa·s):	14,000 (rotor 6 - 20 revs)
Dust dry:	20-30 min.
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before applying other coats:	12 hours (at +20°C)
Drying time:	24 hours
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4.2 Thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4.3 Scratch-effect silicate coating for internal and external use

Supply and application of transpirant, scratch-effect, modified potassium silicate mineral paste coating (such as **Silexcolor Graffiato** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4.4 Siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply two coats of paint one after the other by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to the passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4.5 Thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24}$ = 0.267·0.12:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.4.6 Scratch-effect siloxane coating for internal and external use

Supply and application of highly transpirant, highly water-repellent, scratch-effect siloxane resin paste coating in water dispersion (such as **Silancolor Graffiato** produced by MAPEI S.p.A.). Apply one or more coats of paste coating with a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Graffiato** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.5 PAINTING EXTERNAL SURFACES DAMAGED BY MILDEW AND MOULD Procedure

Preparation of substrates

Before painting surfaces with the presence of mould, clean them with **Silancolor Cleaner Plus** (see section ***I.6.5.1***), an anti-mildew and anti-mould product in water solution, applied by brush or with a manual spray gun. Dilute the product with water at a ratio of 1:3.

Repeat this operation several times, leaving the product on the surface for a few minutes to allow it to penetrate deep down into the substrate. Then remove the mildew, mould and fungi with a stiff brush.

After cleaning the surface, use a brush, roller or spray gun to apply an anti-mildew and anti-mould, silane and siloxane-based insulating primer in watery emulsion (such as **Silancolor Primer Plus**) (see section ***I.6.5.2***), used to even out the absorption of substrates and make them suitable for painting with products from the Silancolor Plus range. The product is supplied ready to use.

Finishing off substrates

For a mould and fungi-resistant finish, apply a coat of **Silancolor Paint Plus** (see section ***I.6.5.3***.), a highly protective, highly transpirant, highly water-repellent, siloxane resin paint in water dispersion for internal and external use. Prepare the product by diluting it with 15%-20% of water and then apply it on the surface with a roller, brush or by spray.

I.6 PAINTING EXTERNAL SUBSTRATES

I.6.5.1 Anti-mildew and anti-mould cleaning product in water solution

Supply and application of an anti-mould and anti-mildew product in water solution (such as **Silancolor Cleaner Plus** produced by MAPEI S.p.A.) to clean the surface of walls before applying a suitable protective system (from the Silancolor Plus range).
The product must have the following characteristics:

Appearance:	transparent solution
Density (g/cm³):	approx. 1.01
Theoretical yield (m²/kg):	1-10
Preparation:	1 to 3 in water
Drying:	by air
Waiting time before painting over:	8-12 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.5.2 Mould and mildew-resistant siloxane hygienising primer with a smooth finish

Supply and application of mould and mildew-resistant silane and siloxane hygienising primer in water dispersion (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.), used to promote adhesion and to make the absorption of the substrate uniform before painting with products from the Silancolor Plus range.

The primer must have the following characteristics:

Appearance:	milky fluid liquid
Dry solids content (%):	5 ± 0.5
Density (g/cm³):	approx. 1.01
Theoretical yield (m²/kg):	6-10

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.5.3 Hygienising siloxane paint for internal and external applications

Supply and application of highly transpirant, highly water-repellent, mould and mildew-resistant siloxane resin paint in water dispersion (such as Silancolor Paint Plus produced by MAPEI S.p.A.). Apply at least two coats of paint by brush, with a roller or by spray after applying a coat of suitable primer (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	65
Density (g/cm³):	approx. 1.55
Theoretical yield (m²/kg):	3-5
Damp abrasion:	> 10,000 cycles
Change in colour after 1,000 hours exposure to a Weather-Ometer (according to ASTM G 155 cycle 1), white colour:	ΔE < 1
Change in colour after 1,000 hours exposure to a Weather-Ometer (according to ASTM G 155 cycle 1), grey colour:	ΔE < 1
Vapour diffusion resistance coefficient (DIN 52615) (μ):	339
Resistance to the passage of vapour of a 0.20 mm thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.07
Capillary action water absorption coefficient (W_{24}) (DIN 52617) [kg/(m²h$^{0.5}$)]:	0.09
$S_D \cdot W_{24}$ =:	0.006 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore Silancolor Paint Plus respects Kuenzle's Theory (DIN 18550).
All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.5.4 Hygienising siloxane coating for internal and external applications

Supply and application of highly transpirant, highly water-repellent, mould and mildew-resistant siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino Plus** produced by MAPEI S.p.A.). Apply one or more coats of paste coating using a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.90
Dry solids content (%):	approx. 80
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to the passage of vapour of a 1.5 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/m²·h$^{0.5}$:	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m²·h$^{0.5}$)
The value of S_D W_{24} is less than 0.1, therefore Silancolor Tonachino Plus respects Kuenzle's Theory (DIN 18550).	
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-2.3 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.5.5 Hygienising acrylic coating for internal and external applications

Supply and application of acrylic resin paste coating in water dispersion for walls resistant to the growth of mould and mildew with pigments and selected fillers (such as **Quarzolite Tonachino Plus** produced by MAPEI S.p.A.). Apply one or more coats of paste coating using a stainless steel or plastic trowel after applying a coat of suitable primer (such as **Silancolor Primer Plus** produced by MAPEI S.p.A.).

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.55-1.85 (according to grain size).
Dry solids content (%):	approx. 85
Waiting time before painting over:	12-24 hours
Consumption (kg/m²):	1.9-2.6 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.6 PROTECTING EXTERNAL STONE AND BRICKWORK SURFACES WITH AN EXPOSED FINISH

I.6.6.1 Water-repellent silicone impregnator in water solution

Supply and application of water-repellent silicone impregnator in water (such as **Antipluviol** produced by MAPEI S.p.A.). Apply several coats of the product until the substrate is saturated.
The finishing product must have the following characteristics:

Appearance:	transparent liquid
Active substance content (%):	5
Density (g/cm³):	approx. 1.02
Capillary action water absorption coefficient (W_{24}) (UNI EN 1062-3) [kg/(m²·h$^{0.5}$)]:	
Brick dressing:	0.04
Traditional render:	0.05
Tuff stone:	0.07
Cementitious skimming mortar:	0.38

According to UNI EN 1062-3 standards, the value of (W_{24}) < 0.1, therefore the product is class III (low water absorption).
All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.6.2 Transparent water-repellent siloxane resin impregnator

Supply and application of transparent, water-repellent, silane and siloxane impregnator in solvent (such as **Antipluviol S** produced by MAPEI S.p.A.). Apply several generous coats of the product.
The material must have the following special characteristics:

Colour:	transparent
Density (g/cm³):	approx. 0.80
Active substance content (%):	9
Brookfield Viscosity (mPa·s):	approx. 5 (rotor 1 - 50 revs)
Consumption (kg/m²):	0.15-2 (according to the absorption of the substrate)
Penetration depth (mm):	4
result/class:	I (< 10 mm)
Water absorption and absorption ratio UNI EN 13580	
Resistance to alkalis compared with untreated areas (%):	2.6
result/class:	compliant (< 7.5%)
Absorption ratio compared with untreated surface after immersion in alkali (%):	6.6
result/class:	compliant (< 10%)
Drying speed by hydrophobic impregnation	
drying speed coefficient UNI EN 13579 (%):	> 30
result/class:	I (> 30%)
Loss in mass after freeze-thaw cycles with de-icing salts	
UNI EN 13581 n° of cycles for treated surface:	> 50
n° of cycles for untreated surface:	9
Δ cycles treated - untreated:	> 41
result/class:	compliant (Δ cycles > 20)
hazardous substances result/class:	compliant

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.6.3 Transparent water-repellent silane and siloxane impregnator in watery emulsion

Supply and application of silane and siloxane impregnator in watery emulsion (such as **Antipluviol W** produced by MAPEI S.p.A.). Apply several coats of the product until the substrate is saturated.
The finishing product must have the following characteristics:

Appearance:	milky fluid liquid
Active substance content (%):	8
Density (g/cm³):	approx. 1.01
Capillary action water absorption coefficient (W_{24}) (UNI EN 1062-3) [kg/(m²·h$^{0.5}$)]:	
Brick dressing:	0.04
Traditional render:	0.03
Tuff stone:	0.06
Cementitious skimming mortar:	0.05

According to UNI EN 1062-3 standards, the value of (W_{24}) < 0.1, therefore the product is class III (low water absorption).
All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.7 PAINTING FLAT ROOFS AND GUTTERING

I.6.7.1 Acrylic paint for permanent contact with water

Supply and application of elastic acrylic resin paint in water dispersion for protecting elements in direct, permanent contact with water (such as **Elastocolor Waterproof** produced by MAPEI S.p.A.). At least three coats of the product must be applied by brush, roller or spray.
The finishing product must have the following characteristics:

Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 59
Density (EN ISO 2811-1) (g/cm³):		approx. 1.18
Consumption (kg/m²)		0.5-0.7 (in 3 coats)
Change in colour after 1,000 hours exposure to a Weather-Ometer (according to ASTM G 155 cycle 1), white colour:		$\Delta E < 1$
Permeability to CO_2 UNI EN 1062-6 (μ):		852,042
Dry thickness for S_D 0.00025 m (m):		213
result/class:		(S_D > 50 m)
Permeability to water vapour according to UNI EN ISO 7783-1,2 (μ):		3432
Dry thickness for S_D 0.00025 m (m):		0.9
result/class:		(S_D < 5 m)
Capillary absorption and permeability to water UNI EN 1062-3 (W_{24}) [kg/(m²h$^{0.5}$)]:		0.01
result/class:		compliant (W_{24} < 0.1)
Thermal compatibility to ageing: 7 days at +70°C UNI EN 1062-11 4.1:	result/class:	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility to freeze/thaw cycles with immersion in de-icing salts UNI EN 13687-1	result/class:	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility to storm cycles UNI EN 13687-2:	result/class:	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility to freeze/thaw cycles without immersion in de-icing salts UNI EN 13687-3.	result/class:	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, crack-bridging capacity UNI EN 1062-7 (μm):		1467
result/class:		A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity UNI EN 1062-7 result/class:		B2
Direct traction adherence test UNI EN 1542 result/class:		compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass:	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2 result/class:		compliant
Diffusion of chloride ions UNI 7928	penetration (mm):	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.8 PAINTING AND COATING EXTERNAL SURFACES OF LISTED BUILDINGS

I.6.8.1 Silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply two coats of the product one after the other by brush, with a roller or by spray after applying a coat of suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Brookfield Viscosity (mPa s):	14,000 (rotor 6 – 20 revs)
Dust dry:	20-30 min.
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before applying other coats:	12 hours (at +20°C)
Drying time:	24 hours
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.8.2 Silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.8.3 Scratch-effect silicate coating for internal and external use

Supply and application of transpirant, scratch-effect, modified potassium silicate mineral paste coating (such as **Silexcolor Graffiato** produced by MAPEI S.p.A.) after applying a coat of suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).
The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.7-1.8
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.9-2.8 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9 PAINTING EXTERNAL SUBSTRATES
Procedure

Decorative finishes using Silexcolor Marmorino (Colour Project)

- **"CLASSICAL EFFECT"** (see section ***I.6.9.1***) application of **Silexcolor Marmorino** in 3 layers with a stainless steel trowel and polishing of the surface with a stainless steel trowel.
- **"ENCAUSTO EFFECT"** (see section ***I.6.9.2***) application of **Silexcolor Tonachino** with a stainless steel trowel, followed by application of **Silexcolor Marmorino** with a stainless steel trowel and polishing of the surface with a stainless steel trowel.
- **"VENEZIANO EFFECT"** (see section ***I.6.9.3***) application of **Silexcolor Marmorino** in 3 layers with a 10 cm steel trowel and polishing of the surface with a stainless steel trowel.
- **"TEXTURE EFFECT"** (see section ***I.6.9.4***) application of **Silexcolor Marmorino** in 1 layer with a stainless steel trowel and polishing of the surface with 1000 grit sandpaper.
- **"GYPSUM EFFECT"** (see section ***I.6.9.5***) application of **Silexcolor Marmorino** in 2 layers with a stainless steel trowel, no polishing required.

Decorative finishes using paint from the Colorite Performance, Silancolor, Silexcolor, Elastocolor **or** Quarzolite **ranges (Colour Project)**

- – **"BRUSH EFFECT" PAINT** (see sections ***I.6.9.6***; ***I.6.9.7***; ***I.6.9.8***; ***I.6.9.9***; ***I.6.9.10***); application of two coats of paint in the colour indicated in the specifications. Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.
- **"NUVOLATO EFFECT" PAINT** (see sections ***I.6.9.11***; ***I.6.9.12***; ***I.6.9.13***; ***I.6.9.14***; ***I.6.9.15***); application of two coats of paint in the colour indicated in the specifications. Once dry, apply a light coat of paint diluted 1:1 with water on the substrate using a napped painting mitt. Use a colour suitable to create sufficient contrast.

Decorative finishes using thick coating products from the Quarzolite, Silancolor **or** Silexcolor **ranges (Colour Project)**

- – **TONACHINO "TEXTURE EFFECT"** (see sections ***I.6.9.16***; ***I.6.9.17***; ***I.6.9.18***);application of Quarzolite, Silancolor or **Silexcolor Tonachino** with a stainless steel trowel. Once dry**,** apply a light coat of neat Quarzolite, Silancolor or Silexcolor Paint with a sponge.
- **TONACHINO "BRUSH EFFECT"** (see sections ***I.6.9.19***; ***I.6.9.20***; ***I.6.9.21***);application of Quarzolite, Silancolor or **Silexcolor Tonachino** diluted with 10% of water by brush. Once dry**,** apply a light coat of Quarzolite, Silancolor or Silexcolor Paint with a sponge.
- – **TONACHINO "NUVOLATO EFFECT"** (see sections ***I.6.9.22***; ***I.6.9.23***; ***I.6.9.24***);application of Quarzolite, Silancolor or **Silexcolor Tonachino** with a plastic trowel. Once dry**,** apply a light coat of Quarzolite, Silancolor or Silexcolor Paint diluted 1:1 with water with a sponge.
- **TONACHINO "BRICK EFFECT"** (see sections ***I.6.9.25***; ***I.6.9.26***; ***I.6.9.27***); application of Quarzolite, Silancolor or Silexcolor Paint as a base coat with a roller or by brush. Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints. Apply Quarzolite, Silancolor or **Silexcolor Tonachino** with a stainless steel trowel and then tamp the surface with a sponge float. After application, remove the masking tape.

I.6.9.1 "Classical effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.
- When the first layer dries, apply the second coat of **Silexcolor Marmorino** with the same circular movement.
- When the second layer is dry, go over particularly irregular areas on the surface with abrasive paper.
- Polish the surface using the blade edge of a steel trowel.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·$h^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·$h^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.2 "Encausto effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Apply a coat of **Silexcolor Tonachino** (see section ***I.3.4.2***) in a colour similar to that of the finishing product. Pass over the surface with a sponge float to create an even granulated effect while the **Silexcolor Tonachino** is drying.
- Spread on a thin layer of **Silexcolor Marmorino** with a steel trowel to create an even surface through which the **Silexcolor Tonachino** shows through.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·$h^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·$h^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.3 "Veneziano effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel to form an evenly-thick layer.
- When it is dry, go over the surface with fine-grained abrasive paper, and apply a second layer of **Silexcolor Marmorino** in a different colour to the first layer (normally the same tone) using a triangular plasterer's trowel.
- Repeat the operation several times according to requirements, going over the surface with abrasive paper between each layer.
- Polish the surface using the blade edge of a steel trowel.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24} = 0.050 \cdot 0.11$:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.4 "Texture effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement, to create areas with slightly different thicknesses.
- Polish the surface using 1,000 grit sandpaper.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.5 "Gypsum effect" fine-grained, satin-finish silicate coating

Supply and application of highly transpirant, fine-grained, modified potassium silicate, mineral plaster with a satin finish, in compliance with DIN 18363 standards (such as **Silexcolor Marmorino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** produced by MAPEI S.p.A.).

- Spread on the first layer of **Silexcolor Marmorino** using a steel trowel in a semi-circular movement.
- When dry, apply the second coat of **Silexcolor Marmorino**, no polishing required.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.610
Dry solids content (%):	67
Vapour diffusion resistance coefficient (DIN 52615) (μ):	50
Resistance to the passage of vapour of a 1 mm thick layer in equivalent metres of air S_D (DIN 52615):	0.050 m
Capillary action water absorption coefficient (DIN 52617) (W_{24}) in kg/m²·h$^{0.5}$:	0.110
$S_D \cdot W_{24}$ = 0.050·0.11:	0.006 kg/m·h$^{0.5}$
Waiting time before painting over	12-24 hours

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.6 "Brush effect" protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1,2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.7 "Brush effect" siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.8 "Brush effect" silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to passage of vapour of a 100 μm thick layer in equivalent metres of air (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.9 "Brush effect" protective elastomeric paint with crack-bridging properties

Supply and application of elastic acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		ΔE < 2.5
Permeability to CO_2	μ	1,272,581
(UNI EN 1062-6)	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2193
(UNI EN 7783-1,2)	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²h$^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (μm)	1333
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B2
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.10 "Brush effect" acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, brush-apply a light coat of paint diluted 1:1 with water. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	⊠E < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.11 "Nuvolato effect" protective acrylic paint for internal and external use

Supply and application of pure acrylic resin paint in water dispersion (such as **Colorite Performance** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart	
Consistency:		thick liquid
Dry solids content (EN ISO 3251) (%):		approx. 61
Density (EN ISO 2811-1) (g/cm³):		approx. 1.35
Consumption (kg/m²)		0.3-0.4 (in 2 coats)
Permeability to CO_2	μ	1,363,475
(UNI EN 1062-6)	S_D for a 0.00015 m thick dry layer (m)	205
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2648
(UNI EN 7783-1,2)	S_D for a 0.00015 m thick dry layer (m)	0.4
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²$h^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (mm)	917
	result/class	A3 (> 0.5 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B1
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.12 "Nuvolato effect" siloxane paint for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paint in water dispersion (such as **Silancolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The paint must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.58
Dry solids content (%):	65
Vapour diffusion resistance coefficient (DIN 52615) (μ):	600
Resistance to passage of vapour of a 100 μm thick layer in equivalent metres of air S_D (DIN 52615):	0.06
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.06
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.20-0.30 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.13 "Nuvolato effect" silicate paint for internal and external use

Supply and application of one-component, modified silicate paint with selected fillers and light-resistant pigments (such as **Silexcolor Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable modified silicate primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The paint must have the following special characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.46
Dry solids content (%):	55
Maximum organic content:	according to DIN 18363
Vapour diffusion resistance coefficient (DIN 52615) (μ):	214
Resistance to passage of vapour of a 100 μm thick layer in equivalent metres of air (S_D) (DIN 52615) (m):	0.02
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.120
Waiting time before painting over:	12 hours (at +20°C)
Consumption (kg/m²):	0.35-0.45 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.14 "Nuvolato effect" protective elastomeric paint with crack-bridging properties

Supply and application of elastic acrylic resin paint in water dispersion (such as Elastocolor Paint produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech**, **Elastocolor Primer** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must also have the following characteristics:

Colour:		as specified by the Works Director or according to the manufacturer's colour chart
Consistency:		thick liquid
Density (EN ISO 2811-1) (g/cm³):		approx. 1.37
Dry solids content (EN ISO 3251) (%):		approx. 63
Consumption (kg/m²):		0.2-0.4 (per coat)
Resistance to accelerated aging (colour RAL 7032) after 1,000 hours exposure to a Weather-Ometer (ASTM G 155 cycle 1):		ΔE < 2.5
Permeability to CO_2	μ	1,272,581
(UNI EN 1062-6)	S_D for a 0.00025 m thick dry layer (m)	318
	result/class	compliant (S_D > 50 m)
Permeability to water vapour	μ	2193
(UNI EN 7783-1,2)	S_D for a 0.00025 m thick dry layer (m)	0.5
	result/class	I (S_D < 5 m)
Permeability to water	W_{24} [(kg/(m²$h^{0.5}$)]	0.01
(UNI EN 1062-3)	result/class	compliant (W_{24} < 0.1)
Thermal compatibility to ageing:	7 days at +70°C	
UNI EN 1062-11 4.1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: freeze-thaw cycles with immersion in de-icing salts		
UNI EN 13687-1	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: storm cycles		
UNI EN 13687-2	result/class	compliant: adherence ≥ 0.8 N/mm²
Thermal compatibility: thermal cycles without immersion in de-icing salts		
UNI EN 13687-3	result/class	compliant: adherence ≥ 0.8 N/mm²
Crack resistance, static crack-bridging capacity		
UNI EN 1062-7	crack-bridging (μm)	1333
	result/class	A4 (> 1.25 mm)
Crack resistance, dynamic crack-bridging capacity		
UNI EN 1062-7	result/class	B2
Direct traction adherence test		
UNI EN 1542	result/class	compliant: adherence ≥ 0.8 N/mm²

Reaction to fire EN 13501-1	Euroclass	B s1 d0
Exposure to artificial atmospheric agents		
UNI EN 1062-11:2002 4.2	result/class	compliant
Diffusion of chloride ions UNI 7928	penetration (mm)	0.0

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.15 "Nuvolato effect" acrylic paint with micro-granular quartz for internal and external use

Supply and application of acrylic resin paint in water dispersion with micro-granular quartz, pigments and selected fillers (such as **Quarzolite Paint** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of paint in the colour indicated in the specifications.
- Once dry, apply a light coat of paint diluted 1:1 with water using a napped painting mitt. Use a colour suitable to create sufficient contrast.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Appearance:	thick liquid
Dry solids content (%):	66
Density (g/cm³):	approx. 1.55
Damp abrasion DIN 53778:	> 5,000 cycles
Change in colour (blue) after 800 hours exposure to a Weather-Ometer:	⊠E < 2
Vapour diffusion resistance coefficient S_D (m) (DIN 52615):	0.04
Capillary action water absorption coefficient (W_{24}) [(kg/(m²h$^{0.5}$)] (DIN 52617):	1.21
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	0.30-0.40 (for two coats)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.16 "Bass-relief finish" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Quarzolite Paint** (see section ***I.6.2.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.17 "Texture effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Silancolor Paint** (see section ***I.3.3.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.18 "Texture effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** in the colour indicated in the specifications using a stainless steel trowel.
- Once dry, apply a light coat of neat **Silexcolor Paint** (see section ***I.3.4.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.19 "Brush effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Quarzolite Paint** (see section ***I.6.2.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.20 "Brush effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Silancolor Paint** (see section ***I.3.3.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6 PAINTING EXTERNAL SUBSTRATES

I.6.9.21 "Brush effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** diluted 10% with water in the colour indicated in the specifications with a brush.
- Once dry, apply a light coat of neat **Silexcolor Paint** (see section ***I.3.4.1***) with a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.22 "Nuvolato effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of neat **Quarzolite Paint** (see section ***I.6.2.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size).
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.23 "Nuvolato effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of **Silancolor Paint** (see section ***I.3.3.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·$h^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·$h^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.24 "Nuvolato effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply a layer of **Silexcolor Tonachino** in the colour indicated in the specifications using a plastic trowel.
- Once dry, apply a light coat of **Silexcolor Paint** (see section ***I.3.4.1***) diluted 1:1 with water using a sponge.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.25 "Brick effect" thick-layered acrylic coating for internal and external use

Supply and application of acrylic resin paste coating in water dispersion with pigments and selected fillers (such as **Quarzolite Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Malech** or **Quarzolite Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Quarzolite Paint** (see section ***I.6.2.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Quarzolite Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to grain size)
Dry solids content (%):	85
Waiting time before applying other coats:	12-24 hours
Dilution ratio:	ready to use
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.26 "Brick effect" thick-layered siloxane coating for internal and external use

Supply and application of highly transpirant and highly water-repellent siloxane resin paste coating in water dispersion (such as **Silancolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silancolor Primer** or **Silancolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Silancolor Paint** (see section ***I.3.3.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Silancolor Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Dry solids content (%):	approx. 80
Density (g/cm³):	1.65-1.95
Vapour diffusion resistance coefficient (DIN 52615) (μ):	178
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.267
Capillary action water absorption coefficient: (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.12
$S_D \cdot W_{24} = 0.267 \cdot 0.12$:	0.032 kg/(m·h$^{0.5}$)

The value of S_D W_{24} is less than 0.1, therefore **Silancolor Tonachino** respects Kuenzle's Theory (DIN 18550).

Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*

I.6.9.27 "Brick effect" thick-layered silicate coating for internal and external use

Supply and application of transpirant, coloured, modified potassium silicate mineral paste coating (such as **Silexcolor Tonachino** produced by MAPEI S.p.A.). Apply the product using the following procedure after treating the surface with a suitable primer (such as **Silexcolor Primer** or **Silexcolor Base Coat** produced by MAPEI S.p.A.).

- Apply two coats of **Silexcolor Paint** (see section ***I.3.4.1***) as a base layer.
- Once dry, apply strips of masking tape as a template to simulate 1 cm wide joints.
- Apply a layer of **Silexcolor Tonachino** in the colour indicated in the specifications with a stainless steel trowel and then tamp the surface with a sponge float.
- After application, remove the masking tape.

The finishing product must have the following characteristics:

Colour:	as specified by the Works Director or according to the manufacturer's colour chart
Density (g/cm³):	1.65-1.95 (according to the grain size)
Dry solids content (%):	80
Dust dry:	20-30 min. by air
Vapour diffusion resistance coefficient (DIN 52615) (μ):	39
Resistance to passage of vapour of a 1.5 mm-thick layer in equivalent metres of air S_D (DIN 52615) (m):	0.059
Capillary action water absorption coefficient (W_{24}) (DIN 52617) in kg/(m²·h$^{0.5}$):	0.09
Waiting time before applying other coats:	12-24 hours
Consumption (kg/m²):	1.7-3.0 (according to the grain size of the product and roughness of the substrate)

All other operations included and calculated in the price for work completed according to specification

..... *(€/m²)*