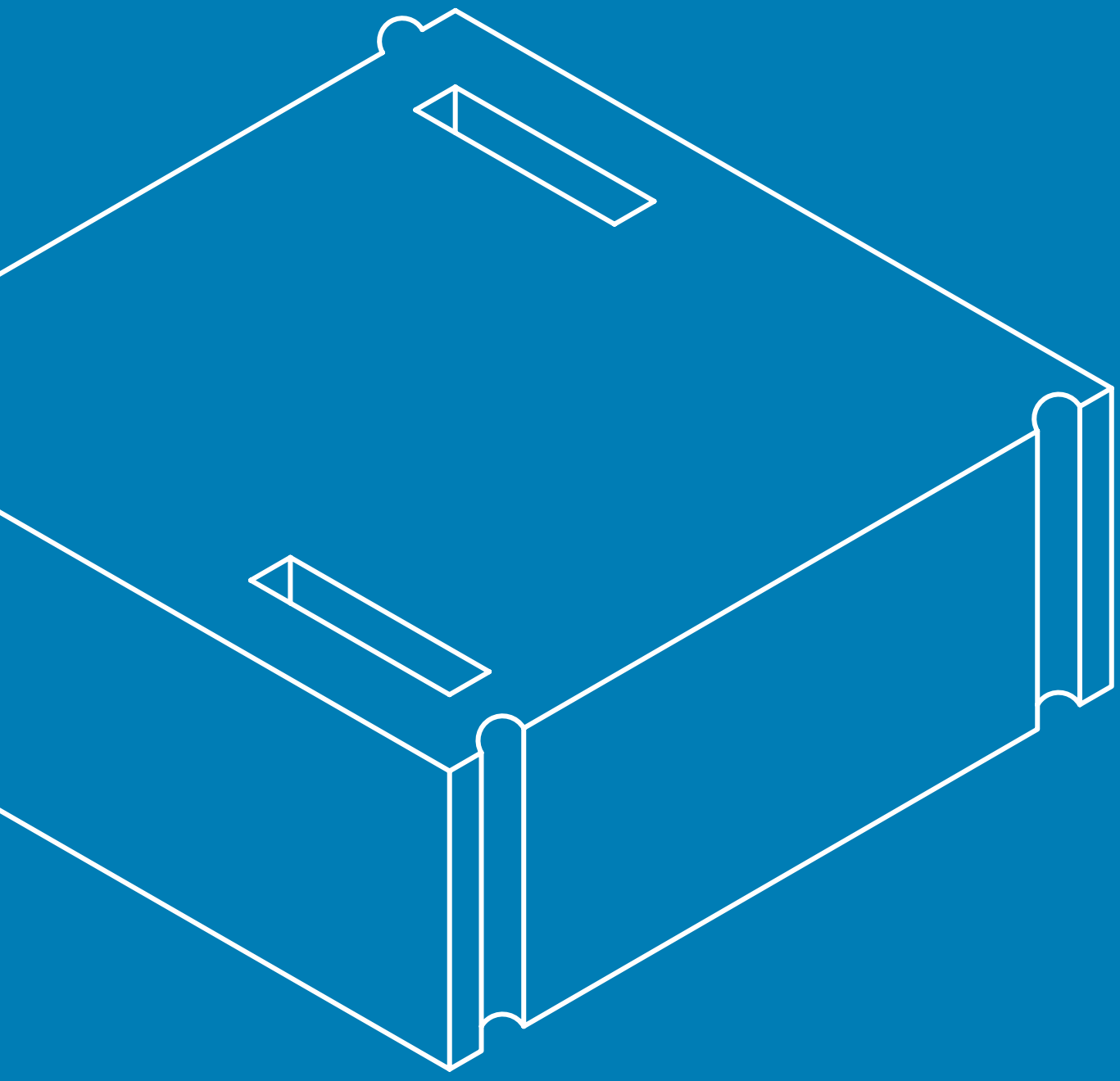


SUPERLIGHT BLOCKS FOR WALLS CONSTRUCTION

APPLICATION MANUAL . **SMART**BLOCK® SYSTEM

ESB

EASYAND**SMART**BLOCK®
lightweight for living comfort

MADE WITH

ROSACOMETTA


ESB
EASY AND SMART BLOCK®

INDEX . APPLICATION MANUAL . **SMART**BLOCK® SYSTEM

> APPLICATION PHASES

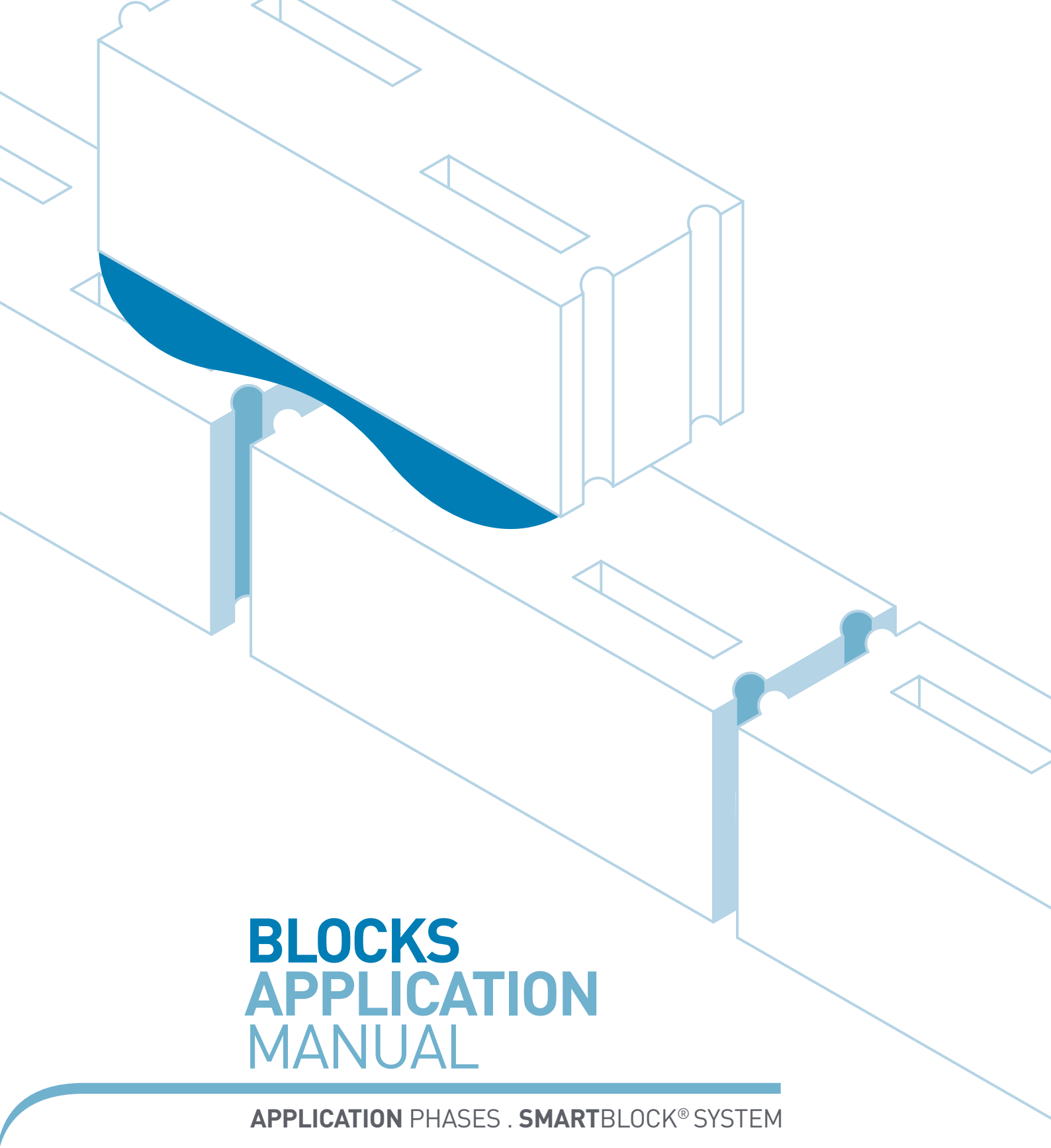
Surface preparation pg. **06**
Laying of the consecutive block rows pg. **07**
Completion of the wall pg. **09**
Fixing systems pg. **09**
Elements cutting and realization of openings and trackings into the wall pg. **10**
Lintels pg. **10**
Correction of thermal bridges pg. **10**

> INSTRUCTIONS FOR THE APPLICATION . INTERNAL AND EXTERNAL PLASTERS

Cement plaster pg. **12**
Cement plaster with fibre pg. **13**
Gypsum based plaster pg. **14**
Thermal insulating plaster pg. **15**
Fibres based adhesive powder / smoothing plaster pg. **16**
Masonry realized with **SMART**BLOCK® system pg. **17**

SMARTBLOCK® is a building system, composed by blocks for infill walls, suitable for the construction of opaque wall of façades and for internal partition walls. In order to guarantee a perfect application it is very important to choose the right building system, the appropriate mortar or binder, the type of plaster or smoothing plaster during the application phase.

SMARTBLOCK® system is fast and easy to realize thanks to its lightness and male/female profile. Below are some simple rules to be followed to get a proper installation, that are not different from the traditional concrete block application. In order to achieve the certified performance of masonry, it is necessary to build according to the building regulation. In comparison with similar products, the excellent thermal insulating and mechanical characteristics allow to reach high-performances with lower thicknesses than other similar products and in accordance with the applicable regulations.



BLOCKS APPLICATION MANUAL

APPLICATION PHASES . **SMART**BLOCK® SYSTEM

APPLICATION PHASES

1. SURFACE PREPARATION:

It is necessary to pay attention to this phase. It is recommended to be careful at the casting of ceiling and/or of the reinforced concrete beam to avoid excessive unevenness, and if needed to correct the defect. Accurately plot the masonry and verify the verticality of the wall.

It is suggested to put on the surface a waterproofing sheath or a polyethylene sheet for separating the floor and the wall made of SMARTBLOCK®.

Lay the first line of blocks using cement mortar and verify the planarity, the horizontality and the verticality by means of a spirit level. Remove possible differences in height.

If necessary correct the alignment with a rubber hammer. The first line of blocks has to be laid on a mortar substrate.

2. LAYING OF THE CONSECUTIVE BLOCK ROWS:

Blocks must be laid with "half - full" offset junctions, that is to say, a displacement between the lower and upper row of the block, using thermal insulating mortar like **Malta Block 600**.
It is necessary to check the planarity and the verticality of the wall during the application of blocks.

APPLICATION PHASES

The application can be realized both with the assistance of traditional tools (e.g. trowel) and by means of rollers for the mortar laying.

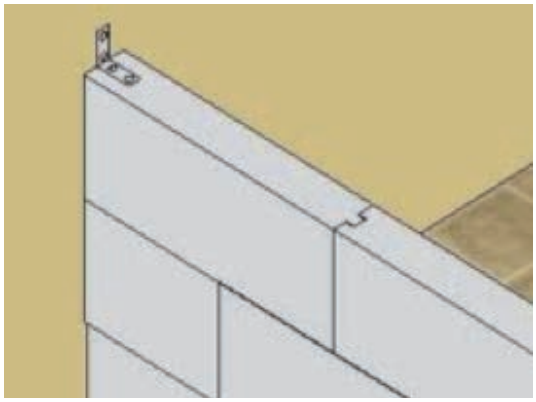
If necessary, correct the alignment as above explained. In case of reinforced concrete structures it is recommended to use an appropriate galvanized pylon to distribute the weight and reduce the crackles creation.
In case of intersected internal walls it is recommended to realize grips, in order to increase its stability avoiding cracks creation.

3. COMPLETION OF THE WALL:

In order to avoid any possible alteration of the wall performances, it is suggested to leave a joint of 1-2 cm to seal on both faces with elastic materials such as polyurethane foam and rock wool or other materials like that. The joint has to be fixed before the wall construction.
Therefore the last line of blocks should be adequately cut.

4. FIXING SYSTEMS:

Walls should be fixed to load-bearing concrete structures according to the instructions provided by the designer. The most common method provides reinforced concrete bars or metal brackets every three lines of blocks. They are fixed to the wall and to the structures with screws.



5. ELEMENTS CUTTING AND REALIZATION OF OPENINGS AND TRACKINGS INTO THE WALL:

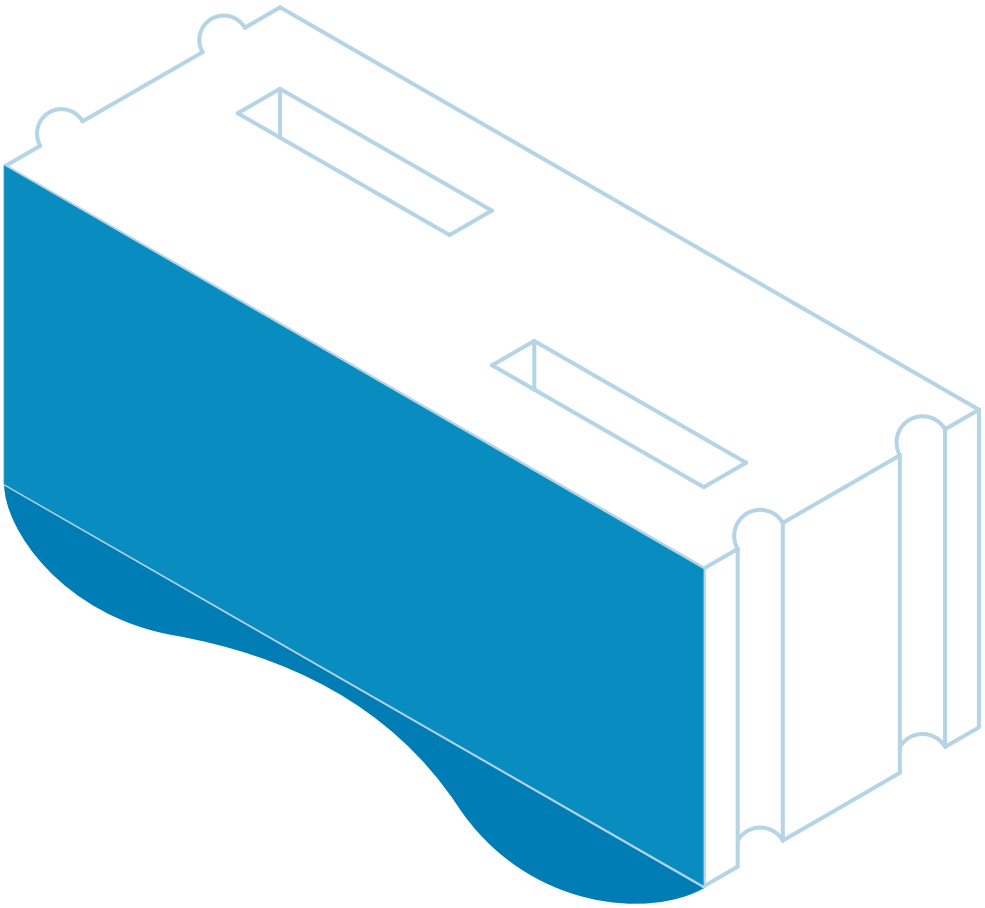
SMARTBLOCK® can be cut with common building tools, such as cut off wheels, both circular and band saw. The blocks are designed with a special composition and density. Therefore they are easy to work and particularly suitable for the realization of openings for electrical and piping system. This kind of operation can be executed using a milling or a disc groove cutting machine. It is recommended to seal the components applying a mortar like **Malta Block 600**.

6. LINTELS:

SMARTBLOCK® building system consists of a full range of reinforced concrete lintels that can be used to fabricate the opening of doors and windows up to 3 meters avoiding any possible thermal bridge. It is recommended to apply the lintel 25 cm on every portion of masonry.
Possible temporary wooden door frames and fixtures hinges or shutters can be fixed to the wall with concrete mortar or chemical resins. For the grouting of the internal openings a mortar like **Malta Block 600**.

7. CORRECTION OF THERMAL BRIDGES:

All the thermal bridges in correspondence with horizontal and vertical structures must be adequately adjusted in accordance with D.Lgs. 311/2006.



INTERNAL AND EXTERNAL **PLASTER**

INSTRUCTIONS FOR THE APPLICATION . **SMART**BLOCK® SYSTEM

INSTRUCTIONS FOR THE APPLICATION

INSTRUCTIONS FOR THE APPLICATION OF CEMENT PLASTER (verify the instructions given by the manufacturer): FOR INTERNAL/EXTERNAL USE.

1. **CLEANING THE SURFACE:** the surface must be free of residual dust, traces of friable and/or flimsy materials, and whatever else may hinder good and direct adhesion of the product to the surface. Before proceeding with the application, wet the surface and let it dry.

2. **PREPARATION OF THE INTERMEDIATE CORNERS AND STRIPES:** make plumb lines over the whole thickness using a galvanized steel staff angle and also make the intermediate stripes using the cement plaster.

3. **CONCRETE PLASTER APPLICATION (thickness between 1 and 2 cm):** apply the first coat of plaster, keeping the spraying gun from a 20 cm distance, in order to have a uniform spray and a minimum thickness of 1 cm. Insert it in a plaster mesh (minimum 140 gr/m^2) overlapped of 10 cm at least. After the application of the plaster and the mesh, proceed with the smoothing using an aluminium strip.

4. If necessary, apply a second coat.

5. **SCRAPING:** after 4 hours and when the product has hardened, scrape with a scraping knife, trowel or float in order to eliminate any imperfection left on the surface.

6. **FINISHING PRODUCTS:** the finishing mortar must be applied on the smoothing plaster layer and can be done with the following materials:

a. *Dry mortar (Isolteco® Rasatura Monocap grain size 0,9 mm type (* smoothed). Once the product has hardened, apply the suitable painting with roller or brush (Ecap® SP, Ecap® STP, Ecap® AP type). Before painting it is necessary to treat the entire surface with Ecap® F fixative.*
b. *Coloured silicate mortars to be applied with a trowel (Ecap® STC type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*
c. *Other colour finishing pastry to be applied with a trowel (Ecap® AC, Ecap® SC, Ecap® SCL type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*

** Mandatory smoothing for paint finishing mortar.*

INSTRUCTIONS FOR THE APPLICATION OF CEMENT PLASTER WITH FIBRE (verify the instructions given by the manufacturer): FOR INTERNAL/EXTERNAL USE.

1. **CLEANING THE SURFACE:** the surface must be free of residual dust, traces of friable and/or flimsy materials, and whatever else may hinder good and direct adhesion of the product to the surface. Before proceeding with the application, wet the surface and let it dry.

2. **PREPARATION OF THE INTERMEDIATE CORNERS AND STRIPS:** make plumb lines over the whole thickness using a galvanized steel staff angle and also make the intermediate stripes using the cement plaster with fibre.

3. **APPLICATION OF CONCRETE PLASTER WITH FIBRES (thickness between 1 and 2 cm):** apply the first coat of plasterwork with fibre, keeping the spraying gun from a 20 cm distance, in order to have a uniform spray and minimum thickness of 1 cm. If there are discontinuities (beams, pillars and so on), it is suggested to use a reinforcing fibreglass mesh that has to remain in the middle of the plaster (do not push it until the bottom) that have to extend of 20 cm at least from the other materials. After few minutes from the application of the plaster, proceed with the smoothing using an aluminium strip.

4. **SCRAPING:** after 4 hours and when the product has hardened, scrape with a scraping knife, trowel or float in order to eliminate any imperfections left on surface.

5. **FINISHING PRODUCTS:** the finishing mortar must be applied on the smoothing plaster layer and can be done with the following materials:

a. *Dry mortar (Isolteco® Rasatura Monocap grain size 0,9 mm type (* smoothed). Once the product has hardened, apply the suitable painting with roller or brush (Ecap® SP, Ecap® STP, Ecap® AP type). Before painting it is necessary to treat the entire surface with Ecap® F fixative.*
b. *Coloured silicate mortars to be applied with a trowel (Ecap® STC type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*
c. *Other colour finishing pastry to be applied with a trowel (Ecap® AC, Ecap® SC, Ecap® SCL type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*

** Mandatory smoothing for paint finishing mortar.*

INSTRUCTIONS FOR THE APPLICATION

INSTRUCTIONS FOR THE APPLICATION OF GYPSUM BASED PLASTER (verify the instructions given by the manufacturer): FOR INTERNAL USE.

1. **CLEANING THE SURFACE:** the surface must be free of residual dust, traces of friable and/or flimsy materials, and whatever else may hinder good and direct adhesion of the product to the surface. Before proceeding with the application, wet the surface and let it dry.

2. **PREPARATION OF THE INTERMEDIATE CORNERS AND STRIPES:** make plumb lines over the whole thickness using a galvanized steel staff angle and also make the intermediate stripes using the same concrete mortar.

3. **GYPSUM BASED PLASTER APPLICATION (thickness between 1 and 2 cm):** applying the first coat of gypsum based plaster with fibres, keep the spraying gun from a 20 cm distance, in order to have a uniform spray and a minimum thickness of 1 cm. If there are discontinuities (beams, pillars and so on), it is suggested to use a reinforcing fibreglass mesh that has to remain in the middle of the plaster (do not push it until the bottom) that have to extend of 20 cm at least from the other materials. After a few minutes from the application of the plaster, proceed with the smoothing using an aluminium strip.

4. **SCRAPING:** after 4 hours and when the product has hardened, scrape with a scraping knife, trowel or float in order to eliminate any imperfection left on the surface.

5. **FINISHING PRODUCTS:** the finishing mortar must be applied on the smoothing plaster layer and can be made with fine mortar (grain size 0,6 mm) or smoothing mortar (with specific finishing product). Later apply the suitable painting.

6. **APPLICATION OF CERAMIC COVERINGS:** it is recommended to use the suitable glue.

ISOLTECO® THERMAL INSULATING PLASTER: recommended FOR EXTERNAL USE.

1. **CLEANING THE SURFACE:** the surface must be free of residual dust, traces of friable and/or flimsy materials, and whatever else may hinder good and direct adhesion of Isolteco® to the surface. Before proceeding with the application, wet the surface and leave it till complete drying.

2. **PREPARATION OF THE INTERMEDIATE STRIP AND CORNER:** make plumb lines over the whole thickness using a galvanized steel staff angles for the corners (fixed to the surface with thermal mortar). Make the intermediate stripes using Isolteco® exclusively.

3. **APPLICATION OF THERMAL INSULATING MORTAR (thickness up to 4 cm):** apply the first coat of thermal insulating plaster with a thickness of 1 cm. After 4 hours it is recommended to apply a second coat of the thermal insulating plaster, according to the required thickness. For thicknesses higher than 4 cm contact Edilteco's Technical Department.

4. **SCRAPING:** crape with a scraping knife, trowel or float in order to eliminate any imperfection left on surface after final floating. Scraping also has the purpose of eliminating the surface polystyrene beads not fully covered with binder.
   Scraping must be carried out:
   Hot season: 24 - 48 hours after the application of the finishing coat.
   Cold season: 72 - 96 hours after the application of the finishing coat.

5. **SMOOTHING PLASTER:** this is a surface protection coating done with Isolteco®. The ideal product to use for this purpose is Isolteco® Rasatura Monocap. The thickness of the smoothing has to be of 4 - 5 mm. It is compulsory to insert fibreglass (minimum 140 gr/m^2) into the smoothing thickness.
   The smoothing plaster must be applied:
   Hot season: after 6 days.
   Cold season: after 10 days.

6. **FINISHING PRODUCTS:** the finishing mortar must be applied on the smoothing plaster layer and can be done with the following materials:

a. *Dry mortar (Isolteco® Rasatura Monocap grain size 0,9 mm type (* smoothed). Once the product has hardened, apply the suitable painting with roller or brush (Ecap® SP, Ecap® STP, Ecap® AP type). Before painting it is necessary to treat the entire surface with Ecap® F fixative.*
b. *Coloured silicate mortars to be applied with a trowel (Ecap® STC type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*
c. *Other colour finishing pastry to be applied with a trowel (Ecap® AC, Ecap® SC, Ecap® SCL type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*

** Mandatory smoothing for paint finishing mortar.*

INSTRUCTIONS FOR THE APPLICATION

REINFORCED SMOOTHING LAYER WITH FIBRES BASED ADHESIVE POWDER ECAP® ADP OR SMOOTHING PLASTER ISOLTECO® RASATURA MONOCAP BOTH FOR INTERIOR AND/OR EXTERIOR.

1. **CLEANING THE SURFACE:** the surface must be free of residual dust, traces of friable and/or flimsy materials, and whatever else may hinder good and direct adhesion of the product to the surface. Before proceeding with the application, wet the surface and let it dry.

2. **CONCRETE SMOOTHING:** the surface protection coating can be made with based fibre adhesive powder Ecap® ADP or smoothing plaster Isolteco® Rasatura Monocap. The thickness of the smoothing plaster must be of 4 - 5 mm and it is compulsory to insert in it a glass fibre mesh (minimum 160 gr/m^2) sized in the smoothing layer.
   The smoothing plaster must be applied:
   Hot season: after 6 days.
   Cold season: after 10 days.

3. **FINISHING PRODUCTS:** the finishing mortar must be applied on the smoothing plaster layer and can be done with the following materials:

a. *Dry mortar (Isolteco® Rasatura Monocap grain size 0,9 mm type (* smoothed). Once the product has hardened, apply the suitable painting with roller or brush (Ecap® SP, Ecap® STP, Ecap® AP type). Before painting it is necessary to treat the entire surface with Ecap® F fixative.*
b. *Coloured silicate mortars to be applied with a trowel (Ecap® STC type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*
c. *Other colour finishing pastry to be applied with a trowel (Ecap® AC, Ecap® SC, Ecap® SCL type), and after the application of the universal fixative Ecap® F on the smoothing plaster.*

** Mandatory smoothing for paint finishing mortar.*

MASONRY REALIZED WITH **SMART**BLOCK® SYSTEM

EXAMPLES OF **MASONRY**

PIACENZA: Opel dealer, first floor.

LODI: dividing walls for offices and canteen.

BELGIRATE: Villa Matilde castle, correction of thermal bridges of doors and windows.

EXAMPLES OF **MASONRY**

BELGIRATE: Villa Matilde castle, correction of thermal bridges of doors and windows.

NORWAY: residential intervention.

SWEDEN: private villa.

ESB

EASY AND SMART BLOCK®

lightweight for living comfort

MADE WITH

ROSACOMETTA

ESB s.r.l.

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