



**LA VERAPIETRA<sup>®</sup>**

**COVERINGS IN NATURAL STONE**



*stone collection*

TECHNICAL MANUAL

2011-12

*"The stone belongs to the land, but when it is worked, it receives the sky and becomes architecture"*



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## 2.DIRECTIONS

All the materials are subjected to various checks of quality, from production to packaging. We recommend to verify at the moment of the delivery that article, tonality and quantity correspond to what is indicated in the folder and in the transportation paper.

At the moment of the delivery, the packaging has to be complete without signs of crashes and pilferings. The retailer must check at the receiving of the wares, the integrity of the packaging and must point out possible differences on transportation paper, countersigned by the conveyer.

The retailer disposes of 8 days' time from the delivery of the wares for every objection. Subsequently the material is considered accepted. **Every type of responsibility declines for the materials partially or totally placed.**

Being valuable materials, we recommend to take care of them. The firm, thanks to checks from production to delivery, can verify with precision the content of the furniture and it doesn't assume any responsibility for dents that it hasn't verified and confirmed.

We recommend to buy in bulk how much you need. The firm doesn't assume any responsibility on colour for **additions or completions** after times.

In any case the additions after years hardly could be the same of existing material, in consideration of natural ageing of the products, caused by atmospheric agents and by dusts. On the contrary of rebuilt stones, natural ones can be washed with hydro spout or acid (depending on typology of stone) to make them clean and shiny again, while the rebuilt stone in this case would lose its colour.

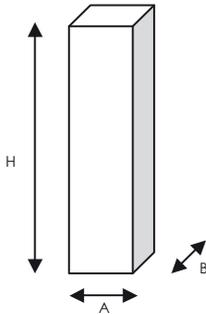
Use limits:

- **LA VERA PIETRA** doesn't add strength to the wall on which it is applied.
- **LA VERA PIETRA** doesn't have characteristics that guarantee the isolation of the ground on which it is laid. It's necessary to resolve every problem of isolation before the covering's placing.
- Avoid water infiltrations between covering and ground wall by using wall-coverings.
- **LA VERA PIETRA** can be applied in zones where there is flowing water in presence of chlorine as swimming pools or small lakes (rebuilt stones cannot).

### 3.MATERIAL'S CALCULATION

LA VERA PIETRA has two typologies of elements: **flats** or **corner-stones**. The **flat** elements have to be placed on vertical walls and are ordered per square meter. The **corner-stones** have to be applied on edges and are ordered per linear meter. The corner-stone's application around windows' opening, doors and columns contributes to give the effect of depth and tri-dimensionality, highlighting the design of the finishing.

We recommend to cover the columns or the edges, that have sides of at least 25 cm wide to give veracity and consistency of support to the element. In case of smaller sizes it's possible to enlarge the column with a polystyrene coat of desired thickness including metallic net reinforcement anchored with dowels or with a traditional planking. We recommend to buy a small percentage plus to make up for any scrap yard or other.



#### EXAMPLES OF CALCULUS:

$$H \times 4 = G \text{ ml}$$

Total corner-stone to order

$$G \times 0,25 = D \text{ mq}$$

Equivalent mq of corner-stone

$$A \times H \times 2 = X \text{ mq}$$

$$B \times H \times 2 = Y \text{ mq}$$

$$X + Y = E \text{ mq}$$

total area in mq

$$E - D = F \text{ mq}$$

total flat elements to order

0,25 = AVERAGE SURFACE OCCUPIED BY 1 ML OF CORNERS IN MQ



#### 4. EVALUATION OF THE GROUND

All the problems on the detachment that we found in recent years, have been caused by an incorrect evaluation of the ground or to a wrong use of mortars or bonding agents. The coverings LA VERA PIETRA can be applied on structurally solid surfaces, built according to good construction practises. The surfaces, where we apply coverings, must have a consistency that can sustain over time a covering of about 50 kg/m<sup>2</sup>.

In particular the bonding agent must be sufficient to support the adhesion tensions that arise between covering and texture without tearing, contrary to what one may think, the biggest problem isn't the weight of stone itself, but the different thermic expansion within different materials, created by changes of season, temperature, drying. If there isn't more than perfect anchorage between the two grounds, the chances of detachment will increase.

##### A LAYING WITH VARNISH

Any varnish treatment, surface waterproofing or other finishing, don't have the mechanical properties to support the stone which is prepared to support only its own weight and to adapt to structural movements. The application of covering with different thermic expansion from the ground involves the complete detachment over time.

##### B LAYING ON PRE-MIXED PLASTER

There are pre-mixed concrete-based plaster with good mechanical strength that after suitable measures can support LA VERA PIETRA coverings. However, there are many other less strong plaster, lime or other, which don't support the weight of the covering. Often the tearing occurs already during the drying of the bonding agent subsequently to its shrinkage. We suggest to consult the producer, the builder or the layer requiring them the necessary guarantees, before placing the covering directly on the plaster.

##### C LAYING ON NORMAL SETTING COAT

The normal finishing with setting coat or fine mortar lime-based creates an inconsistent and weak surface coat as if it was a varnish, without adequate mechanical strength necessary to support a covering.

##### D LAYING WITH HIGH TEMPERATURE AND BELOW 0°C

The hardening and the hold of a bonding agent or mortar is made possible by chemical action triggered by the water mixture. Its absence involves the immediate block of its action compromising the hardening and the achievement of the mechanical characteristics required. Too hard paste, freezing temperatures below -3°C or temperature above 35°C of the ground, may ruin a mortar/bonding agent and its hold with subsequently detachment through the passing of time and also burning.

##### E LAYING ON VERY ABSORBING SURFACES

The same problems described above, can also happen with very absorbing grounds that, by removing the water from the bonding agent/mortar, don't allow the adhesion of the material.



## 5. PREPARATION OF THE GROUND

LA VERA PIETRA coverings are applied directly on raw untreated walls, on any type of mortar or bonding agent with sufficient mechanical properties, on coat and gypsum-board properly anchored. For wood, metal, cellular concrete surfaces, weak plasters, varnished or treated surfaces, the specific procedures for the preparation of the ground must be followed, before laying the covering.

### A BRICK

Although this ground is found to be very safe as an anchor, the direct laying on brick doesn't guarantee to be rainproof and the eventual passage of water can saturate the wall below. Moreover, the bonding agent on brick could easily suffer burnout (see point D page 4). To obviate both issues we recommend a raw refill with a plaster of suitable mechanical properties.

### B BLOCKS OF CELLULAR CONCRETE (GASBETON)

To conform surfaces and improve water resistance, given the high absorption of these products, a shaving with special bonding agent must be made before the laying. The bonding agent will be recommended by producer or retailer and the anchorage of a special metallic net up to 2 mm, mesh 5 x 5 cm will also be recommended.

### C REINFORCED CONCRETE

Reinforced concrete turns out to be a ground among the safest and yet most difficult to use. It is necessary to make sure that no disarming oils has been used for the detachment of the formwork and that there aren't dusts or musses. In the first case the patina must be removed mechanically with the use of a flexible cup. In the second case it is sufficient to clean with high pressure water. Close attention must be paid to the ground's temperature during laying, especially in summer, the concrete being a strong accumulation of heat can "burn" the mortar/bonding agent easily. In this case we recommend to wet it plenty to reduce its temperature.

### D WOOD AND IRON

Transfer a sheet of tar paper or waterproof (ex. Tyvek, etc.) on the support of wood or iron. Below will be reported an electro welded metallic net of galvanized wire attached to the ground with dowels in number and distance appropriate to the ground's characteristics. It's necessary to keep the metallic net detached from the ground at few mm so the smoothing that you are going to apply can completely surround the metallic wires. When the shaving is completely dry, you can lay the covering. The strong expansion of the ground can break the stone in the corners, we recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm.

### E GROUND WITH UPWARD MOISTURE

The coverings LA VERA PIETRA's natural stones have an excellent transpiration, but they aren't dehumidifying materials; with appropriate systems you can still lay them in areas with upward moisture. On macerated grounds or with strong manifestations of moisture it's necessary to remove the weaker part and to retrieve with dehumidifying plasters. In the presence of small manifestations of moisture without detachments of plaster and with safe ground, the laying can be carried out any way, it is still needed to lay an electro welded metallic net of 2 mm wire, mesh 5 x 5 cm, attached to the ground with dowels in number and distance appropriate to the characteristics of the ground. It's necessary to keep the metallic net detached from the ground at few mm so that the smoothing agent that you are going to apply completely surrounds the metallic wires. We recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm.



#### **F THERMO INSULATING PLASTER**

The thermo insulating plasters on the market are designed to obtain an optimal transpiration and resistance to the passage of heat, but they have a sufficient mechanical strength only to support the finishing covering with a reduced weight. It is not possible to apply directly a covering LA VERA PIETRA of weight well over a normal finishing. To cover any risk, we recommend after the removal with water of processing dusts, to cover with an electro welded metallic net of 2 mm wire, mesh 5 x 5 cm, attached to the ground with dowels in number and distance appropriate to the characteristics of the ground. It's necessary to keep the metallic net detached from the ground at few millimeters so that the smoothing agent that you are going to apply completely surrounds the metallic wires. We recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm.

#### **G PRE-MIXED PLASTERS**

There are many typologies of pre-mixed plasters on the market, that usually are designed to support little weight and so they must be considered not as safe as grounds. Some are concrete-based and may have the required characteristics, but the supplier firm must give the adequate guarantees of covering support with weight not less than 50 kg/m<sup>2</sup>. The best solution is to carry an electro welded metallic net of 2 mm wire, mesh 5 x 5 cm, attached to the ground with dowels in number and distance appropriate to the characteristics of the ground. It's necessary to keep the metallic net detached from the ground at few mm so that the smoothing agent that you are going to apply completely surround the metallic wires. We recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm.

#### **H VARNISHES OR FILM OF DIFFERENT FINISHING**

With the presence of varnish there is no treatment or pat that can guarantee the covering's holding. The only two procedures allowed are the complete removal of varnish up to the safe ground or the laying of an electro welded metallic net through mechanical attachment to the ground.

1. Remove completely the superficial part with abrasive blasting or special equipment, to obtain a safe ground, wash with water to remove dust and smooth the surface with appropriate smoothing agent. Lay only when the drying procedure is completed. In the internal walls is faster to carry a gypsum-board pre-wall with a mechanically fixed structure to the ground (follow instructions to the point M).
2. For the mechanical coupling use an electro welded metallic net of 2 mm wire, mesh 5 x 5 cm, attached to the ground with dowels in number and distance appropriate to the characteristics of the ground. It's necessary to keep the metallic net detached from the ground at few mm so that the smoothing agent that you are going to apply completely surround the metallic wires. We recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm. The covering can be laid when the drying procedure is completed.

#### **I GROUND TREATMENTS**

The use of surface treatments and consolidation treatments of depth not adequately penetrated, must involve the realisation of holding testing before laying. Then make the glue and then tear when dry: the holding guarantee exists only if together with the stone removal occurs the tearing of the ground (plaster etc.) anchored to the bonding agent



#### **L TAR OVERLAY**

In the case of tar edges on the wall, no concrete bonding agent gives guarantee of anchorage. We recommend to report an electro welded metallic net of galvanized 2 mm wire, mesh 5 x 5 cm for two-thirds anchored to the structure and a third overlaying on the sheath. Anchor the structure with dowels in number and distance appropriate to the ground's characteristics. It's necessary to keep the metallic net detached from the ground at few mm so that the smoothing agent that you are going to apply completely surrounds the metallic wires. We recommend to overlay the metallic net on the corners and to place on the joints of at least 10 cm. When the drying procedure is completed, proceed with covering. In time, any eventual detachment from the sheath will be supported and held by the armature itself.

#### **M GYPSUM AND GYPSUM-BOARD**

The characteristic of these grounds is the strong absorption. To avoid problems it's necessary to make a waterproofing treatment by using a fixative in depth. Superficial fixatives of another kind, that can form a film with consequent detachment of the covering, should be avoided. To prove eventual fixative's holding paste a stone and when drying procedure is completed, proceed with the tearing; the guarantee will be given only if the ground comes away with the stone. A good alternative is to soak very well the ground with water thus making the lay, that should never occur in presence of water on the surface. In case of gypsum plaster make incisions on the surface to improve adhesion. To avoid any treatment you can use one of the many bonding agent on the market, specifically made for gypsum and gypsum-board grounds.

#### **N BLOCKS OF WOOD FIBER**

For the blocks of wood fiber make a double shavng of coat bonding agent with the inclusion between the two shaves of a fiber glass net of 160 gr/m<sup>2</sup> minimum, overlay the net on the corners and place it on the joints of at least 10 cm.



### ○ LAYING ON COAT

Recent legislations on energy saving impose energy efficiency requirements for buildings. For this reason the use of thermic coat as covering for houses' facades and consequently the necessity to make a safe laying of coverings on such covering surfaces is becoming more widespread. LA VERA PIETRA products' laying is possible only on perfectly-anchored-to-ground-coat and where exist a traction mechanical strength sufficient to support a covering of about 50 kg/m<sup>2</sup>. In case of already existing coats, coats with panels of rock wool system or coats on weak plaster, it will be necessary to rely on a mechanical attachment to the underlying structure, using the following system:

Report an electro welded galvanized wire net 2 mm, mesh 5 x 5 cm, fixed by dowels of suitable length and appropriate technical features to the support structure. A shaving with the same coat bonding agent will follow until the metallic net is completely covered. After hardening the surface is ready to be placed over with LA VERA PIETRA coverings.



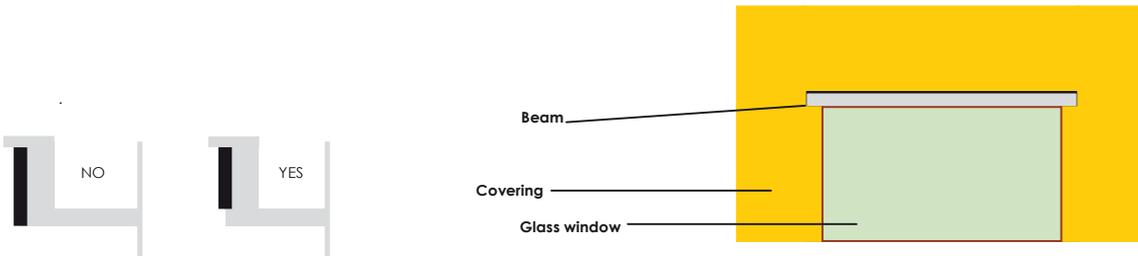


## 6. PLACING RULES

The coverings LA VERA PIETRA replace the old stone walls that have become too expensive and cumbersome, but without losing the charm to have in your environment a natural stone covering of low thickness, having the same credibility. The purely aesthetic element of LA VERA PIETRA coverings includes the knowledge and the respect of the constructive logics that were at the basis of the old natural stone walls even if its ductility allows any extremism or architectural hazard with a likely result. The natural beauty of the laid stone is an expression of personal taste which is further valued by the artistic ability of the layer.

Some rules are in any case indispensable for a correct use of LA VERA PIETRA articles:

1. The stones, when are load-bearings, must be positioned horizontally, depending on the direction of the grain and never vertically, to obtain the maximum compressive strength.
2. Near an opening (windows or arches) the laying of corner pieces in a vertically sense gives to the covering a very realistic effect.
3. In the case of large horizontal openings (large windows or balconies), the load forces of a bearing wall, will be distributed on a beam or on a decorative support of appropriate size along the opening which consequently will give full credit to work.





## 7. CLEANING AND MAINTENANCE

To clean any halos appeared at the end of laying, you must use metallic brush or high-pressured waterspout. If the stone is very dirty, use acids for the stones.

The ageing of stones laid out and time deposits imply a change in the colour, which can be removed, if necessary, with the use of high-pressure waterspouts or acids for natural stones.

## 8. GUARANTEE

The coverings LA VERA PIETRA are natural products and not factory's and so show their beauty in the imperfections that nature has given to them, their resistance and holding is guaranteed over time

*"Natural stone is history"*





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