



**METHODO** s.r.l.

**The Ventilated Wall Evolution**



# The Company

Methodo Srl is a company dedicated to projecting and developing ventilated walls. The experience in production of printed elements made in composite materials has its beginning in the first eighties researches, focused on solving the cold and humid walls problems, that were generally found in every building.

Methodo is an independent company, internally able to offer all the general instruments and know how in order to develop the engineering and projecting activities related to ventilated walls.

Since the eighties, the company worked in the north of Italy, but in the year 2000 it reached a fast success, working just in the Turin nearby for more than 500 buildings caulking interventions. Since then, this specific field is in continuous development, thanks also to the recent Italian facilitations for building energetic requalification.

The company operates also on the international market, where some supplies have been accomplished in Israel, Australia and Spain.

## summary

The Company . . . . .	3
New Constructions . . . . .	4
The Ventilated Wall . . . . .	8
Very High Buildings Covering . . . . .	10
The Methodo Ventilated Wall . . . . .	11
Existing Buildings Covering . . . . .	14
Methodo Ventilated Wall Features . . . . .	18
Façade Restructuration . . . . .	20
The Ventilated Coat . . . . .	22
Industrial Shed Insulation . . . . .	23
Technical Manual . . . . .	27
Methodo Panels Colors and Dimensions . . . . .	34





**new buildings**



*Methodo Ventilated Walls are used both in existing and new constructions, eliminating once and for all every maintenance and future restructuration costs. The colour interchange and the care for details create a refined and elegant atmosphere, beside all the advantages offered by a superior living comfort granted by the Methodo ventilated wall. In this photo there is a civil building.*







## The Ventilated Wall

“Cover well and air the building in order to obtain the best energy saving possible”.

Ventilated walls represent the state of the art of the modern building industry. It is made of:

- 1)** An external covering, that has an estetical value and it protects the building from atmospheric agents.
- 2)** The inner tube, that avoids the formation of steam and humidity thanks to the chimney effect.
- 3)** The external capsizing, that eliminates the thermal bridges and increases the thermal resistance and the acoustic insulation.

The ventilated wall, coupled with a good insulation, can be considered as the best technological solution for buildings energy saving, especially for those that have to be restructured and for all those buildings which thermal resistance as values equal or above  $U1 1.35 (W/m^2K)$ , far from those requested by the current laws, that normally must have values around  $U 0.32 (W/m^2K)$ .

This means a larger thermal dispersion, that leads to the appearance of humidity, underlined by some spots and mould, having reference to thermal bridges.

The thermal bridge is that part of a building structure that presents thermal features slightly different from those around. Specifically, a thermal bridge allows faster heat fluxes, constituting a favourite way for heat exchanges inside out.

The main effects are:

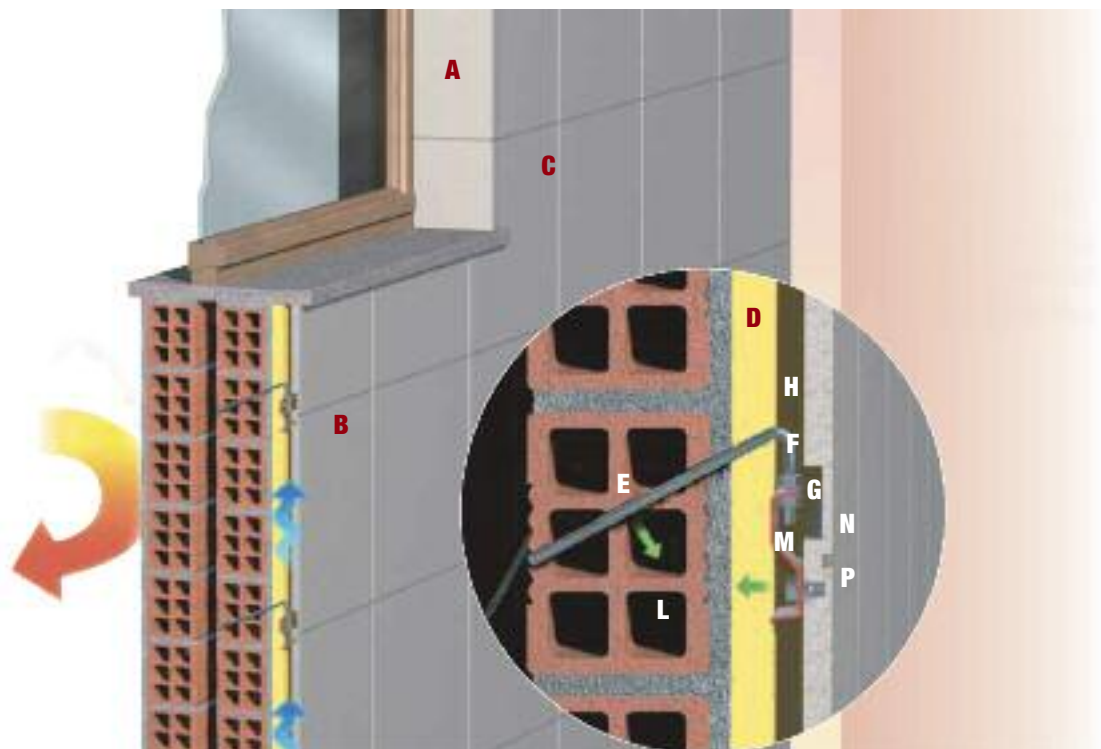
- 1)** A strong cooling in all those spots next to the thermal bridge. Subsequently a heavy condensation and the appearance of mould.
- 1)** A reduction of the insulating power of the wall.

Thermal bridges are not something casual but are simply the result of some projecting and/or building mistakes. These mistakes are avoidable since the very initial phases of the construction. However, we can eliminate thermal bridges coupling a total building insulation to a ventilated wall covering, which

## section of a ventilated wall

### Legend

- A** Methodo Parapet
- B** Methodo Layer
- C** Methodo Window Sill
- D** Methodo Insulating
- E** Methodo Anchor
- F** Tensioning Dice
- G** Regulation Dice
- H** Ventilated Chamber
- L** Tensioning Vectors
- M** Methodo “S” Stirrup
- N** Surmount
- P** Insert for the Layer





technical special feature is to constitute an external covering, spaced out from the bearing structure, in a way to allow the formation of a cavity useful for the air to circulate, thanks to the “chimney effect”.

The building costs, initially greater, are compensated by the superior architectural prestige of the building and by the tested energetic spare, that pays off well enough.

Furthermore, a well installed ventilated wall does not require any maintenance in time. This way there will be no future costs.

The ventilated wall is competitive both for new buildings and for recovering and requalifying existing buildings, residential, industrial and for public and private services.

Ventilated coverings have been created to answer, through high esthetical quality and undoubted thermoacoustic insulating features, to demanding needs for building protection against the combined action of rain and wind, neutralizing any negative weather effect and keeping dry the building structure.

The installation of the METHODO ventilated wall gives remarkable advantages both for new and existing buildings. These advantages are especially those related to energy efficiency, specially in the case of very high or exposed, isolated buildings.

In thermo energetic means, ventilated walls can reduce, in summer, the heat of the building thanks to the partial reflection of the sun by the external covering, to the ventilation in the cavity between the covering and the building structure and the insulation of the building, this way obtaining a great cooling system reduction costs.

Viceversa, during winter, ventilated walls hold the heat inside granting noticeable heat costs spare.

The chimney effect is possible through an efficient natural ventilation, granting noticeable benefits in heat and humidity removal and granting a high living comfort. Beside this,



ventilated walls reduce noise thanks to its main insulating purpose

Thanks to these numerous assets and to deep technological innovations, ventilated walls are growing in interest and applications in worldwide architecture, freeing building's façades from previous limits, giving to architects the creative possibility to renew completely the aspect of a building and the most complex project requests. Ventilated walls are layered composite building solutions that allow its external elements installation without any mortar.

From the structural point of view this is a true embossed system, very different from the traditional one; infact, the main metal structure is fixed to the wall through stirrups and achorages that allow to assembly indipendent layers as an external covering and an insulating mattress, in order to create an air cavity.

*continues to page 11*



**great height building covering**





*continues* from page 9

The effect of ventilation comes to its climax once this one is able to be efficient all over the façade, requiring exclusively a cavity dimensioning so to optimize sockets and valves.

### **Methodo ventilated wall**

The company Methodo Srl strongly believes in using ventilated walls in buildings of any dimension and height, in order to increase the energetic spare. It believes in the cultural and technical value of a system that has accompanied civilization towards its technological and social progress.

The development of new technical and

architectural solutions is a challenge, as well as the project of new layer models and the optimization of the productive process to grant a unique and vanguard product.

The chance of using natural products make the METHODO Layer the ideal component of any structure.

The METHODO ventilated wall system, along with materials, grant a new value to the whole building, definitely superior to the traditional brick façade.

Here we report the advantages of the methodo ventilated walls in comparison to traditional ones.

*Continues* to page 14









*continua da pag 11*

- No cracks in the covering;
- No wall collapsing for detachment;
- Protection of the structural walls from the direct action of atmospherical agents;
- No thermal bridges and high living comfort;
- No superficial condensation (the presence of the air cavity allows to get the water steam from the inside to get out, favouring the humidity to vanish)
- Efficiency in time of the external insulation, keeping it dry thanks to an excellent ventilation;
- Easy to set up independently from weather.
- Maintenance and intervention possibilities;
- Creation of a technical cavity for the plant.

#### **Features of Methodo Ventilated Walls**

- 1)** All sides closed joint.
  - 2)** Chance to be mounted without an under-structure.
  - 3)** The composite structure of the layer.
- a)** The closed joint gives the chance to reduce the air tube at the least, in order to further reduce the spaces specially next to the property boundaries.
- b)** Less costs for the whole system due to the lack of an understructure.
- c)** The composite material gives a resistance to knocks superior to any natural or ceramic related material. Beside this, the ceramic ones break if knocked, creating dangerous situations specially for those façades next to sidewalks. Methodo Layers instead of breaking got pierced.

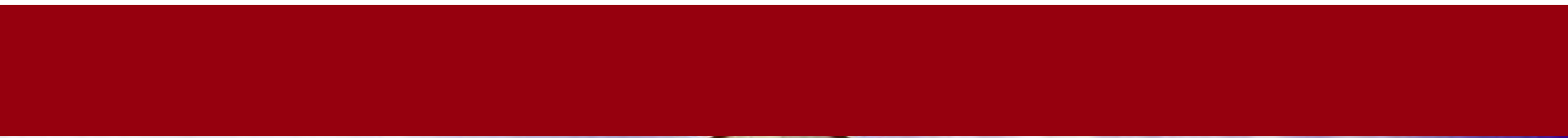
## existing building covering







*The building before the intervention: The walls underneath have been disrupted by weather and climate.*

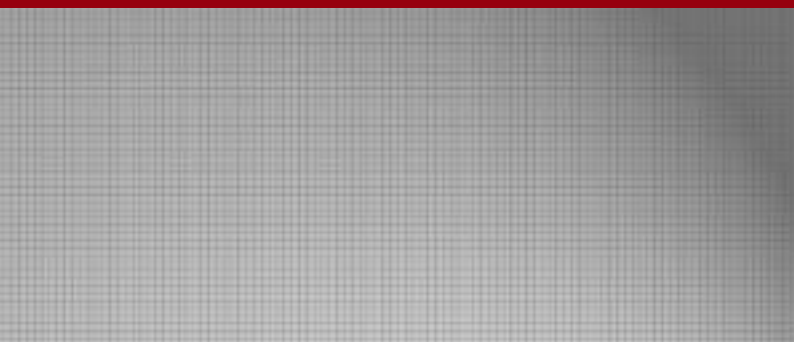




*Covering  
Detail*











*Before Intervention*



*After the Intervention*





*Before Intervention*



*After the Intervention*



## façade restructuration







*A building that presents a disrupted façade and it is highly dispersive from the energetic point of view, it is also not so aesthetic. The METHODO ventilated façade solves brilliantly these inconvenients.*





## the ventilated coat

It is dedicated to those customers who prefer the aesthetical aspect of a normal façade without losing all the advantages of the METHODO ventilated walls..

The ventilated coat consists essentially in cover-

ring the raw wall with the classical insulating system by METHODO. The wall is then covered with a normal plastering procedure. The result is the one of a conventional wall, maintaining unaltered all the METHODO insulating benefits.





*Before the intervention*



## **industrial shed insulation**

*After the intervention*















# Technical Manual



## The Methodo Module

Methodo Layers can be installed both on existing and new buildings, in order to create the ventilated wall system.

Methodo Layers are made of a composite pre formed material. This material gives the layers a consisted hardness.

Methodo ventilated walls are built with closed joints thanks to the chance of surmounts amongst each side of the modules. This feature allors to reduce at its minimum the thickness of the air chambre. The layer allows also to build the cabinet while the work is in progress. The exclusive mechanic fixing system is the disappearing one and it doesn't need any wall support.

In case of particular needs (for the creation of a technical cavity for passage and for hiding cables), the parti-  
cular way the S stirrup is made allows to install the covering layer on every kind of metallic undestructure.

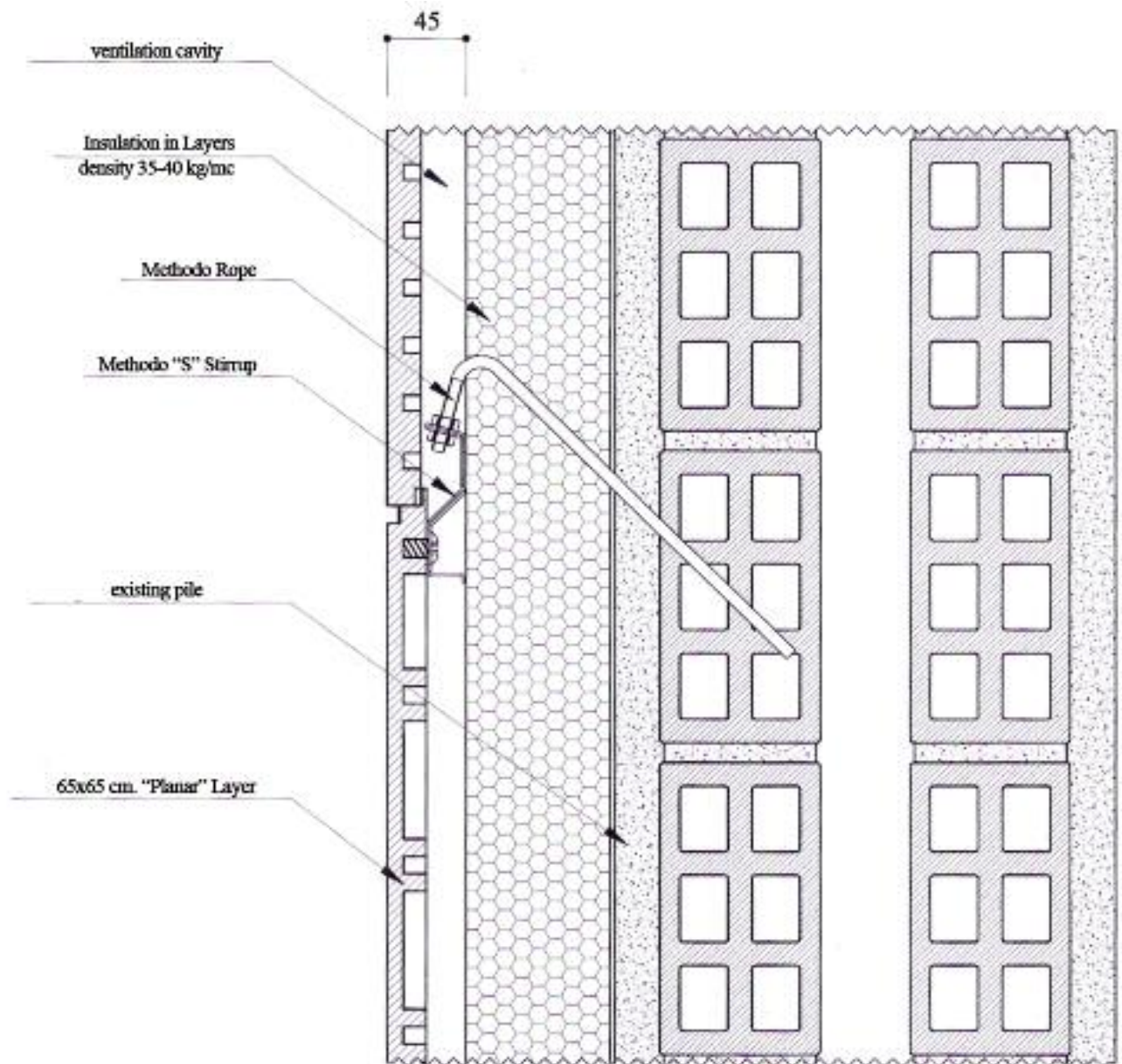


Figure 1 - Section with anchoring with insulation - measures in cm



### The Covering

The external covering is constituted by “Planar” model layers in the 65x65 cm. Format, surmounting each other by 1 cm, these layers are characterized by an embossment of cm 63x63 defined by a 1 cm closed joint blind (see Figure n. 2). The rest of the layer has a incorporated frame with preprinted holes able to fix the anchoring system, (see Figure n. 3)

NB: Considered the composition of the external layers (composite materials), the colors can variate for any single layer, making chromatic and geometric differences.

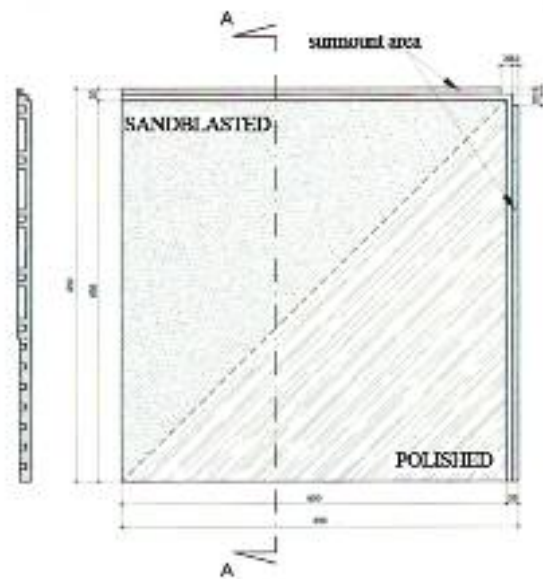


Figure 2 - Rear Prospect of a “Planar” 65x65 cm. layer

**The File Filling Covering**  
This layer allows to slightly modify your needs while you’re in the run, adapting your project in the operative step. You can cut layers directly in the construction site directly with a water clipper with a diamond disc and a grinder. This way is a simple and fast one to adapt the module during the installation step. Every layer will be reduced of 20cm, both in height and width, without renouncing to the surmount amongst layers (see Figure n. 3).

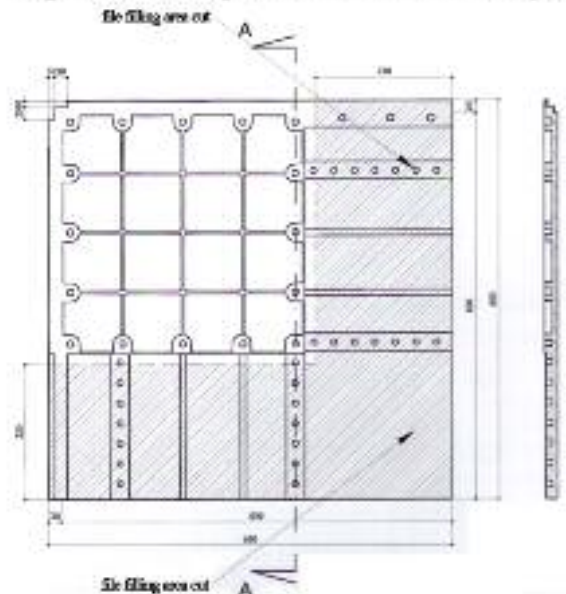


Figure 3 - Rear View of the Planar 65x65 cm layers

### The Anchorage

The installation of the covering layers is accomplished through a mechanic fixing system able to fasten to any wall, componed for each layer by 4 “S” stirrups, 4 screws, 1 rope, 2 nuts and 4 elastic washer (see Figure n. 1 and n. 4).

Every layer will be equipped with 1 rope and 2 nuts at the level with the first and the last layer column.

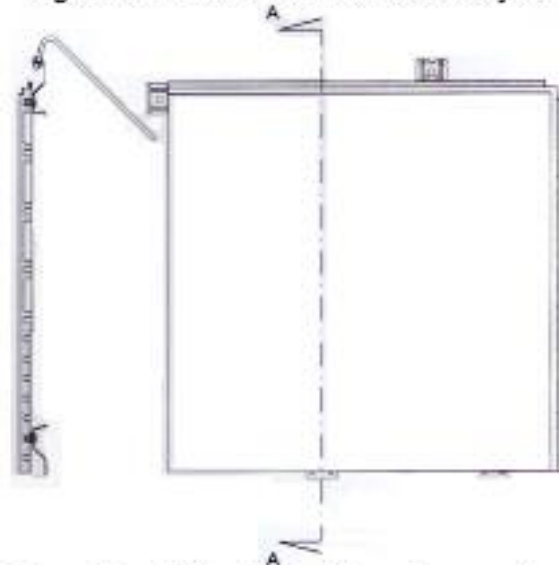


Figure 4 - Installation plan for the fastening accessories

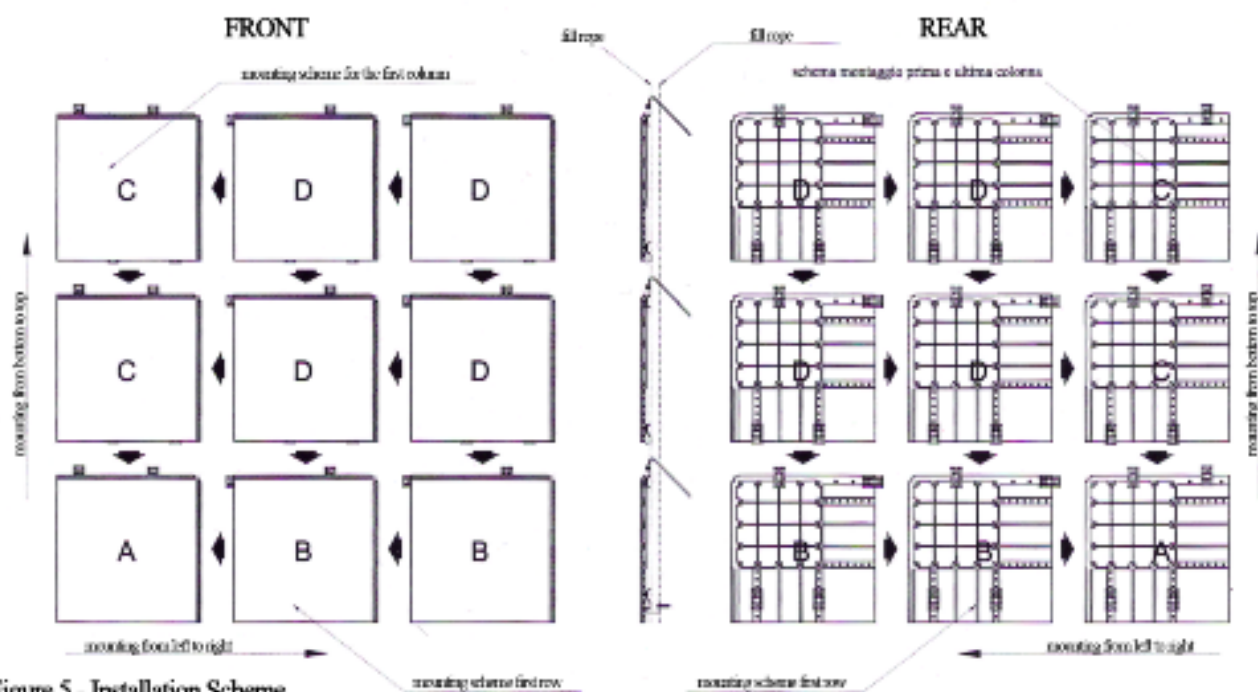
### The Thermal Insulant

The commonly used insulant is the XPS extruded polystyrene in layers, with a density of 35-40 kg/mc (+/- 10%),  $\lambda$  of calculation 0,037 W/mk, calculation thickness, applied only with mechanic fastening through plastic wedges for hard insulants. Alternatively, other insulant materials with the same mechanic characteristics can be used as well.

## Methodo ventilated wall application

The ventilated wall installation will happen according to the following steps.

- 1) Cleaning and restoring the gross parts of the surfaces to cover.
- 2) Laying of the finish borders as: starting ones, vertical finishes, superior closing ones and window coatings.
- 3) Laying of the insulator, applied with just a mechanic fixing through plastic wedges for hard insulators.
- 4) Surface squaring to cover through the tracing of a horizontal line, using a water leveller with a transparent pipe, and a vertical line, using a valamber and a plumb line.
- 5) The installation procedure will be executed positioning the first module on the left side of the wall that must be covered, then placing the subsequent modules interlocking them through the joint on the right side of the layer. (see Figure n. 5).
- 6) Once the first layer row is applied, the second one can be placed, simply executing the same operations till the complete covering of the building. (see Figure n. 6).
- 7) The starting and the top layers must not be sealed, instead those layers must be distanced of 1-2 cm both at the bottom and at the top in order to let the air circulate inside the ventilated wall. (see Figure n. 6)
- 8) In case of installing a covering on pitched roof in adhesion or on a ramp, the covering itself must be installed with a specific aluminium profile able to allow the ventilation and the fastening of the layers in their superior part. (see Figure n. 7).
- 9) In case of absence of ledges on in case the very one has an insufficient measure to give a suitable covering, the specific metal profile "C" or "Z" must be installed. The very one must have sufficient size in order to grant the ventilation.



### Allowed installation tolerances

- 1) vertical gap: the layer follows the existing wall
- 2) spires between one layer and another: 5 mm max.
- 3) height difference between a layer and another: 5 mm max.
- 4) Blind Joint between a layer and another
- 5) Coupling between cutting surfaces: 2 mm.
- 6) Blind joint coupling amongst layers: allowed in a virtual range of 30 mm every 10 mt of escape hatch.



## Finishes and window coatings

### Starting

Starting can be made through:

- Application of coated steel rollaway profiles 15/10 thick to hook up the first row of layers. (see Figure n. 6);
- Application of pre-painted anticorrosive aluminium "FVR pierced" profiles to hook up the first row of layers, suitable for starting of pitched roofs and ramps. (see figure n. 7)
- Application of metal finishing profiles available on the market, thus suitable to grant an effective resistance to layer's traction.

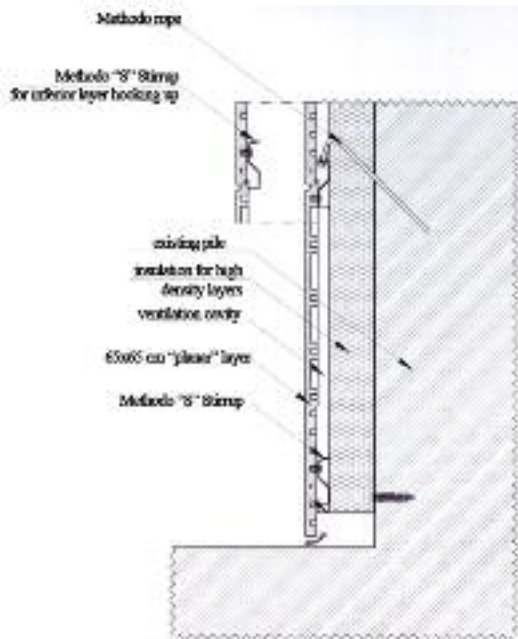


Figure 6 - Starting with coated steel rollaway profiles

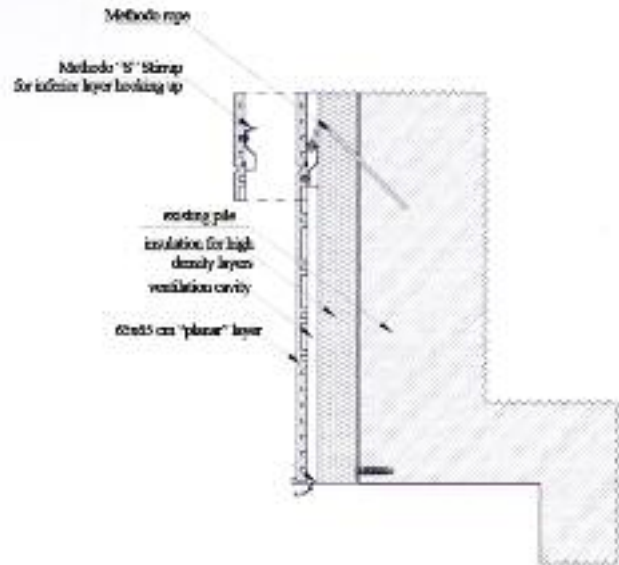


Figure 7 - Starting with FVR Pierced aluminium profiles

### Edges and Corners

Edges and Corners can be made:

- With a jolly, obtained through the combination of layers with 45° cuts on both sides and the application of polyurethane insulating material. (see Figure n. 8);
- Straight Edge, obtained through a simple combination of layers with borders cut at 90° and the application of a polyurethane insulating material. (see Figure n. 9);
- Through using metal finishing profiles available in commerce.

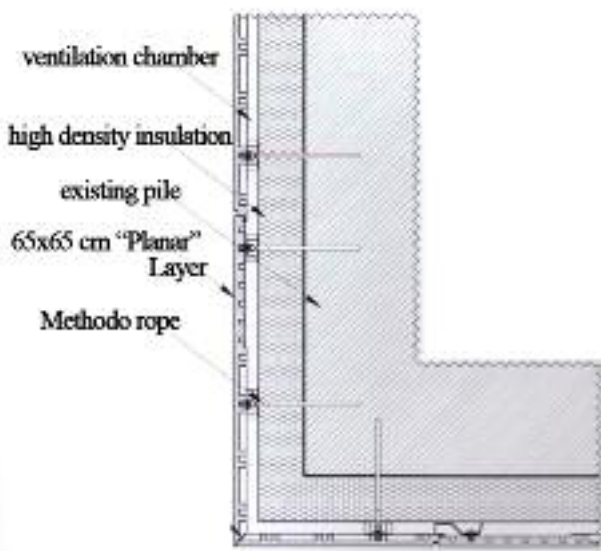


Figure 8 - Jolly Particular

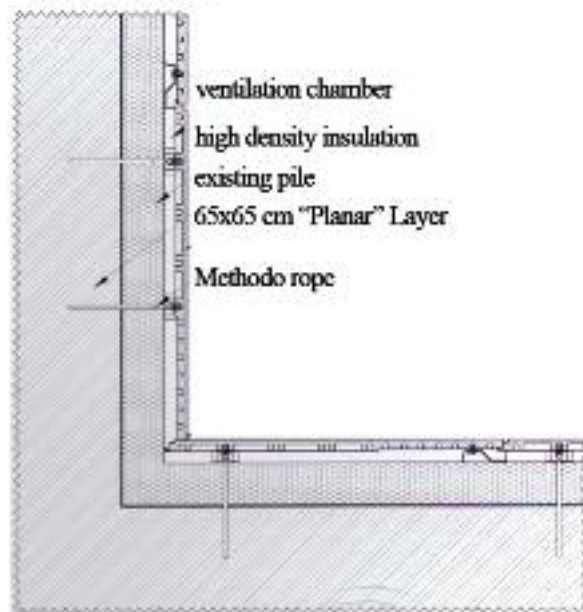


Figure 9 - Corner Particular

## The window coatings

The window coatings can be made both in natural stone and pre-painted anticorrosional aluminium, and using the special Methodo composite 32x80 cm layers.

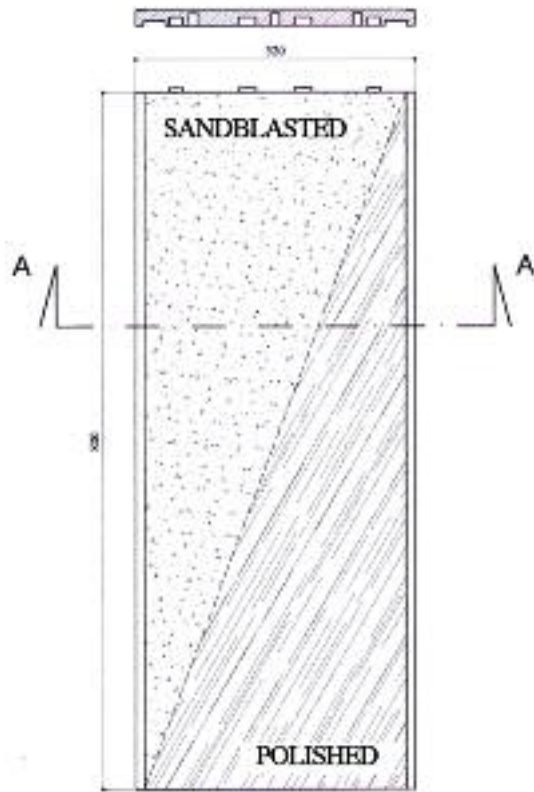


Figure 10 - Layer prospect cm 80x32 front

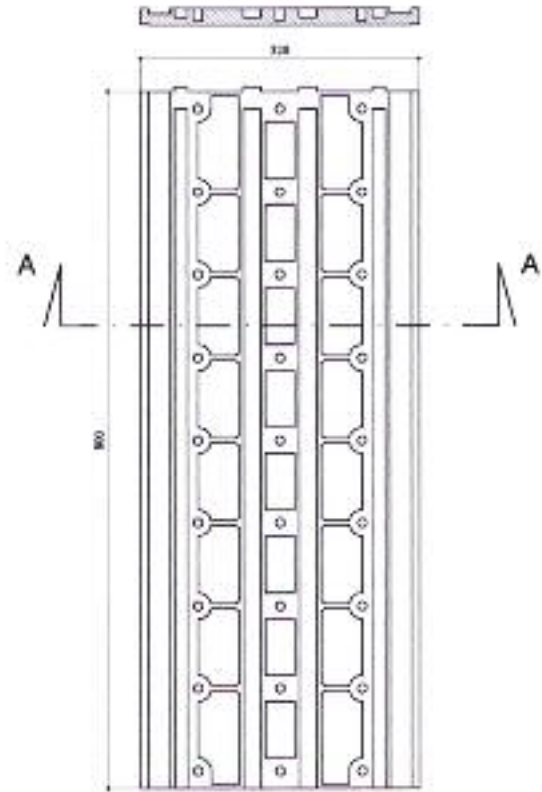


Figure 11 - Layer Prospect cm 80x32 rear

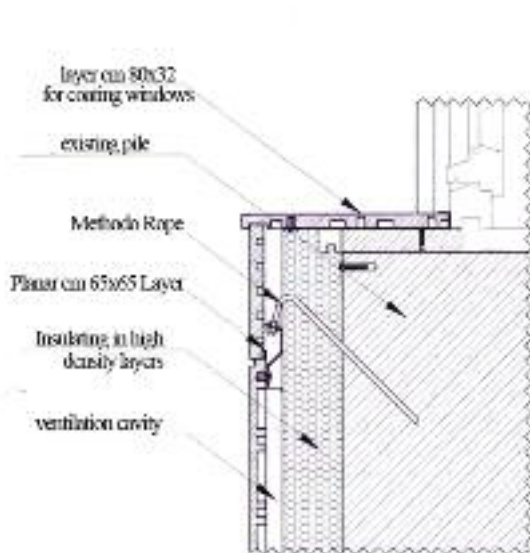
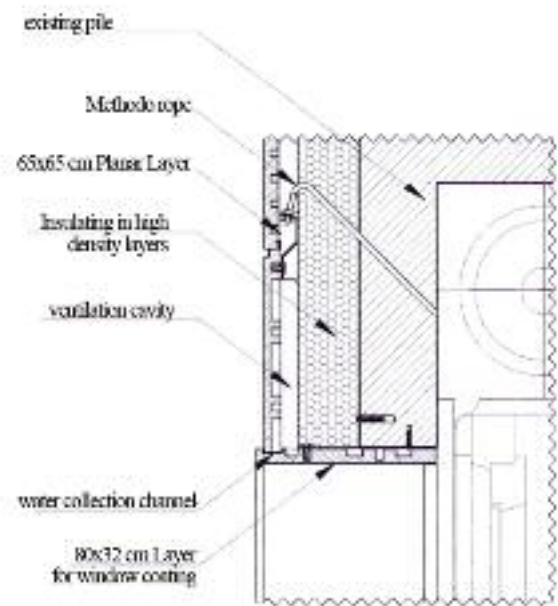


Figure 12 - Particle Sill with Layer cm 80x32



Particle Lintel with Layer 80x32

Fi



**The vertical finishes.**

The vertical finishes can be made:

- a) Through FVR anticorrosional pre-painted aluminium profile (see Figure n. 16);
- b) Through the application of the specific layers in the 15,5x80 format (see Figure n. 14-15-17) or in the 32x80 cm format (see Figure 10-11) in the Methodo composite material

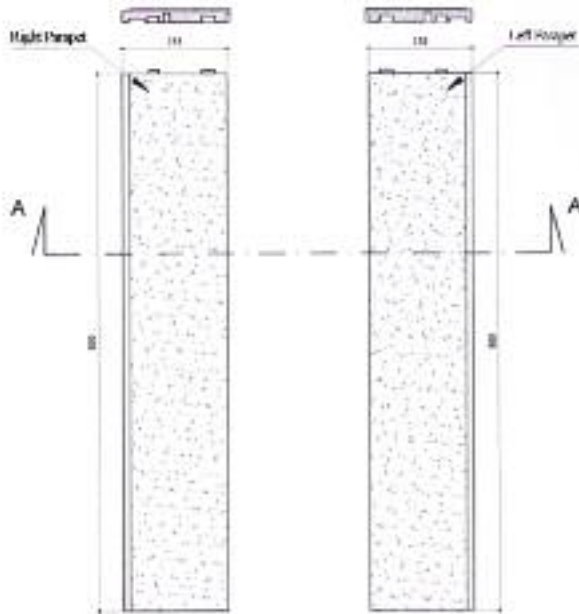


Figure 14 - Prospect of exposed layer cm 30x15,5

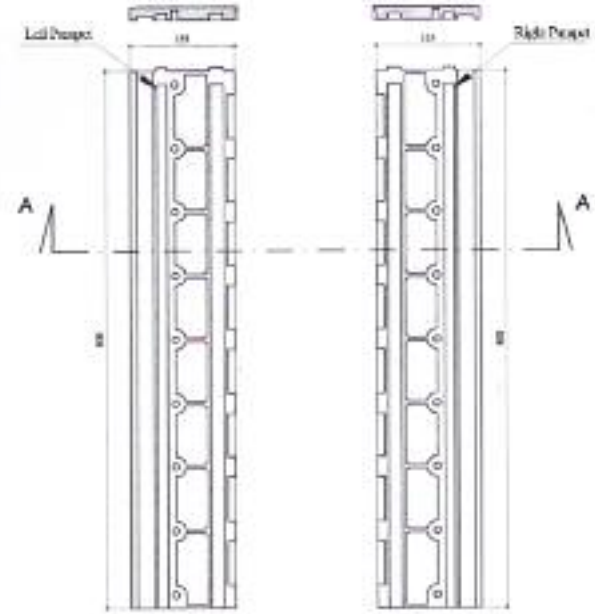


Figure 15 - Prospect of back layer cm 30x15,5

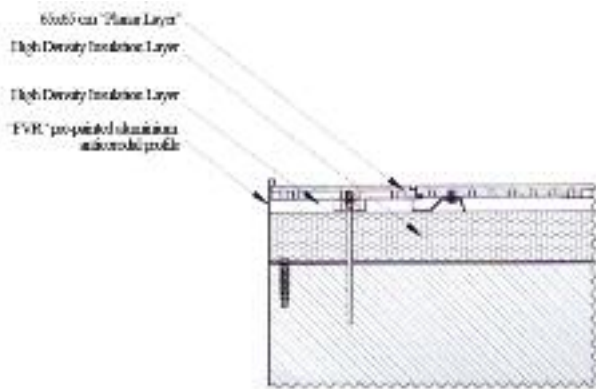


Figure 16 - Finish vertical aluminium particle

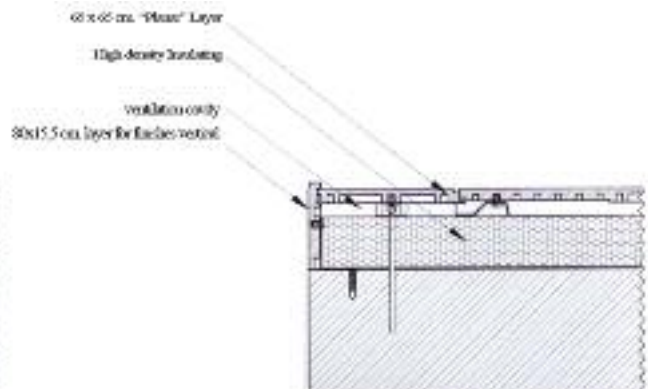


Figure 17 - Finish vertical particle with cm 30x15,5 layer

**Item Specifications**

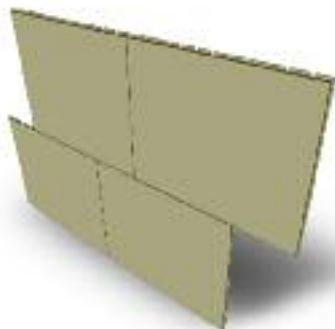
The ventilated wall is made of preformed composite layers.

Each layer must surmount the subsequent on the left side and the lower one so to make a closed joint on every side. The under structure will be fixed through coated steel and/or inox AISI 304 18/10 steel stirrups and ropes. The nominal traction of the façade will be of 3500 N/m<sup>2</sup>.

In order to obtain such resistance no glue must be used. The ventilated wall must grant the absence of beat bridges with the wall or the support under structure.

METHODO LAYER				
TEST	REFERENCE LAWS	FIELD	UNITS	RESULT
Reaction to fire	CSE RF 2/75/A	-	-	Class I
	CSE RF 3/77	-	-	Class I
Resistance to hail	UNI 10890:2000	Aspect	m/s	No Damage VA Class (1)
Chemical Resistance	UNI EN 175:2002	Aspect	-	No Deterioration either dimensional or structural No Aspect Variation Grade 0
Linear Thermal Dilatation	UNI EN 10545-8:2000	-	10(-6)/°C	8,97
Freeze Resistance	UNI EN 12371:2003 Test "B"	Aspect	-	No Alteration
		Volumetric Variation (3)	%	-0,4
Apparent Volumetric Mass	UNI 10444:1995	Volumetric Mass		2285
Water Absorbment	UNI 10444:1995	Permeability	Kg/m3	1,7
Accelerate aging Resistance UV/Condensed	UNI 9922	Aspect	-	Integral (4)
Thermal range Resistance	UNI 9429	Aspect	-	Integral (5)
Freezing and Unfreezing Cycles Resistance	Giordano Institute Procedure	Aspect	-	Integral (6)
METHODO FASTENING SYSTEM				
TEST	REFERENCE LAWS	FIELD	UNITS	RESULT
Resistance to traction of fasteners fixed to pierced bricks structures.	Giordano Institute Procedure	Strenght	N	1128,5 (7)
Resistance to traction of fasteners fixed to reinforced concrete.	Giordano Institute Procedure	Strenght	N	2437,5 (7)
METHODO VENTILATED WALL SYSTEM				
TEST	REFERENCE LAWS	FIELD	UNITS	RESULT
Resistance to wind	Giordano Institute Procedure	Aspect	-	No Damage
NOTES (1) V=11,0 / 11,8 m/s (2) Immersion in sodium hypochlorithe (Active Chlorine 7%) (3) Percentage variation of the apparent volume (4) After 500 hours (5) After 120 hours (6) After 48 hours (7) Maximum load registered (medium value) (8) Valued submitting the sample to 500000 pressure cycles. (+ 1000 Pa) and depression (- 1000 Pa)				

## Methodo layers sizes and colours



**"A" type Layer**

$l \times a$

**1200 x 600 mm**



**"B" type Layer**

$l \times a$

**640 x 640 mm**



**"C" type Layer**

$l \times a$

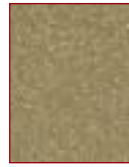
**800 x 400 mm**



**S003**



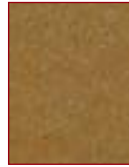
**S004**



**S005**



**S006**



**S007**



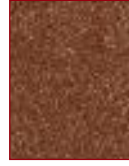
**L008**



**S009**



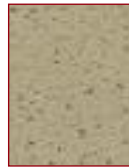
**S010**



**S011**



**S012**



**S013**



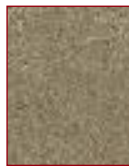
**S014**



**S015**



**S016**



**S017**



**S018**



**L019**



**L021**



**L022**



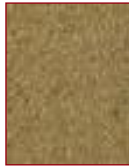
**L023**



**L024**



**L025**



**L026**



**S025**



**S026**



**S027**



**L028**



## Methodo Available Colours



**METHODO** s.r.l.

Via Dei Lavandai 30/38 (ex Strada Bertolla)  
10156 - TORINO - Italy

Tel.: +39 011 223.87.23 +39 011 223.87.16

Fax: +39 011 223.87.24

[www.methodo.com](http://www.methodo.com) - e-mail: [methodo@methodo.com](mailto:methodo@methodo.com)