

MIXX WINDOWS

Ventilated Facade - Urano Wall

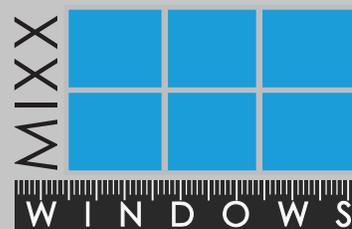


Window And Facade Solutions In

Aluminium | Alu Wood | Wood | Wood Aluminium | Bronze



METRA SpA
Italy





LAMINAM

www.metra.it



METRA
Italian Style Emotions



URANO WALL
Curtain walls

METRA. ADDING VALUE TO YOUR HOME



METRA. Design, Colour, Emotion.
Italian style desired the world over.

METRA's integrated systems have been created in order to provide quality solutions to any architectural and aesthetic need of the contemporary era. METRA's systems supply comfort and security to your dwelling space.

METRA's systems are characterized by:
a vast range of colours, accessories, design complements, anti-break devices, automation and ergonomic design.

Thermic insulation and a certified installation system ('Posa Clima') guarantee long lasting durability and energy saving.

People dreaming of their own house, dream of METRA's window and door frames.



METRA
Italian Style Emotions

METRA. THE ONLY COMPANY TO OFFER A COMPLETE RANGE OF PRODUCTS

OUR SERVICE

ALWAYS CLOSER TO CUSTOMERS

METRA's toll free number is always available in order to support your ideas, suggesting new solutions and finally directing you to Metra's point of sale. Metra's pre and after sale service will always help you in each phase: from your frame choice to installation, from cleaning advice to traceability of your frame history.

DESIGN AND STYLE

METRA's window and door frames include a wide range of aesthetic styles, adding thus value to the traditional and contemporary dwelling spaces, preserving in this manner the original features of buildings restored conservatively. The latest creations provide more luminosity to living spaces thanks to the tapered shapes and the reduced thickness of profiles.

DESIGN COMPLEMENTS

METRA's design complements are offered in a wide range of coordinated shapes distinguished by the original style capable of satisfying and harmonising the aesthetic requirements of any kind of dwelling environment.

Metra's accessories guarantee enhanced performances to one's own window and door frames.

FINISHING

A huge variety of finishing, resistant and chromatically surprising! From metallic colours to sand effects, opaque, glossy.....up to natural wood surface cladding the heart of aluminium.

THE CHOICE OF ALUMINIUM

Aluminium is becoming ever more present in our lives: from simple cans to high-speed trains.

Aesthetically agreeable, malleable, extremely resistant and 100% recyclable.

Aluminium is the ideal material for the creation of windows and doors.

GREEN

METRA is engaged in a low environmental impact production and all its products are Eco-friendly to the maximum extent.

METRA'S POINT OF SALE

METRA's point of sale is the place where people enter with a dream and make it come true.



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Advantages

- Formats up to 1000x3000 mm
- Reduced thickness (3.5 mm)
- Inalterability and resistance to weather conditions and UV rays
- High wind resistance performance
- Graffiti and scratch resistance
- Easy cleaning and maintenance
- Wide range of finishing
- Easy to install
- Two slab fixing methods: mechanical and structural

LAMINAM[®]

Curtain walls **URANO WALL**

Laminam Esterna: the evolution of ceramic cladding for ventilated façades.

Laminam Esterna is the result of **Laminam - METRA** research.

Laminam is the first manufacturer in the world of porcelain stoneware slabs of sizes up to 1000x3000x3 mm, created with innovative technology.

Since 1962 METRA has specialised in aluminium and its extrusion and quickly has become a leader in Italy and abroad in the supply of profiles for industry and architectural systems.

By putting together LAMINAM Esterna and Laminam slabs, the system METRA Urano Wall offers new extraordinary opportunities to building design.

Laminam Esterna by putting together the performance values of Urano Wall and the ceramic "skin" originates the added value of the extraordinary combination and lightness of the slabs.

Thanks to the size of Laminam slabs, the wide range of available finishing and the easy installation, Laminam Esterna presents itself on the market of ventilated façades as the ideal alternative to natural stone, glass, fibre cement, aluminium and composite panel cladding.



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Ventilated Façade

The ventilated façade is a building solution which can protect the building from weather conditions and notably increase its thermal-acoustic insulation. Laminam Esterna enhances these features and in addition offers high aesthetic value.

The slab is composed of an aluminium structure, fixed to the wall of the building by brackets and anchors, to which the cladding is hung. The façade is therefore made up of three parts:

- insulating layer adhering to the external enclosure wall,
- an air chamber to ensure natural ventilation,
- external Laminam finishing.

At the base of the hollow space, a grill is placed in order to allow air to pass through and avoid anything accidentally entering it.

At the top there is roof flashing to allow air to escape and prevent the infiltration of rain water.

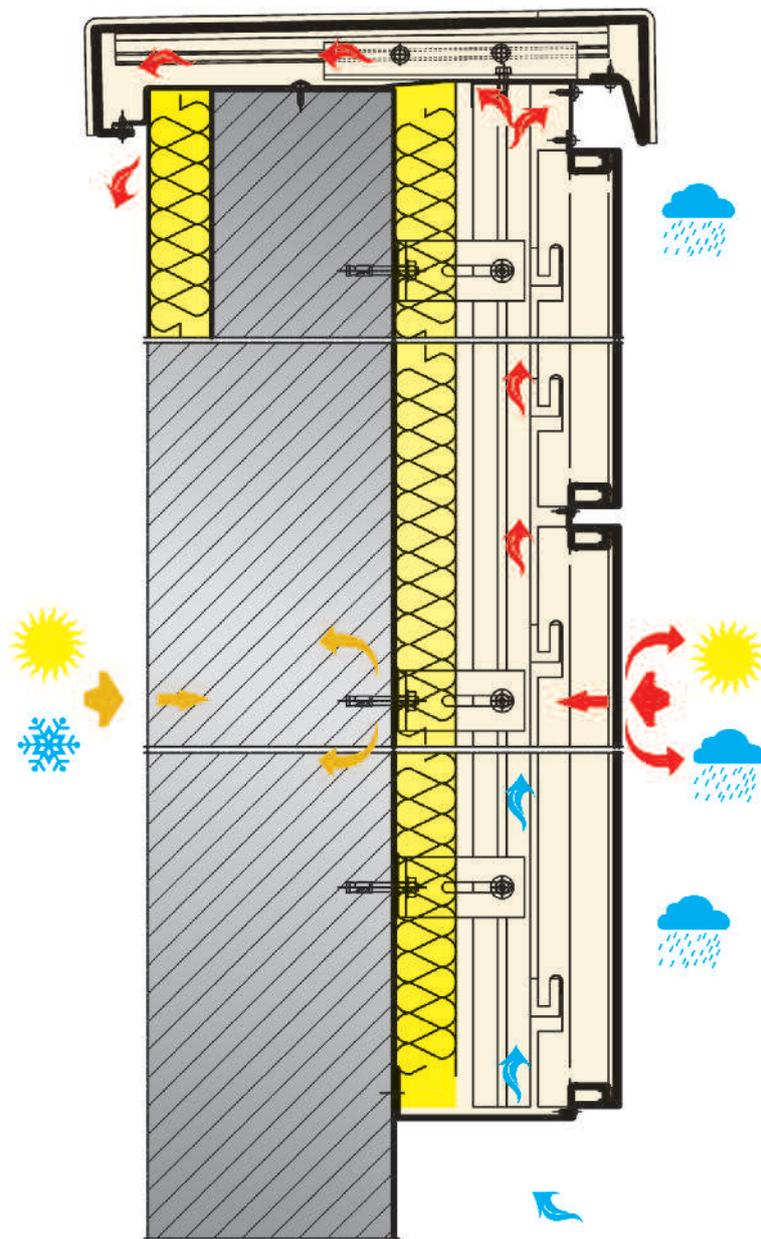
The air circulation inside the hollow space facilitates the evacuation of steam from inside the building, stopping the formation of surface condensate and avoiding damage caused by persistent moisture.

The ventilated façade, due to the presence of insulation, combined with the ventilation chamber, guarantees notable energy saving. The result, therefore, is a significant decrease of heating/cooling costs, with subsequent reduction of air emissions.

The external finish of the Laminam porcelain stoneware slabs is the strength of the Laminam Esterna system: inalterability over time, resistance to weather conditions, chemical attacks and UV rays, lightness and large format, graffiti resistance and the ability to notably reduce maintenance costs of external cladding.

Due to its countless benefits, Laminam Esterna is ideal for both cladding new constructions and upgrading existing buildings in the event that the energy efficiency and aesthetics are not satisfactory.

Laminam Esterna is therefore an innovative and proven system which is able to enhance the advantages of ventilated facades with porcelain stoneware finishes of sizes which have never been achieved before.



-  Building inside thermal flow
-  Solar irradiation
-  Insulating panels
-  Stack effect
-  Rain

Distinctive features

Sizes

Formats up to 1000x3000 mm, exceeding the limit of traditional ceramics while retaining their advantages.

Lightness

Due to the reduced slab thickness of only 3 mm and the use of the Urano-Metra aluminium structure, the Laminam Esterna system weighs around 15 Kg/m²

An everlasting surface

Laminam porcelain stoneware slabs guarantee resistance over time and inalterability to weather conditions, UV rays, corrosion, oxidation and chemical agents.

An indestructible surface

Laminam slabs are easily cleaned from varnishes and are graffiti and scratch resistant.

Individualisation

Individualising the external Laminam finish is possible for designs of at least 6,000 m² in order to satisfy both the designer's ideas and the clients' needs.

Easy to install

Due to the assembly of the frames in the factory and their lightness, dry installation of Laminam Esterna is precise, quick and simple.

Optimal insulation from weather conditions

The combination of the insulation with the ventilation chamber guarantees a notable energy saving. The thickness and the performance of the insulation vary according to the energy classification required for the building.

Energy saving

High protection of the building and insulation from weather conditions is guaranteed. The combination of the insulation with the ventilation chamber guarantees a notable energy saving. The thickness and performance of the insulation vary according the customer's request.

Restoration of walls and better living comfort

Thanks to the ventilation chamber, steam is evacuated, therefore eliminating the formation of surface condensate.

Better acoustic comfort

Laminam Esterna guarantees excellent sound insulation compared to traditional open-joint ceramic façades. This performance can be further improved thanks to the use of thermal/acoustic insulation layers.

Property value enhancement

External cladding with Laminam slabs allows total design freedom. Laminam Esterna guarantees to maintain aesthetics and performance over time without the need of maintenance, consequently enhancing the value of the building.

Easy maintenance

Each individual slab is easily removable, therefore it is possible to conceal within the hollow space building systems and services that need to be monitored.

Façade's resistance

Laminam Esterna has been subjected to strict tests to assess its wind and impact resistance.

No performance limits

Laminam Esterna can be dimensioned in such a way that, by optimizing the pitch of the rear aluminium structure, it can withstand high pressures without damaging the cladding itself.

The system

The slab

The basic component of the Laminam Esterna system is the thin Laminam porcelain stoneware slab.

The slab has a nominal thickness of 3.5 mm and is reinforced on the backside with a fibre glass mesh, applied during the production process by means of placement of high-performance hot-melt glue. This mesh improves the mechanical resistance of the slab and acts as a break restraint in case of accidental impact.

The frame

The frame is made of METRA aluminium profiles, assembled through a completely hidden bracket.

The panel

The slabs are applied to the aluminium frame with structural silicone.

The system is available with two different fixings: mechanical and structural fixing. In the structural fixing, the slab is anchored to the frame with a silicone which has been specifically tested to ensure perfect adhesion. In the mechanical fixing, the adhesion between the slab and the frame is ensured by structural silicone and a mechanical safety stop. In both versions, the profile of the frame is designed so that the connection is not exposed, and also to guarantee the protection of the edges of the slab.

Moreover, although not being a watertight ventilated façade, the frame is made with a particular profile that allows the horizontal joint to be closed.

The aluminium frame may be painted in any RAL colour chosen by the client.

The production of the panels in the workshop (slab + frame) guarantees a rapid and precise installation and an exceptional level of finishing.

Substructure

Features of the Urano Wall profile (adjustment on three axes and the option to remove panels for maintenance and/or replacement).



Mechanical safety stop of the mechanical system



Lower profile seal

System technical features

- **Upper cover:**

the upper cover should serve two main functions:

- prevent the infiltration of water from the roof
- allow the circulation of air in the hollow space

The cover can be made of aluminium or alucobond

- **Interim joint:**

this was designed to avoid the infiltration of rain water, dust and insects.

Due to the particular configuration of the frame, joints can be of variable widths from 8 to 16 mm.

- **Lower closure:**

the lower closure, made of a micro-perforated profile, should allow ventilation, ensure the discharge of condensation and avoid any type of accidental intrusion.

The closure can be positioned at a minimum distance of about 60 mm from the edge of the finished external floor.



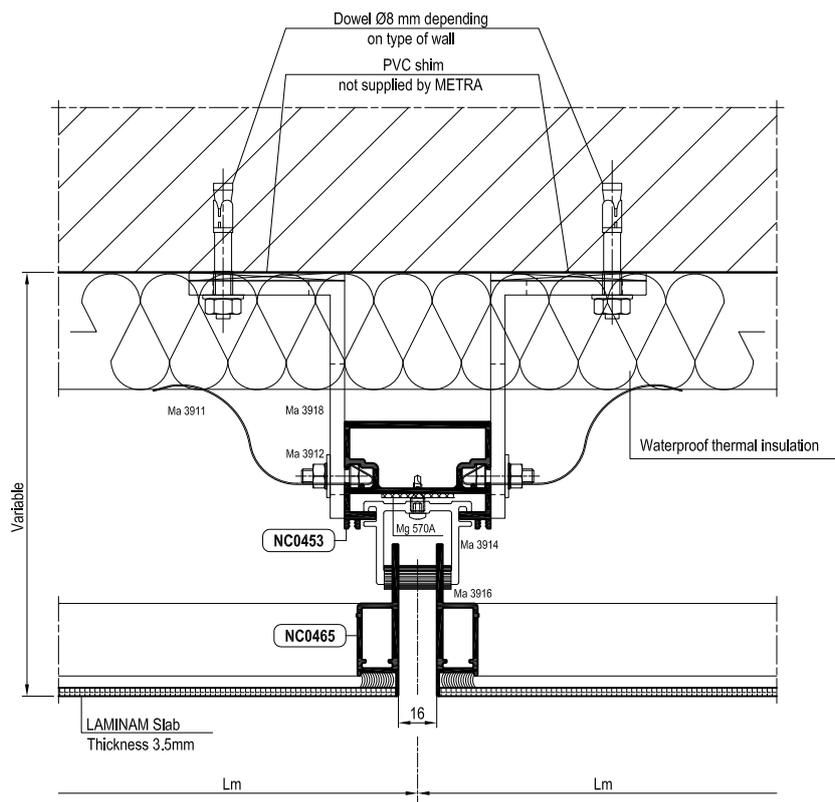
Protection profile of the slab edge



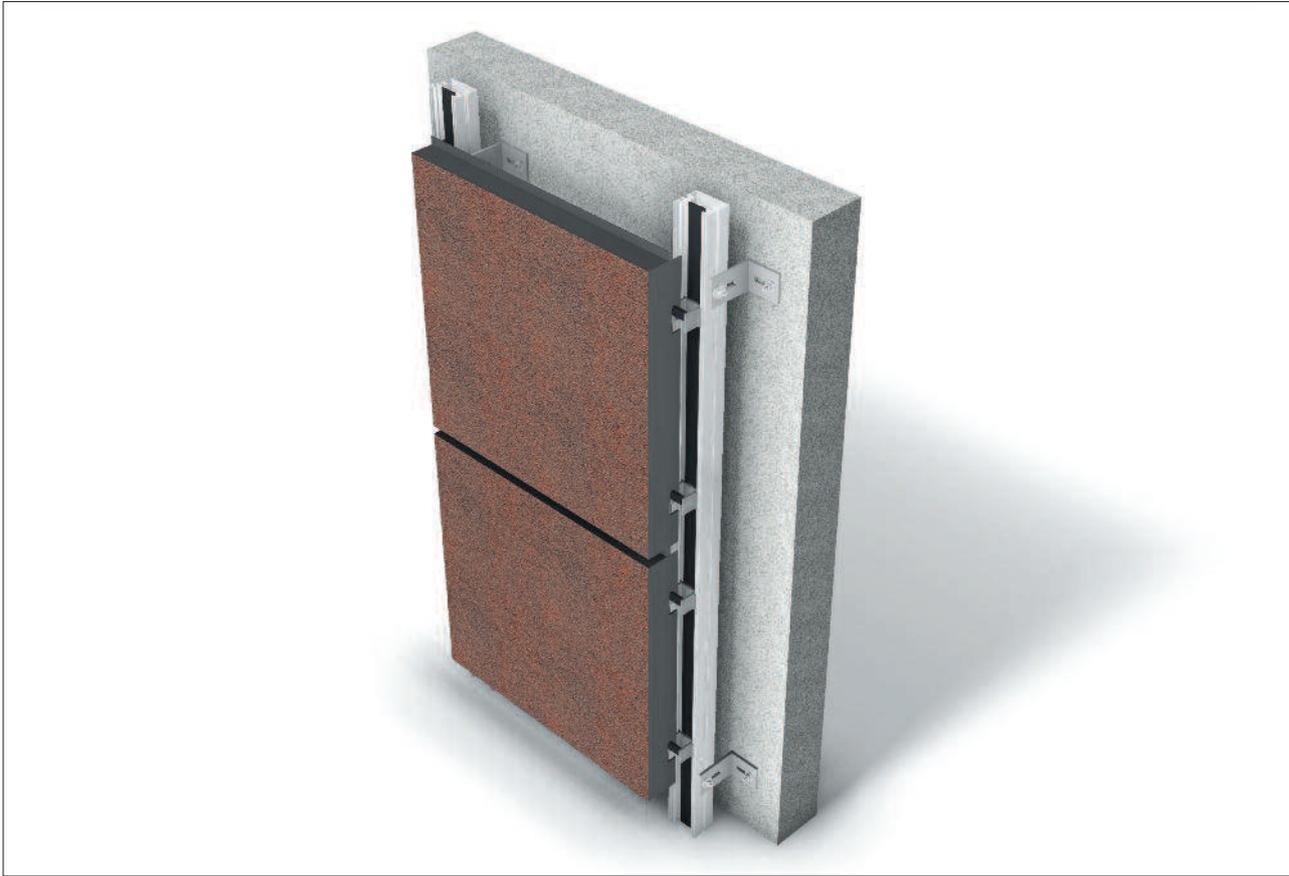
Upper profile seal



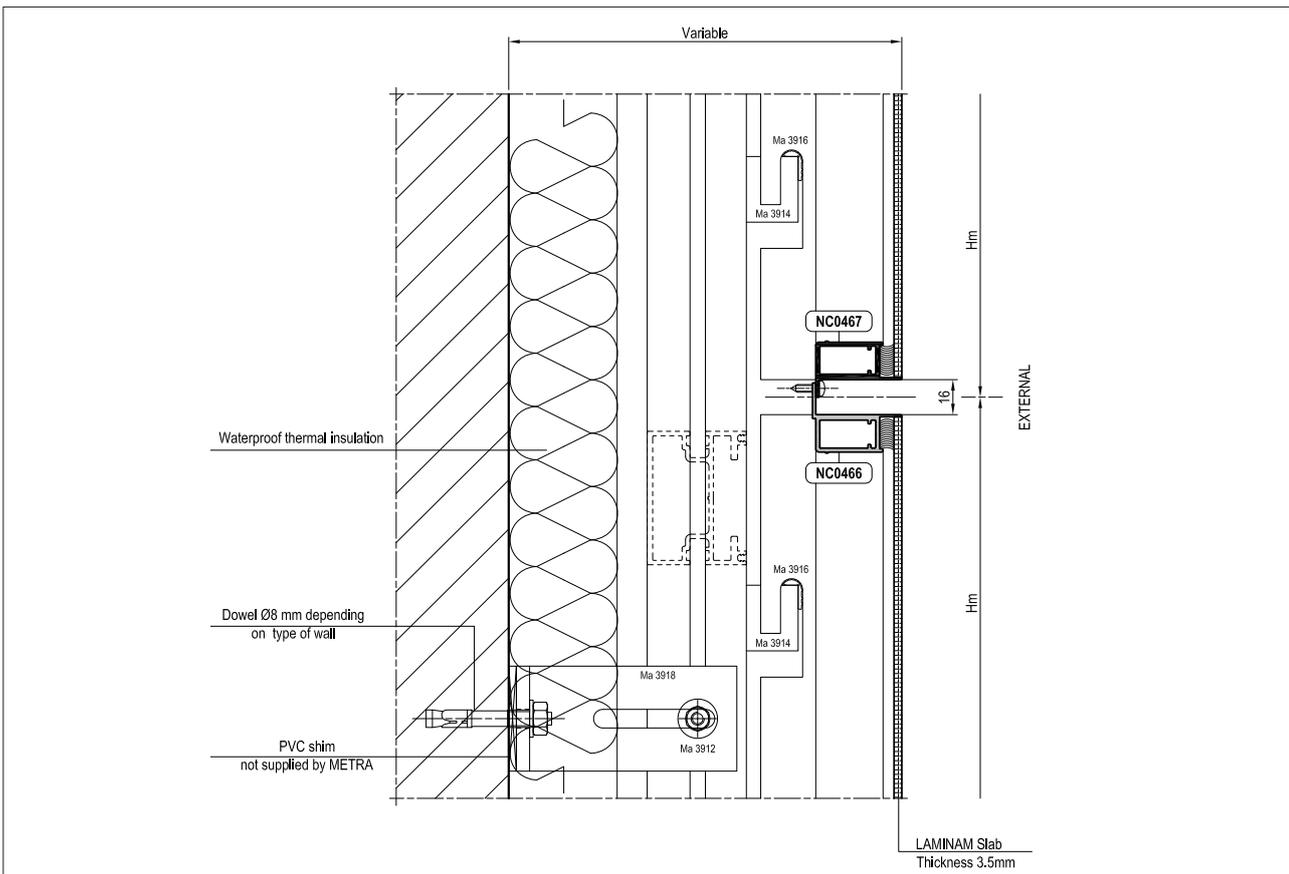
Horizontal section

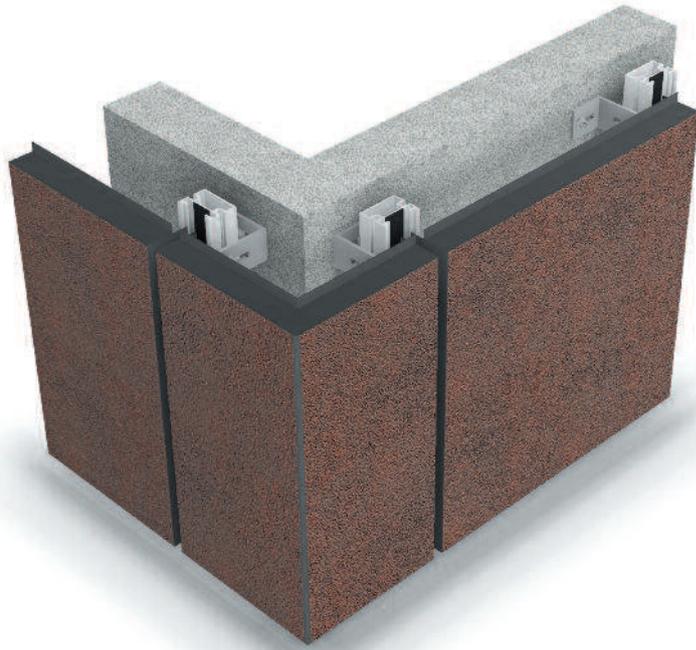


EXTERNAL

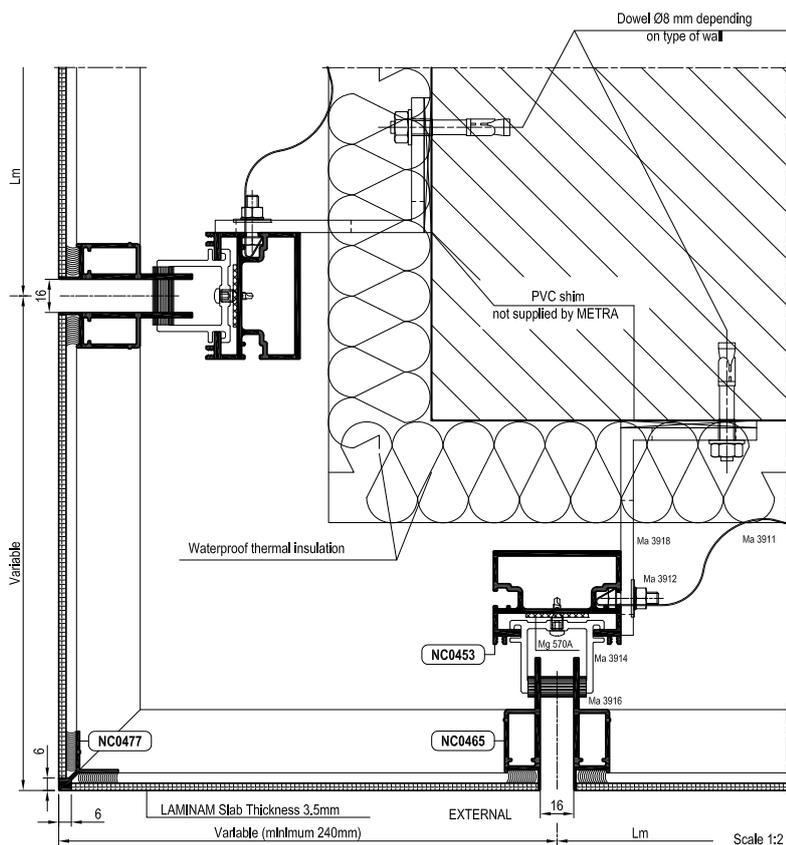


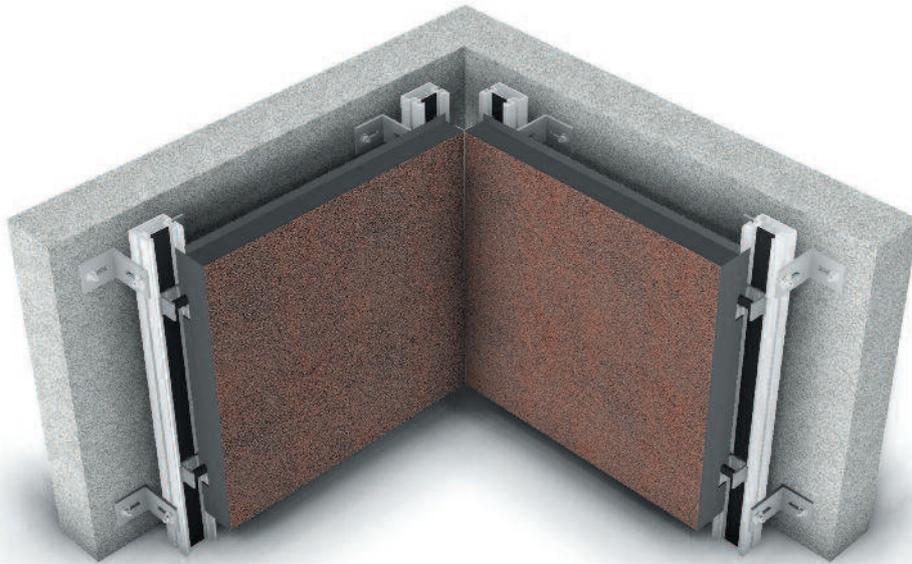
Vertical section



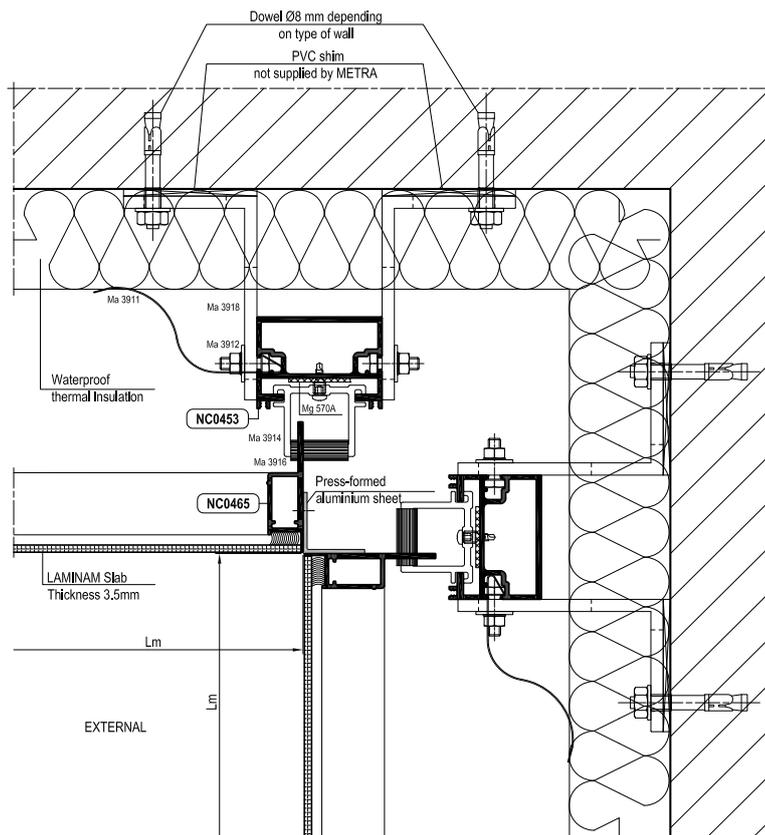


External corner section with low dimensioned finishing profile for improved optical characteristics





Internal corner section

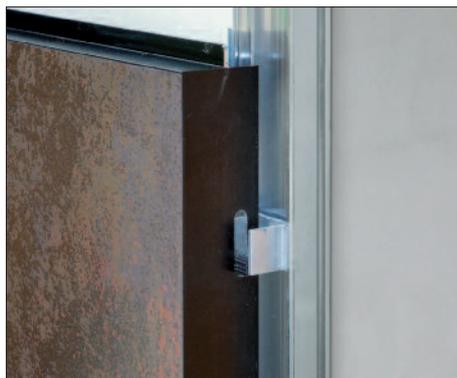


Installation sequence

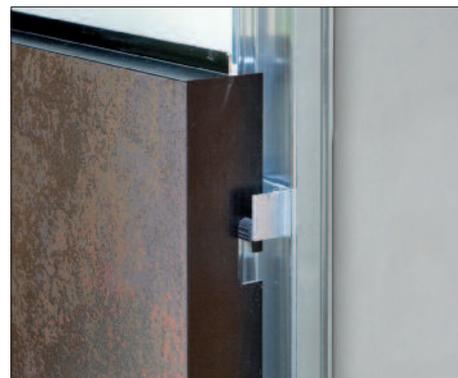
Joining the frame to the substructure



Mechanical anchoring of the connection system (Step 1)

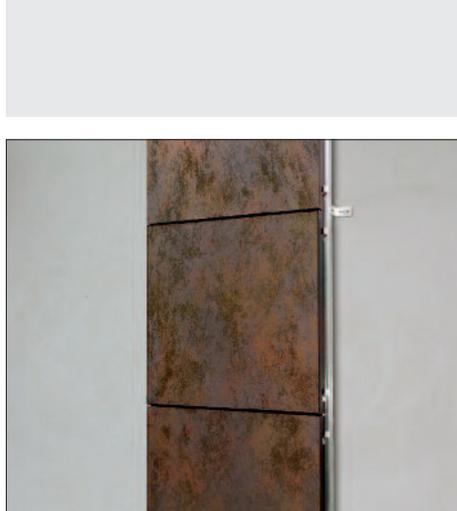


Mechanical anchoring of the connection system (Step 2)

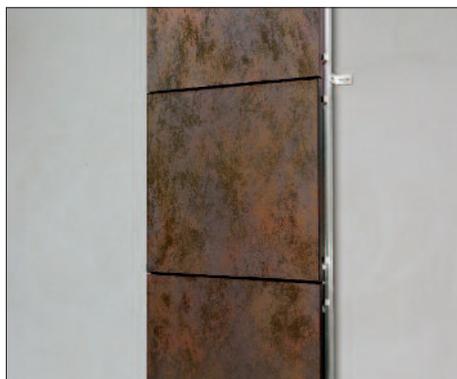


Coupling pin for panel alignment. This pin enables the removal of a single panel, if necessary

Portion of a finished curtain wall



Removal of a single panel.



Laminam Esterna can be applied to almost any wall support which is suitable to withstand the load of the façade. The particular lightness of the system compared to traditional ceramics or natural stone greatly facilitates its application.

The brackets are anchored with chemical or mechanical dowels according to the tear resistance that the support guarantees.

Should it be necessary, dowels and brackets can be isolated from the wall thanks to the application of suitable seals or cartridges to avoid creating small thermal bridges.

The system, thanks to the adjustment on three axes, allows horizontal and vertical alignment correction (out of plumb).

All the Laminam Esterna frames are made in the factory, guaranteeing a rapid, precise and clean installation and ensuring optimum results.

Specifications

System description

The “ventilated façade” shall be made with METRA URANO WALL system. The profiles shall be made of T5 EN AW 6060 (EN 573-3 and EN 755-2) aluminium alloy in accordance with EN 515 and extruded within the tolerances according to EN 12020. The system shall foresee the use of vertical profiles with variable depth (depending on static requirements) having a shape adapted to house, without any milling or turning machining, the support accessories of the outer cladding. The external cladding will be made of 3.5 mm thick porcelain stoneware slabs, framed and bordered (semi-structural solution) or fixed with silicon (structural solution).

The profile where the structural glue will be applied on will be treated according to the indications and specifications of the sealant supplier, whereas the internal part shall be treated according to the indications of the Legislative Decree. The average thickness of the profiles must be in compliance with the EN 755 standard.

Accessories

The vertical profile is attached to the wall using the following accessories:

- Wall fixing brackets (± 25 -30 mm adjustment according to the bracket).
- AISI 301 stainless steel support springs (or suitable aluminium support element) which allow the horizontal and vertical adjustment of the metal panel and are auto-locking and complete with anti-vibration springs.
- Support accessories for the glass panels (in stainless steel-aluminium) which allow the horizontal and vertical adjustment of the panel and are auto-locking and complete with anti-vibration springs.
- Wall support springs of the thermo-insulation panels made of hardened and temperate steel, if external insulation of the masonry is foreseen. The accessories must be original, specially designed and manufactured by METRA for the system.

Draining and ventilation

The “ventilated façade” system should protect the wall from splashes, water backlash and consequent runoff onto the façade and thus keep (also due to the ventilated air hollow space between the outer cladding and the insulation) the thermal insulation and the internal wall dry, leading to advantages in terms of duration and thermal insulation. Any water condensation will be expelled through the lower part of the façade by means of suitable channels made in the sheet metal.

Seals

Adhesive joint cover seals of the cladding panels are applied to the vertical uprights. Near the external perimeter of the window frame or continuous façade, an elastomeric watertight seal (EPDM) will be applied to connect the cladding panels and to avoid water infiltration. In cases where no aluminium panels are used, but of another material, a sheath of insulating material will need to be placed in the contact points between the window frames or the continual façade, to avoid possible galvanic phenomena.

Expansion

The components shall be made in such a way that expansion generated by variation in temperature and by tolerance and movements of the building structure can be absorbed without noise and deformation of the ventilated façade, for which profiles, accessories and seals must be used in the correct way, respecting the indications about cutting and mounting tolerance reported in the technical documentation of machining and installation of the system. Particularly, it will be necessary to create expansion joints on the uprights thereby using the special couplings included with the accessories and placing a layer of anti-friction material (Teflon, nylon, etc.) between them and the anchoring brackets.

External enclosure walls

The “ventilated façade” system must allow the insertion of porcelain stoneware panels, “dry installation” through mechanical suspension and fixing devices with the possibility of being aligned even after their installation. Between the panels, an EPDM spacer will be foreseen to guarantee a joint of 8/16 mm.

Verification and static dimensioning

The façade must be checked and statically dimensioned considering the forces and the stresses to which the product will be subjected. The profiles must be dimensioned so as to avoid any elastic deformation higher than 1/200 compared to the distance between the constraints and, in any case, no more than 15 mm.

Product compliance

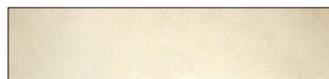
The surface finishes applied by METRA COLOR must comply with what is provided for in the QUALICOAT, QUALIMARIN, QUALIDECORAL and QUALANOD trademark directives.

Installation

In order to maintain the performance of the seals and thermal-acoustic insulation even after installation, the façade shall be installed according to the technical catalogue requirements.

Finishing

Blend



Avorio



Grigio



Nero



Noce

I naturali



Basalto vena scura



Marfil crema



Basalto vena chiara



Travertino avorio



Ossidiana vena chiara



Ossidiana vena grigia



Ossidiana

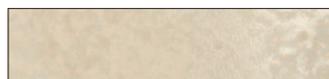
Oxide



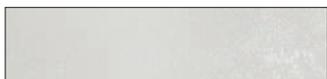
Grigio



Minimale



Avorio



Bianco



Moro mat



Moro



Nero



Perla

Metropolis



Fumo



Neve



Moro



Nero

Sketch



Avorio



Marrone



Nero



Noce

Collection



Abete



Arancio



Avorio



Bianco



Cielo



Corallo



Edera



Fumo



Lapis



Moro



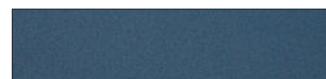
Nero intenso



Nero



Neve



Notte



Perla



Tortora



Crusca



Orzo



Uva

Tredi



Basalto



Basalto Rid.



Carbonio Rid.



Carbonio



Zinco Rid.



Zinco

Linfa



Canapa



Cenere



Canapa



Corteccia



Cotone

Filo



Argento



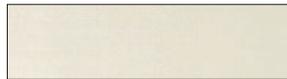
Bronzo



Ghisa



Oro



Brina



Mercurio



Pece



Rame

Filo romantico



Argento



Bronzo



Ghisa



Oro

METRA Quality

By using METRA brand products and accessories, you will be sure to use materials which maintain optimal performance and duration over time.

METRA systems are certified by the most important European test laboratories, obtaining maximum performance results.

To play safe, choose original profiles, easily recognisable by the M trademark on the inside of the frame of each accessory. Remember that the accessory is an integral part of the system and only with original METRA accessories, you can obtain high performance.

Furthermore, METRA is among the first Italian companies to have trademarked its own products to enhance its recognisability for the protection of the consumer.

The quality of METRA systems is further ensured by certified "European trademark" production processes and the RINA certified company quality system in accordance with the ISO 9001:2008 standard.



Curtain walls

Casement windows and doors

Aluminium-wood windows and doors

Sliding windows and doors

Internal doors and partition walls

Systems for Handrails

Verandas

Shading systems

Photovoltaic applications

Accessories and design complements

Finishing and colours



METRA

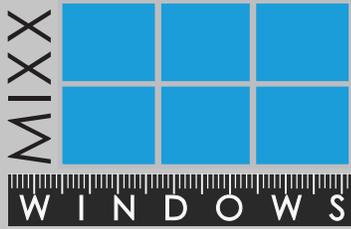
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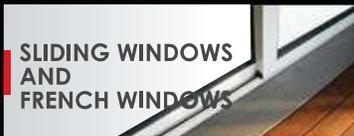


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Brochure - Facciate continue
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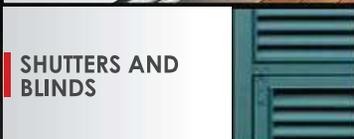
**SLIDING WINDOWS
AND
FRENCH WINDOWS**



**CASEMENT
WINDOWS AND
FRENCH WINDOWS**



CURTAIN WALLS



**SHUTTERS AND
BLINDS**



SUNBLADES



**VERANDAS AND
GAZEBOS**



**INTERNAL DOORS
AND
PARTITION WALLS**



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AND COATING**

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