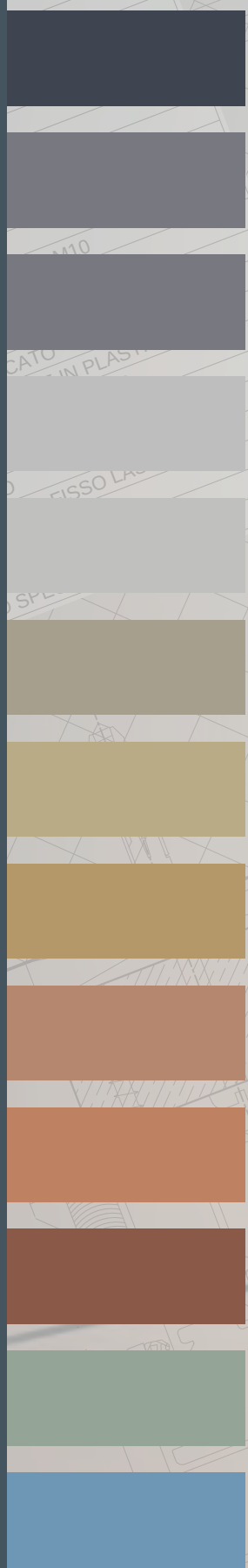


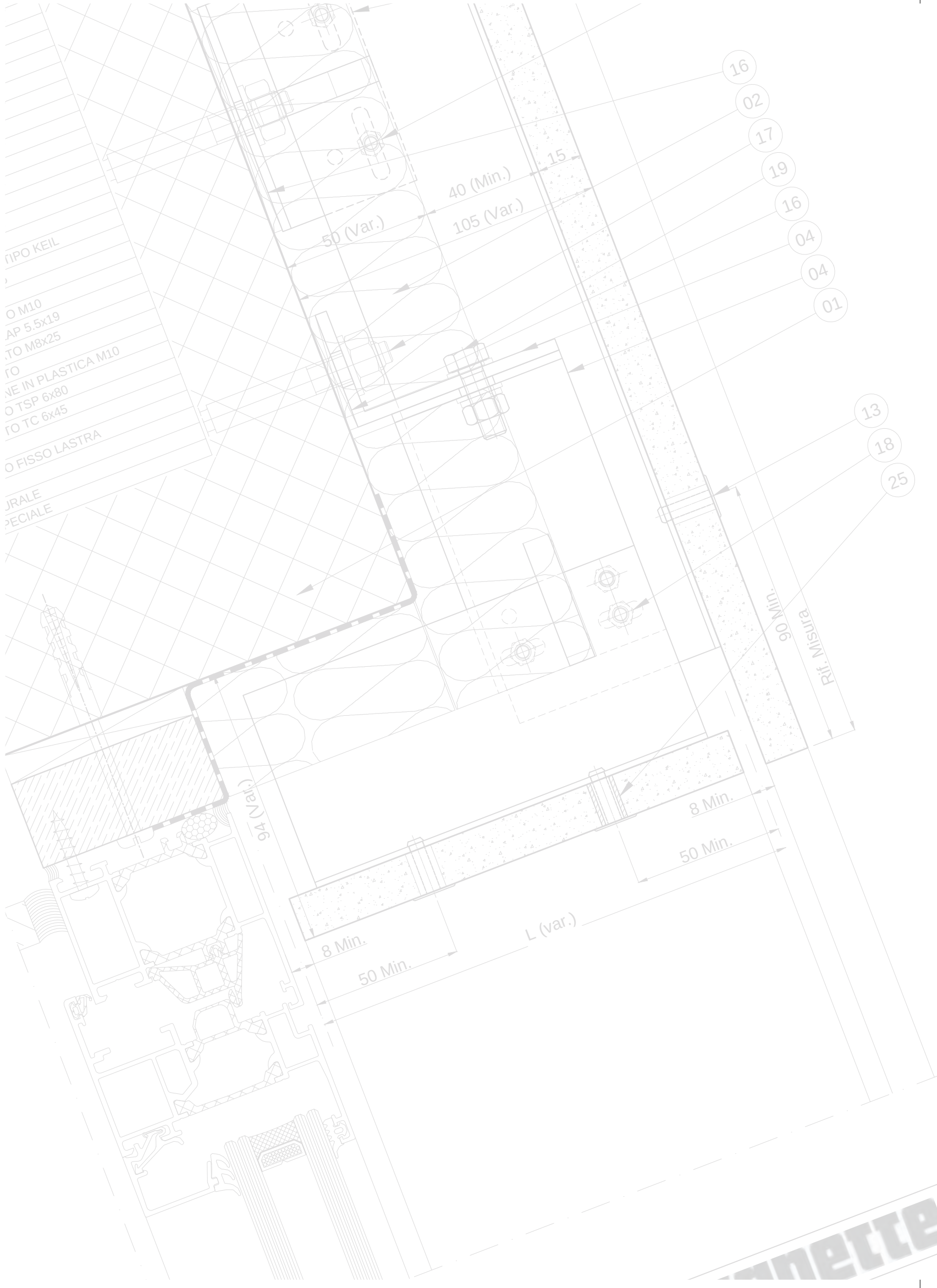
Technical Manual 1.1



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TIPO KEIL
O M10
AP 5.5x19
TO M8x25
GO
NE IN PLASTICA M10
O TSP 6x80
GO TC 6x45
O FISSO LASTRA

JRALE
SPECIALE





CLADIA[®]

with
Ductal[®] *inside*

zanette

YOUR BUILDER GROUP



CLADIA®

with
Ductal® inside

From the collaboration between Zanette Italian producer of concrete prefabricated panels and Lafarge-Holcim, world leader in building materials, CLADIA® with Ductal® inside, was born panels made with UHPC Ductal® concrete, which allows to produce large flat panels with thin thicknesses, high durability over time and a wide range of colours and surface finishes. CLADIA® with Ductal® inside, panels are produced in the Italian Zanette factories, in Fontanafredda (PN), with sophisticated plants and state-of-the-art machinery, constantly monitored in the production process both from the internal lab the major European certification institutes. (CSTB)

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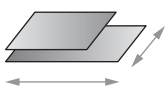
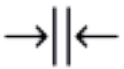
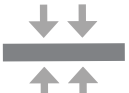
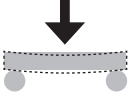
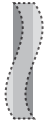
Technical Manual

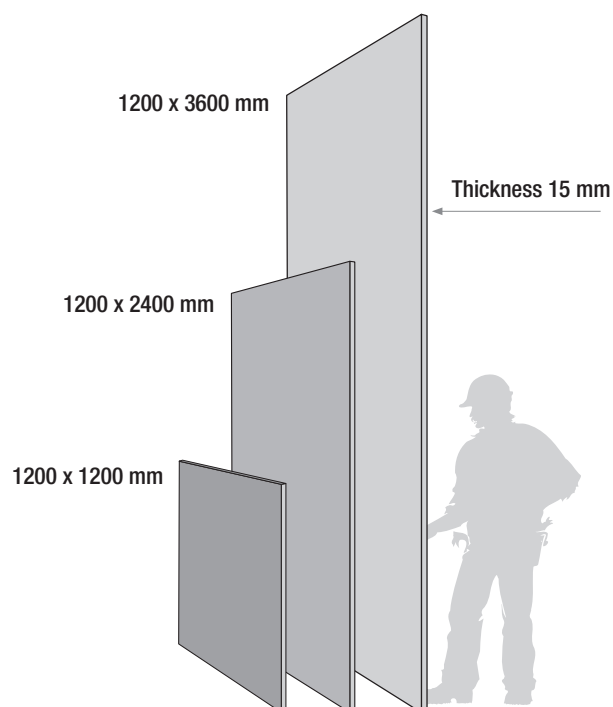
This Technical Manual has been published by Zanette to illustrate the physical and technical characteristics of CLADIA® with Ductal® inside, panels which together with simple notions of design, installation, transportation and maintenance can make the concept of ventilated wall easy and effective.

The different regulation requirements of each country, where the CLADIA®, with Ductal® inside will be positioned, have to take into account the following characteristics.

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Technical details

CLADIA - Technical characteristics	Law	Test result
 Standard dimensions	EN 14992 2007	1200 x 2400 mm 1200 x 3600 mm
 Thickness	EN 14992 2007	15 mm standard According to the matrix at request
 Specific weight	NF P 18-459	15 mm = 34 kg /m ²
 Compressive strength	NF EN 12390-3	110-130 MPa
 Flexural strength	NF EN 1170-5	14-18 MPa
 Elastic modulus	NF EN 1170-5	40 GPa
 Thermal expansion coefficient	NF EN 1170	11 µm/m/°C
 Thermal conductivity	EN 12467	1,3 W/m ²
 Impact resistance (Ball Drop)	NF P 08 301 - 302	Satisfactory (No breack)
 Keil point fastening extraction	Keil system	2,50 kN
 Fire resistance	NF EN 13501-1	Grade A1
 Abrasion resistance Loss of mass Index abrasion resistant	ASTM C 501-84	0,64 g (0,19%) 139

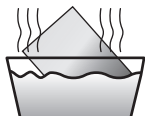


Tests and certifications: CSTB

The technology of CLADIA®, with Ductal® inside, is based on the use of Ductal® cement produced by LafargeHolcim. The innovative mixing, with a low ratio water / cement makes the product slightly porous and highly durable compared to conventional concrete.



Smaller size are possible with the cutting of the standard slabs (excluding wastages). On request slabs cut-to-size.

Durability of Cladia slabs	Low ref	Value
 100 cycles freeze / thaw	NF EN 12467	Category A
 Immersion in hot water	NF EN 12467	Category A
 Water absorption	NF EN 13369	5,6 %
 Immersion and drying	NF EN 12467	Category A
	Diffusion of chloride content	XP P18-462
	Penetration resistance to the chloride ions	ASTM C 1202
	Porosity measurements with mercury	Linee guida AFGC
	Gas permeability	XP P 18-563
		<0,014*10 ⁻¹⁴ m ² /s at 90gg days
		571 Coulombs
		7,0 %
		<0,4*10 ⁻¹⁹ m ²

Production tolerances / Cladia slabs cutting	Low ref	Test result
	EN 12467	Dimensional ± 3 mm
		Thickness ± 1 mm
		Straightness ± 0,05 mm
		Perpendicularity ± 2 mm / m
		Trasversal curvature ± 1/200 width
		Longitudinal curvature ± 1/200 length



1. Ventilated wall

The origins of the system to build with a ventilated façade came from the system of the ancient Romans and perfected itself over the centuries in northern European countries where it was used to preserve natural products. Also called "GRANITE TO OPEN JOINT", it was made from wooden constructions with air gaps permitting water drainage and evaporation.

A double skin therefore increased the performance of the building without compromising the typology of materials. It is understood that for humid and rainy climates this system allow to have healthy environments reducing condensate or mold phenomena.

The main characteristic of a ventilated facade are:

- External skin consisting of the cutting of a panel.
- An air space.
- An insulated wall that controls air leaks.
- A substructure of aluminium or wood with a thickness able to contain insulating material plus the air chamber.
- A rigid insulation barrier (Thermostop) between the underside structure and the existing wall.

With this sequence we could have these advantages:

- In winter the heat of the building is maintained inside and the cold air does not go directly on the structure of the building.
- In the summer, thanks to the natural ventilation given by the air chamber, there is an internal cooling when outside temperatures are high.
- Most sunlight affects the external skin of the building (CLADIA®, with Ductal® inside,).
- The heat that passes over CLADIA®, with Ductal® inside, is partially dissipated by ventilation.
- Another big advantage for high buildings is that the control of the temperature minimizes the structural movement.

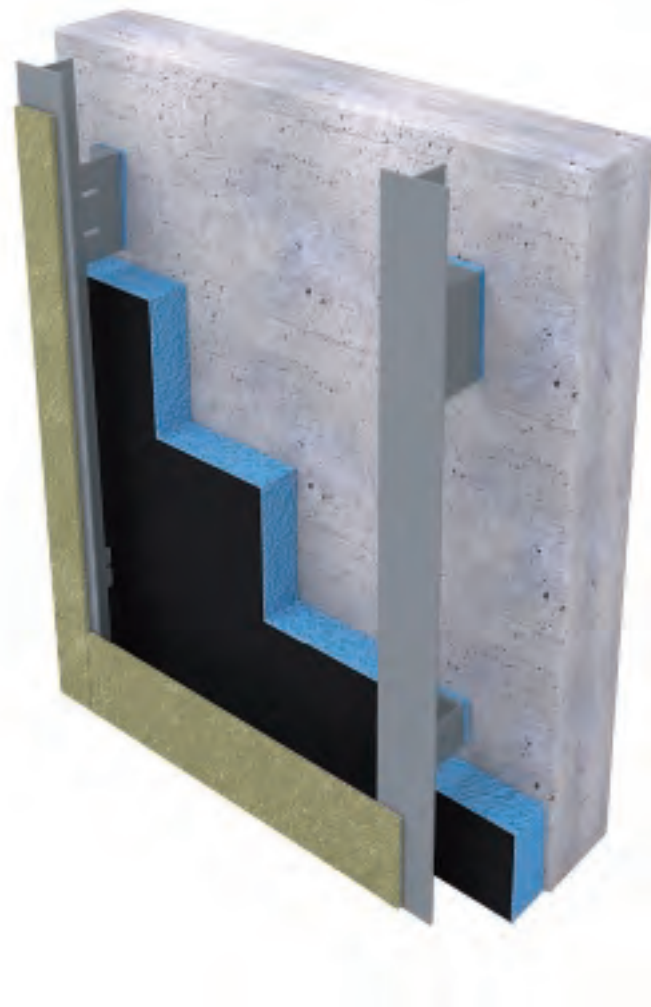
Unlike traditional constructions, Ventilated Wall System eliminates those weaknesses called thermal bridges.

In fact, these Thermal Bridges most commonly found amongst connections between floor and wall increase speed of loss of heat causing superficial condensation which over time cause damages to the building.

All this does not exist with the Ventilated Wall thanks to the continuity of insulation without thermal bridges, eliminating any risk of condensation inside the building.

The acoustic performances of the ventilated wall system are very effective increasing the comfort living of buildings.

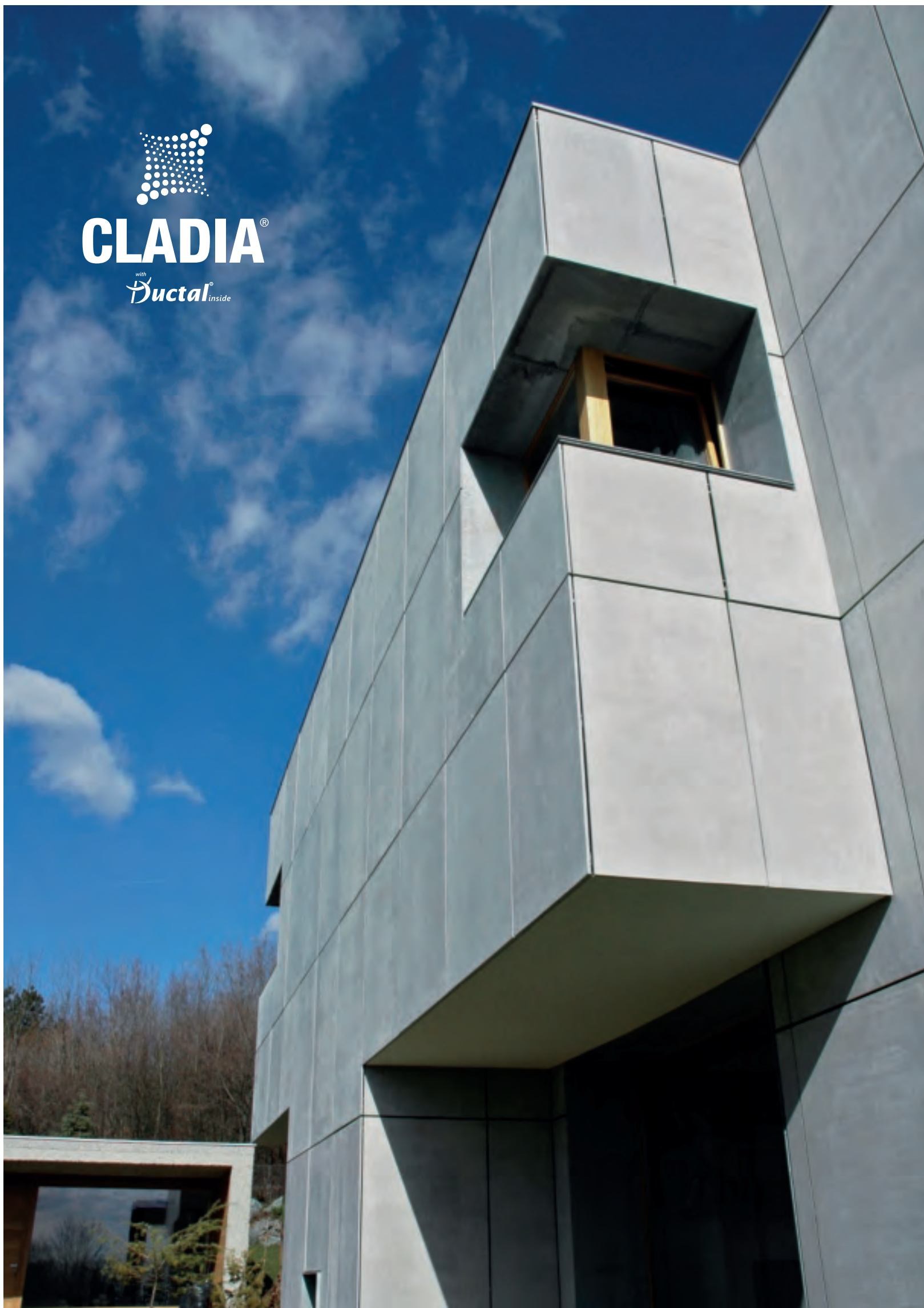
In conclusion buildings built or upgraded with this system type provide a healthier living environment.





CLADIA®

with
Ductal[®] *inside*



1.1 Introduction to CLADIA®, with Ductal® inside

The evolution of GRC (Glass Reinforced Concrete) has brought Zanette over time to a production of slabs of CLADIA®, with Ductal® inside.

The possibilities of having thin slabs with high mechanical resistances make this product particularly suitable for facade cladding systems ventilated.

The CLADIA®, with Ductal® inside, allows to change the external aesthetic appearance of a building without any structural intervention, fast, economical and resistant in time.

With the use of suitable under support structures CLADIA®, with Ductal® inside permits to create a perfect ventilated wall, with excellent values of insulation, thus guaranteeing a high production energy saving.

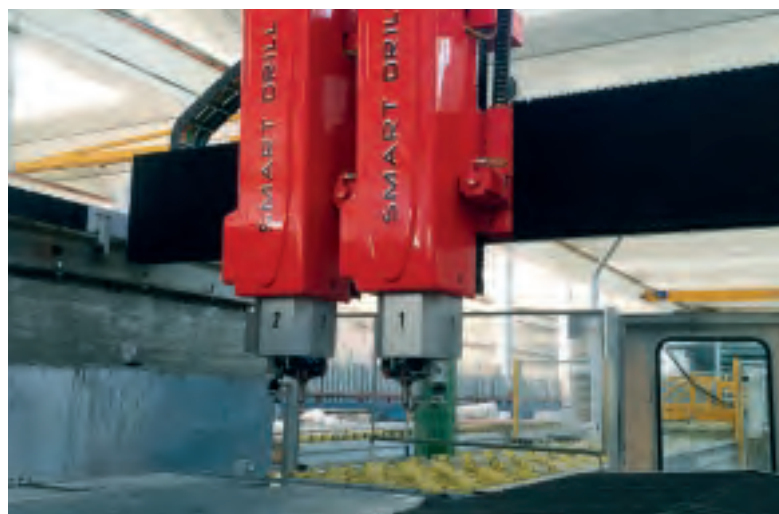
Due to its particular cementitious composition, CLADIA®, with Ductal® inside, maintains its physics integrity, mechanics and aesthetics much longer compared to traditional metal coating systems or ceramics, even in environments with climatic conditions more extreme.

The insertion of glass fiber reinforcement gives to the product excellent bending mechanical resistance and traction, without having to take into account the smallest cover required by metal armor. This product allows to produce elements of large dimensions with very thin thickness, which can fit any architectural requirement.

CLADIA®, with Ductal® inside, with thicknesses of 15 millimetres can reach important sizes up to 3600 ± 4000 mm in length and 1200 in width.

The benefits of using CLADIA®, with Ductal® inside are that it is:

- RESISTANT
- LIGHT
- THIN
- BIG STANDARD DIMENSIONS
- FIREPROOF
- CERTIFIED
- CUSTOMIZABLE
- VERSATILE
- MATERIAL EFFECT / ASPECT
- RECYCLABLE





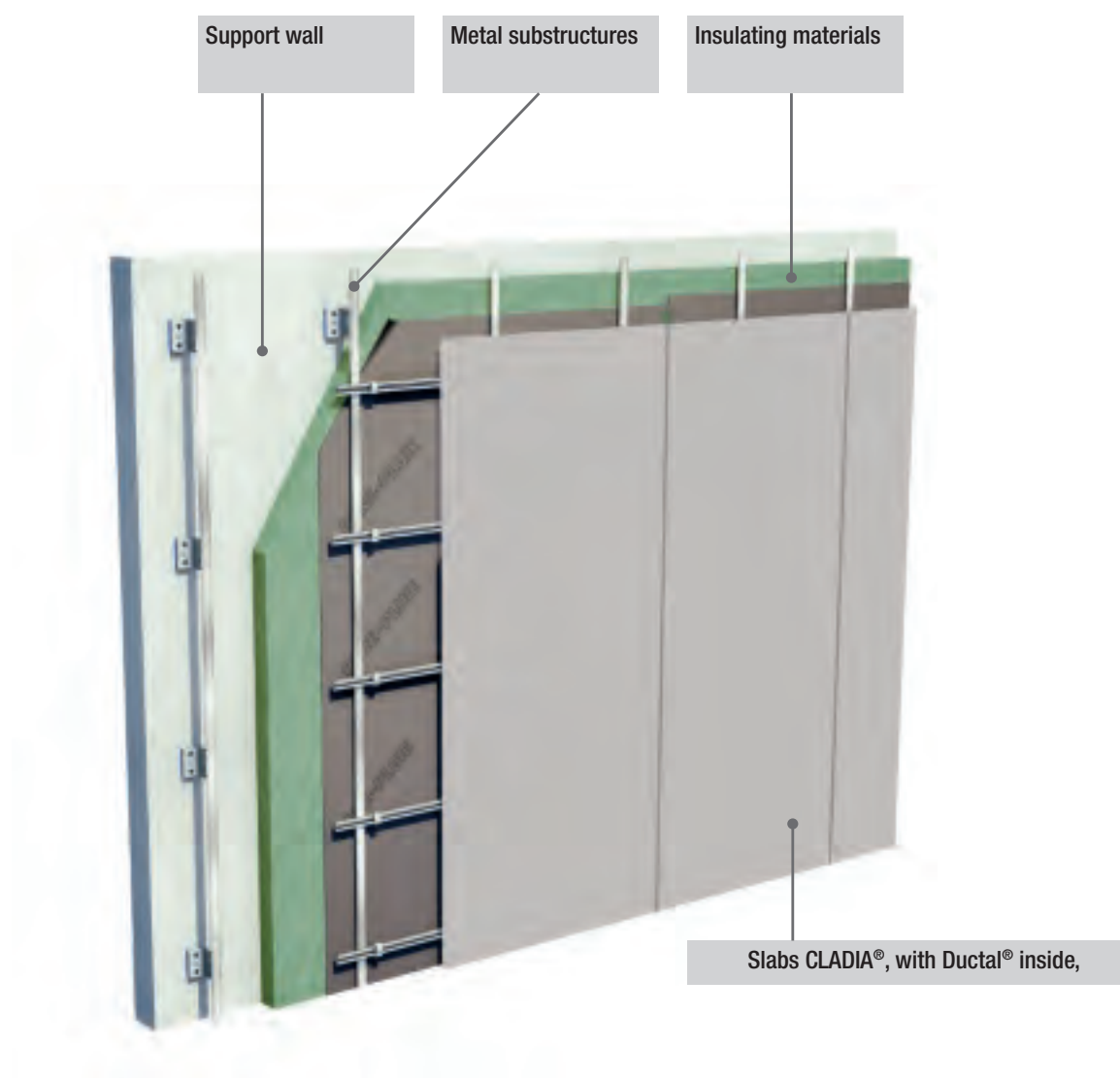
1.2 Application on ventilated wall

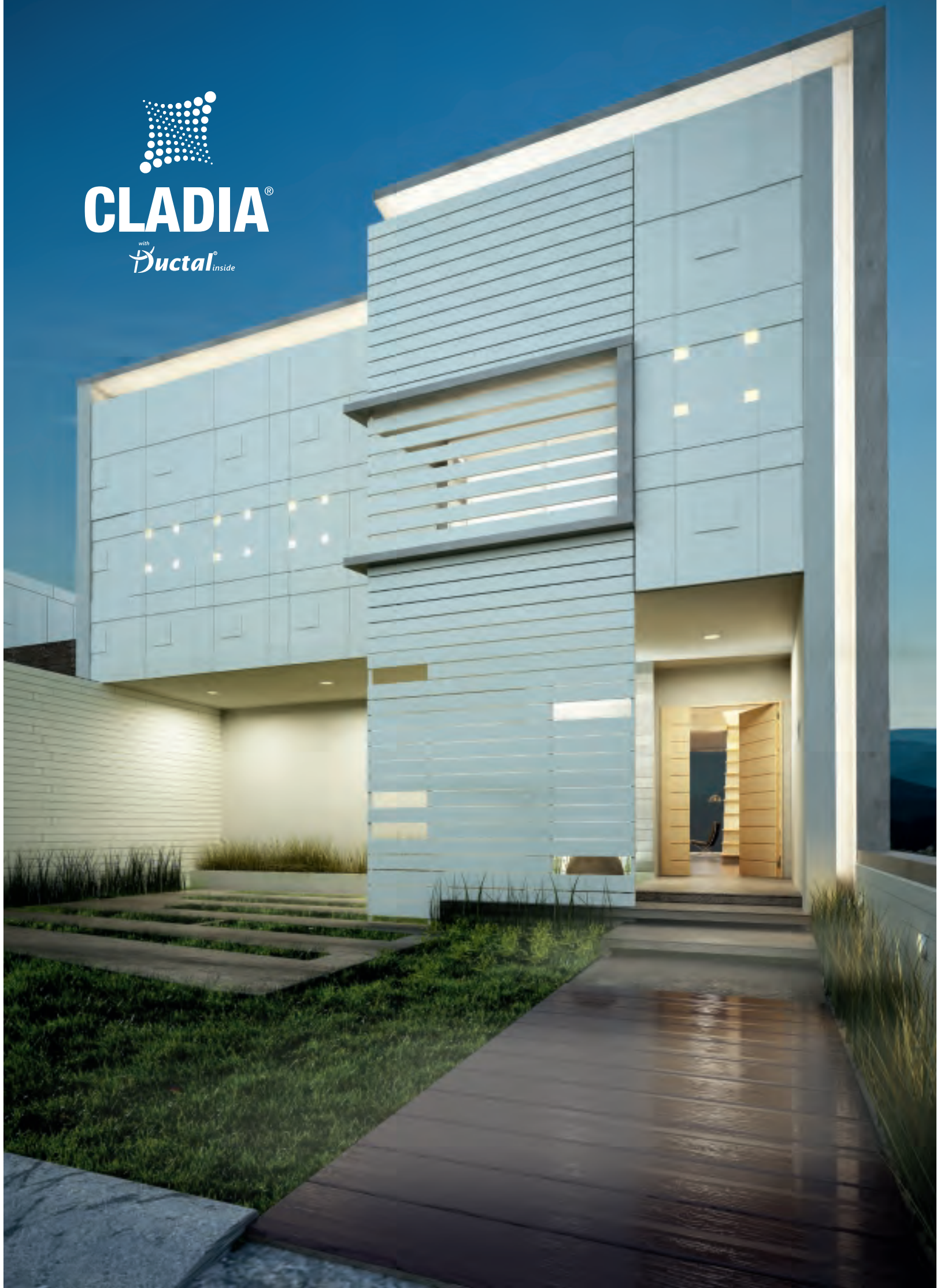
CLADIA®, with Ductal® inside, slabs find their own greater application area as coating system for ventilated walls. The slabs must be mounted on a rigid substructure but at the same time flexible, stable and levelled, statically dimensioned in such a way as not to transfer loads to the coating slabs.

The substructure must also be mounted and secured on a properly dimensioned support wall and verified (Sisma, wind, pressures and depressions and distances from other buildings) for additional stresses given by the ventilated wall.

The substructures can be made in steel, aluminium or in wood, and must be able to accommodate the layer of insulation and the air chamber where the ventilation takes place.

The structure should be designed for two types of fixing: VISIBLE and INVISIBLE from which you can choose the finishes and colouring together with any corner elements or special elements.





1.3 Design possibilities

CLADIA®, with Ductal® inside, offers architects a creative vision of the future. We offer many possibilities of use, standard or customization for new construction, to the realization of coatings dedicated to restoration or renovation projects of existing buildings, where compatibility and coordination is required with the landscaping context and respect of any urban constraints.

In such cases the performance and technical characteristics of CLADIA®, with Ductal® inside allow concrete constructive solutions, thanks to the ability of a versatile production that can make artefacts, design, with the care of traditional Italian craftsmanship.

3D modelling, full-size prototypes, (mock-up) tests and resistance tests.

Zanette has an organized technical platform to develop with the designer the production solutions also for custom facade claddings.



1.4 Behavior and Fire resistance

For fire behavior and fire resistance Zanette has carried out on CLADIA®, with Ductal® inside, several tests according to the current relevant European regulations.

CLADIA®, with Ductal® inside, thanks to its cement composition guarantees excellent performance of fire resistance.

Excellent fire reaction values and the stability at high temperatures allow to certify the product with fire protection class **A1** (EN 13501-1).

Tests and certifications according to ATEX type A certification issued by CSTB (France)

1.5 Geographical location Climate - Wind – Earthquake

To figure out how to make a ventilated wall in a building we have to look at a lot of information that we can summarize:

- Height and design of the building
- Geographic location
- Climate of the Territory
- Wind
- Earthquake

If the building is near the sea or the mountain will have different needs and behaviors as well depending on the respective wind.

If near an airport the building will have high loading forces or vortex occurrences.

The Territory will also have influences on elevated heights if the surrounding environment is flat, without hills, mountains etc.

As for the wind in addition to the previous points, it can be very important the positioning of other buildings around as they may hinder the free flow of the wind, causing the "diversion" or "acceleration" of the complex flow patterns. The design of the building has an effect on how the pressure of the wind can be distributed.

The height of the building must be evaluated. The speed of the wind increases with the height.

The presence of an earthquake within the territory must necessarily call for a proper design.

1.6 Insulation and thermal bridges

To create a high performance ventilated wall one must leave a minimum ventilation space to prevent leakage of heat compared to the outside in the winter but also in the summer.

It is necessary to place a layer of insulating material.

When choosing the insulating layer, there are very important transmittance values, specifically the Lambda value of the material which is expressed in W / mK (watt per Kelvin meter) and defines the ability of the material to transmit the heat based on the thickness used. Obviously, the lower this value the greater the performance of the building will be.

For the ventilated walls the insulation ideally must be compact, non-friable, fire-retardant, breathable, and resistant to water and wind that will be inside the air chamber due to pressure and depression.

Very important is that the insulation is firmly secured in its place for the duration of the façade without the possibility of detachment they would have to foreclose the effectiveness of isolation itself as well as to compromise the structure itself and mold formations and condensates. Mechanical fixings are usually applied and / or non-combustible glue fasteners in the entity of no. 5 per square meter, subject to prescriptions other than part of the insulation manufacturer.

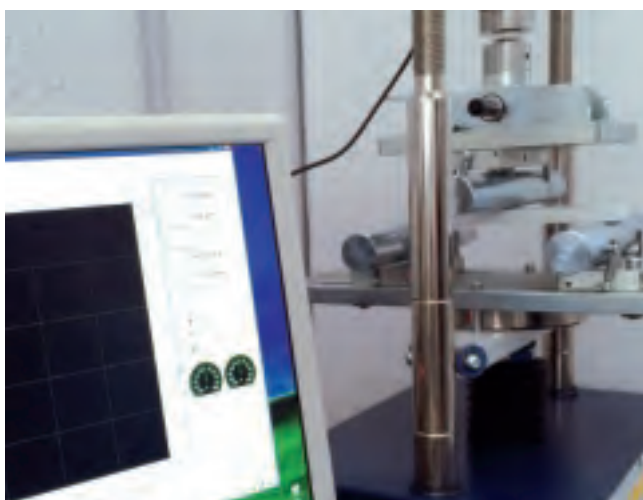
In addition to isolation a very important point is the possible thermal bridges that the ventilated wall solves almost totally, thanks to the positioning of the insulation outside the building.

Attention must be paid to connectioning the substructure to the supporting wall and the insulation joints. In the first case the use of a "Thermostop" is sufficient while in the second case the problem is solved by placing insulation in two overlapping layers avoiding any leakage.



2. Tests and certifications

CLADIA®, with Ductal® inside, is a CE marked product, made in Italy with state-of-the-art equipment, whose production process is constantly monitored and periodically verified by the major institutes of European certification, in fact since 2004 the system management and quality of Zanette is ISO 9001 certified.



Certification company Zanette srl

Quality System UNI EN ISO 9001: 2008

Certificate No. 75200-2010-AQ-ITA-SINCERT

Conformity Certificate "CE":

Certificate No. 0407-CPR-282

Conformity Certificate "FPC":

Certificate n° 209 PC/CLS/3

System Certifications of CLADIA®, with Ductal® inside.

AVIS TECHNIQUE

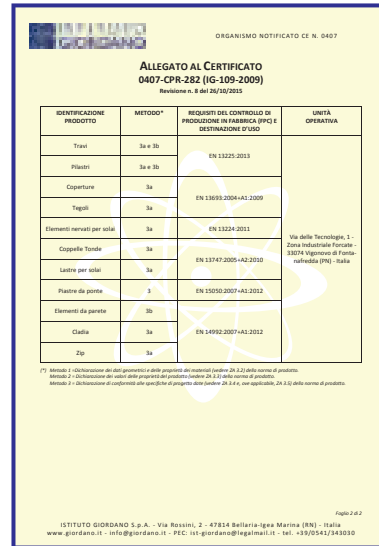
ATEX A nr 2346 for Visible fixing (screw system)

ATEX A nr 2347 for Invisible fixing (Keil system)

Avis Technique System Certification guarantees the product verification from production to installation, providing the guidelines for all stages of processing. Full documentation is available upon request.

AVIS
TECHNIQUE

2.1 Zanette a certified reality



The CRZ (Zanette Research Center) constantly evolves and updates the norms and consequent methods of certification.

In addition to ISO Quality Management System, CLADIA®, with Ductal® inside, is subject to CE marking which allows it to circulate with a kind of Technician Passport in the European Union Market, in addition, the control is monitored by CSTB.

You can access the area for update downloads at www.zanette.com

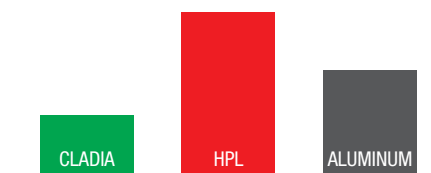


2.2

Eco – sustainable building

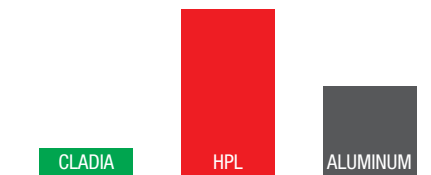
CLADIA®, with Ductal® inside have been compared with the aluminium and HPL panels (that are the most commonly used system).

The results show advantages that are really interesting for our product.



Gas emissions – greenhouse effect.

CLADIA®, with Ductal® inside, are one of the best solutions on the market among the cladding systems, to realize an eco-friendly building, both during the manufacturing process than the replacement and final disposal.



Water consumption.

The water consumption to produce CLADIA®, with Ductal® inside, is limited to the hydration of concrete and not to the processing cycles. So the water consumption is 3 times less than aluminium solutions and 6 times less than HPL solutions.



Waste and production residues.

CLADIA®, with Ductal® inside production, generates waste considered completely inert. Their pollution value is comparable to the lighter aluminium. Instead HPL production appears to be the most polluting both during manufacturing process than the final disposal.

2.3 Recycling of slabs

An increasingly frequent concern today is to understand what will happen to the materials at the end of their cycle of life, how they are disposed of and what they do to the environment.

CLADIA®, with Ductal® inside, and everything that is part of the ventilated wall can be separated, divided and recycled differently.

Simple materials such as sand, cement, glass fibres can be crushed and reused as substrates or inert materials. This factor lowers CO2 emissions and reduces energy consumption.



Zanette's project sustainability

The ZANETTE company has always looked at the Sustainability of buildings.

That's why CLADIA®, with Ductal® inside, sought to increase energy efficiency of new buildings and upgrading the old ones.

CLADIA®, with Ductal® inside, has a process traced with low water consumption and its total reuse, electricity comes from photovoltaic plants positioned in the roof while thermal energy is extracted from co-generation plants using European tracked vegetable oil.

The production plants grow to 25,000 square meters built on an area of 50,000 square meters.

New types of buildings are designed with thermal-break walls, window frames and roofs according to regulations to avoid unnecessary energy dispersion and to give a comfort living environment.



3. Design with CLADIA®, with Ductal® inside

For the design of a new building or upgrading solutions we have taken into account constructive solutions according to the criteria of industrial processing, using standard formats or their sub-multiples avoiding the use of expensive special elements.

In the distribution of the single elements the position of doors and windows is a very important corner that added to the size of the joints can affect the use of the only elements coming from "Standard" slabs.

The production of CLADIA®, with Ductal® inside, develops essentially on two slab formats 1200x2400 or 1200x3600.

A careful design optimizes the realization of cuts on standard plates by managing a part economic value given by "wastages".



3.1

Facade cladding guidelines.

Realizing a project using one ventilated wall can be outlined as follows:

- Feasibility with the product chosen in the formats, colours, finishes, corners, door and window joints.
- Choice of fixing type: VISIBLE or INVISIBLE
- Structural diagram and relative rough calculation
- Realization of final project drawings

Depending on the type of building to be covered and the type of façade to be installed, some general warnings must be taken into account:

The substructure package + coating panels is an element anchored to the building to be coated, but structurally independent.

The facade cladding does not contribute to the static stability of the building.

The supporting structure must therefore be adequately calculated to be able to withstand the loads added by cladding.

It is advisable that the supporting structure is designed and performed to facilitate the installation of the substructure of the facade coating, with respect to linearity and simplicity of fixing elements.

The fixing of the coating panels to the bottom structure must be suitably designed to withstand not just the stresses of the elements and atmospheric agents, but must also take account of any possible accidental bumps.

In case of special work on panels, or addition of elements that may alter its stability or stiffness, it is necessary to study appropriate fixing systems based on the particular case.

3.2 Substructure guidelines

To design a substructure and anchoring system to the wall of a facade cladding, many factors need to be taken into account. The aspects which affect the sizing and technical features of this type of substructure, which only in appearance may seem like a standard element, are many:

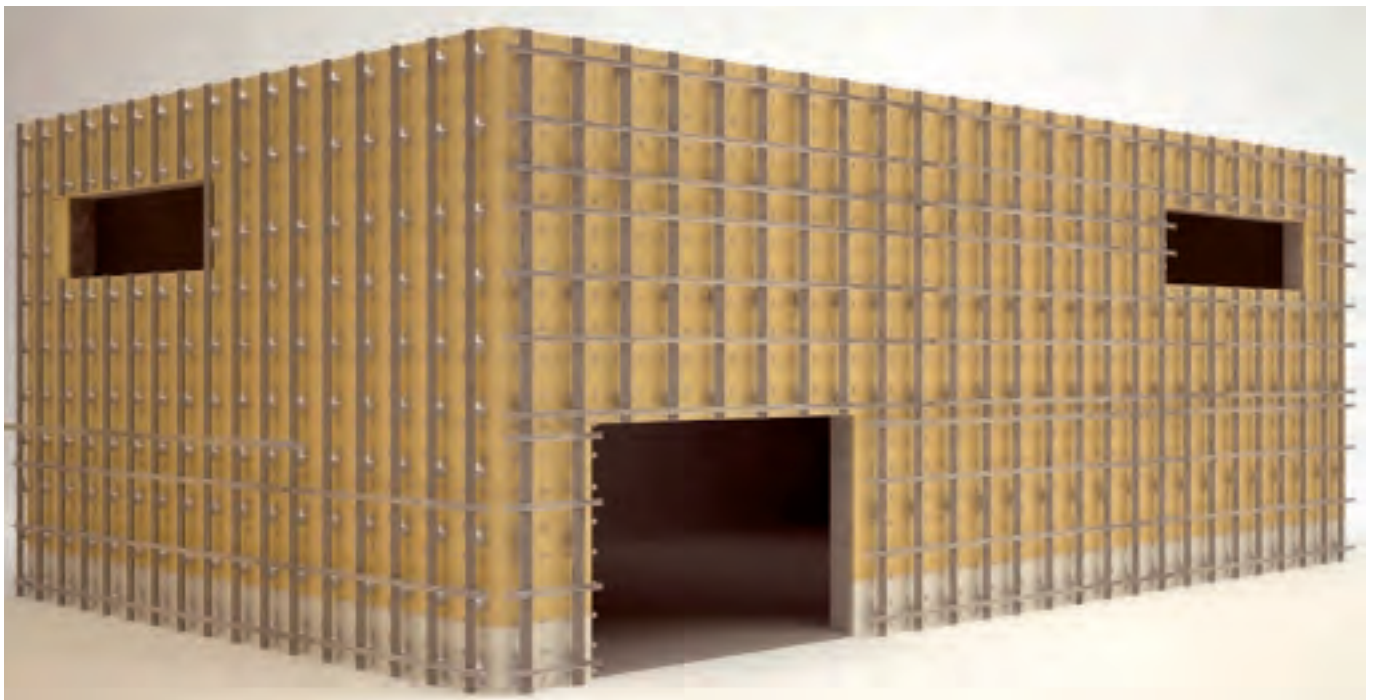
Characteristics and situation of the supporting structure to which anchoring, with brackets and fixing elements appropriately sized and treated against rust.

Resistance to external stresses as the force of the wind, seismic movements, etc ... according to the prescriptions of local regulations.

Weight and dimensions of coating panels, according to which is dimensioned the step of the hardware to the substructure.

The fixation must be designed to absorb the movements of the panels, without subjecting tension to the elements and unsupervised stresses.

Sizing an appropriate insulation layer and ventilation between the supporting structure and the covering panels.



3.3 Fixing system of standard slabs

The fixing systems for the sub-structures provided for panels CLADIA®, with Ductal® inside, belong to two different categories, Visible and Invisible, that mainly affect two aspects:

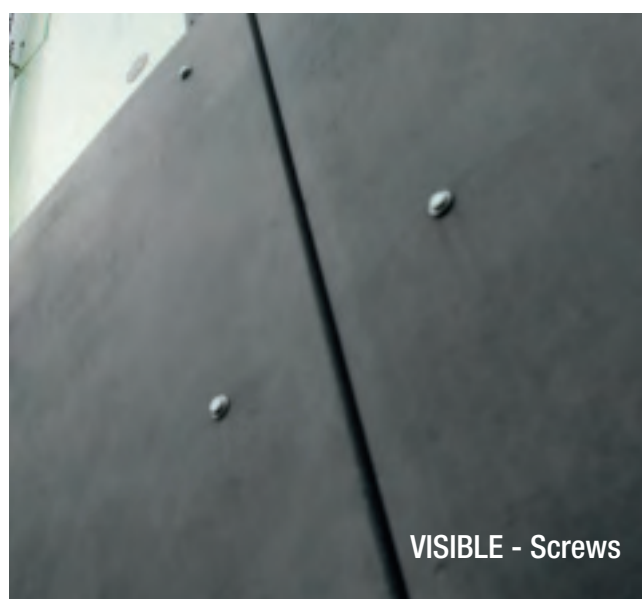
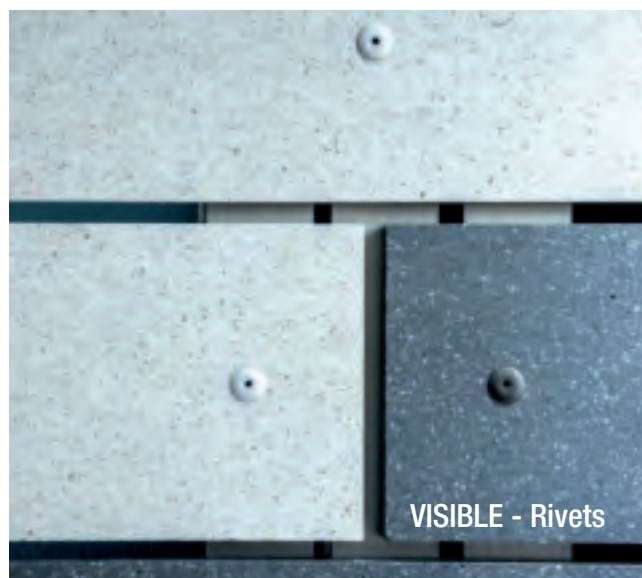
- Aesthetic appearance of the ventilated façade at close range.
- Economic aspect according to the modularity of the selected slabs.

As far as VISIBLE fixing is concerned, it is obtained using a single lower vertical structure underneath fixed and calculated to the supporting structure by means of special rivets or screws, create the facade in a simple and economical way even during installation.

INVISIBLE fixing can be made with several Standard defined systems. The mechanical system "KEIL" is developed by means of a bush inserted inside the slab, or special glue "SIKATACK" or similar.

There are also other less used systems such as milling "KERF" by overlaying "SCANDOLE" or inside the cells, make the façade clean even by near obviously with a more articulated work in both design, under construction and assembly.

More information and technical details are developed in the following chapters where distances fixing from the edges and many other useful information is explained.



3.4 Fixing system with rivet or screw on sight

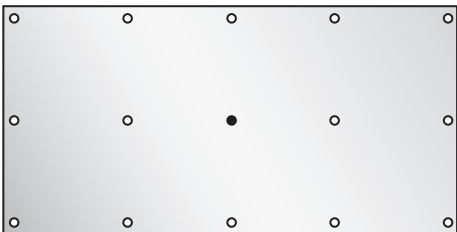


Fixing by a rivet is realized predisposing on the slab CLAD-IA®, with Ductal® inside, through holes in the position and amount needed to overcome the stresses to which the slab will be subjected to operating phase (according to the table below). These holes will have to coincide with the aluminium substructure, on which the holes are to be made on site of the diameter of the rivet - screw, which will fix the slab underneath the supporting structure. To allow differential expansion between slabs CLADIA®, with Ductal® inside, fastened with rivets - screws, and under the supporting structure, the holes will have a diameter of 9 mm, while the rivet will have a diameter of 5.1 mm.

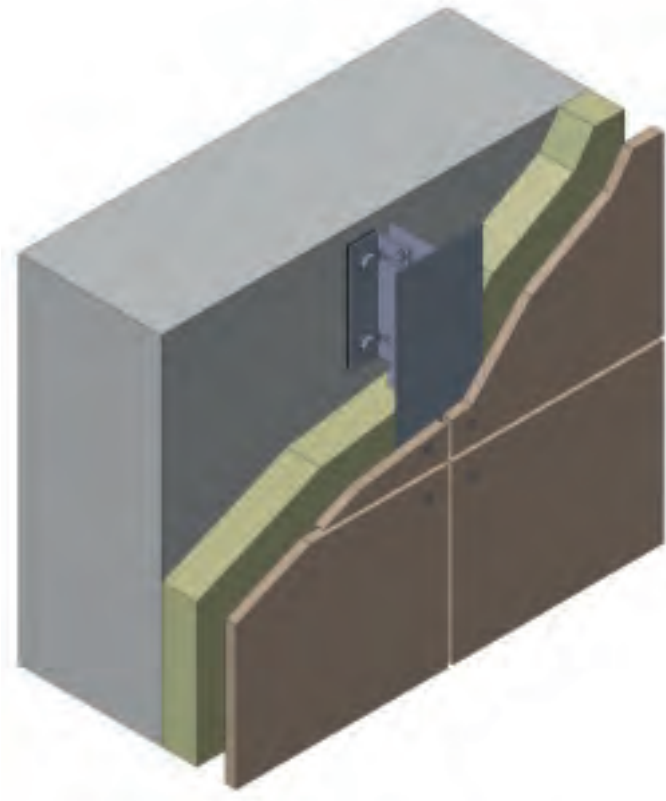


Rivet

At the installation stage you will have to make sure to include bushings on the central holes before the fixing of the rivet. These will go to create fixed points, unlike those without bushing, thus allowing the sliding of the slab, following the diagram below.



Fixed point on slab 120 cm horizontal



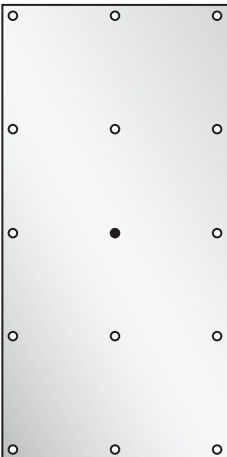
Substructure for fixing on sight	Min. distance from edge bars of the panel
Aluminium with brackes and vertical T or L	30 mm
Wooden with horizontal - vertical warping	30 mm



Screws



Bolt - Burglar proof



Fixed point on slab
120 cm vertical



Wooden with
horizontal - vertical
warp

Design of visible fixing points of the panels

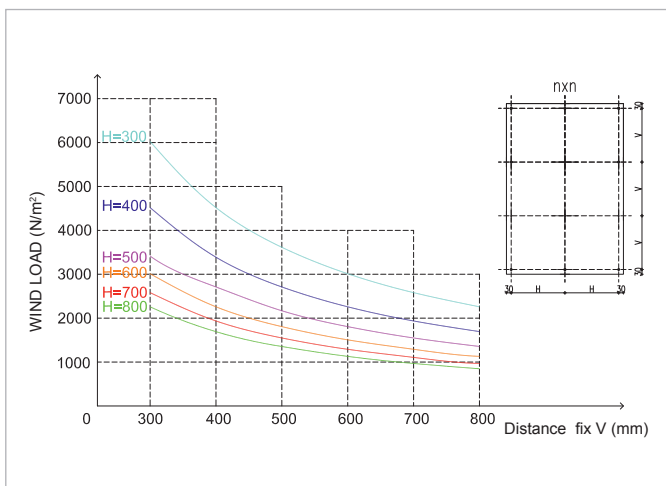


Diagram for Determining the visible Fixing Points with **nxn** type (Multiple fixing points in H and V).

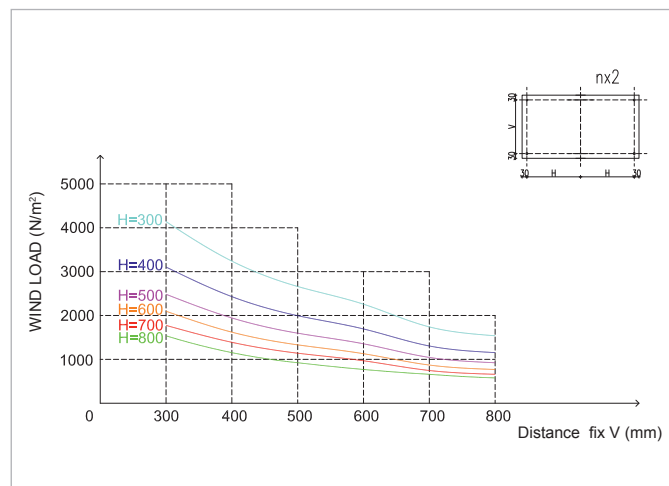


Diagram for Determining the visible Fixing Points with **nx2** type (Multiple fixing points in H and 2 in V)..

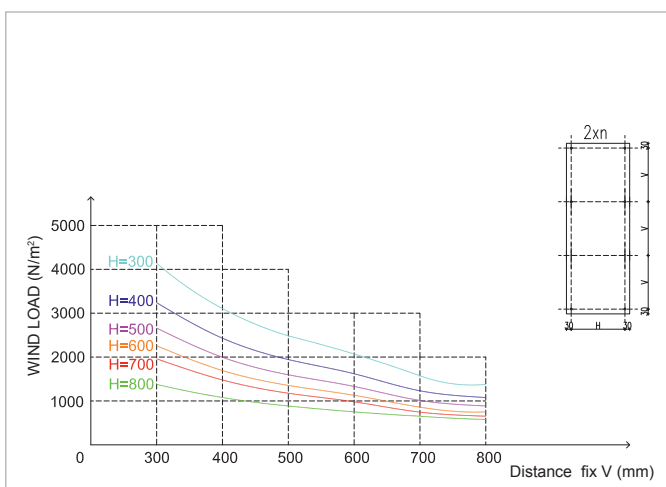


Diagram for Determining the visible Fixing Points with **2xn** type (2 fixations points in H and multiples in V).

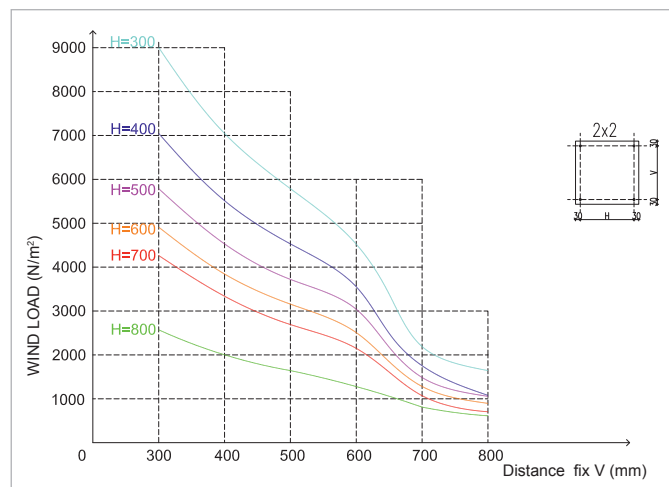


Diagram for Determining the visible Fixing Points with **2x2** type (2 fixations points in H and 2 in V).

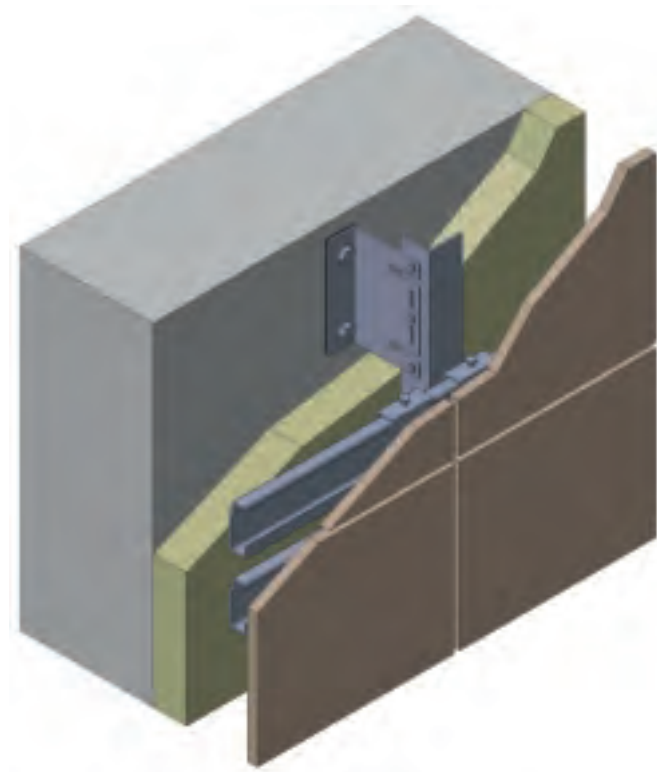
3.5 Slabs with invisible fixing

The invisible fixing is made by predisposing on the slab CLADIA®, with Ductal® inside, having a 15 mm thickness, with internal milling holes with inner diameter 9 mm, outer 7 mm, and depth 10 mm, in position and in the amount needed to withstand the stresses to which the slab will be subjected during use (according to the table below).

On these holes, previously performed in Zanette's drilling centers, will then be put into operation a Keil Hs expansion tip 10 mm or equivalent, in which the clamping bracket will be attached underneath the structure by means of a special bolt, tightened with a pair of 2.00 / 4.00 Nm, which will guarantee the dowel an appropriate fixing to the plate. Between the bracket and the plate you will have to always insert a rubber gasket or sponge that enhances the coupling between the two surfaces.

The plates, equipped with brackets in the expected amount, will come then hooked on to the substructure, adequately prepared, leaving a minimum joint of 8 mm, which can be regulated by adjusting the appropriate screws in the structure.

If horizontal joints are planned in the design of a width greater than 20 mm, the panels will be able to be removed individually, and after the laying of the entire facade.



 Download video: www.cladia.it

Substructure invisible fastening system	Min. distance from longitudinal edge bars	Max. distance from longitudinal edge bars	Min. distance from transversal edge bars	Max. distance from transversal edge bars
Aluminium with brackets mullions and horizontal profiles	50 mm	100 mm	50 mm	200 mm



Design of invisible fixing points of the panels

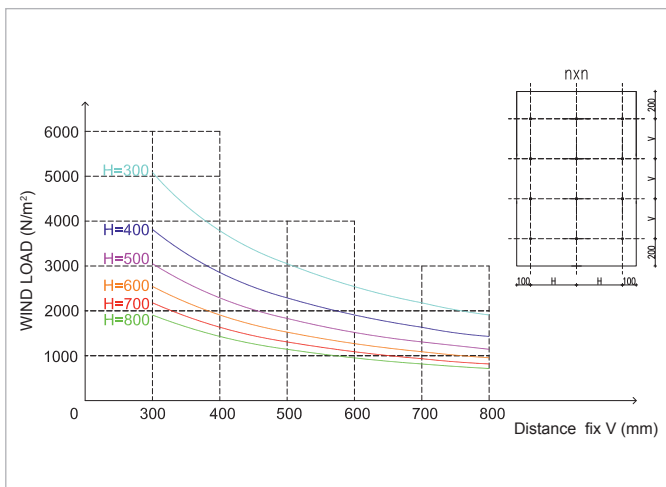


Diagram for Determining the invisible Fixing Points with **nxn** type (Multiple fixing points in H and V).

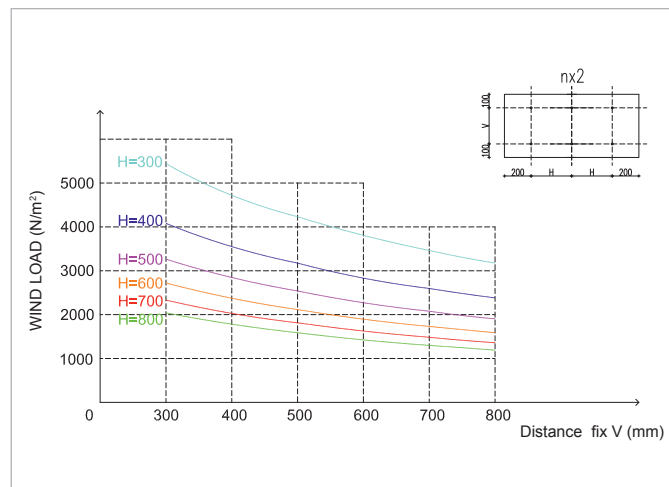


Diagram for Determining the invisible Fixing Points with **nx2** type (Multiple fixing points in H and 2 in V).

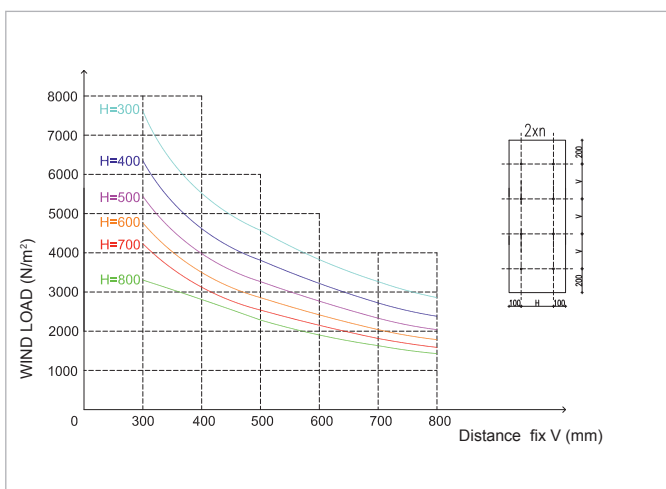


Diagram for Determining the invisible Fixing Points with **2xn** type (2 fixations points in H and multiples in V).

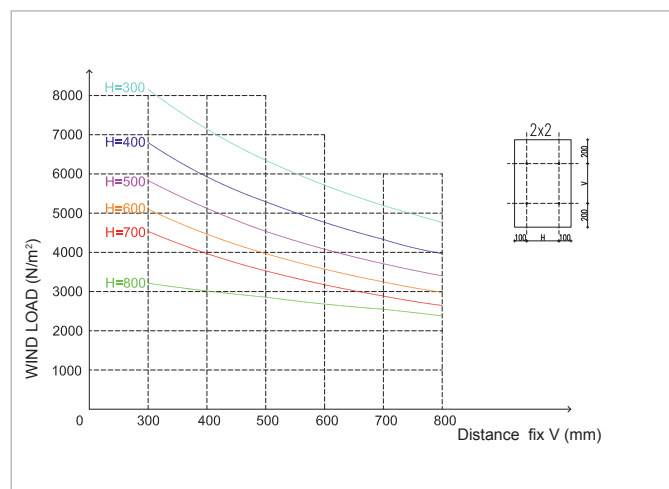


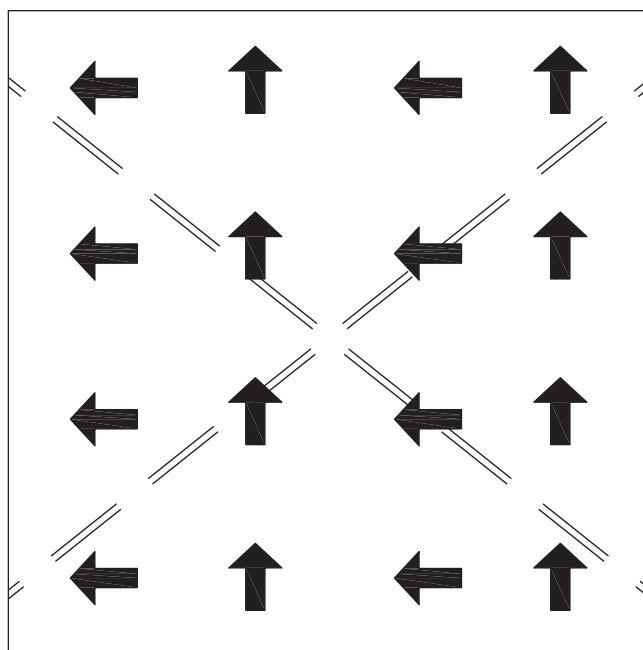
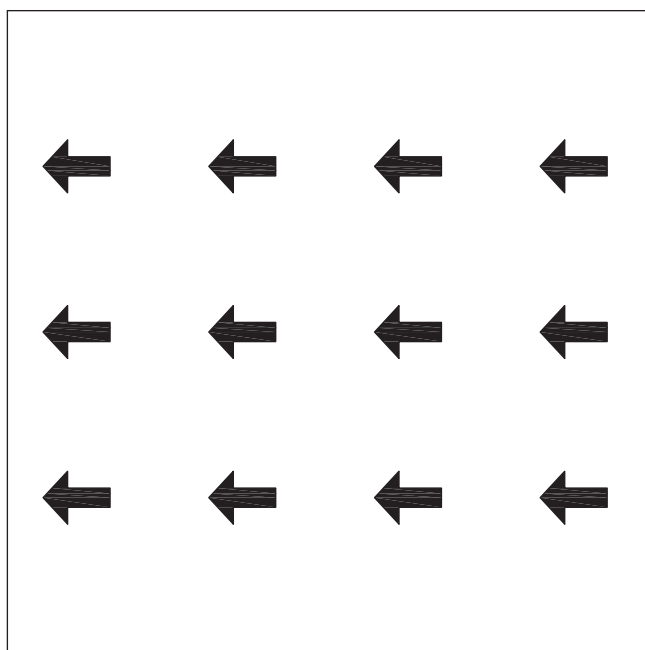
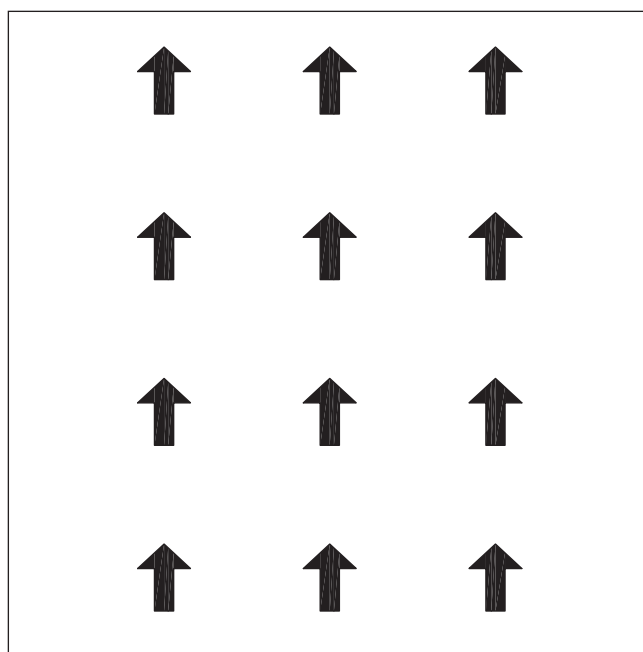
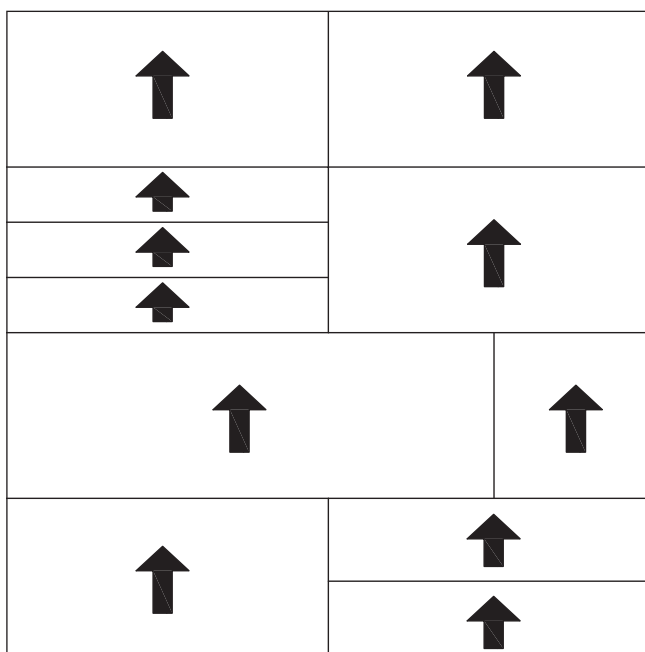
Diagram for Determining the invisible Fixing Points with **2x2** type (2 fixations points in H and 2 in V).

3.6 Installation Order

In order to get a good result in the installation phase of CLADIA®, with Ductal® inside, it is always advisable to maintain a pre-set order of assembly at the beginning of the laying, so you can correct any error of the slabs or of the underlying structures when installing.

The position of each slab is fixed by a schedule production list which allows the installer to accurately identify the type of slab to be installed.

The minimum joint between the slabs, both in vertical and horizontal position, is 8 mm in order to obtain a good regulation and a normal thermal expansion of the product.



3.7 Junction between the panels

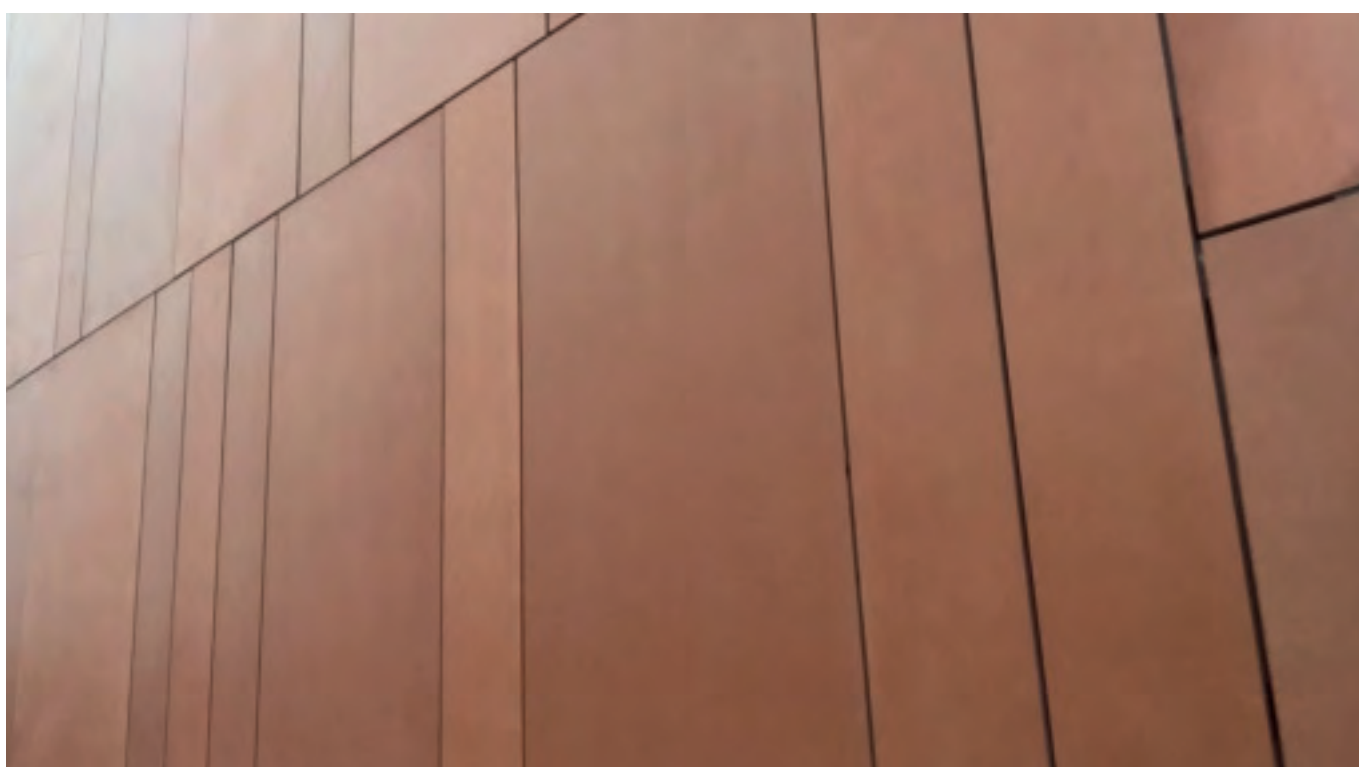
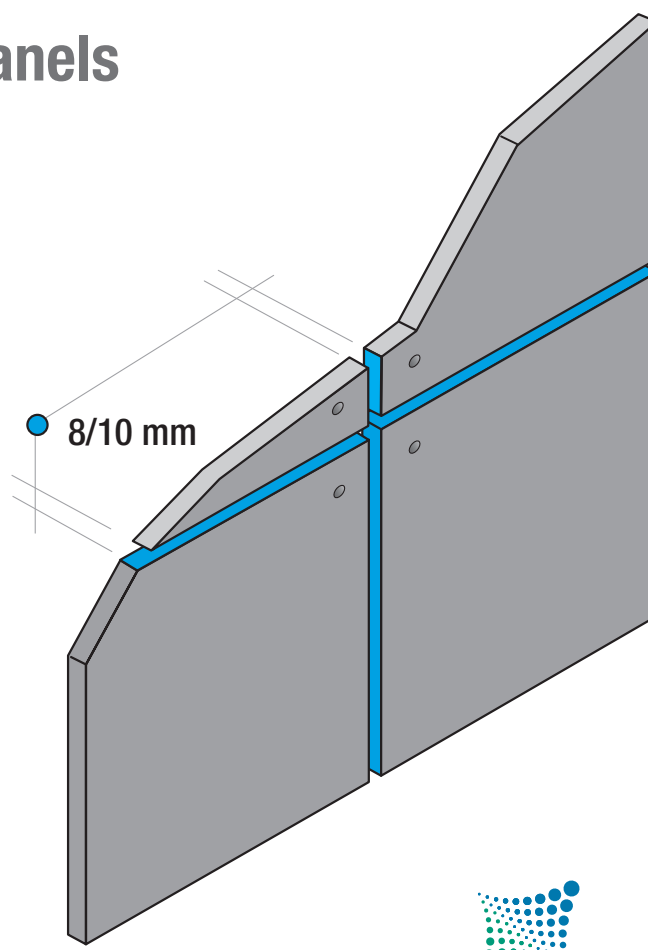
The junction between the panels is a fundamental aspect to consider, as it concerns both mechanical and aesthetic aspects:

Substructures and coating panels are subject to expansion due to variability of external agents. It is therefore essential to calculate these variations of dimensions and displacements to accommodate the joint that must be between the panels. The minimum gap width should be 8/10 mm.

Also the expansion and movement of the structure, in which the panel will be anchored, must be taken into account for the dimensioning of the joints between the panels.

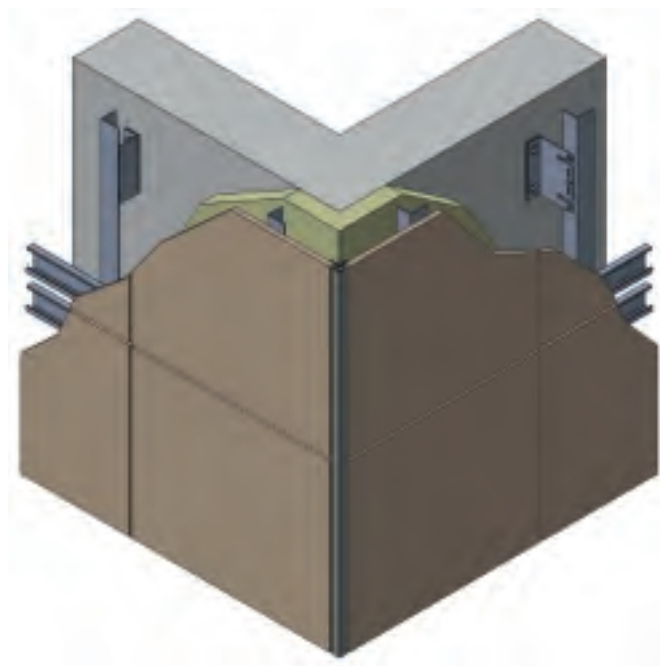
In the case of a ventilated wall, the joints must be able to provide adequate ventilation and drainage of possible standing water.

If a gap of more than 8/10 mm is required, it would be advisable to provide closure elements, gaskets or profiles, suitable to meet the aesthetic needs required.



3.8 Corner possibilities

For the corners with CLADIA®, with Ductal® inside, multiple solutions, can be used which in all cases, due to the reduced thickness of the slabs, make the angular joint elegant and discrete.



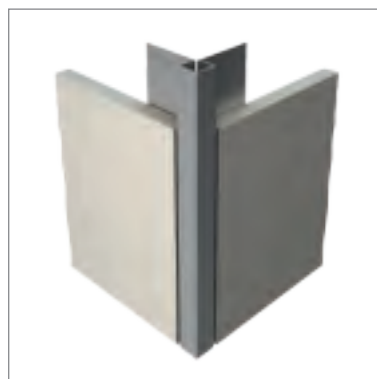
Corner joint with standard sharp edge.

Derived from the direct alignment of the slab heads, reinforcing the inner part with a metal element to give rigidity and resistance to the slabs against any accidental impacts.



Corner joint with standard profile.

Derived from the alignment of the heads connected to a metal profile, with the same colour of the slab or different colour, to mark the corner joint firmly.



Corner joint with 45 ° standard edge.

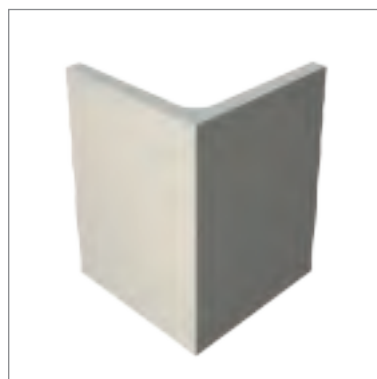
Derived from the alignment of the heads of the slabs cut at 45 °, reinforcing the inner part with a metallic element to give rigidity and strength to the slabs against any accidental impacts.



Three-dimensional corner. Special elements.

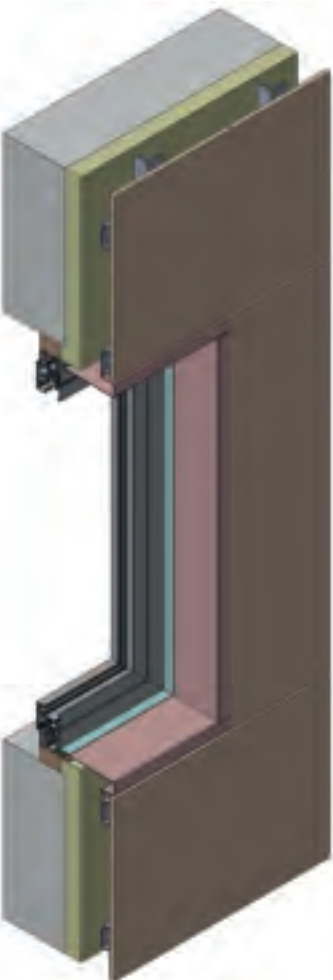
Made of a single three-dimensional element with a maximum size of 600x600 mm and a length of 2400 or 3600 mm.

It is recommended to use 300x300 lengths, 2400 cm length for ease of installation and handling.



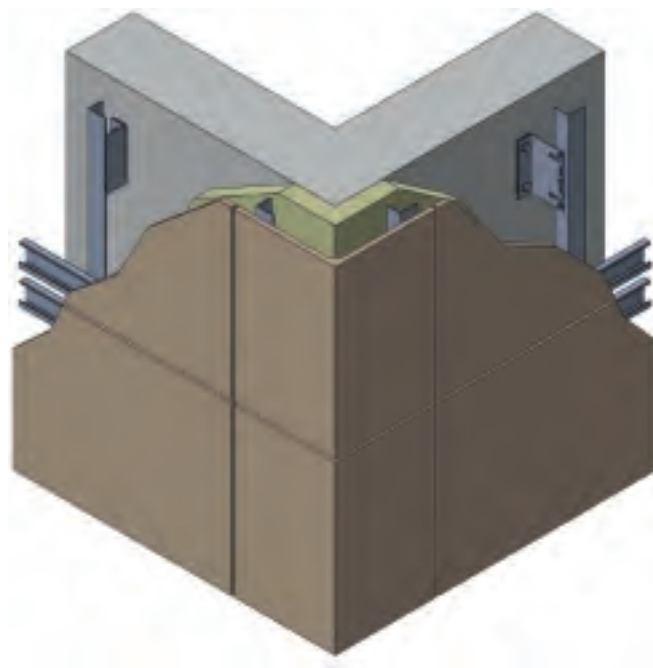
3.9 Doors and windows

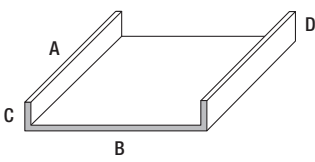
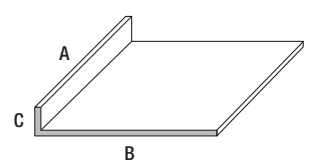
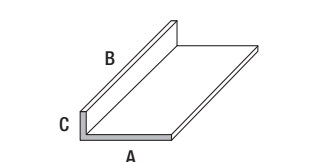
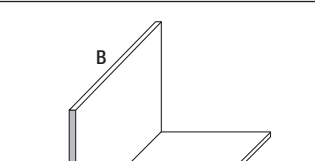
For the alignment of panels with CLADIA®, with Ductal® inside, in correspondence with windows and doors multiple solutions can be used, which in all cases, due to the reduced thickness of the slabs, make the angular joint elegant and discrete.



3.10 Special elements

In addition to the standard rectangular slabs there are some special elements that allow continuous corner finishes without open edges. Here are some examples.



Max. dimensions of special elements - mm						Finishings of special elements					
Type	A	B	C	D	Thickness	Uniform	Natural	Brushed	Orange peel finish	Bush hammered	Texture
	2400 1200	600 600	100 100	100 100	20 15	✓	✓	✗	✗	✗	✓
	1200	3600	100		15	✓	✓	✗	✗	✗	✓
	1200	3600	100		15	✓	✓	✗	✗	✗	✓
	450 450	2400 1200	450 450		20 15	✓	✓	✗	✗	✗	✓

✓ Recommended finishing.

✗ Possible finishing not recommended due to the migration of fibres in the surface.

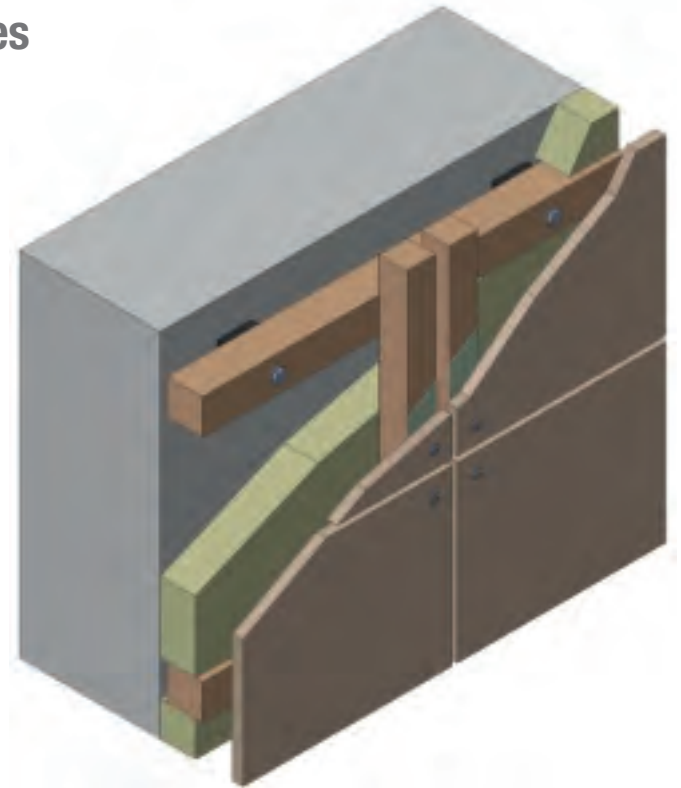


3.11 Other types of fixing and substructures

Fixing of panels on wooden structures

All the previously described system can be applied on a sub-structure in wood instead of aluminium.

The system consists of a wooden batten network, consisting of a series of vertical uprights, to which a series of horizontal struts are screwed, which, appropriately dimensioned, makes the fastening structure for the slabs.



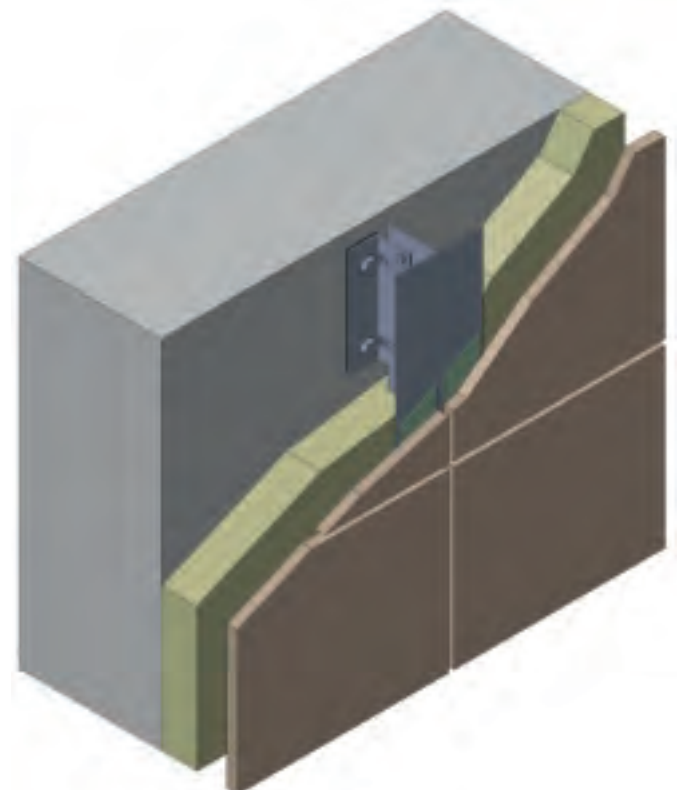
Fixing panels with adhesive

Adhesive fixing is achieved by applying, on the inside of the plate CLADIA®, with Ductal® inside, perfectly rectified, the particular bonding systems to the substructure properly laid out.

The fixing system must be of the type "Sika Tack Panel" or equivalent, and may only be applied by companies authorized to use the above system, so the operating instructions of the glue product must be observed as a general rule.

Essential weather conditions such as a temperature between 5 and 35 ° C and a humidity less than 75% shall be observed.

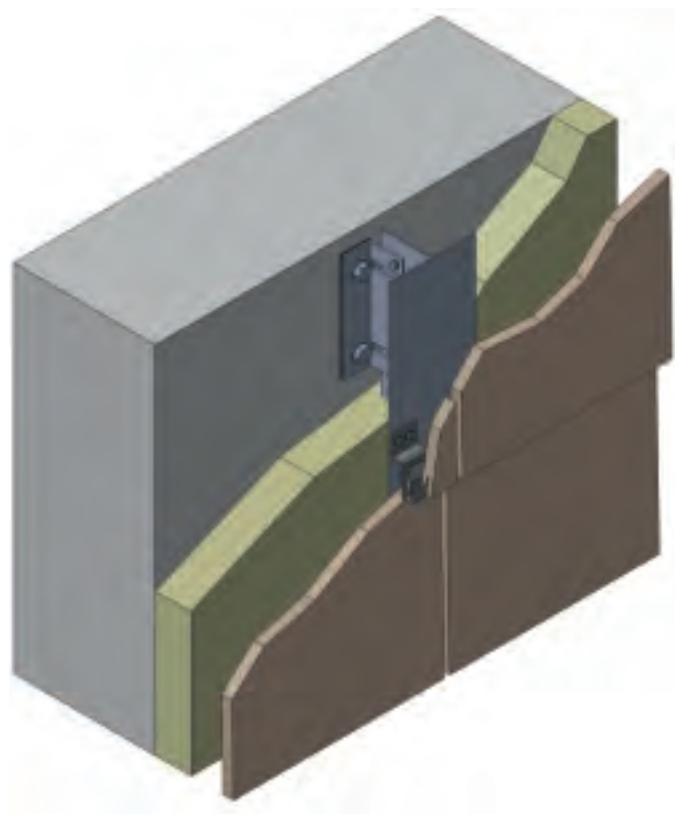
Therefore the laying conditions with adhesive fixing should be evaluated from time to time according to the various processes.



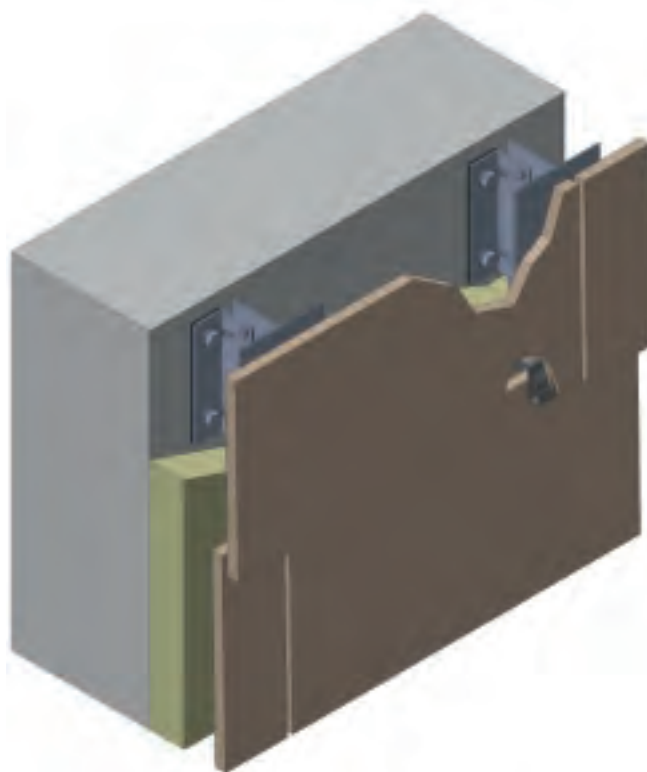
Download video: www.zanette.com

Fixing panels with shingle system

A variant of the classic coplanar arrangement of the slabs is one with one side topped with the adjacent slab, with the aesthetic effect of a wall covered with a shingle system.



Aligned shingle system



Staggered shingle system

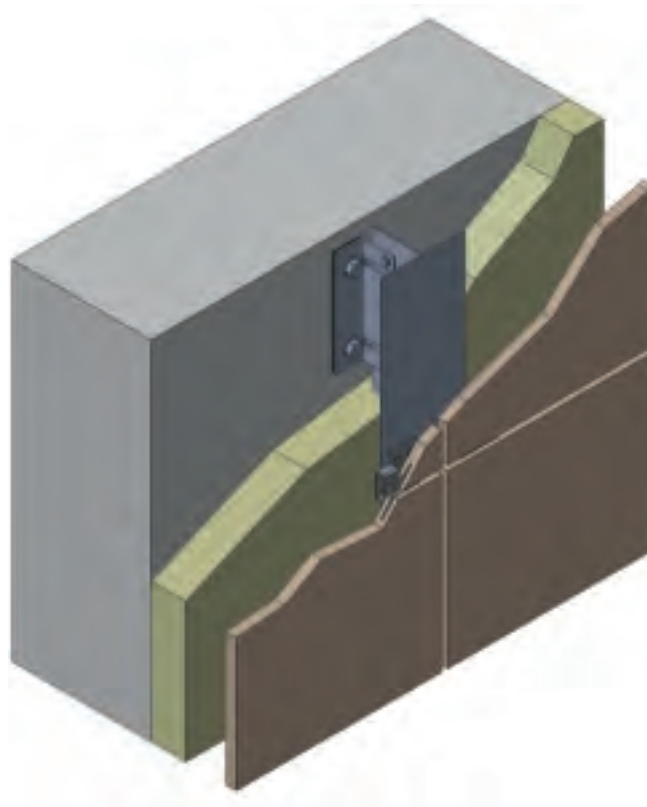
Fixing panels with Kerf system

Among the types of invisible fixing, Kerf system, usually used for stone, can also be applied to CLADIA®, with Ductal® inside.

Made for a sheet form no more than 600 mm in width, this fixing solution greatly increases the invisible fastening possibilities.



Download video: www.zanette.com



3.12 Colours and finishes

Besides to the existing range of 14 standard colours, it is possible to have special colours at customer's request always using the same colouring process.

The different colours can have 5 finishes:

NATURAL the texture of Ductal® has been enhanced.

BRUSHED the tiny grains of silicon have been highlighted.

ORANGE PEEL APPEARANCE a mix between brushed and bush hammered processing.

BUSH HAMMERED rustic and raw effect of the material.

UNIFORM finishing, a protective pigmented coat is applied, with more or less covering capacity, giving to the surface a matt or glossy effect.

On CLADIA®, with Ductal® inside, can be applied also water-repellent treatment, anti-graffiti coating and wet effect, all tested and certified in our inside laboratories.



TOTAL BLACK				
ANTHRACITE				
DARK GREY				
GREY				
WHITE				
TOTAL WHITE				
IVORY				
SAND				
YELLOW				
RED LIGHT				
RED EARTH				
BROWN				
GREEN				
BLUE				
Finishing Uniform	Finishing Natural	Finishing Brushed	Finishing Orange peel finish	Finishing Bush-hammered

3.13 Surface protective treatments

Today, building means to cause impacts on the environment at all levels (energy consumption, waste production ...). In addition, products used in construction, maintenance or cleaning are still too often aggressive and sometimes toxic and seriously harmful to man and to the environment.

In this point, Zanette has been committed to a process of sustainable development from the beginning by researching, short-range raw materials, and also a respectful environment protective treatment. Conscious of current environmental hazards, Zanette, along with its suppliers, develops ecological products. Most of the raw materials we use to protect our plates are:

- **Formulated with water**
- **Biodegradable over 90%** (according to OECD standards)
- **Without or with low VOC content** (Volatile Organic Compounds)
- **Without solvent / silicone free**
- **Non-toxic / Not dangerous**
- **Non-flammable**

The protective equipment used by Zanette has an exceptional longevity of about three times higher than that of other products on the market. Our savoir-faire allows us to provide a ten-year insurance guarantee for good gripping on the PROTECT range.

So, the buildings protected with our products, get a longer lifespan while remaining clean and new much longer. Our products reduce the use of water and chemicals at the time of restoration and maintenance.

We can therefore propose three types of products that can also have different shades from fully opaque, semi-opaque, glossy:

PROTECT – IDRO CF – PROTECT ANTIGRAFFITI.



PROTECT

Through surface treatment with hydro and oil repellent products you can protect all the materials produced by Zanette. This surface treatment has different features and many advantages: Water repellent, oil-repellent, Anti-graffiti, Avoids the formation of efflorescence, Anti-chewing gum and anti-mold.

It is applied on the slabs after their maturation directly in Zanette's centers of production by means of sophisticated automated equipment that ensures correct metering per square meter avoiding accumulations of materials.

Features: Biodegradable, Colourless, Stain-resistant, Protects against frost.

Hydro and oil-repellent

The treatment "PROTECT" protects the main causes of degradation, such as dirt, stains of any kind, air pollution, grease, infiltration, and so on. The treated substrates resist penetration of water, oil and dirt. The cleaning of the treated surfaces is thus guaranteed.

Pigmentation

PROTECT can be transparent or pigmented with low percentages up to a total coverage. Unlike painting, it is a semi-transparent impregnating product that respects the minerality of materials obviously compatible with concrete. The final colour depends on the colour of the veneer and the colour of the support of Zanette's products in the concrete mass. Protect is a non-film-like product; the support remains permeable to air and water vapor, mono-component that does not require the application of a primer to uniform the bottom.

The Protect system: customized colouring.

The Protect colour range includes 42 standard colours and 8 "special" colours. A standard colour has a 100% coverage index by generating the product called by Zanette "UNIFORM". Zanette, with sophisticated machinery is able to shade these tones and offer a degree of opacity more or less high, keeping the same performances. The final colour of a treated surface will always be the result of the combination: stain colour on the colour of the substrate. A colour with low cover index will be less covering. In this case, the initial colour of the support will have a greater interaction on the final colour.

IDRO CF

Zanette constantly searching for innovative products, has studied a simple application product that is able to let CLADIA®, with Ductal® inside, breathe giving the characteristic of hydro-repellent oil. IDRO CF is a hydro and oily repellent product ideal for protecting all alkaline surfaces from water penetration, from problems caused by moisture dirt, also grease and graffiti.

The application of IDRO CF allows to contain and in some cases completely block the appearance of efflorescence on the surface of the support. Totally invisible and colorless after drying, IDRO CF does not alter the appearance or colour of the treated material.

Always in aqueous phase, IDRO CF can be applied to the Ductal support 24 hours after production. It can be used on site and in industry during the production of prefabricated concrete elements.



PROTECT ANTIGRAFFITI

As a result of many customer requests for anti-scratch protection, Zanette has tested a very effective product at external laboratories:

PROTECT ANTIGRAFFITI protects for a long time the main causes of degradation such as dirt, stains of any kind, atmospheric pollution, dirty grease, infiltration etc.

PROTECT ANTIGRAFFITI allows permanent protection of treated surfaces. Resists many washings, up to 20 or more washings (using the scratch-resistant Graffi 2010 cleaner) and the surface does not need to be protected again after removing the graffiti.

Pigmentation

PROTECT ANTIGRAFFITI is suitable for concrete. Unlike painting, it is a semi-transparent product that respects the minerality of materials. Colour finishing depends on the colour of the veneer and the colour of the support.

PROTECT ANTIGRAFFITI is a non-film-forming product; the support therefore remains permeable to air and water vapour.

PROTECT ANTIGRAFFITI is used on all types of vertical concrete, both inside and outside: concrete, reinforced concrete, cement fibrous, UHPC concrete, etc.

The PROTECT ANTIGRAFFITI system:

Customized colouring

The PROTECT ANTIGRAFFITI sample includes 42 standard colours and 8 "special" colours.

A standard colour has a 100% coverage index. These colours can blend and offer a degree of more or less opacity, preserving the same performance.

The final colour of a treated surface will always be the result of the combination: stain colour on the colour of the substrate. A colour with low cover index will be less covering. In this case, the initial colour of the substrate will have a greater interaction on the final colour.



3.14 Graphic Customizations



Zanette's experience on the façades can be distinguished by customizations. Thanks to automated technologies, logos with engraving and varnishing are possible. Customization options are complemented by the reproduction of particular graphics or textures with computerized cutting and drilling operations.

Thanks to constant research and experimenting, our center of robotised processing ensures precision and speed in consecutive machining of the slabs and also in depth.

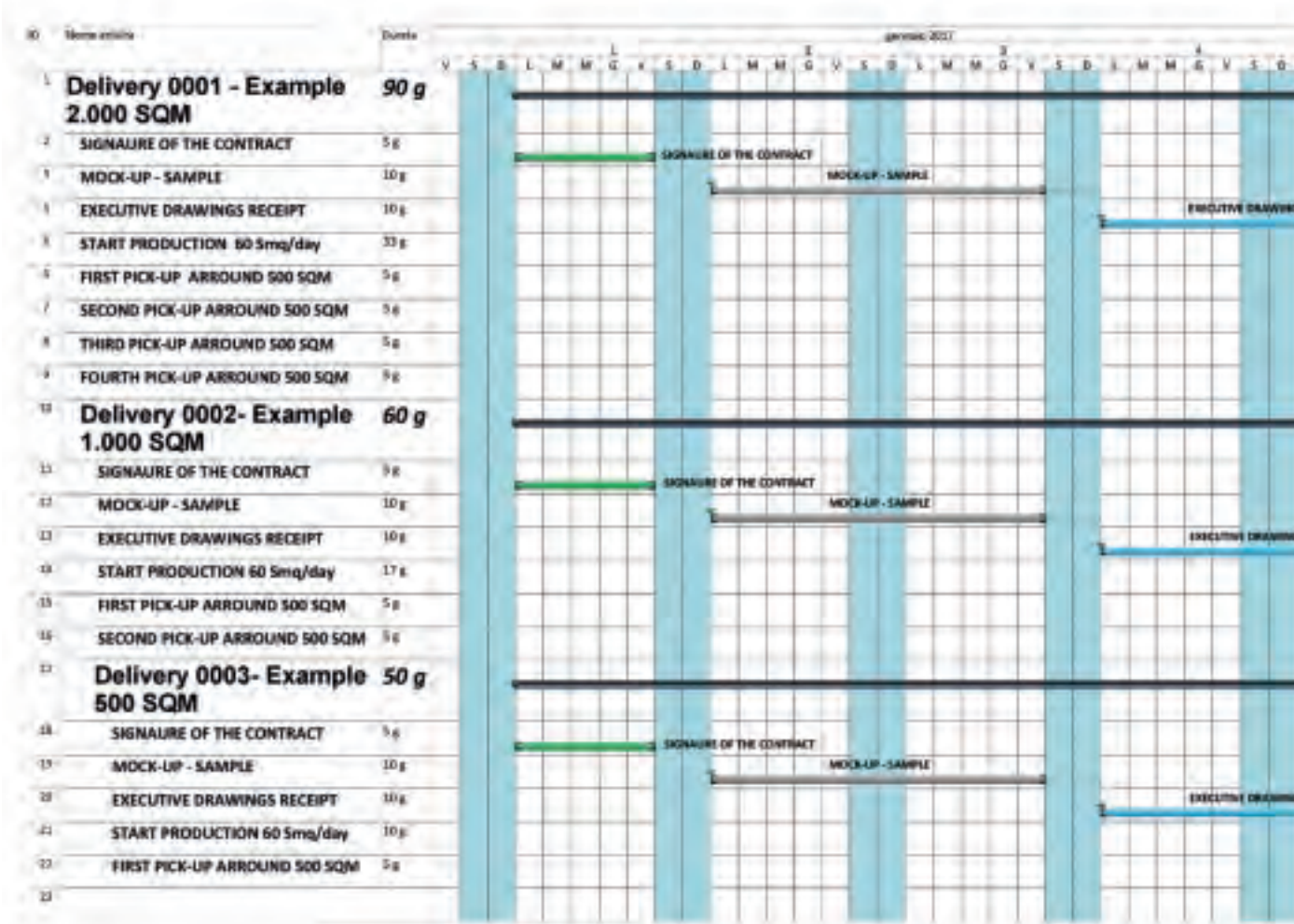


3.15 Supply Management

Zanette is able to guarantee a punctual delivery products on site through a proven manufacturing and supply management system in Italy and abroad.

A group to build and to rely on.

The production synergies of Zanette factories are include a production system, which assures where necessary, reliable solutions for the client who needs delivery priority or special suppliers at the construction site.



3.16 Aesthetic characteristics CLADIA[®], with Ductal[®] inside

NATURAL PRODUCT

Concrete is considered a natural product and Zanette sees it as such, with all its advantages and different modes of expression. Seeing a surface born with the various shades of colour and light effects has always been an interesting moment shared with architects and customers, different are colourful surfaces flat and without "LIFE" but you can still reach with Zanette treatments.

Also in the colouring of cement paste, the focus is on meeting the ecological needs of modern and simple design. Working with natural raw materials brings advantages but also some particular characteristics.

The market always asks for products with low porosity, homogeneous colour and smooth surfaces, large format uniforms that however are not part of our type of production and sustainable philosophy.

In choosing our production cycle we wanted to tackle a "Green" path avoiding chemical treatments or very sophisticated processes to maintain the authenticity of the natural product.

CHROMATIC SHADES

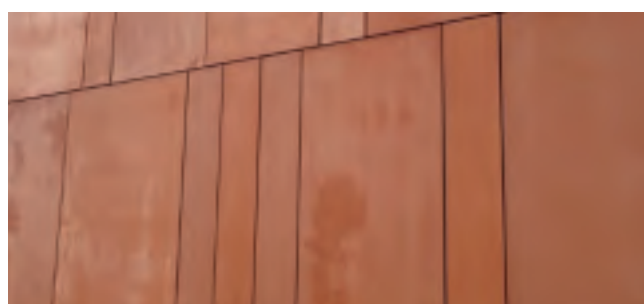
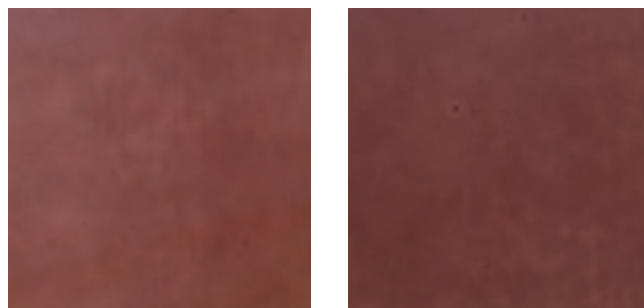
Shades, different shades, differences in workmanship inside and small imperfections are a fundamental feature of our handmade product that we can consider "natural" material with a different plate based on the daily cast that are affected by the influence of climatic factors.

NATURAL PHENOMENON OF EFFLORESCENCE

When the cement 525 CEM 1, during its transformation separates calcium hydroxide, dissolving in water it can migrate to the outer surface of the CLADIA[®], with Ductal[®] inside panel, through an evaporation process.

This phenomenon occurs when hydroxide of calcium is returned to the surface and is converted in calcium carbonate.

This inevitable natural process amplified by unfavourable weather conditions, leads to the deposition of calcium carbonate on the surface, as efflorescence of white colour. Above all in strong colours, with a simple passage of water the effect will tend to disappear manifesting itself in forms always smaller in a season. Zanette can suggest a cleaner with a low dosage of sulphuric acid 3% that with an application and subsequent quick rinse can accelerate the elimination of this efflorescence.



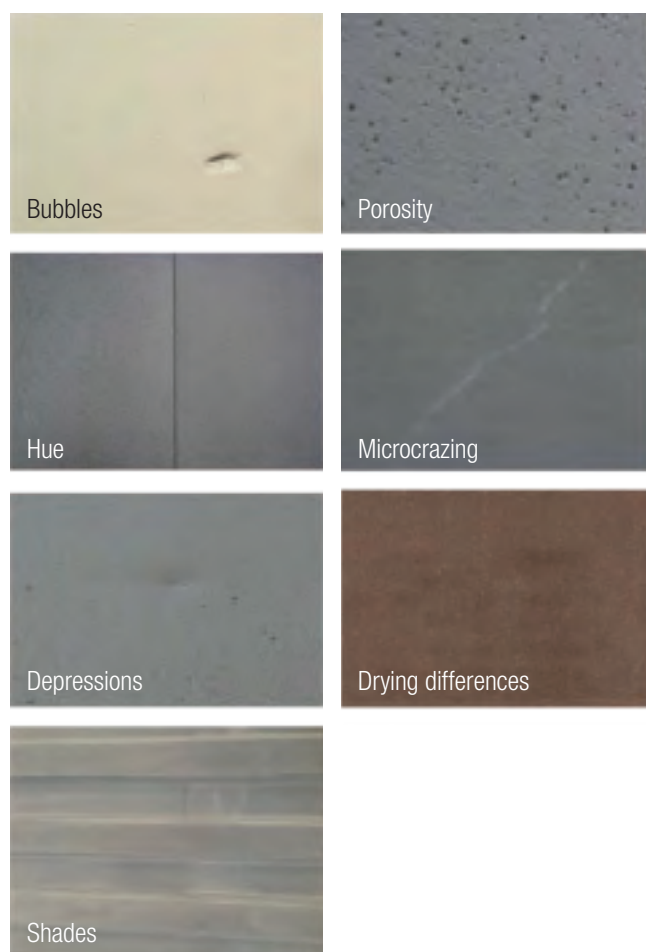
WATER BEHAVIOR

The concrete is hygroscopic, therefore subject to absorption of uneven water, that's why Zanette in spite of it the low porosity especially in the finished slabs NATURAL (obtained without any removal of the concrete skin) applies a water-repellent protective coat which reduces its permeability making it less exposed to the climatic conditions. Those, will however be able to influence, always on the panel, especially during the drying phases in large panels that can then show up with dry edges compared to some central parts.

PARTICULAR FEATURES OF THE PRODUCT

Since concrete is a natural product, despite the CLADIA® sheets with Ductal® inside are the product of serial industrial processes, each sheet retains its uniqueness as if it were a single element. Differences in colour, shades of hues, small porosity micro-differences are the particular features of a material product, so they are not to be considered non-conformities.

Below are some examples of the main characteristics of the slabs.



MASS COLOURING YIELD

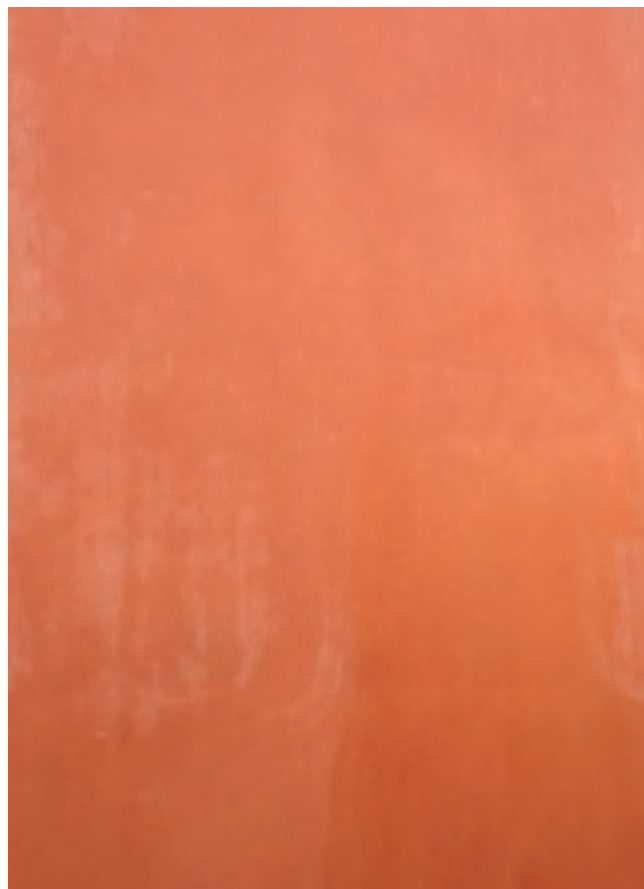
Zanette uses natural dyes from the best brands, which, nevertheless, are subject to small variations over time. Heat, high solar irradiation and dry climate can accelerate the process of discolouration (especially for strong-tone hues) over time. Zanette recommends protecting the CLADIA® panels, with Ductal® inside, with special treatments that improve and lengthen the colour seal over time.

There are also anti-graffiti treatments, and matte or glossy lotus effects that can increase and improve yield over time.

LARGE-SIZE SHEETS

In large coating applications, optical phenomena occur due to different absorption, which cannot be detected on small sample panels.

Small micro-cracks due to expansion or shrinkage, contrasted by random fibres and glass fibre mesh, do not affect the technical features of the slab, as supported by bending tests, which are constantly monitored by Zanette.



3.17 Tender Specifications- detailed

Standard Specification Items

Supply and installation, cladding of ventilated external facade for vertical or sloped walls, with the use of "CLADIA[®], with Ductal[®] inside panels", containing fibreglass in order to avoid slab collapse.

External surface finish , colour , with impregnating protective treatment, about 15 mm thick.

The "CLADIA[®], with Ductal[®] inside panels" will have maximum dimensions, 1200 x 3600 or sub-multiple measurements, calibrated on the part not in sight, cut, shaped and worked at the factory. The CLADIA[®] cladding panels, with Ductal[®] inside, will be installed on a suitable aluminium substructure appropriately sized and calculated to withstand seismic stresses and wind gusts, supplied by a leading certified company using the Keil system or similar for concealed mechanical fastening/mechanical fixing system with concealed rivet/concealed glue fixing system, and will be installed according to a specific abacus made on site, with 8/10 mm grout.

Between the load-bearing wall and the CLADIA[®] cladding panels, with Ductal[®] inside, we will interpose an insulating layer of rock wool coupled with bituminous film to form a waterproof barrier with thickness of cm, λ W / mk, complete with fastenings to the underlying wall, to reach a total transmittance of the buffer package $\mu < \dots \dots \dots$ W/m²k

The supply and installation of connection sealing, intra-doses on holes, ventilation grilles and anything else not expressly specified, are excluded from the cost quoted.

SUPPLY OF CLADIA PANELS[®], with Ductal[®] inside,

"Ex works" supply from our production plant in Forcate di Fontanafredda (PN), of "CLADIA[®], with Ductal[®] inside panels", with inner fibreglass mesh to avoid slab collapse in case of impact. Colour (see colour chart - CLADIA[®] with Ductal[®] inside technical manual), external finish (see finishing table - CLADIA[®] with Ductal[®] inside technical manual) 15 mm thick (Weight 33.00 Kg/m²), to be installed by your specialized technician on suitable support structure (or on your modular cells).

The "CLADIA[®], with Ductal[®] inside panels" will have maximum dimensions, 1200 x 2400/3600 or sub-multiple measures, calibrated on the part not in sight, cut, shaped and worked at the factory.

Any production scraps deriving from the formation of non-standard panels will be accounted for separately after the production schedules have been reviewed.

The finish and the shade of slabs not treated with uniform protective products is heterogeneous, a fundamental feature for the cement produced at different times.

CORNER FORMATION

Formation of corner elements.

Surcharge for production of three-dimensional single-block corner elements, with maximum width of 400 x 400 mm and maximum length 2400/3600 mm.

These elements can have the same mass colour of the flat cover panels, but only Natural or matrix smooth external finish.

Beveled corners with 45° cut. Panel juxtaposition angle using a 45° cut of the thickness of the panels for about 10/11 mm, leaving a corner of about 4/5 mm at 90° to prevent breakage in the event of impact.

Corner flap creation.

Surcharge for corner flaps on panels, for a maximum height of 10 cm, with the same mass colour of the flat cover panels, but only Natural or matrix smooth external finish (See Special Parts - CLADIA[®] with Ductal[®] inside Technical Manual).

PREPARATION FOR FASTENING SYSTEMS

Preparation of the Keil or Fischer-type undercut-holes for concealed fastening.

Keil-type undercut-hole drilling for retractable fastening at a distance of about ... x cm from one hole to the other.

Preparation of the Keil or Fischer for retractable fastening. Supply of Keil or Fischer-type or similar expansion inserts $h_s=10$ mm, in order to connect the aluminium under-structure and the covering panels, complete with a special bolt. Prepa-

ration of through-hole drilling for surface fastening. Creation of through-hole for surface fastening with rivet or screw, at distance of aboutx cm from one hole to the other, including supply, if any. Supply of rivet or screw insert in the same colour for surface fastening. Supply of colour-on-colour rivet or screw for panel fastening to the sub-frame.

PROTECTIVE TREATMENTS

Water repellent protective treatment made of 2 coats applied at the factory, which protects the external surface of the panels, maintaining the material effect on surfaces.

Colour-on colour pigmented uniform protective treatment made of 2 coats applied at the factory, which protects the external surface of the panels and gives colour uniformity of the installed product.

Colour-on colour or transparent anti-graffiti protective treatment, made of 2 coats applied at the factory, which protects panel from any vandalism.

TRANSPORT

Transportation of products to your work site carried out by our qualified vehicles or carriers, including suitable packaging; unloading is to be performed by customer by means of suitable lifting means.

SUB-STRUCTURES

Invisible aluminium sub-structures for mechanical fastening. Sub-structure to support cladding plates for concealed fastening, made of special profiles in natural aluminium, using wall brackets, complete with Thermostop insert in contact with masonry, with vertical frame in T or L profiles and horizontal frame with C profiles, including C-clamps for fastening of sub-frame to Keil, Fischer or similar inserts prepared in the panels. Calculated and sized according to project overloads, provided by a leading manufacturing company.

Visible aluminium sub-structures for surface fastening. Sub-structure to support cladding plates for surface fastening, made of special profiles in natural aluminium, using wall brackets, complete with including travel costs, board and lodging, any burden required to execute work safely, costs of thermostop insert in contact with masonry, with vertical frame in T or L profiles calculated and sized according to project overloads, provided by a leading manufacturing company.

ENGINEERING AND INSTALLATION

Engineering and preparation of production abacus. Realization of engineering for the study of the facades, including charges for the survey at the installation site, the overall drawings of facades, the creation of abacuses for cladding panel production and cutting, the study of details of intra-doses and connection flashings, the study of details for the installation and anything else necessary for the execution of works in a workmanlike manner.

Installation of sub-structures and cladding panels. Installation of support structures and covering panels, with open joints between 8 and 10 mm wide, carried out by specialized employees, lifting equipment and suction tools to handle slabs at height, as well as scaffolding or rental of aerial platforms

SUPPLY OF INSULATING MATERIALS

Supply of glass wool insulating panel.
Supply of glass wool insulating Isover X60 VN, d 0.032 W/mk type panel or similar paired to bituminous film forming a waterproof barrier.
Total thickness mm for panels measuring 0.60x1.40 m
Supply of polystyrene insulating panel.
Supply of polystyrene insulating Sirap Gemastir-type panel or similar for initial wainscoting with thickness of 200 mm /mm
Supply of polystyrene insulation with thickness of 200 mm /mm
Supply of adhesive to glue wool and polystyrene.
Supply of Mapetherm AR 1 day-type glue or similar to bond the 1st layer of wool and plinth polystyrene in quantities of about 5.00 Kg/m².
Supply of dowels to fasten the wool insulating panel.
Supply of screw-on FIF CS 8/100-type dowels, complete with insulating disc D/140 in quantities of about 6 pcs/m².



4. Transport

An organized logistics system provides us with an efficient and monitored management of every product that leaves our plants; each checklist can be easily checked allowing quick traceability of each component of the order.

To avoid deformation or breakage, the sheets are located on a resistant pallets that are specifically made to ensure rigidity and support on the entire support surface.

Important: The pallet must be abundant, or protrude beyond the slab, at least 1 cm on each side and be reinforced to guarantee abnormal flexing.

The dimensions of the pallets must be optimized for container transport.



Transport with lorry truck	Unit	200x2400x15 slab	1200x3600x15 slab
Capacity 24000 kg - Length m 13,60			
Total slabs to be loaded	#	≈ 190	≈ 110
Weight, including pallet	kg	≈ 20	≈ 16
Total m²	m²	575	470
Pallets	#	10	6

Pallet size must be optimized for container transport.

4.1 Packing

Organization and care of packing allows the product to always reach the destination site and in the best conditions. Each panel is carefully protected and arranged for shipping on 3 types of packaging:

Pallets (photo A) - **Cage** (photo B) - **Closed crate** (photo C).



Technical information	Unit	1200x2400x15 slab	1200x3600x15 slab
Delivery		ZANETTE - Forcate facility (PN)	
Slab surface	m ²	2,88	4,32
Slab weight	kg	95	142
Slab weight for m ²	kg	33	33
Slab per pallet	#	19 - 20	15 - 18
m ² per pallet	m ²	54 ÷ 58	60 ÷ 78
Pallet weight	kg	≈ 50	≈ 100
Total pallet weight	kg	2000	2000

4.2 Packaging and Handling

Packaging to be created in sequence is a very important phase that guarantees the arrival on site of materials not damaged during transport.

Even the recommended handling of each shipment must be carried out with the appropriate equipment in order to avoid breakage or damage, which, if of minor entity, can be repaired with special kits.

Important: To ensure safe handling and avoid damage to slabs, it is necessary to use pallets with a non-deformable structure. We also recommend that you follow the brief and useful handling and storage instructions shown on the following pages.



4.3 Work on site, maintenance and cleaning

Drilling and cutting.

CLADIA® sheets, with Ductal® inside, make it easy to carry out normal adjustment or repair work on site. For through or Keil type holes, it is advisable to use tools approved by the manufacturer. For manual cutting of slabs, it is sufficient to use electric tools with blades or diamond-coated discs with a rotation speed of 13,000 rpm. Preparing suitable perpendicular cutting guides will guarantee greater precision and finish quality, on suitable supports that prevent breakage.

Cleaning and maintenance.

For the normal cleaning of CLADIA® panels, with Ductal® inside, we recommend water and neutral detergent; water-cleaning machines can be used with pressure not greater than 0.3 bar max.

Any treatment areas subject to natural superficial degradation can be restored with products compatible with the original treatment; however, our Technical Assistance Service remains ready to provide you with professional solutions and products for correct maintenance and cleaning of your façade.

CLADIA®, with Ductal® inside, Repair Kit (Hard - Soft)

An easy and quick repair of slabs which suffered non-structural damage can easily be done on site with CLADIA®, with Ductal® inside, Repair Kit.

The kit contains everything necessary for long-lasting repair, does not require the use of special equipment and is compatible with any protection products.



CLADIA®, with Ductal® inside, Repair Kit is available in the following versions:

HARD 5 kg package for deep repairs.

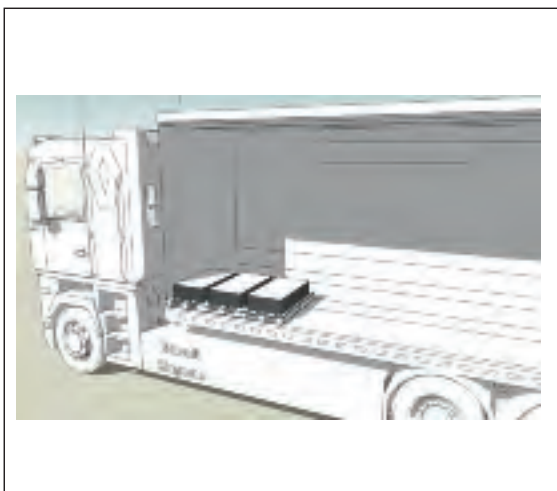
SOFT 1 kg package for superficial repairs.

On-line info: www.zanette.com - training - video and manuals.

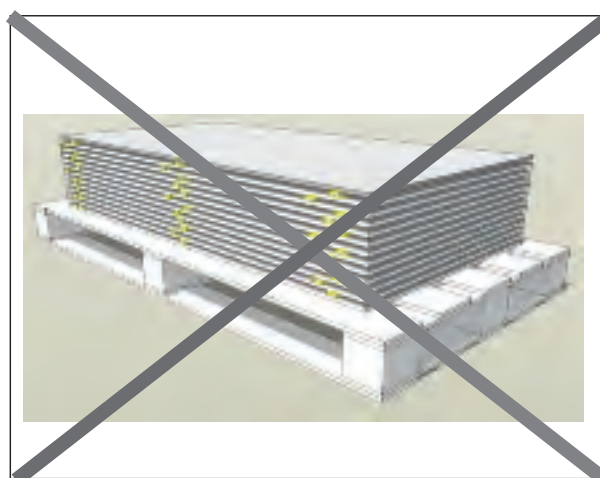
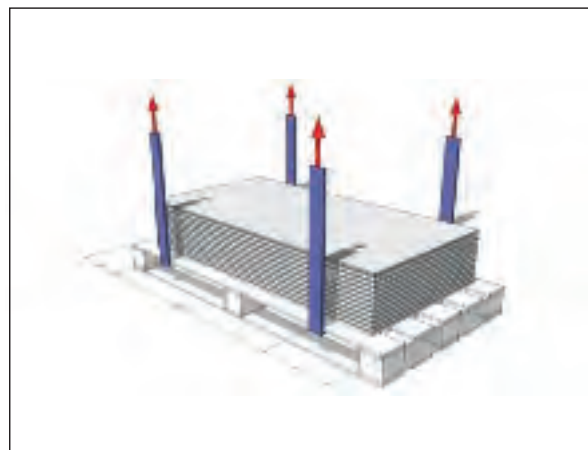


4.4 Handling and storage procedures

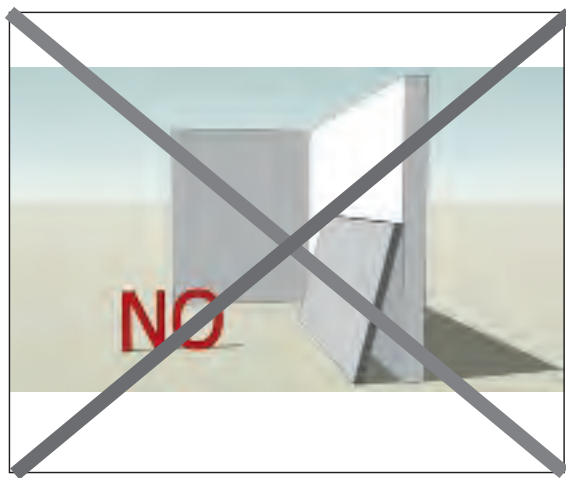
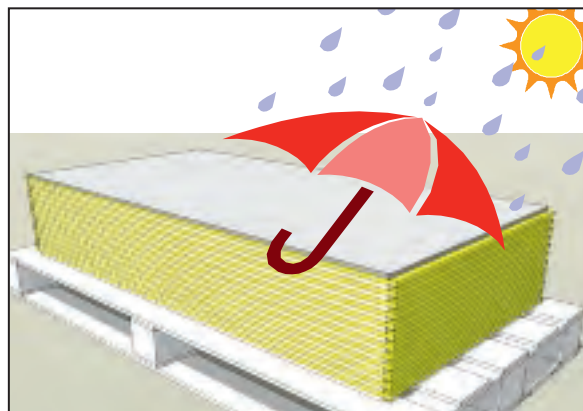
Synthetic cards with warnings, lifting methods, handling and storage are included in each pallet.



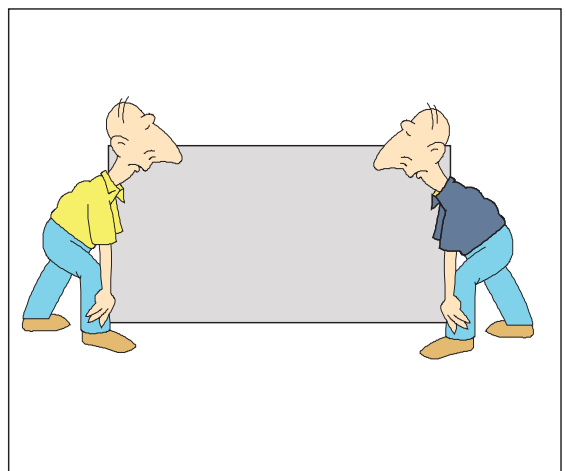
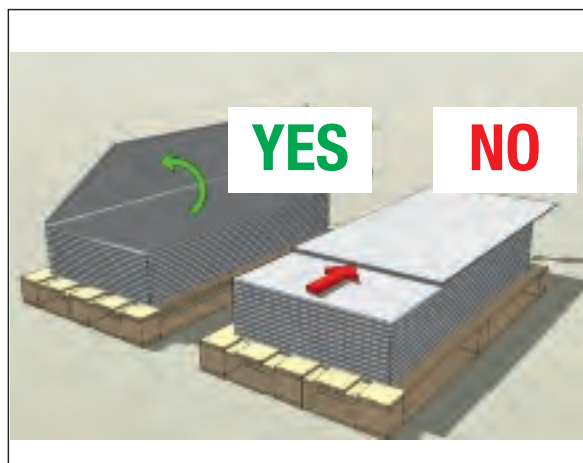
TRANSPORT MUST TAKE PLACE ON PALLETS THAT DO NOT OVERLAP AND ARE LOADED IN A WAY THAT DOES NOT RESULT IN LOAD SLIPPING FOLLOWING COLLISION OR SUDDEN BRAKING. ANY TRANSFERS MUST BE MADE FOLLOWING THE LIFTING INSTRUCTIONS PROVIDED BELOW, PAY ATTENTION TO THE DISTANCE SUPPORTS



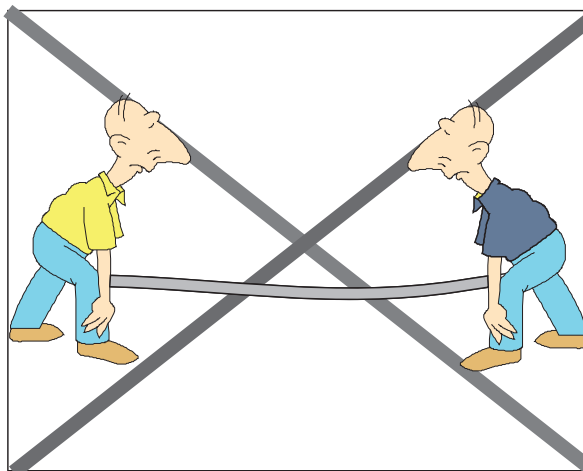
PROTECT SLAB CORNERS AND BORDERS. DO NOT LEAVE SLABS UNDER RAIN OR SUN



USE GLOVES OR SUCTION CUPS FOR LIFTING. PAY SPECIAL ATTENTION TO LARGE SLABS



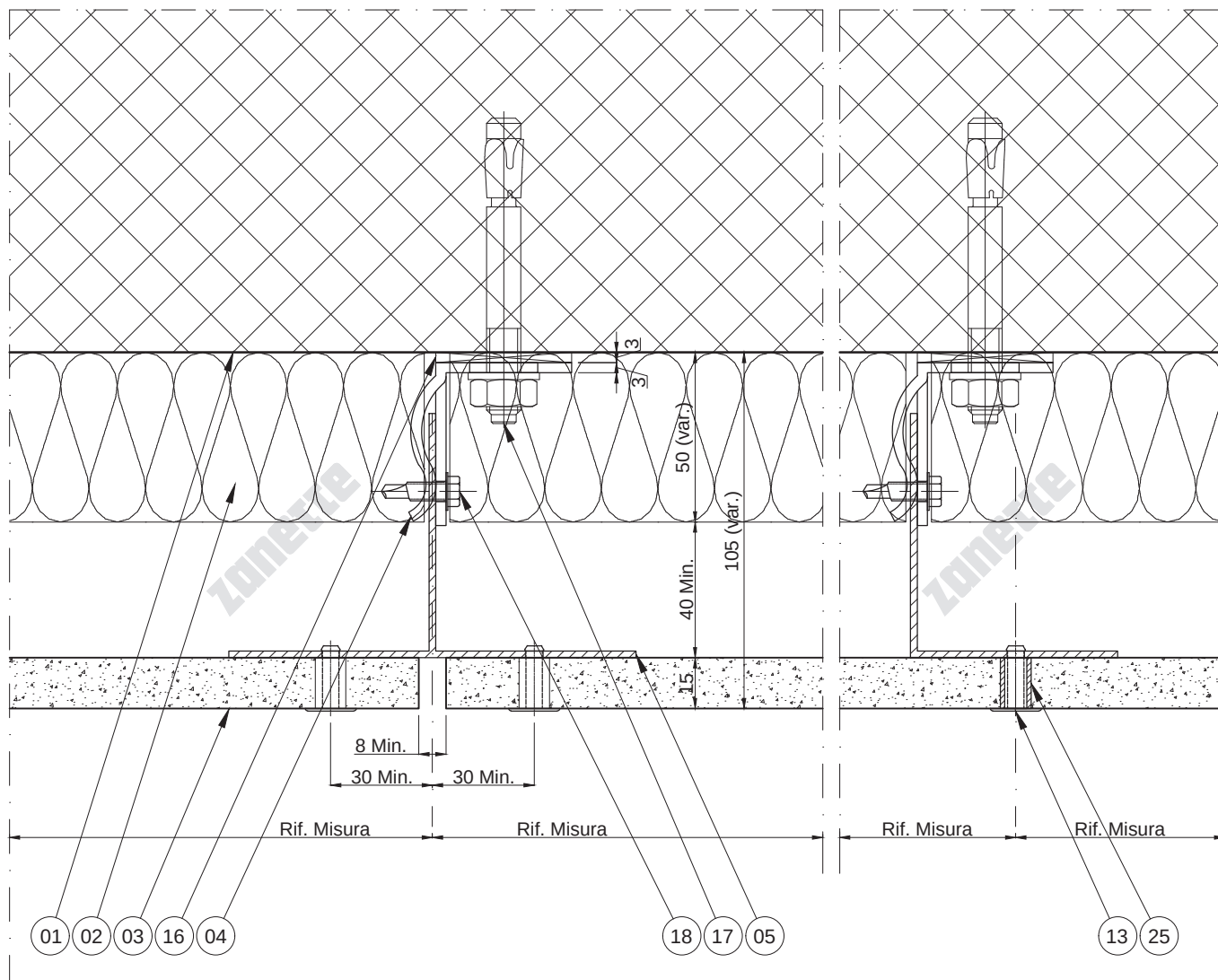
TO MOVE SLABS, USE SUITABLE GLOVES, LIFT SLAB WITH SUCTION CUPS, PLIERS OR HANDS MAKING SURE THE SLAB IS NOT DAMAGED. USE MAXIMUM CAUTION TO ENSURE THAT THE SLAB DOES NOT COME INTO CONTACT WITH OTHER SLABS. ROTATE THE SLAB SO THAT HANDLING OPERATIONS BEGIN WITH SLAB POSITIONED AS IN THE PICTURE ON THE LEFT. NEVER LIFT THE SLAB IN HORIZONTAL POSITION. NEVER USE ACIDS OR SOLVENTS TO CLEAN THE SLAB. ONLY USE WATER.



5.1

Technical drawings for the design of façades with visible fastening





MATERIALS LIST

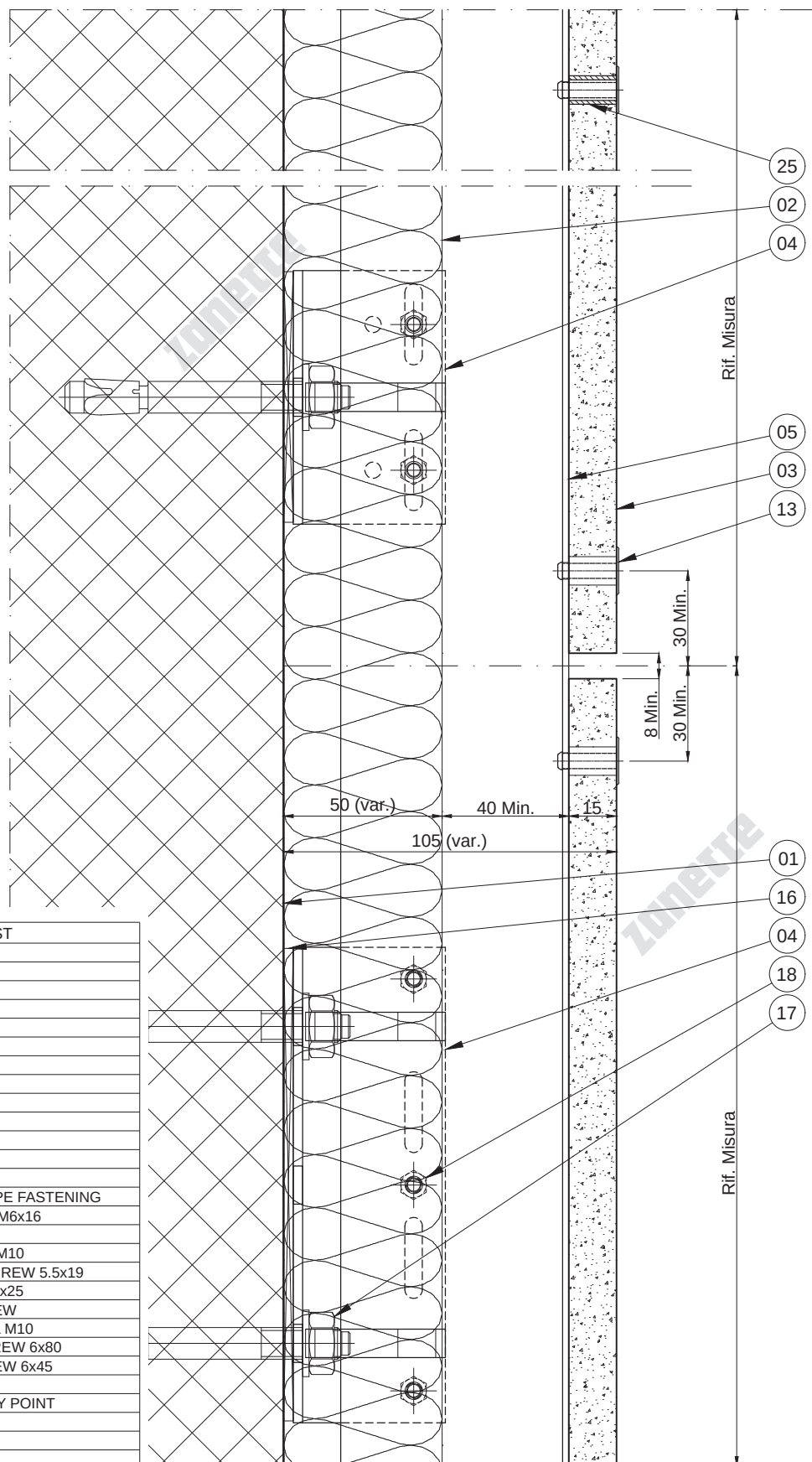
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
VISIBLE FASTENING SYSTEM BRACKET AND
STRUT FASTENING T120 / 52
HORIZONTAL SECTION - Scale 1:2

zanette

2D-01

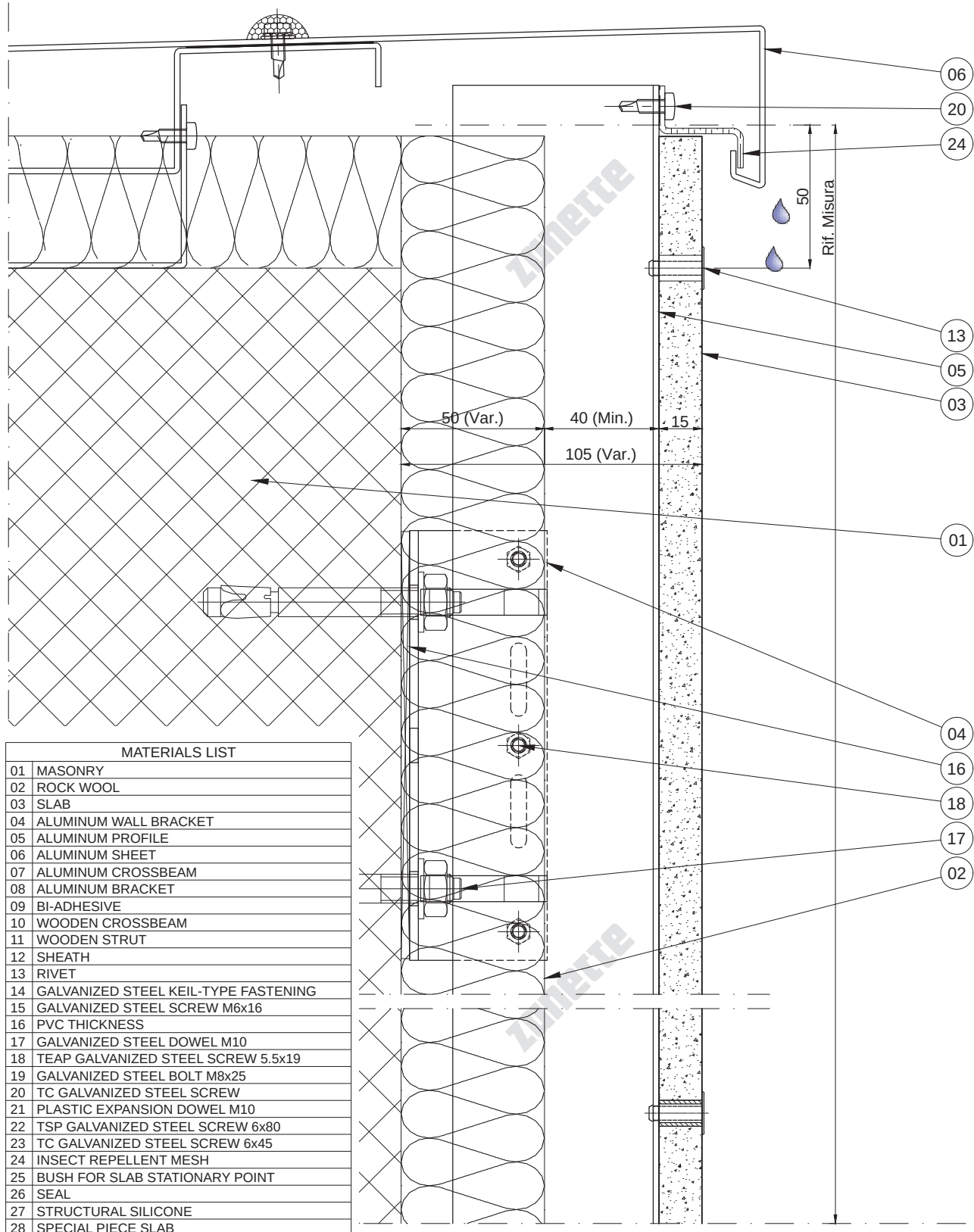
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
VISIBLE FASTENING SYSTEM BRACKET WITH
FIX/MOVABLE POINT STRUT FASTENING T120 / 52
VERTICAL SECTION - Scale 1:2

zanette

2D-02



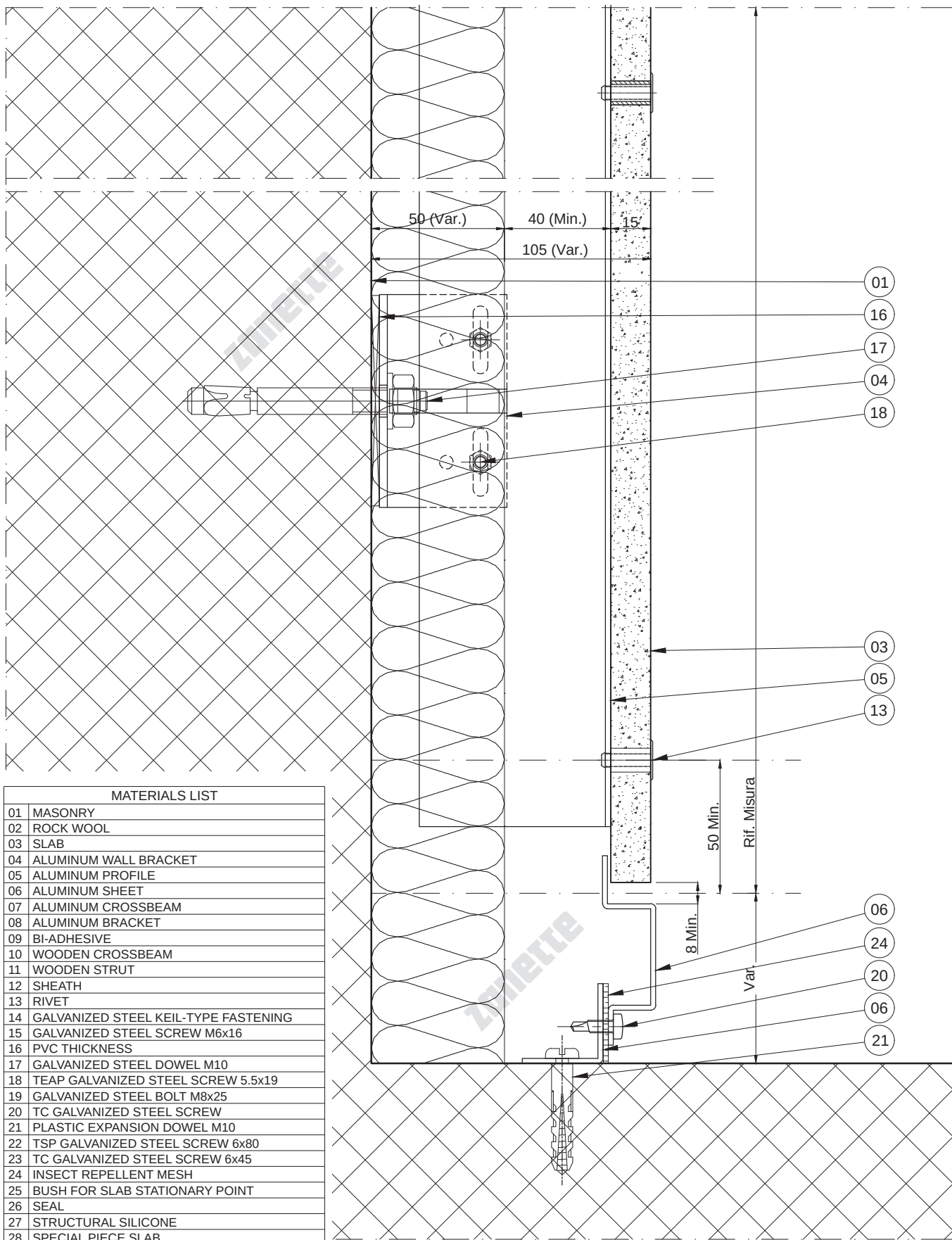
MATERIALS LIST

01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
VISIBLE FASTENING SYSTEM
UPPER PART DETAIL
VERTICAL SECTION - Scale 1:2

zanette

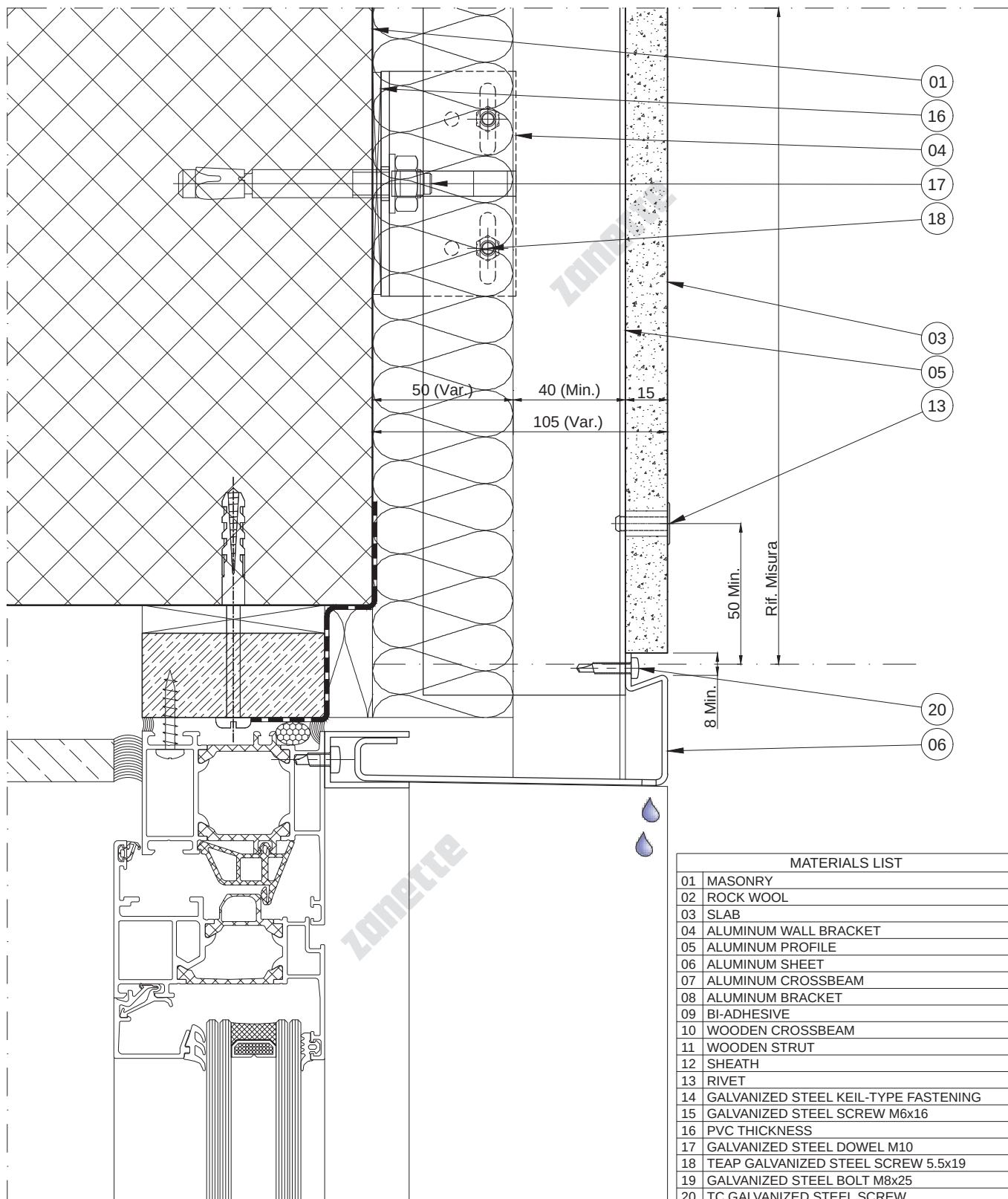
2D-34



DESCRIPTION:
VISIBLE FASTENING SYSTEM
LOWER BASE DETAIL
VERTICAL SECTION - Scale 1:2

zanette

2D-35

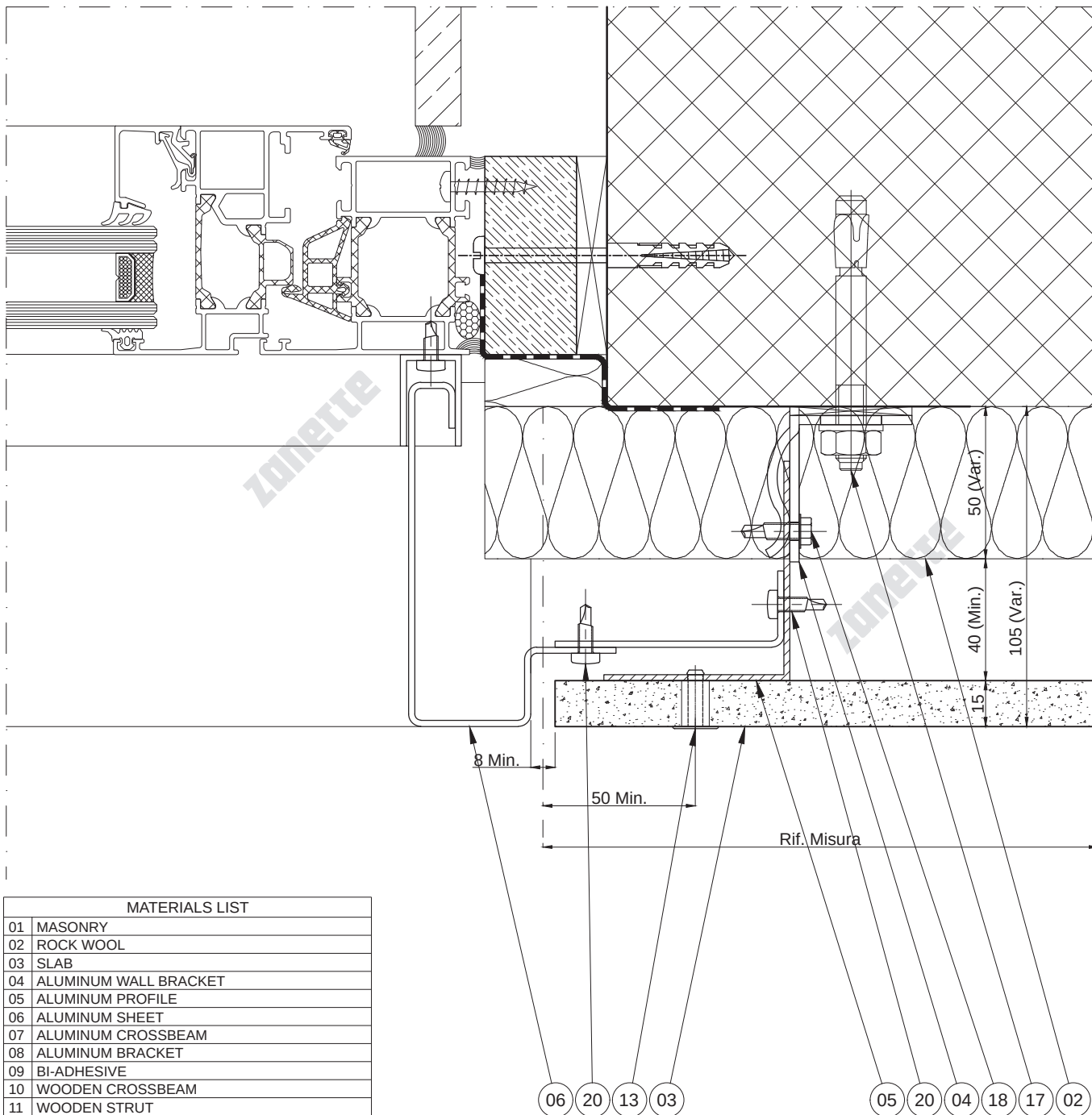


MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
VISIBLE FASTENING SYSTEM WITH
ALUMINIUM FRAME CEILING
VERTICAL SECTION - Scale 1:2

Zanette

2D-36

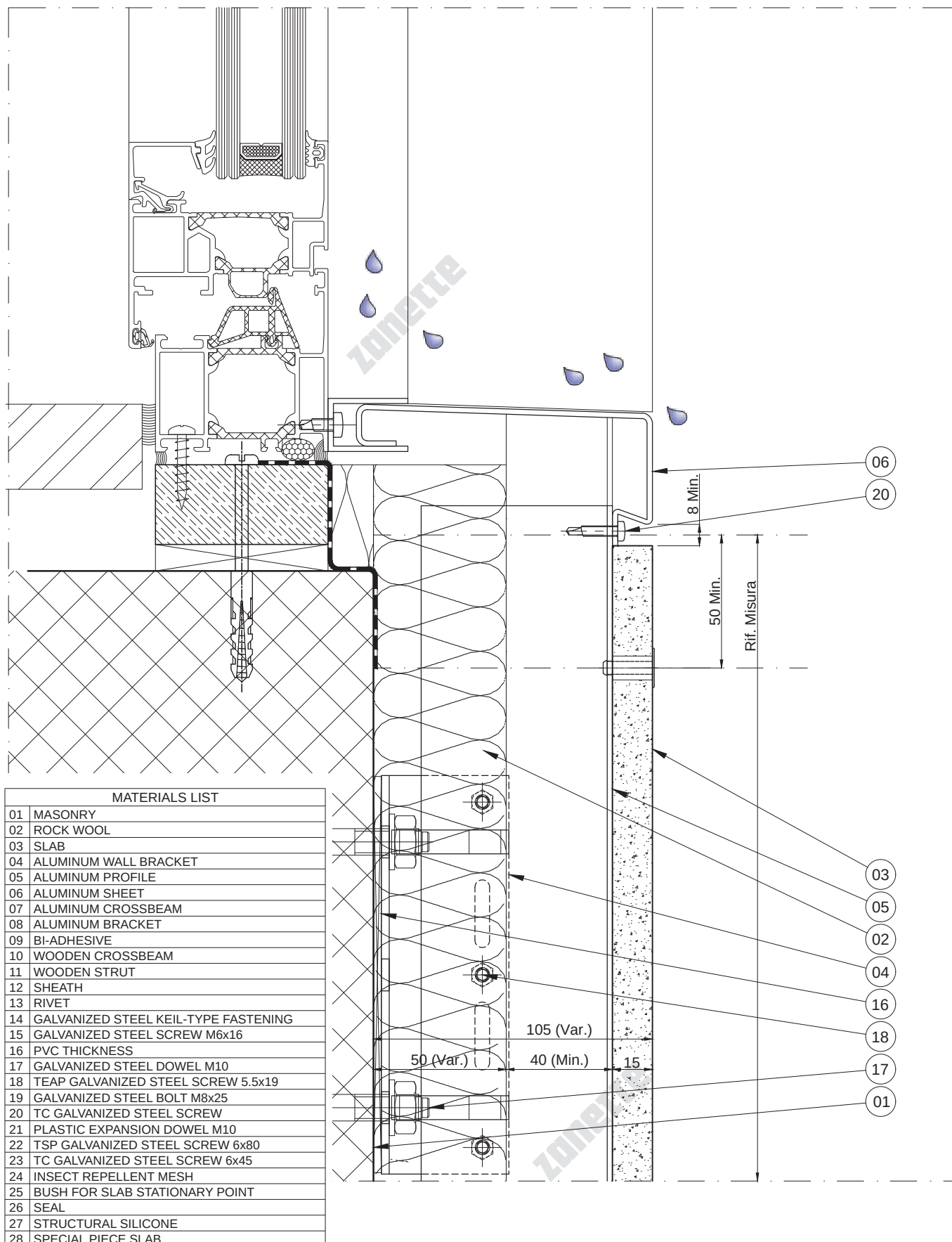


MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
VISIBLE FASTENING SYSTEM
ALUMINIUM FRAME
HORIZONTAL SECTION - Scale 1:2

zanette

2D-37

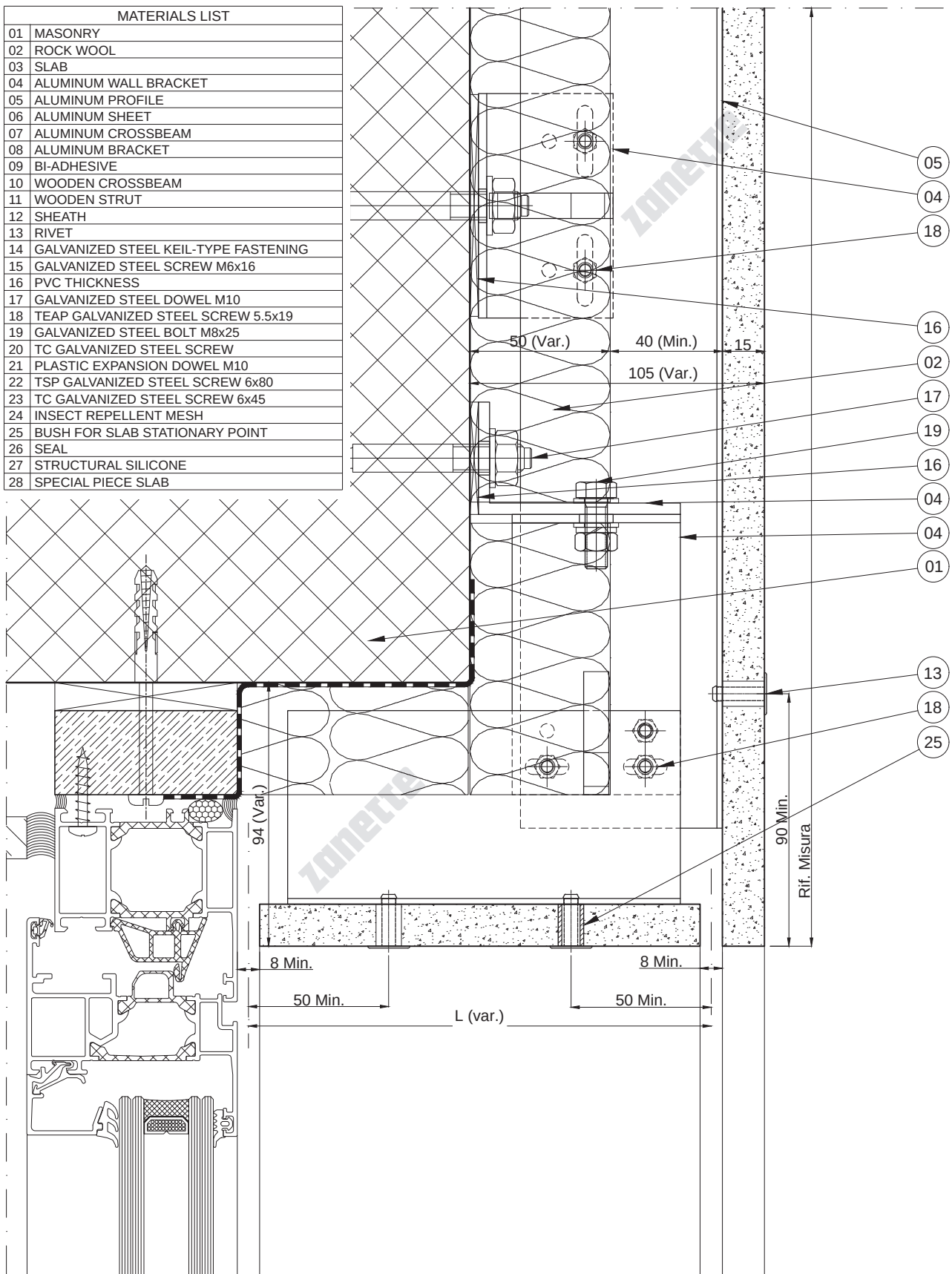


DESCRIPTION:
VISIBLE FASTENING SYSTEM
FRAME WITH ALUMINIUM SILL
VERTICAL SECTION - Scale 1:2

zanette

2D-38

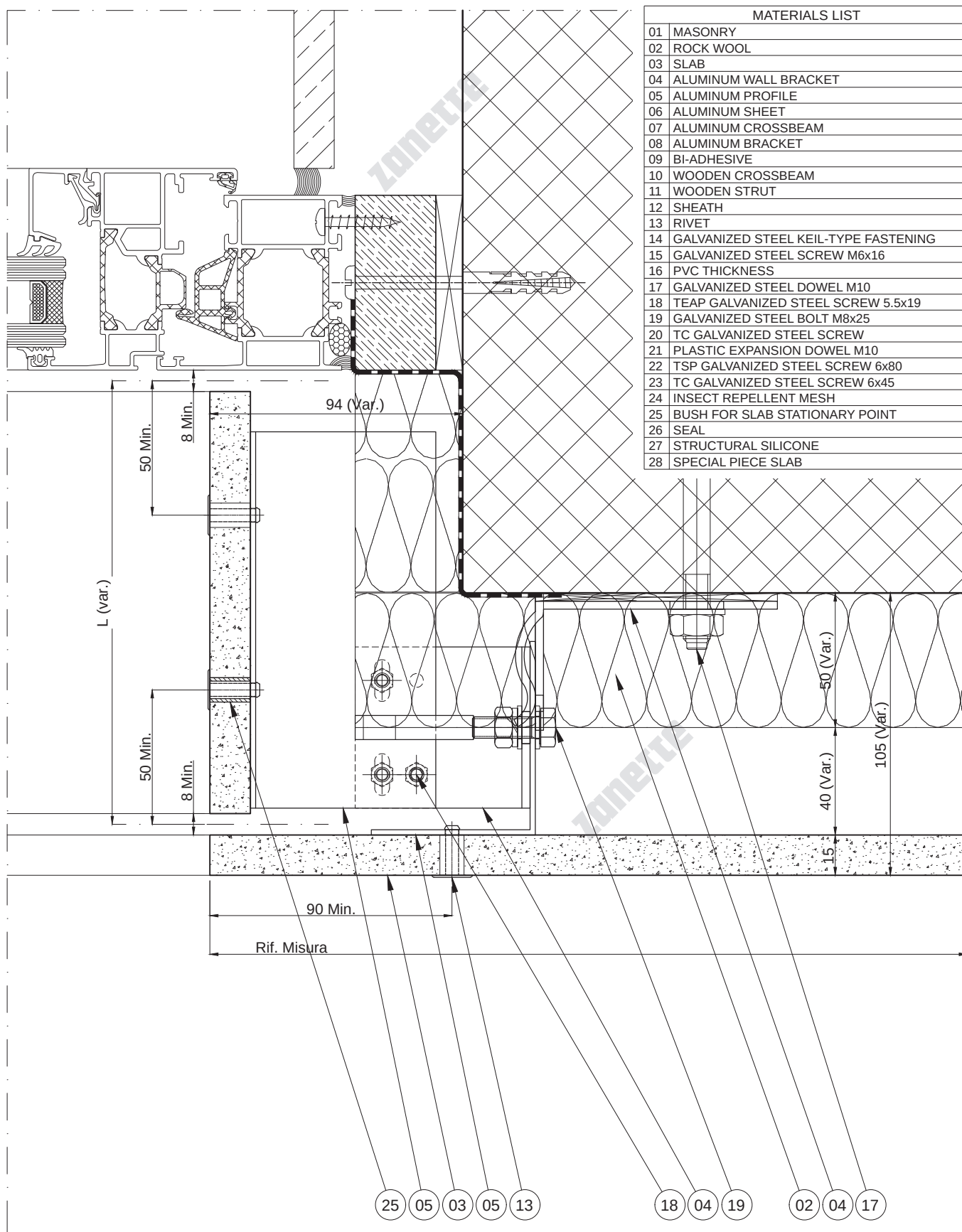
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT </td
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
VISIBLE FASTENING SYSTEM
SLAB CLADDING CEILING
VERTICAL SECTION - Scale 1:2

zanette

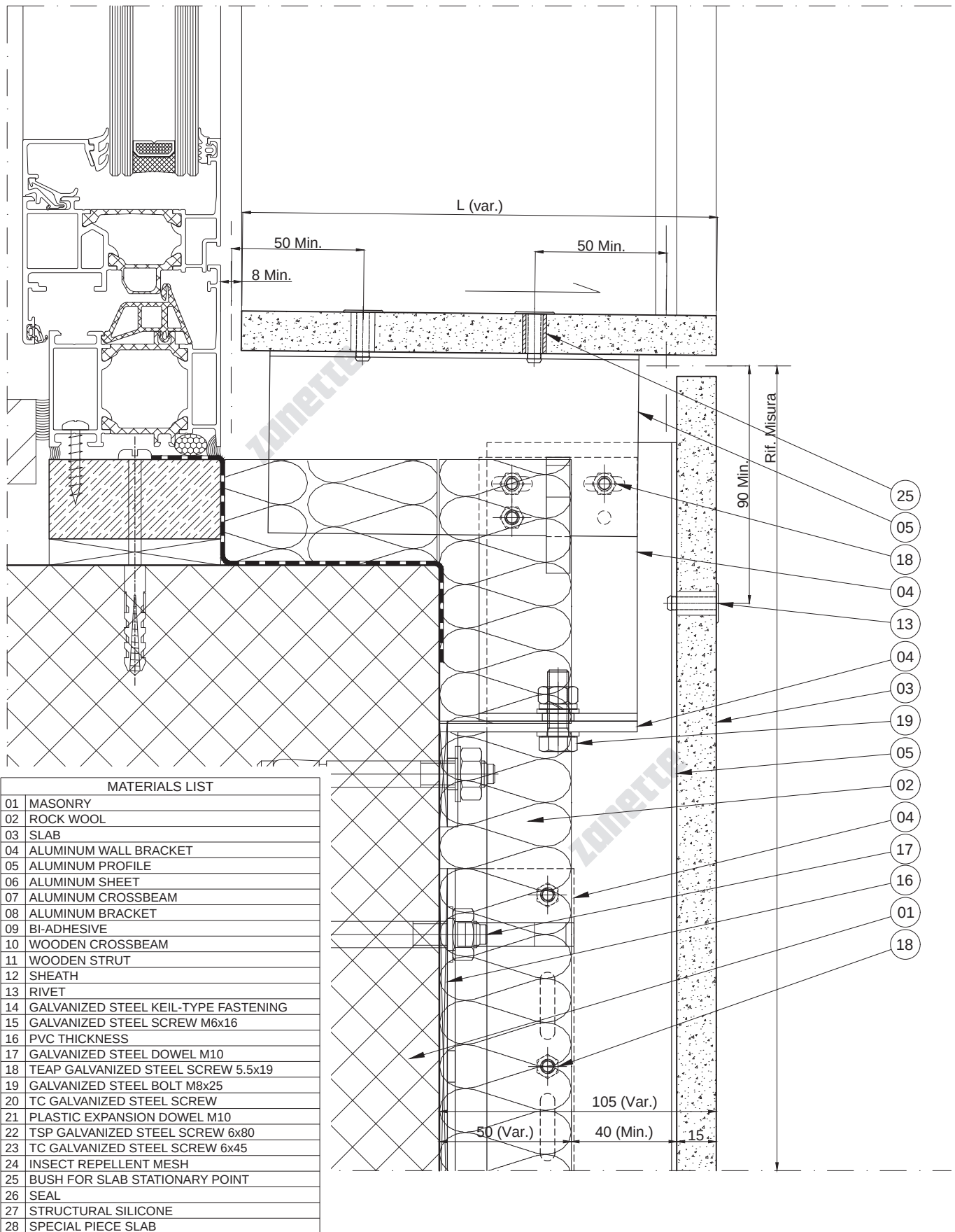
2D-39



DESCRIPTION:
VISIBLE FASTENING SYSTEM
SLAB CLADDING FRAME
VERTICAL SECTION - Scale 1:2

zanette

2D-40



zanette

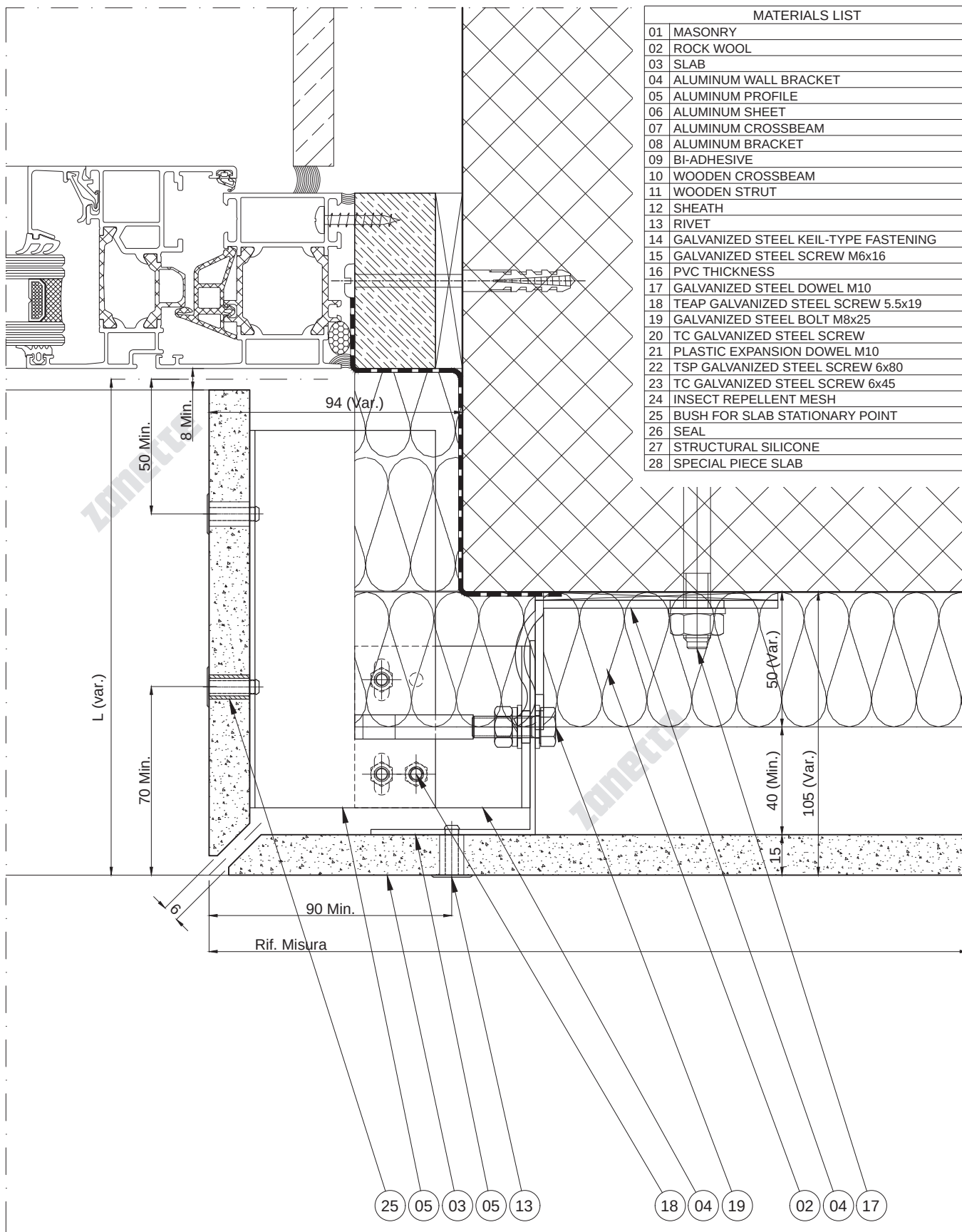
2D-41

Technical drawing of a window frame cross-section, showing various components and dimensions. The drawing includes a detailed view of the frame profile on the left, a cross-section of the frame assembly in the center, and a side view of the frame assembly on the right. Dimensions are indicated in millimeters (mm).

Key dimensions and components labeled:

- 94 (var.)**: Dimension of the frame profile height.
- 8 Min.**: Minimum dimension of the frame profile.
- 50 Min.**: Minimum dimension of the frame profile.
- 70 Min.**: Minimum dimension of the frame profile.
- L (var.)**: Variable dimension of the frame profile.
- 90 Min.**: Minimum dimension of the frame profile.
- Rif. Misura**: Reference measurement.
- 6**: Dimension of the frame profile.
- 04**, **01**, **13**, **18**, **05**, **25**: Component numbers.

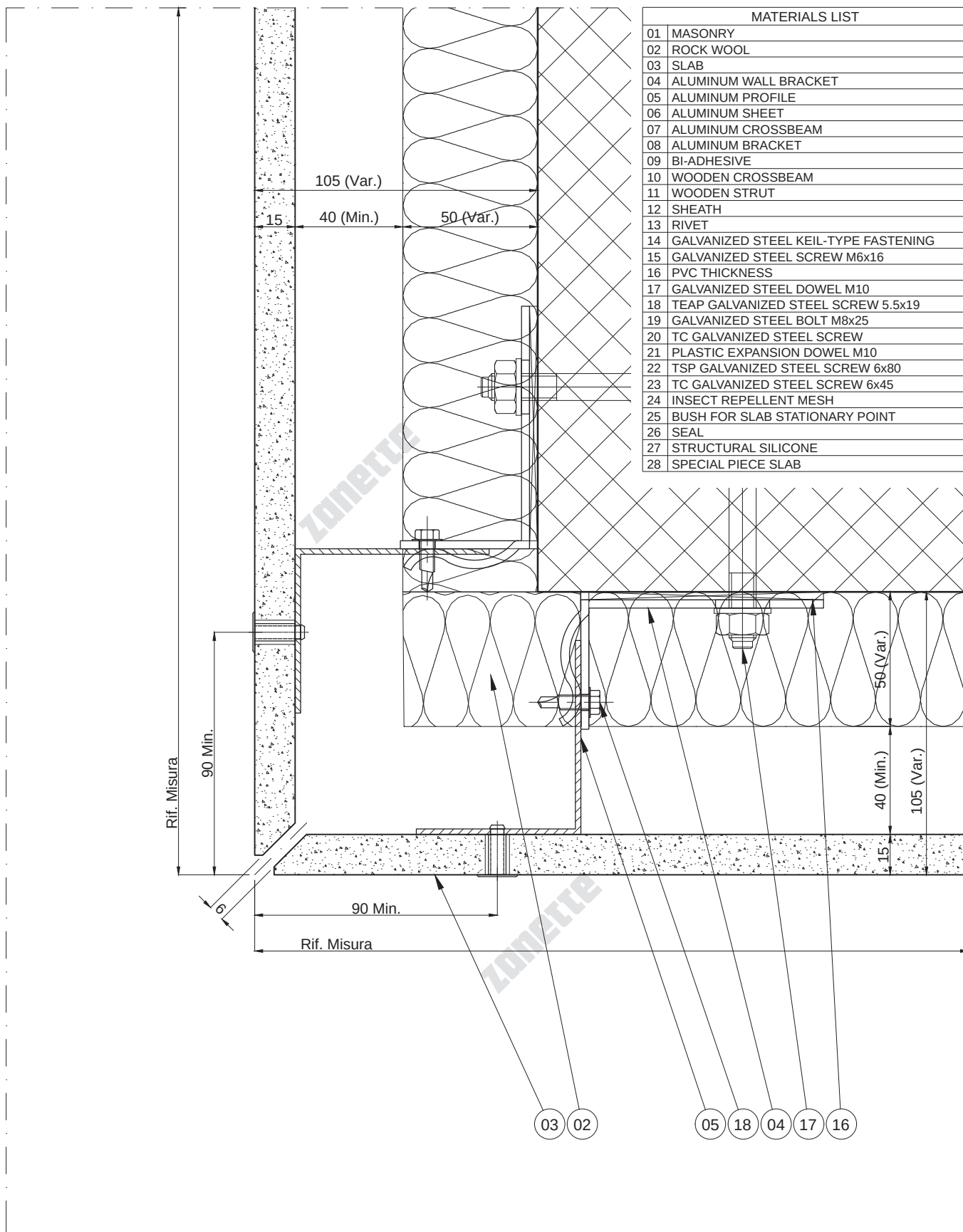
2D-42



DESCRIPTION:
VISIBLE FASTENING SYSTEM
SLAB CLADDING FRAME
HORIZONTAL SECTION - Scale 1:2

zanette

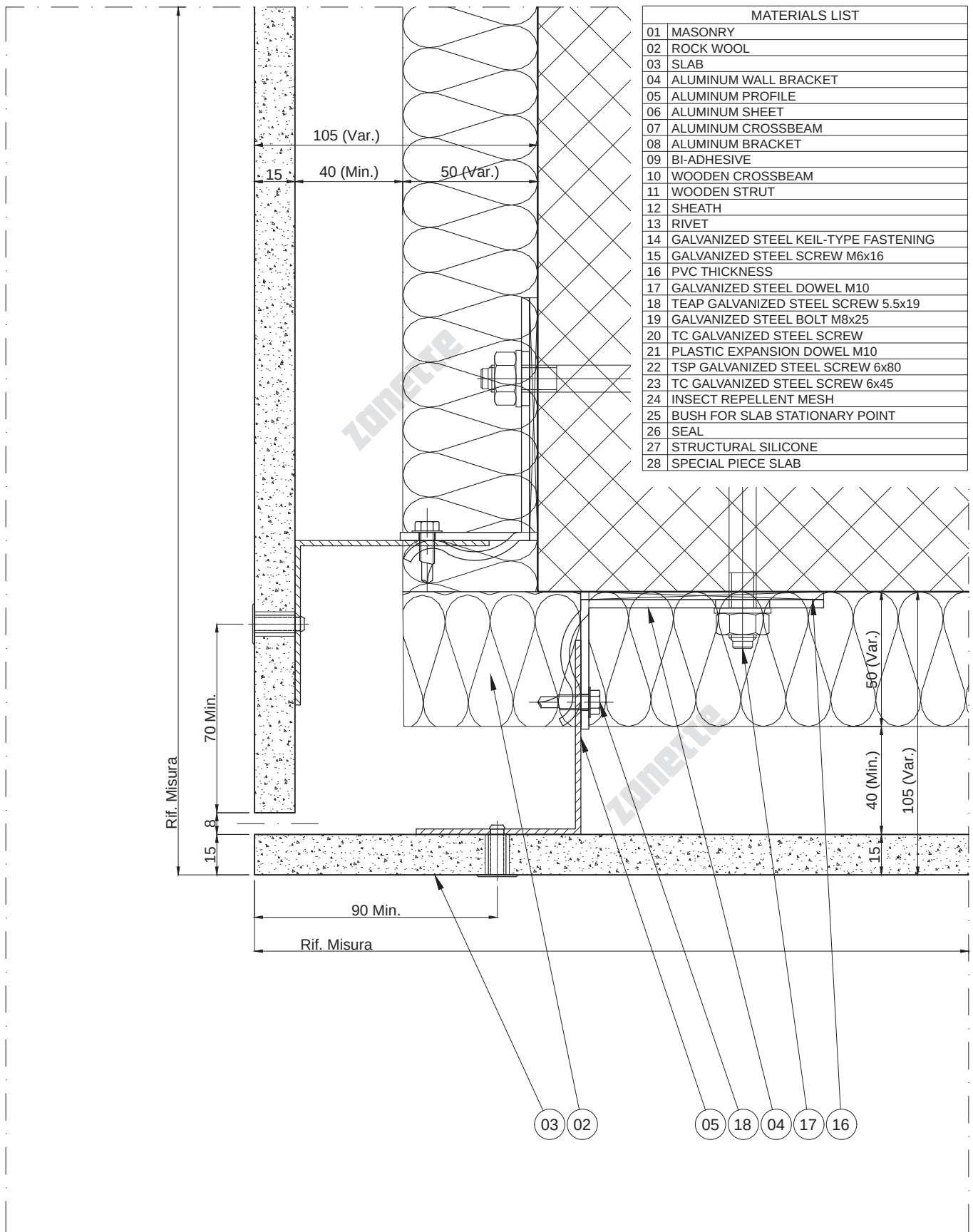
2D-43



DESCRIPTION:
VISIBLE FASTENING SYSTEM
CORNER DETAIL
HORIZONTAL SECTION - Scale 1:2

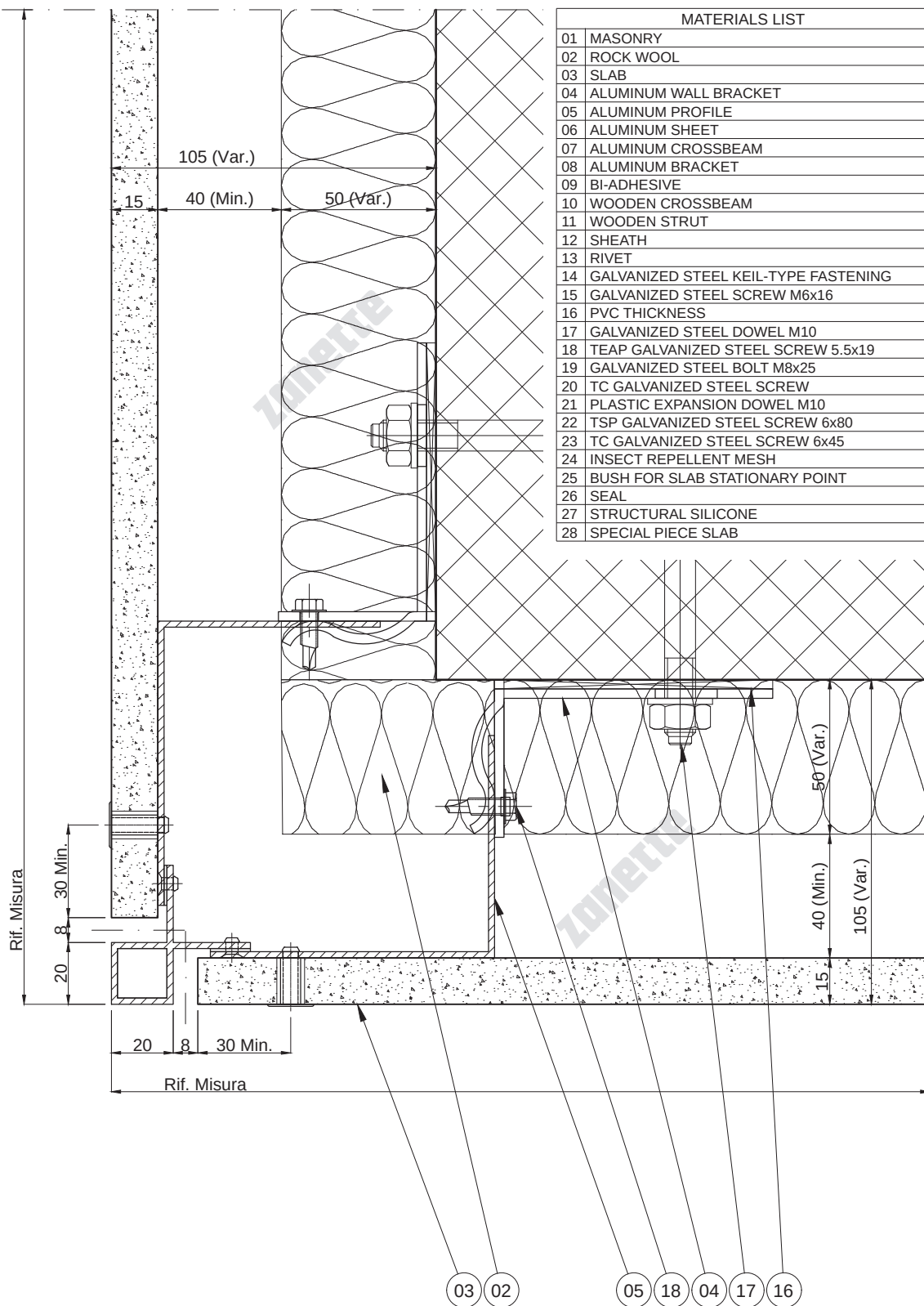
zanette

2D-44



zanette

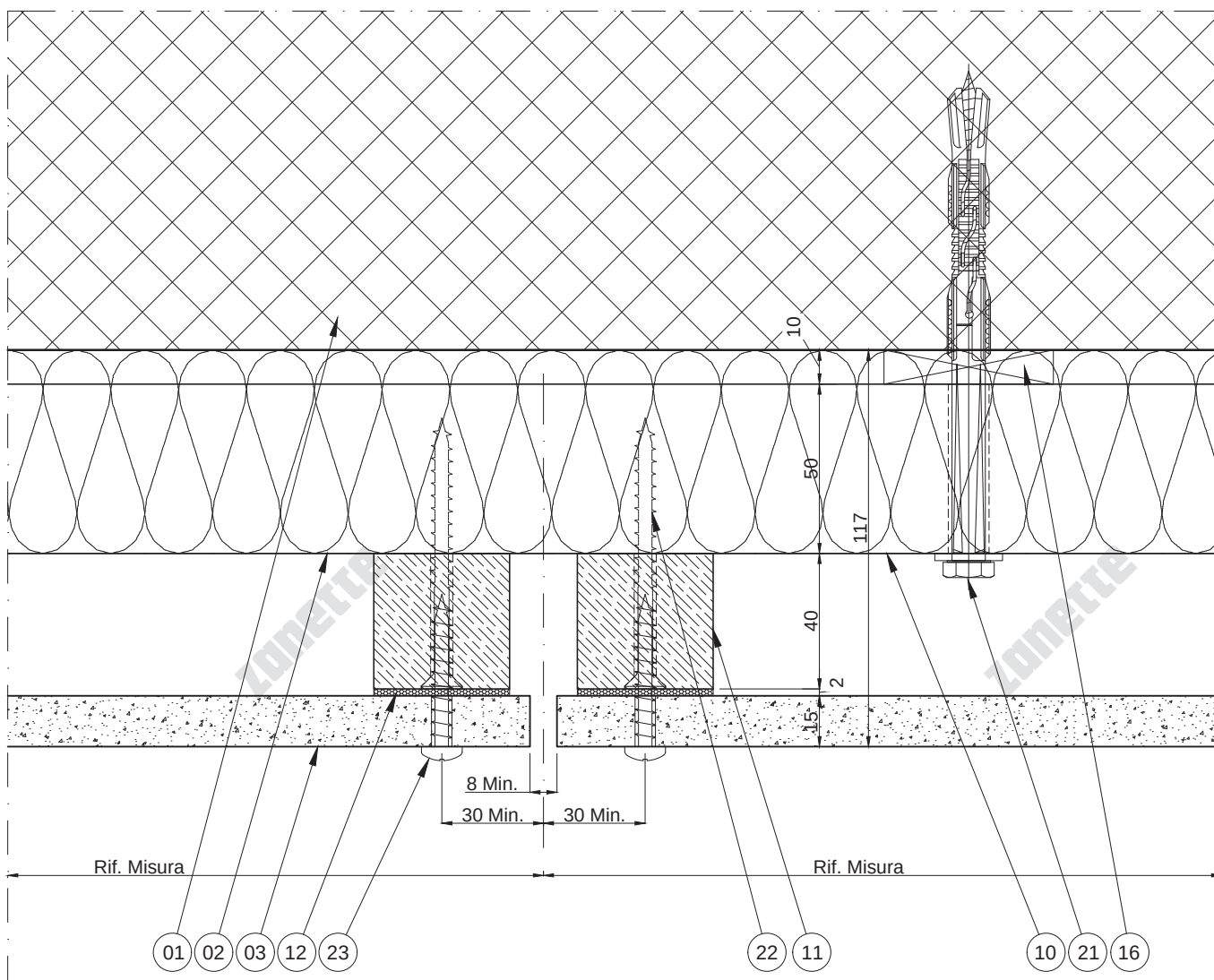
2D-45



DESCRIPTION:
VISIBLE FASTENING SYSTEM
CORNER DETAIL WITH PROFILE
HORIZONTAL SECTION - Scale 1:2

zanette

2D-46



MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

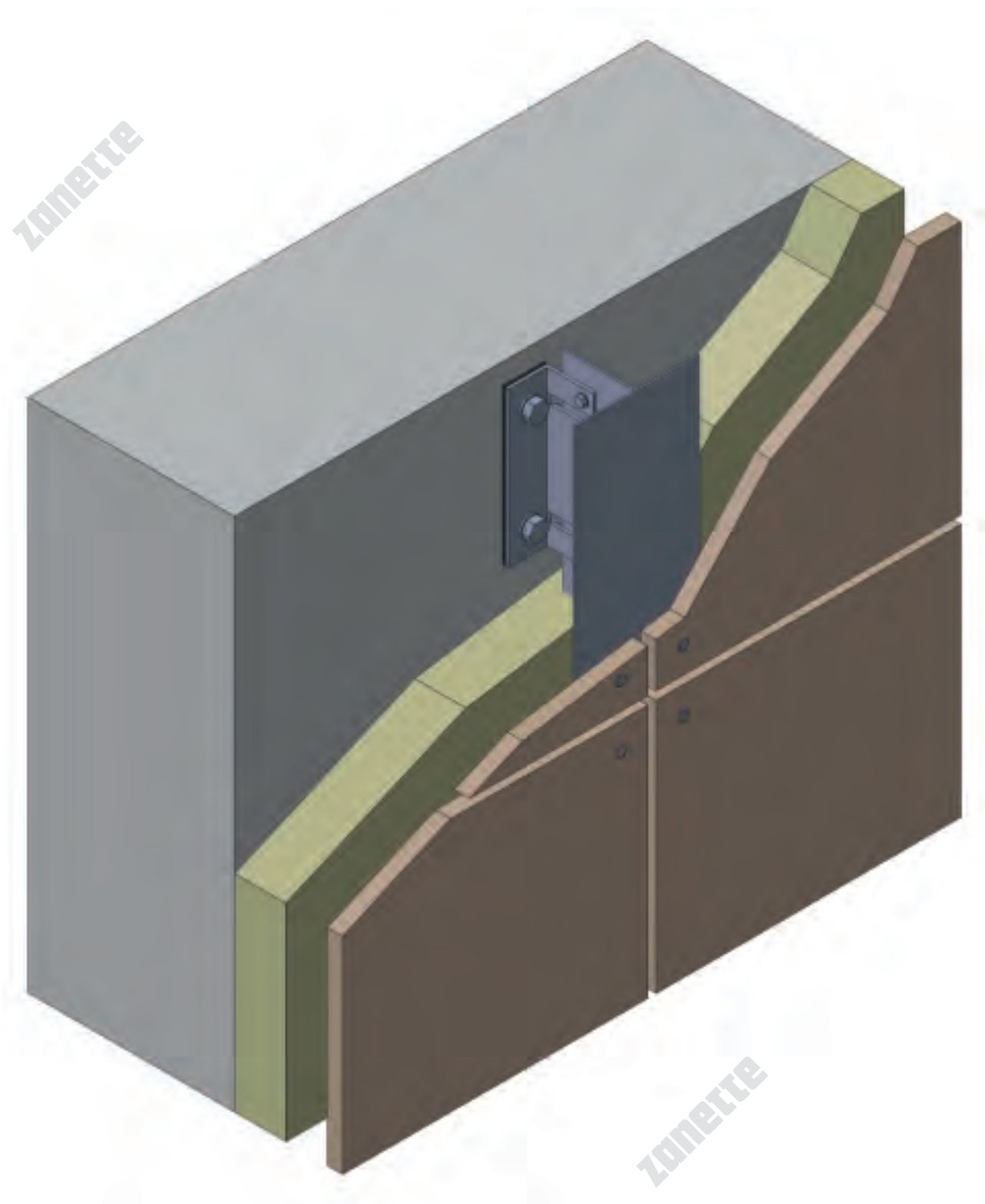
DESCRIPTION:
VISIBLE FASTENING SYSTEM
SUBSTRUCTURE IN WOOD
HORIZONTAL SECTION - Scale 1:2

Zanette

2D-16

[illegible]

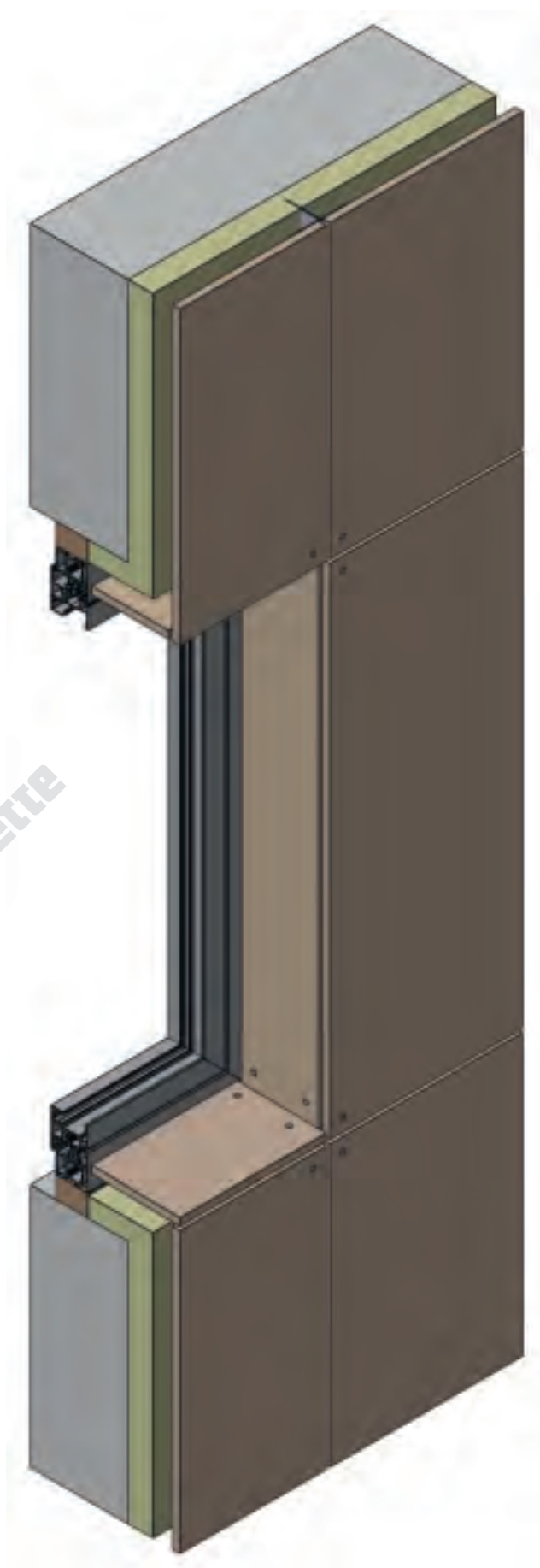
zanette	2D-17
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DESCRIPTION:
VISIBLE FASTENING SYSTEM

zonette

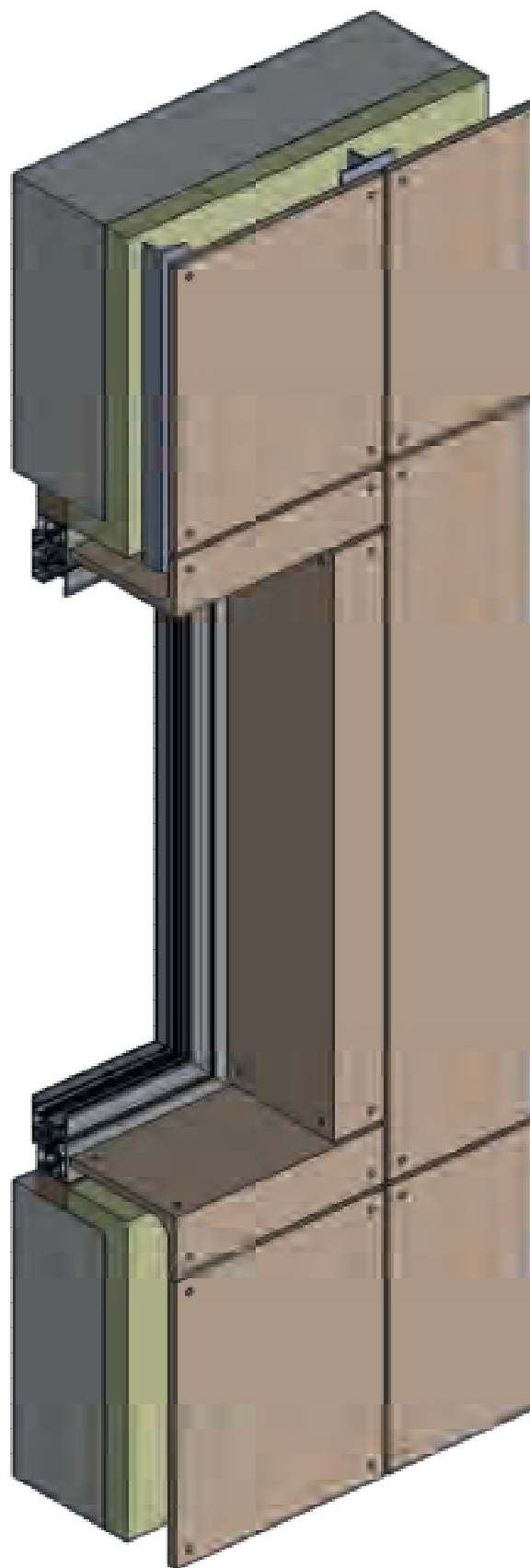
3D-01



DESCRIPTION:
WINDOW WITH VISIBLE FASTENING SYSTEM

zonette

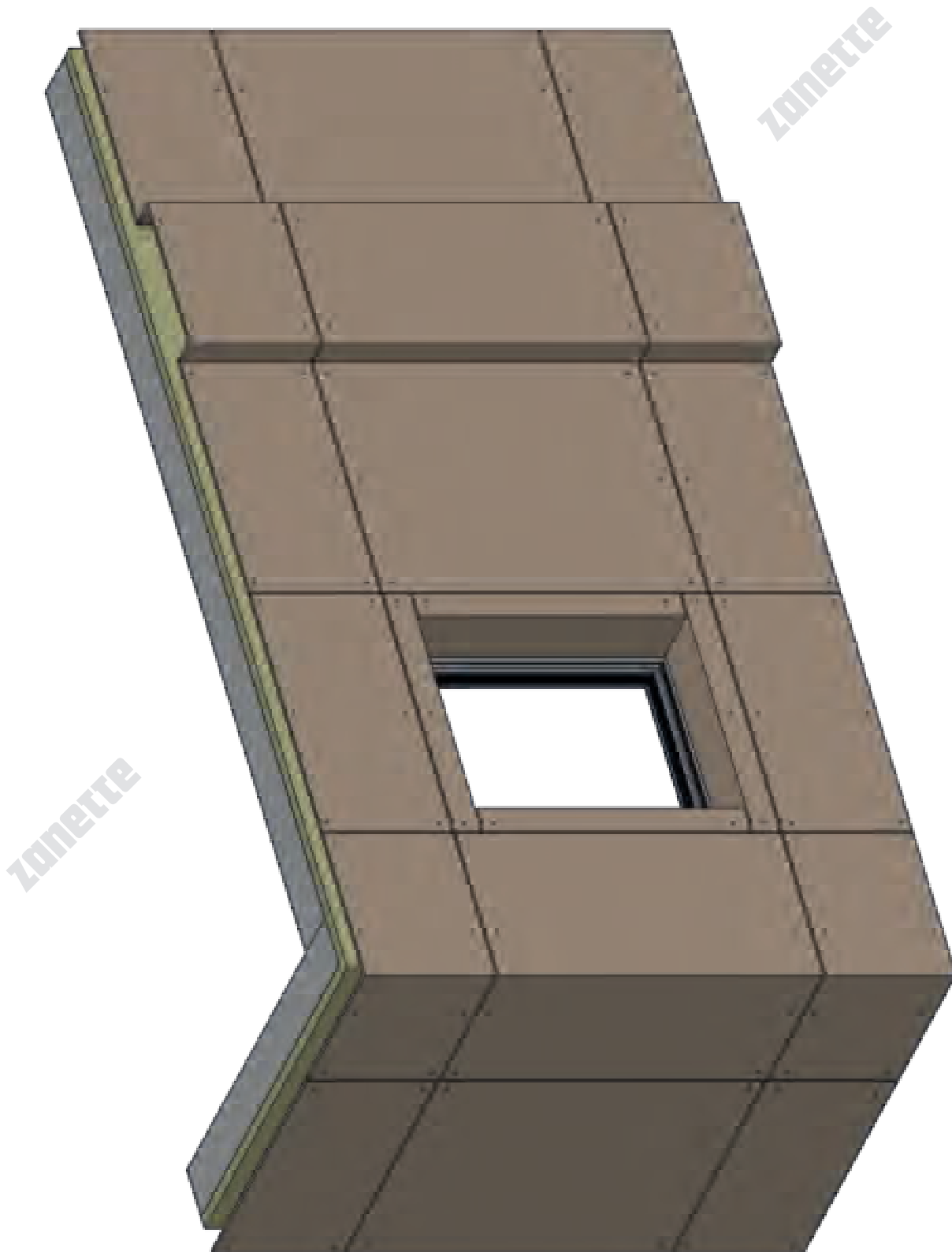
3D-06



DESCRIPTION:
WINDOW WITH SPECIAL ELEMENTS
WITH VISIBLE FASTENING SYSTEM

zanette

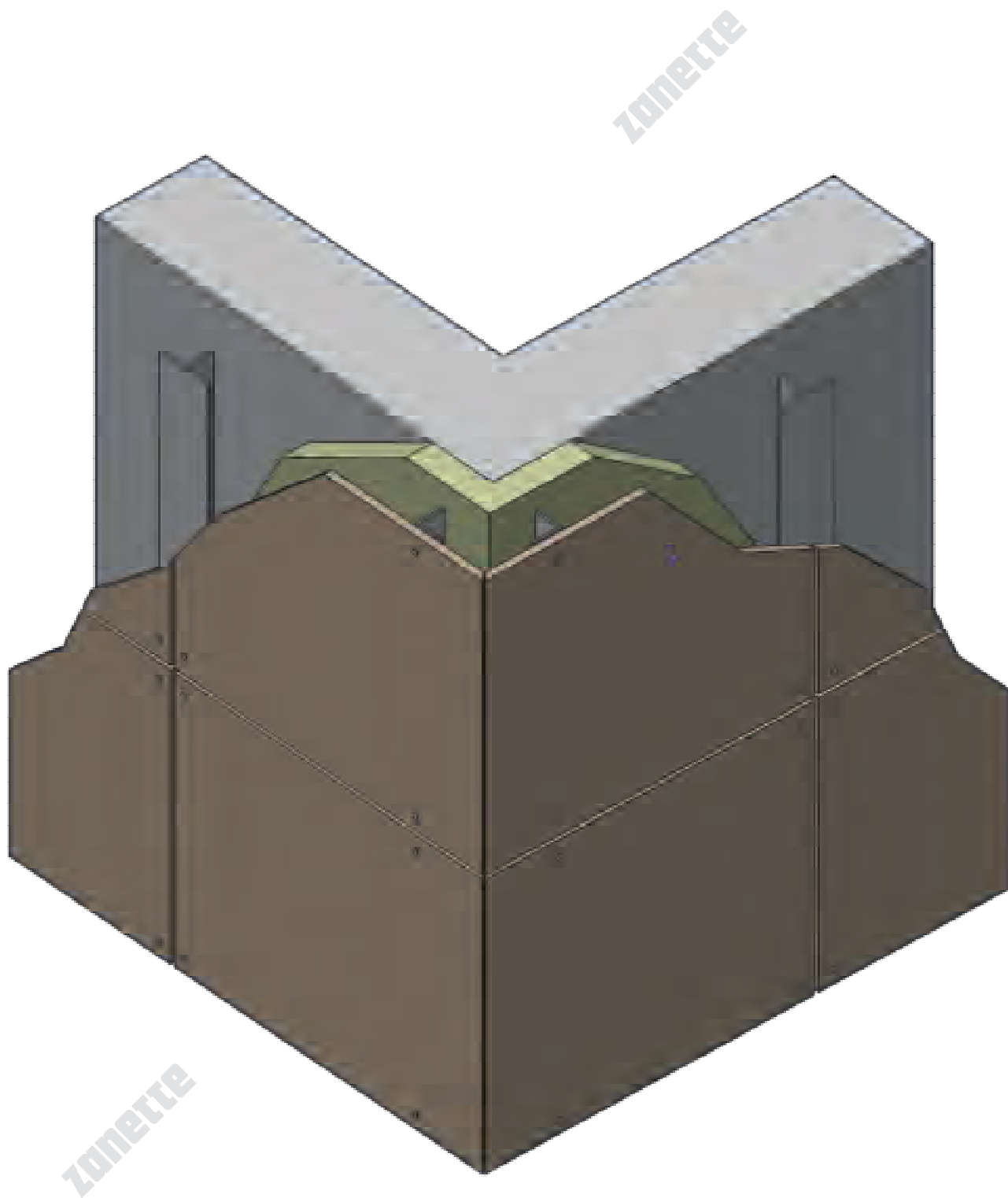
3D-08A



DESCRIPTION:
WINDOW WITH SPECIAL ELEMENTS, "C" ELEMENT, CORNER ELEMENT
WITH VISIBLE FASTENING SYSTEM

Zonette

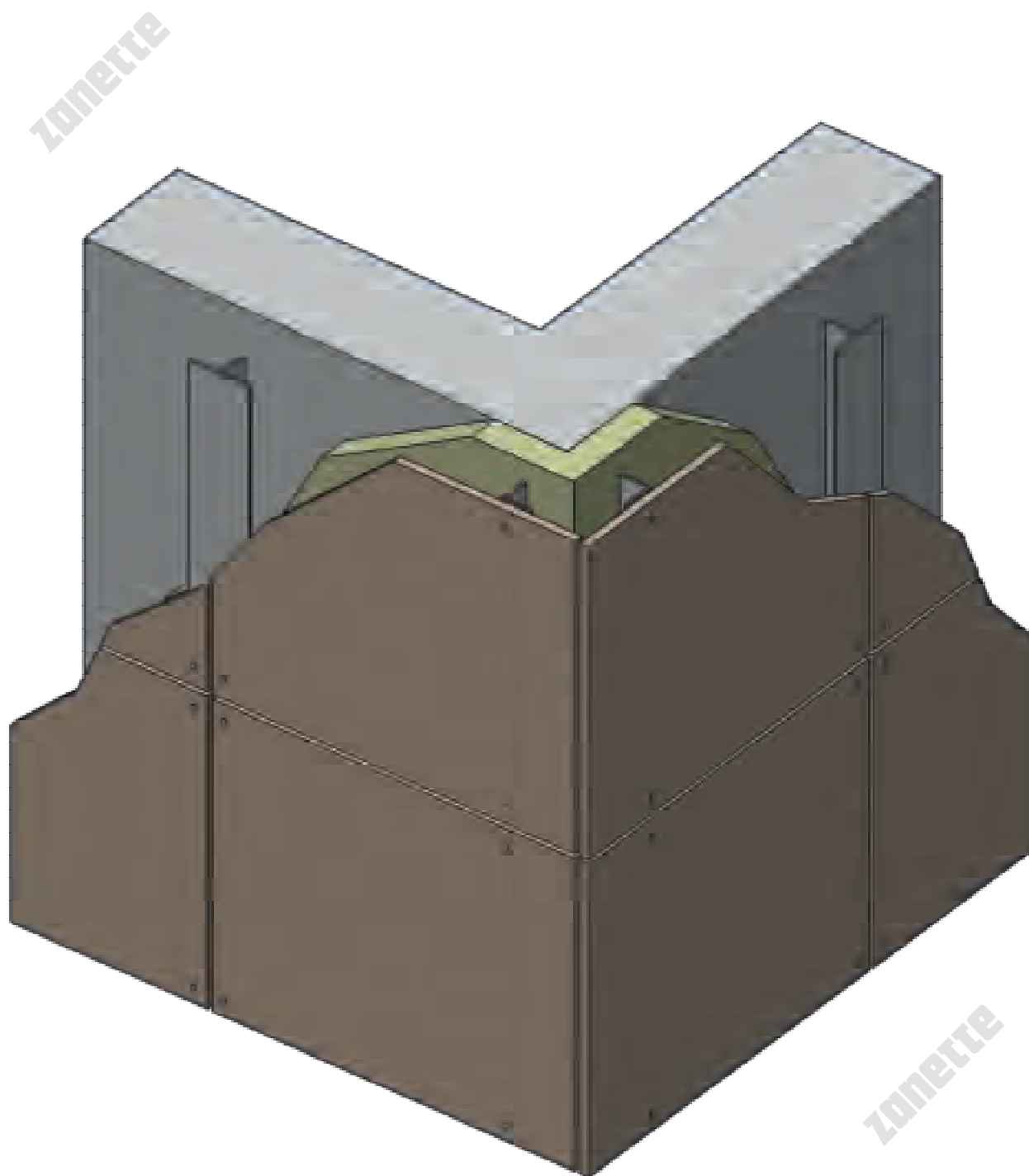
3D-10A



DESCRIPTION:
45° CUTTING CORNER
WITH VISIBLE FASTENING SYSTEM

zanette

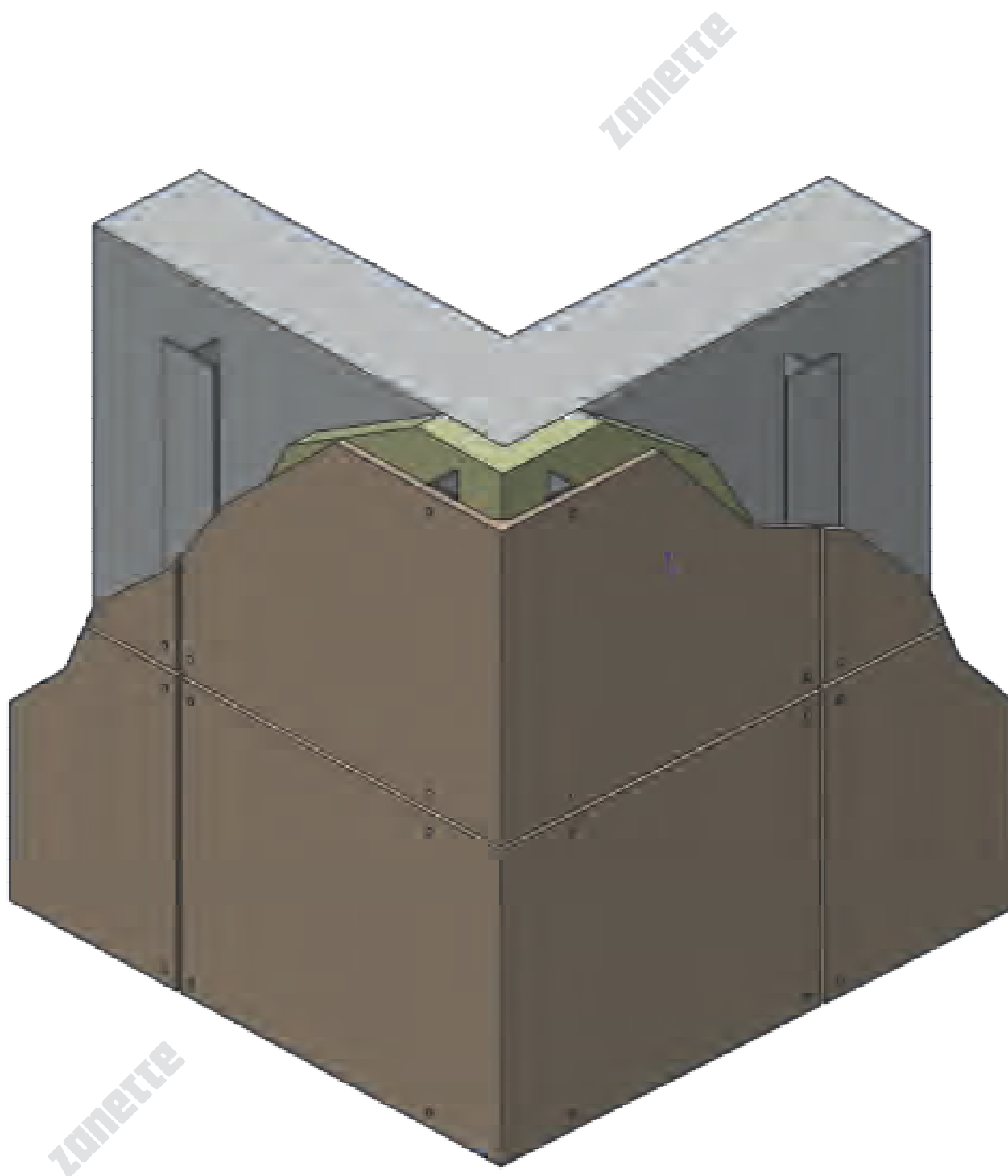
3D-14A



DESCRIPTION:
SHARP EDGE CORNER
WITH VISIBLE FASTENING SYSTEM

zonette

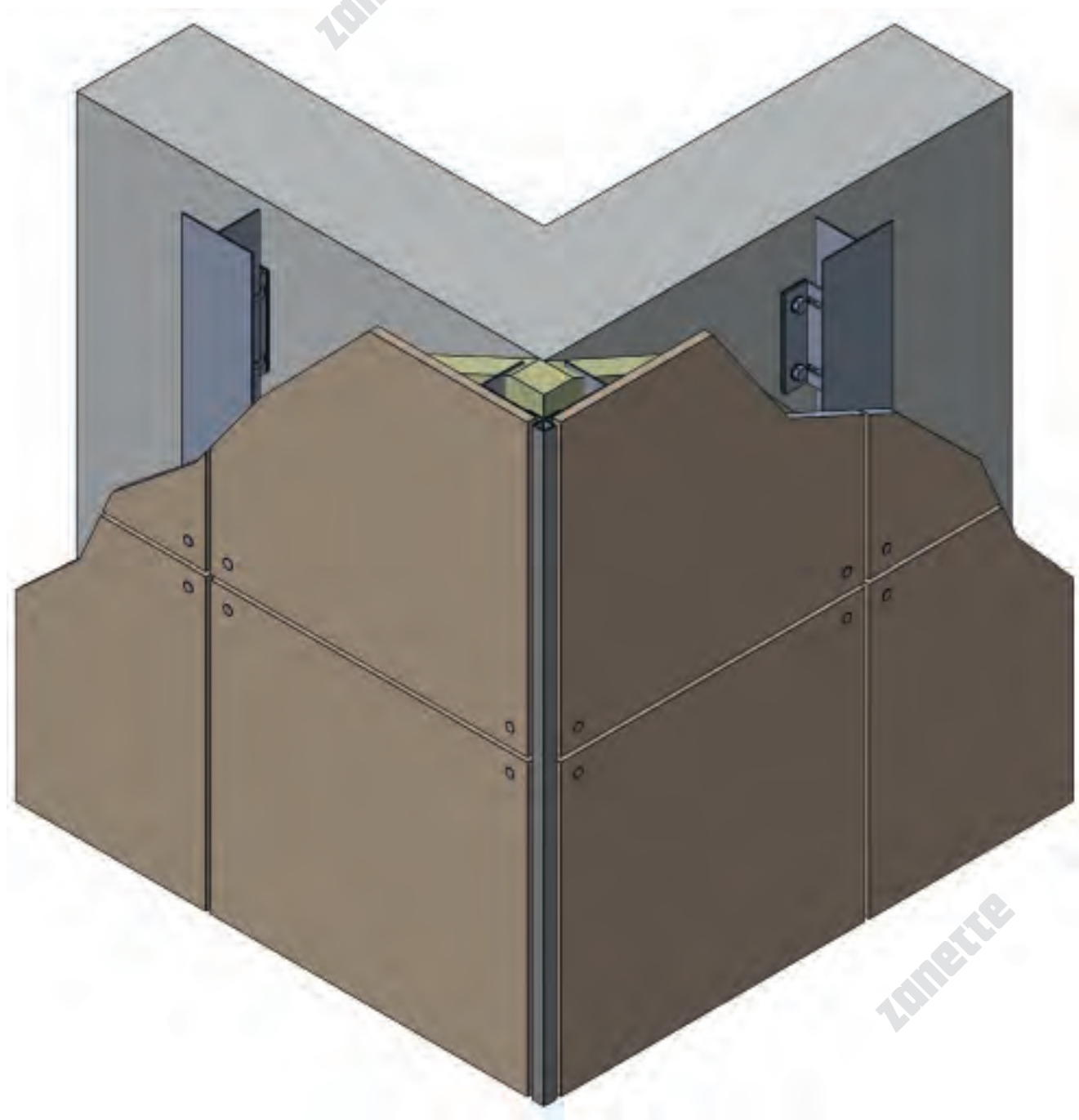
3D-15A



DESCRIPTION:
SPECIAL ELEMENTS 300X300 CORNER
WITH VISIBLE FASTENING SYSTEM

zonette

3D-16A



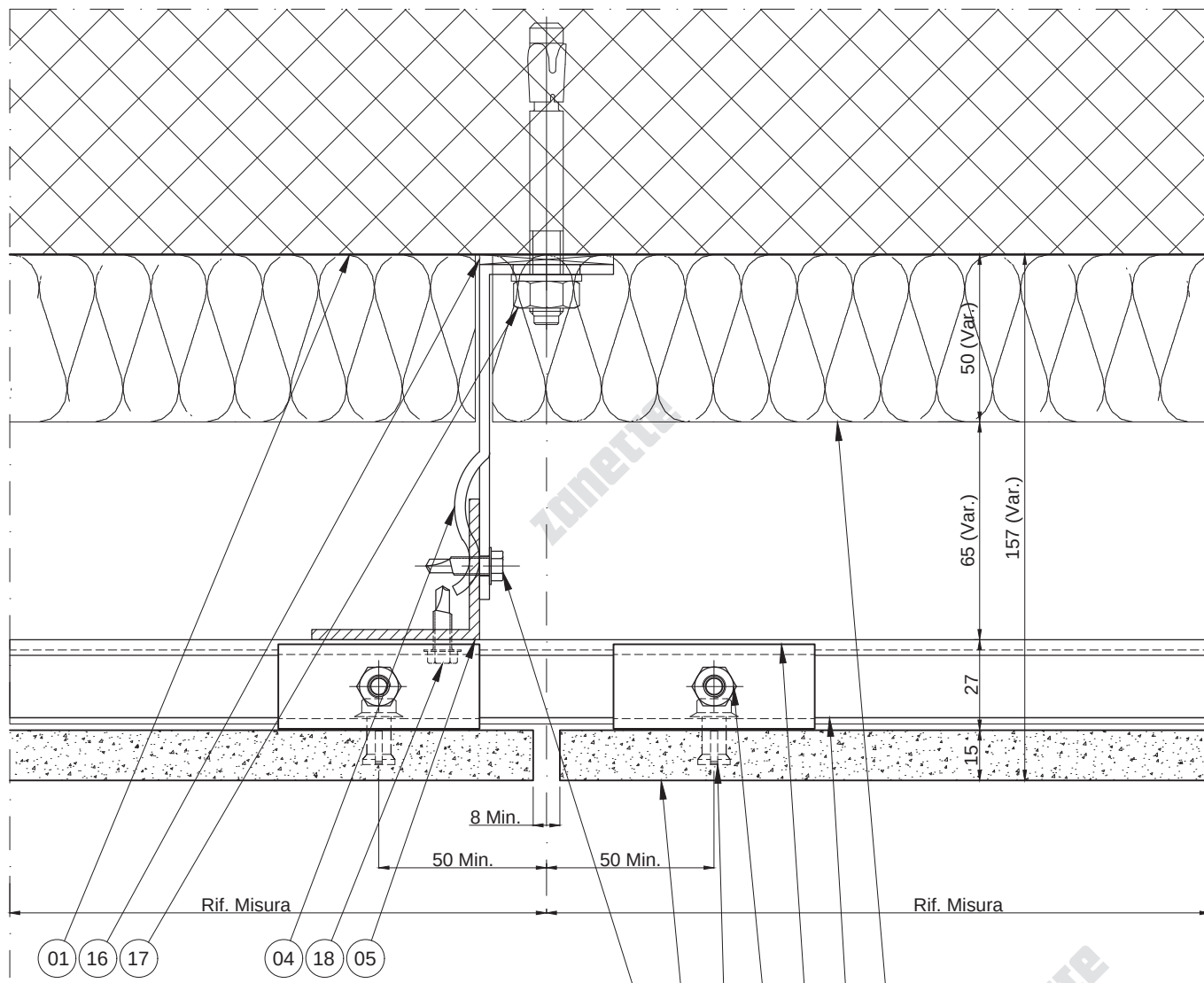
DESCRIPTION:
CORNER WITH PROFILE
WITH VISIBLE FASTENING SYSTEM

zonette

3D-17

5.2 Technical drawings for the design facades with invisible fastening system.



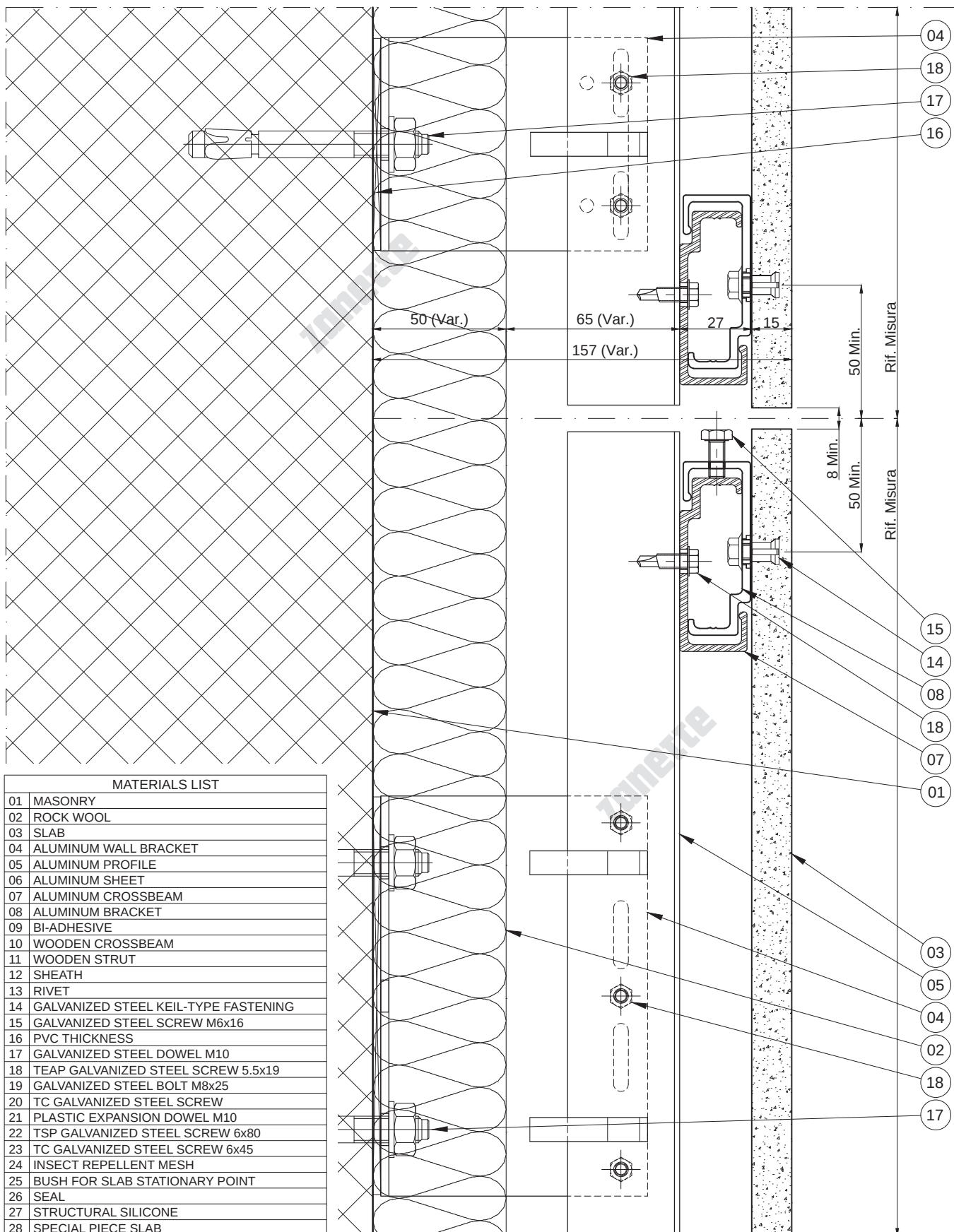


MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
INVISIBLE FASTENING SYSTEM
BRACKETS AND STRUT FASTENING "L"
HORIZONTAL SECTION - Scale 1:2

Zonette

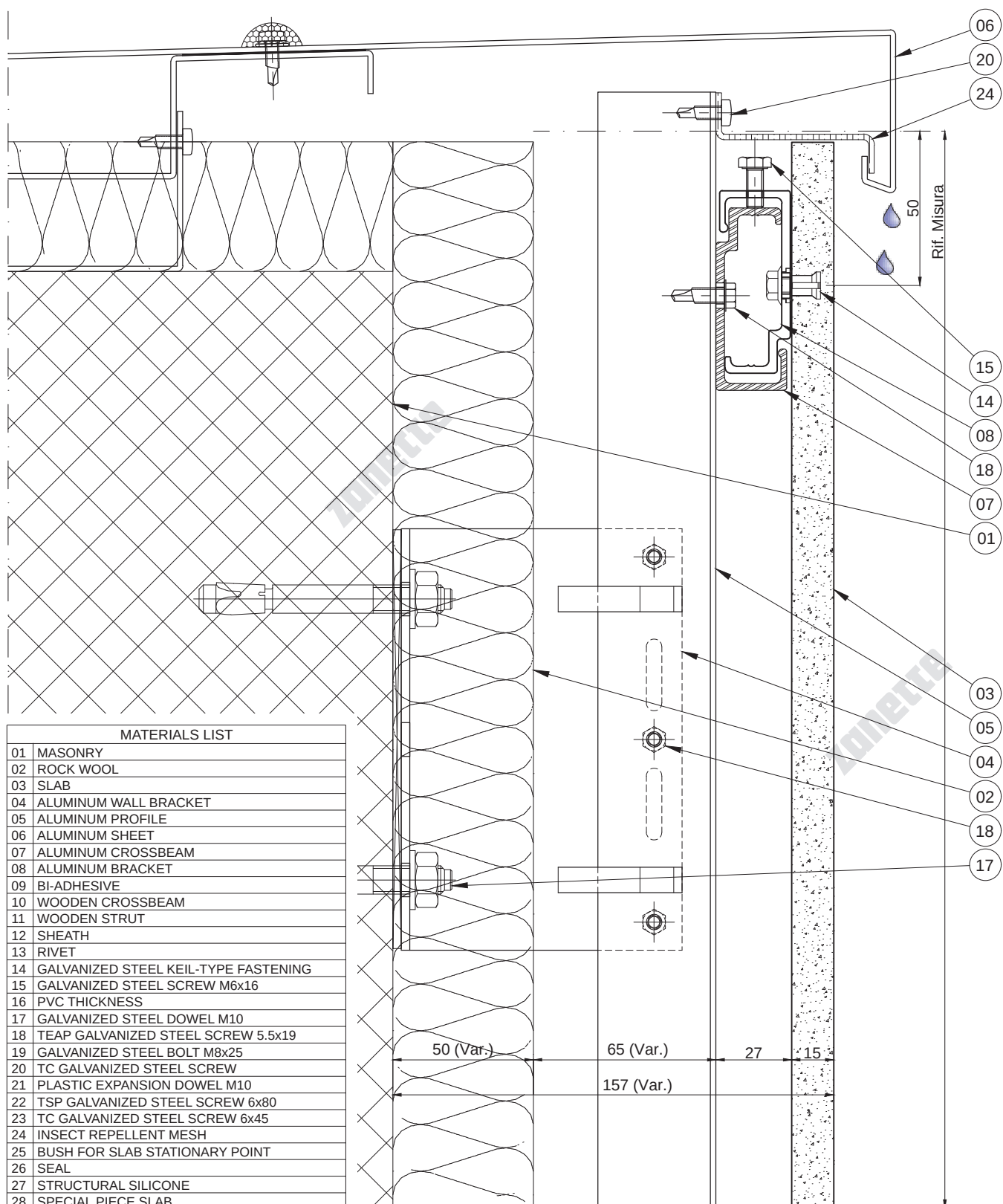
2D-03

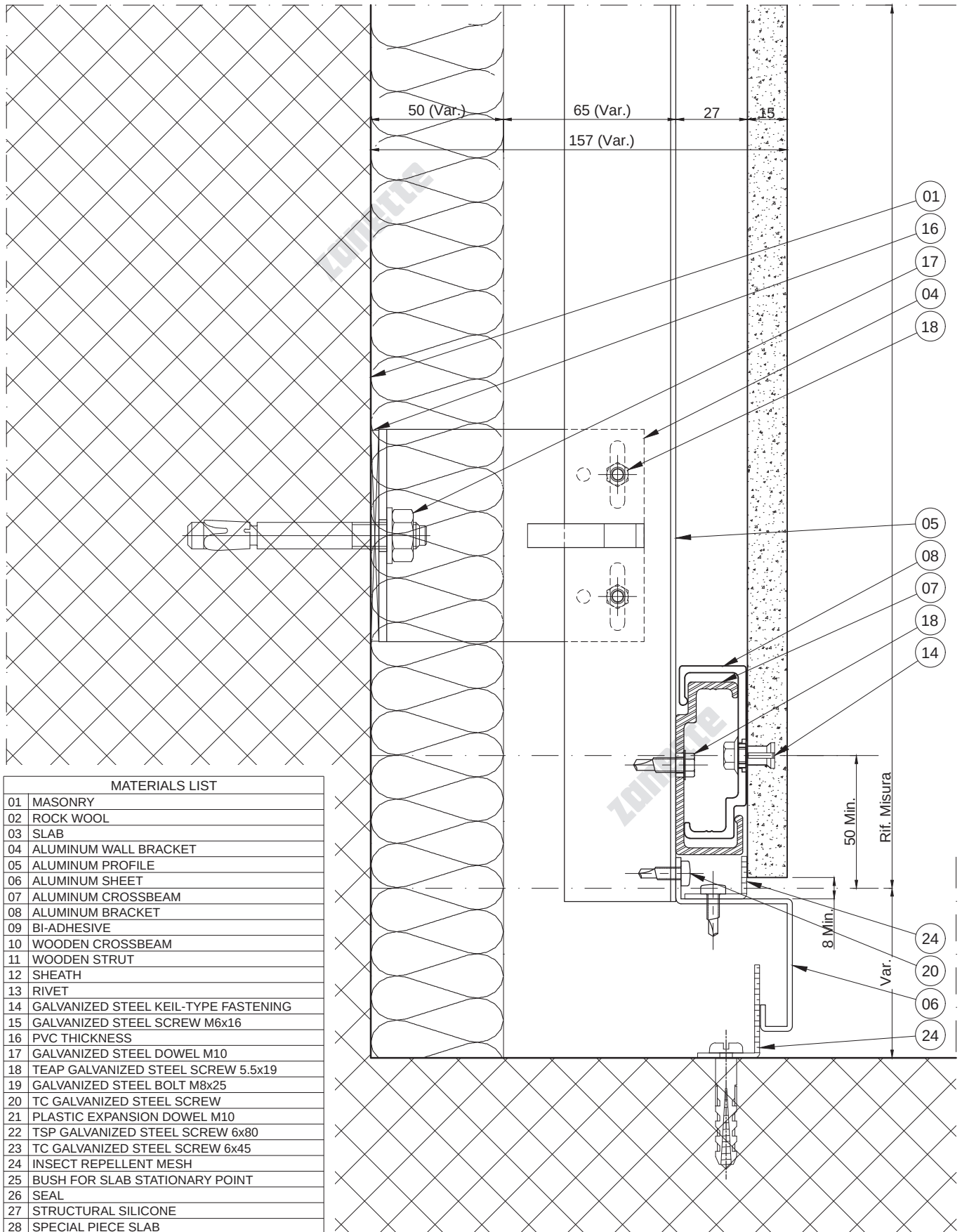


DESCRIPTION:
INVISIBLE FASTENING SYSTEM
FIX / MOVABLE POINT AND STRUT FASTENING "L"
HORIZONTAL SECTION - Scale 1:2

zonette

2D-04

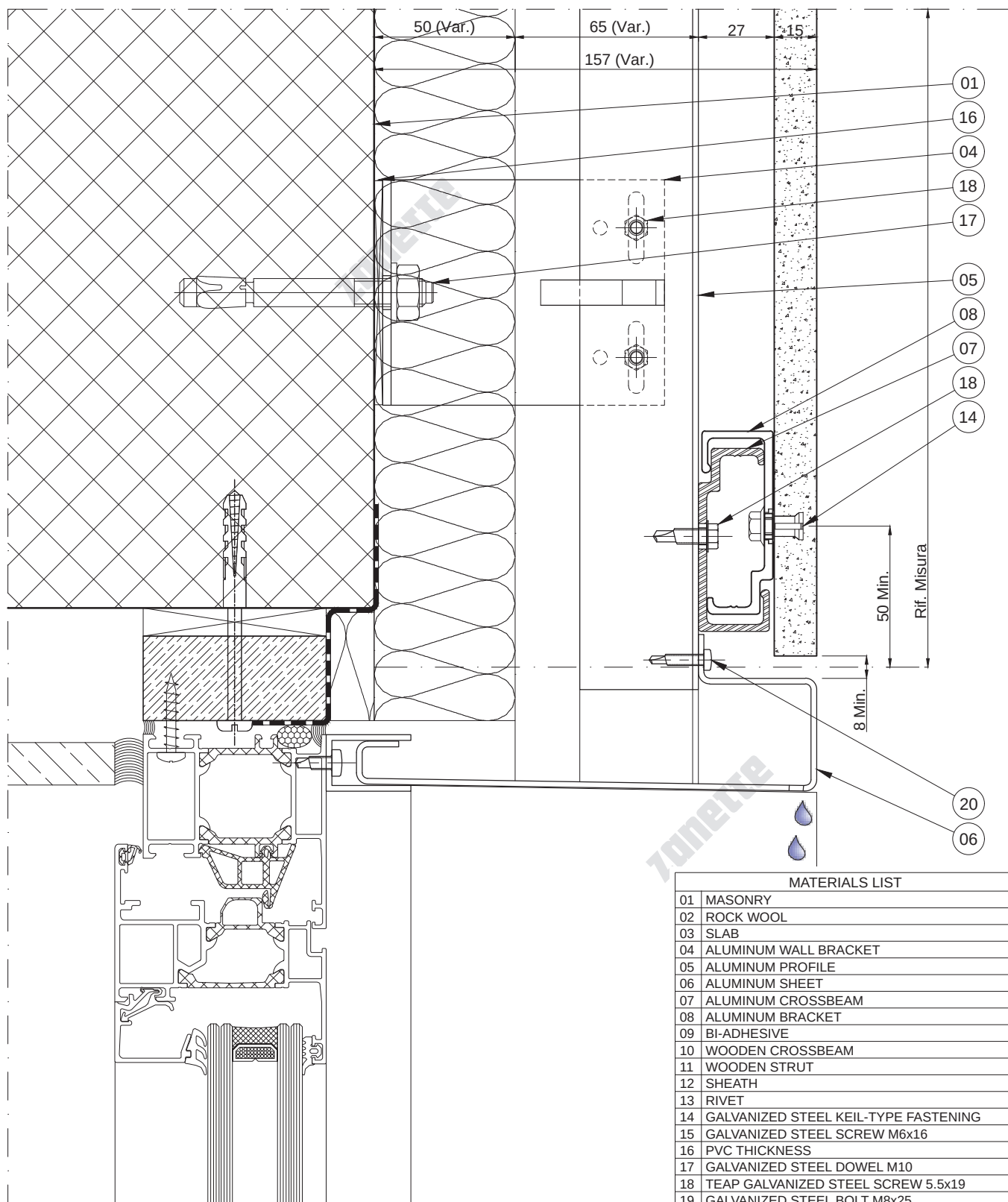




DESCRIPTION:
INVISIBLE FASTENING SYSTEM
LOWER BASE
VERTICAL SECTION - Scale 1:2

Zonette

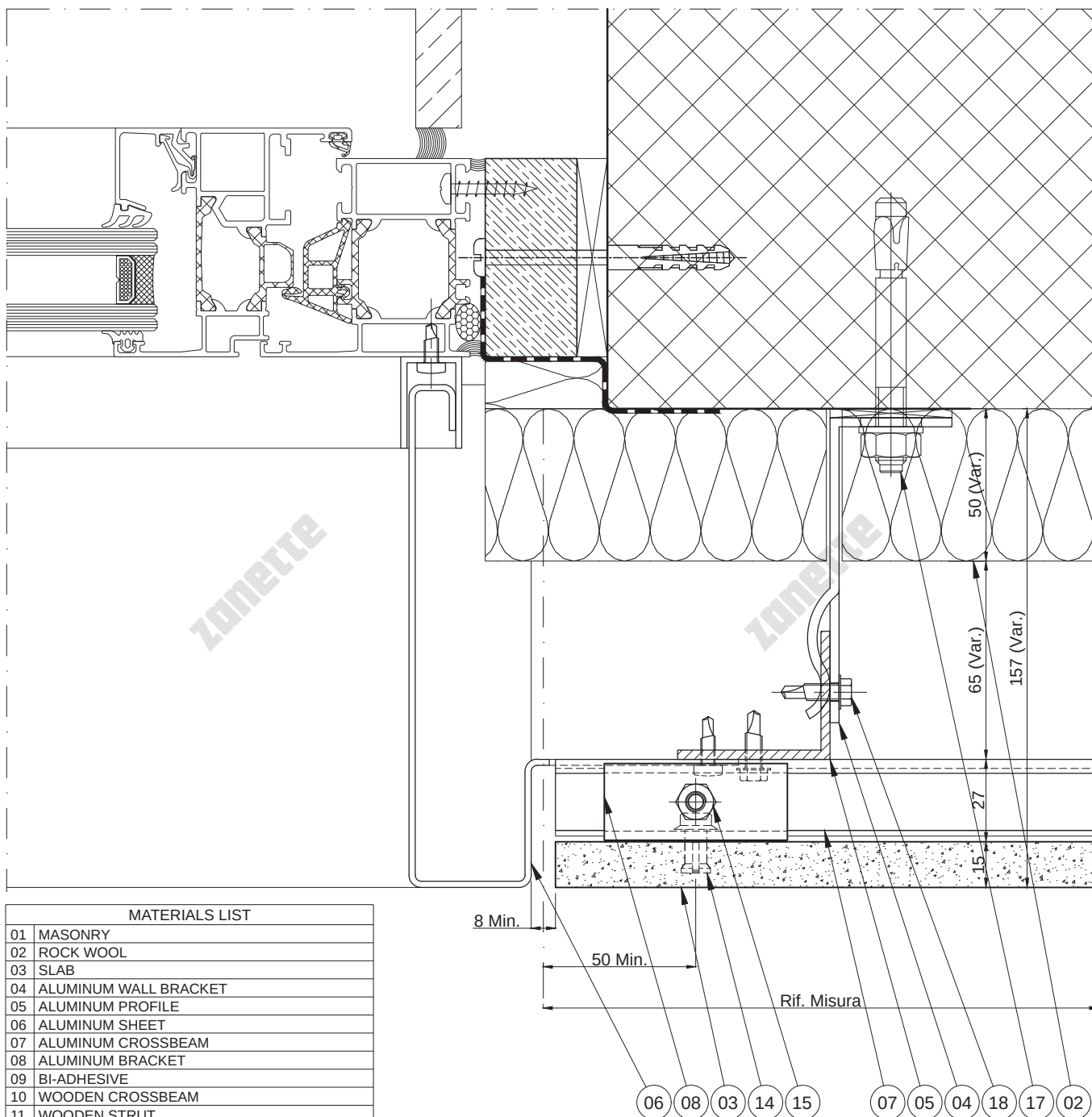
2D-06



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
ALUMINIUM FRAME CEILING
VERTICAL SECTION - Scale 1:2

zonette

2D-07

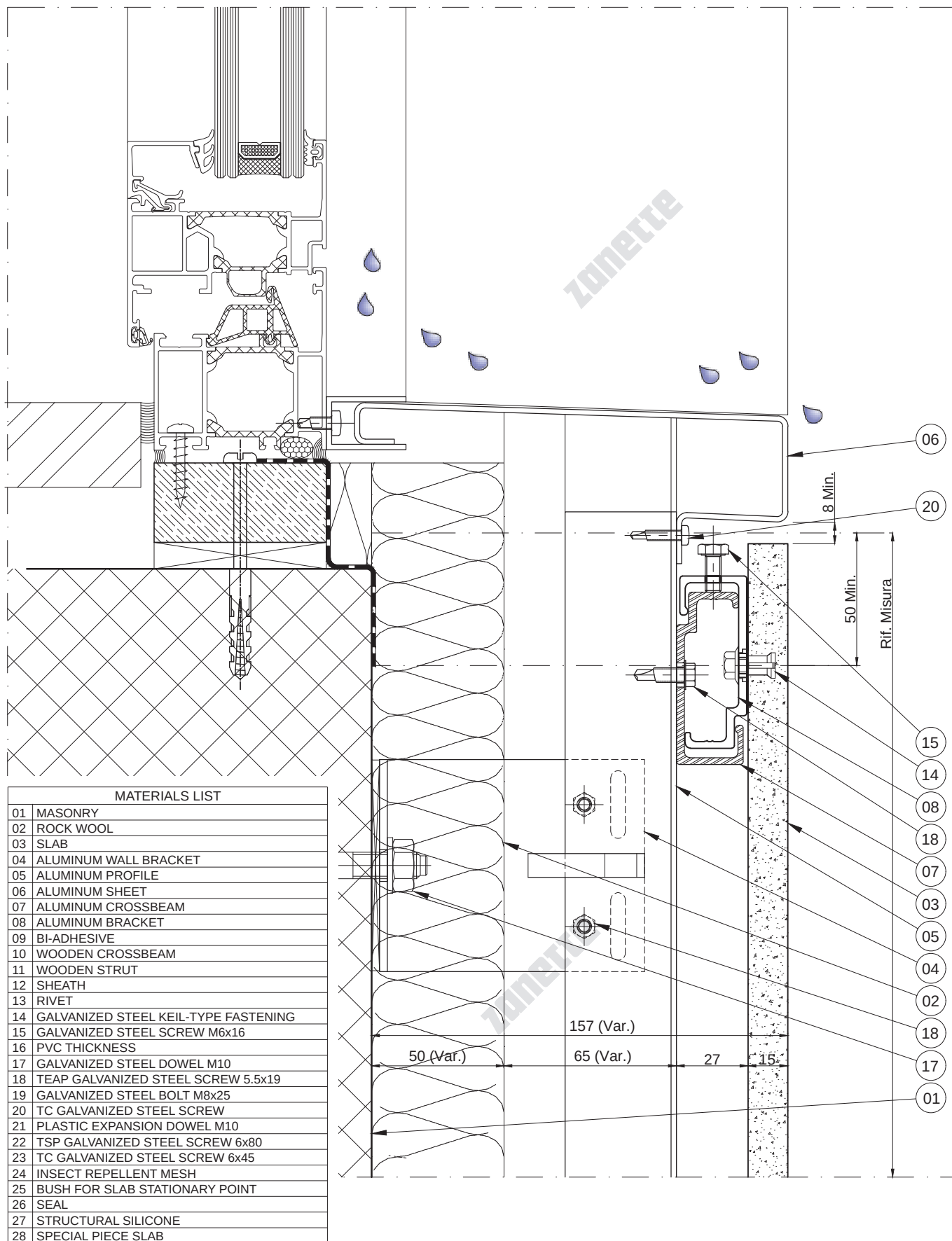


MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
INVISIBLE FASTENING SYSTEM
ALUMINIUM FRAME
HORIZONTAL SECTION - Scale 1:2

zanette

2D-08

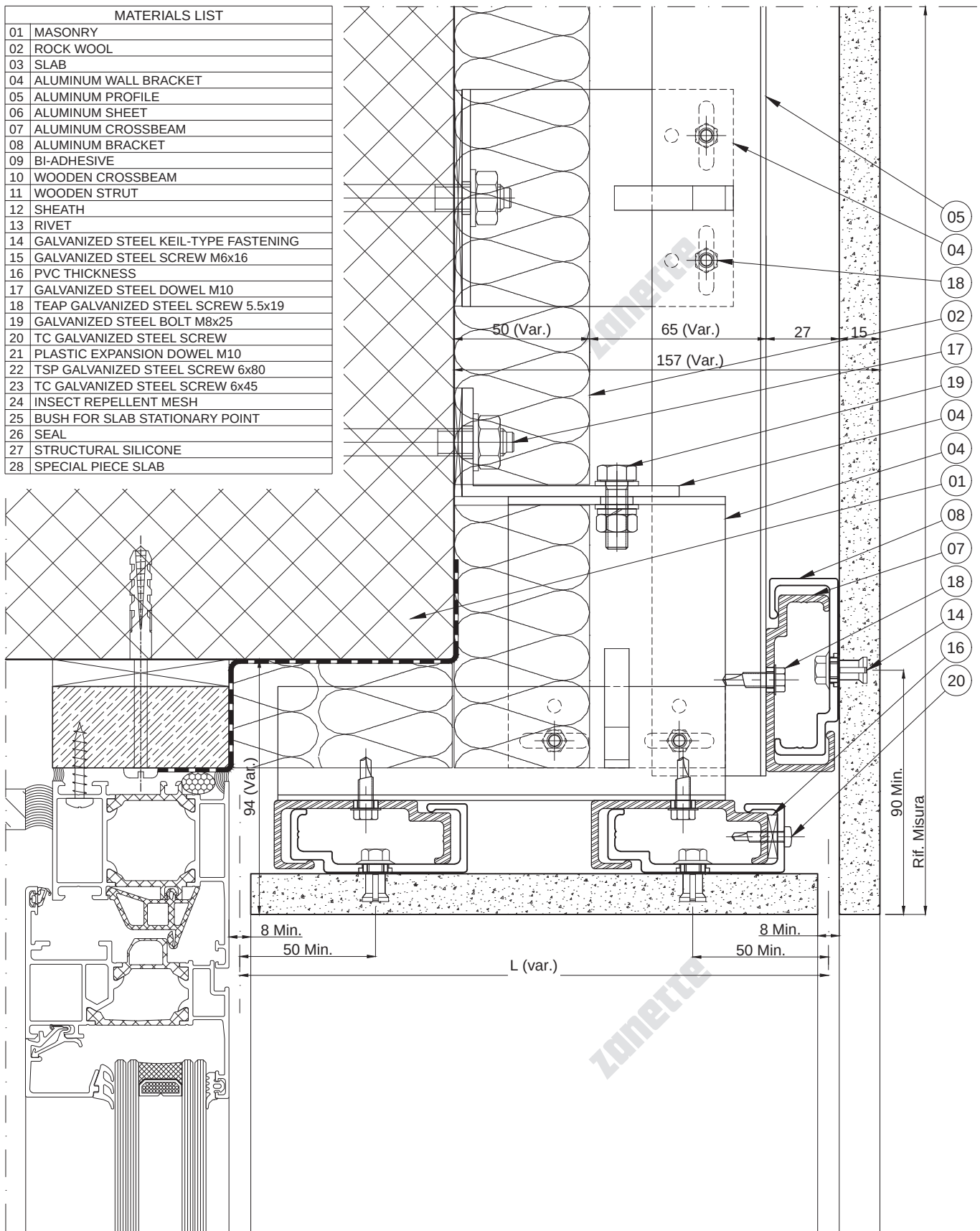


DESCRIPTION:
INVISIBLE FASTENING SYSTEM
ALUMINIUM SILL
VERTICAL SECTION - Scale 1:2

Zonette

2D-09

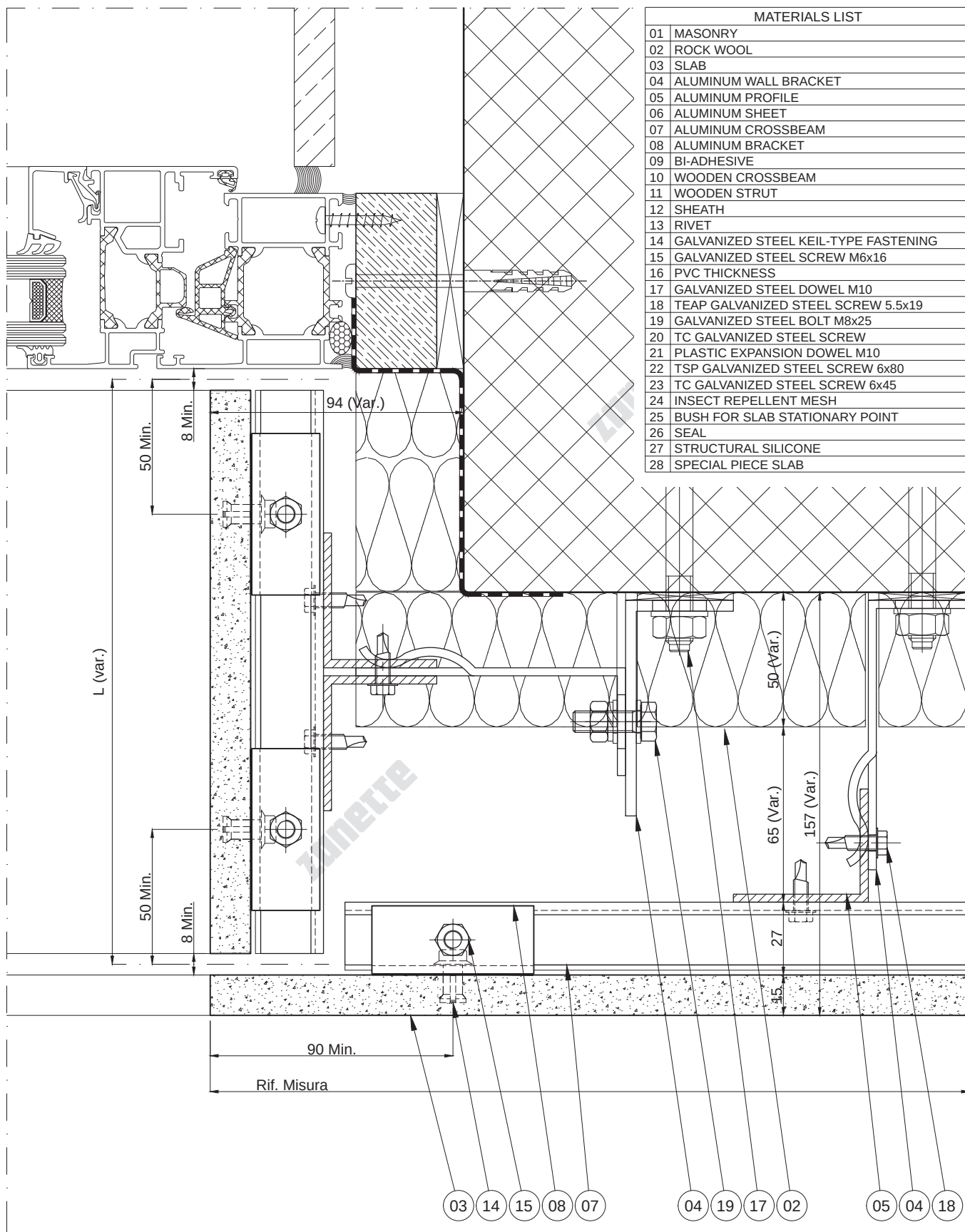
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT </td
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SLAB CLADDING SYSTEM
VERTICAL SECTION - Scale 1:2

Zanette

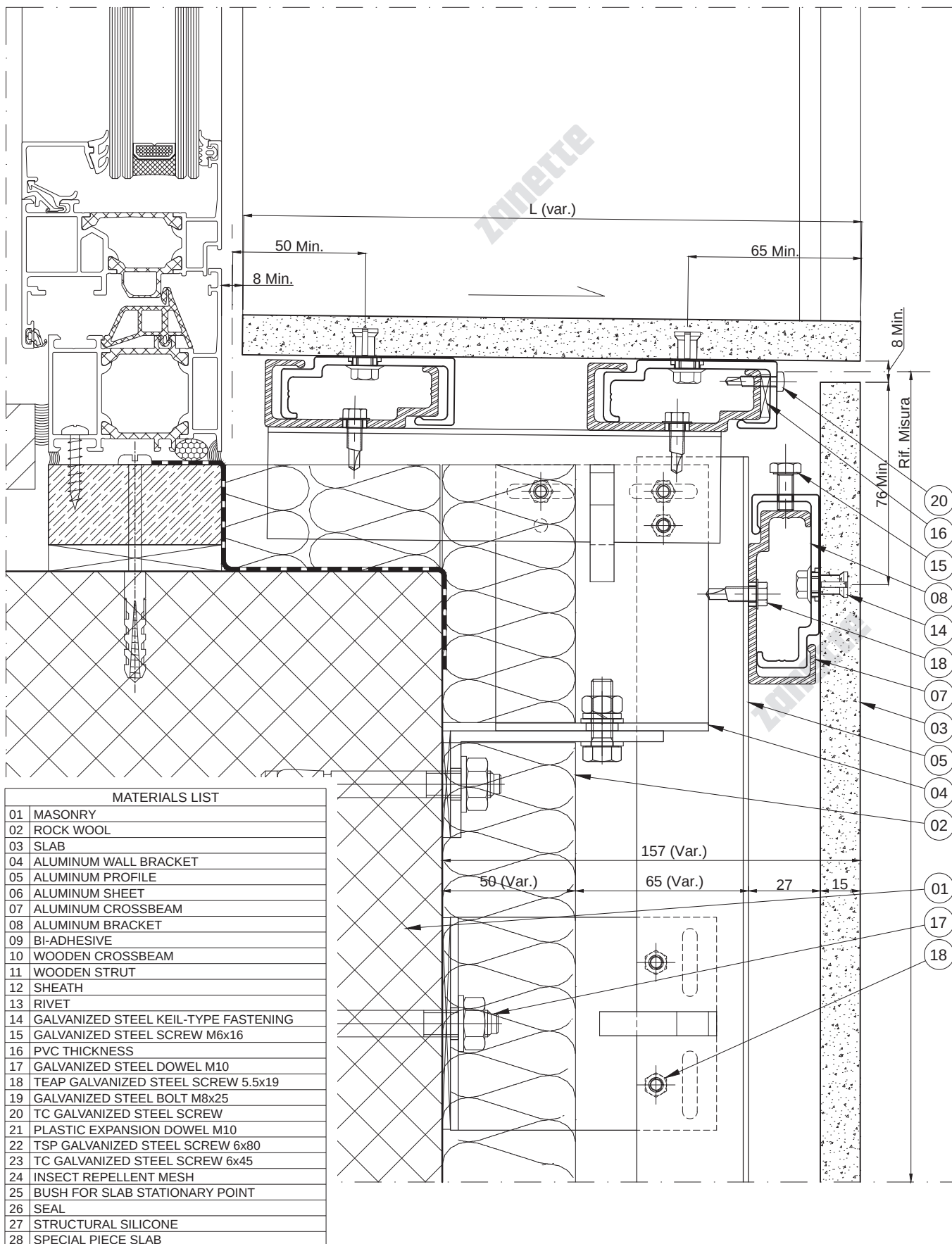
2D-10



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SLAB CLADDING FRAME
HORIZONTAL SECTION - Scale 1:2

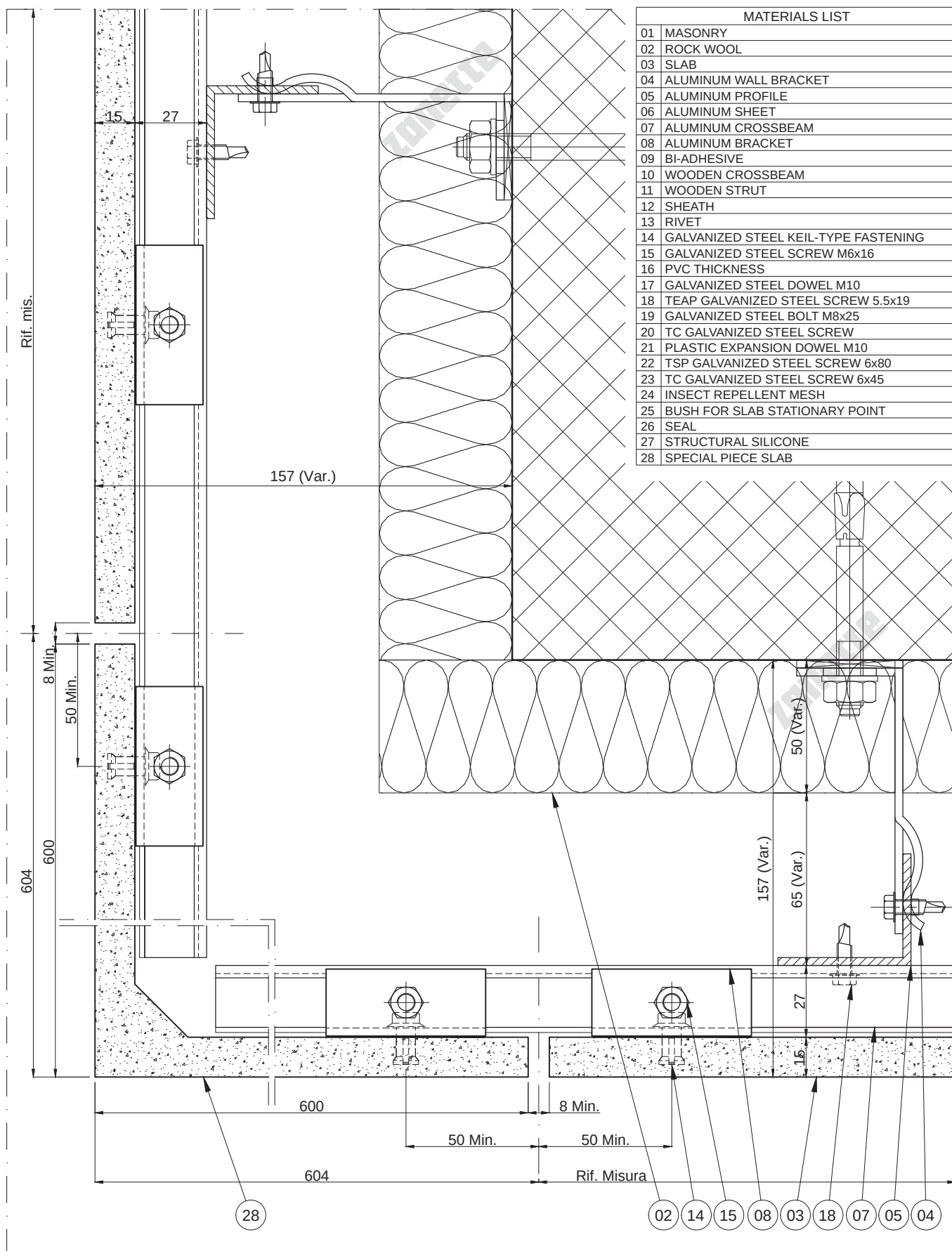
zanette

2D-11



zanette

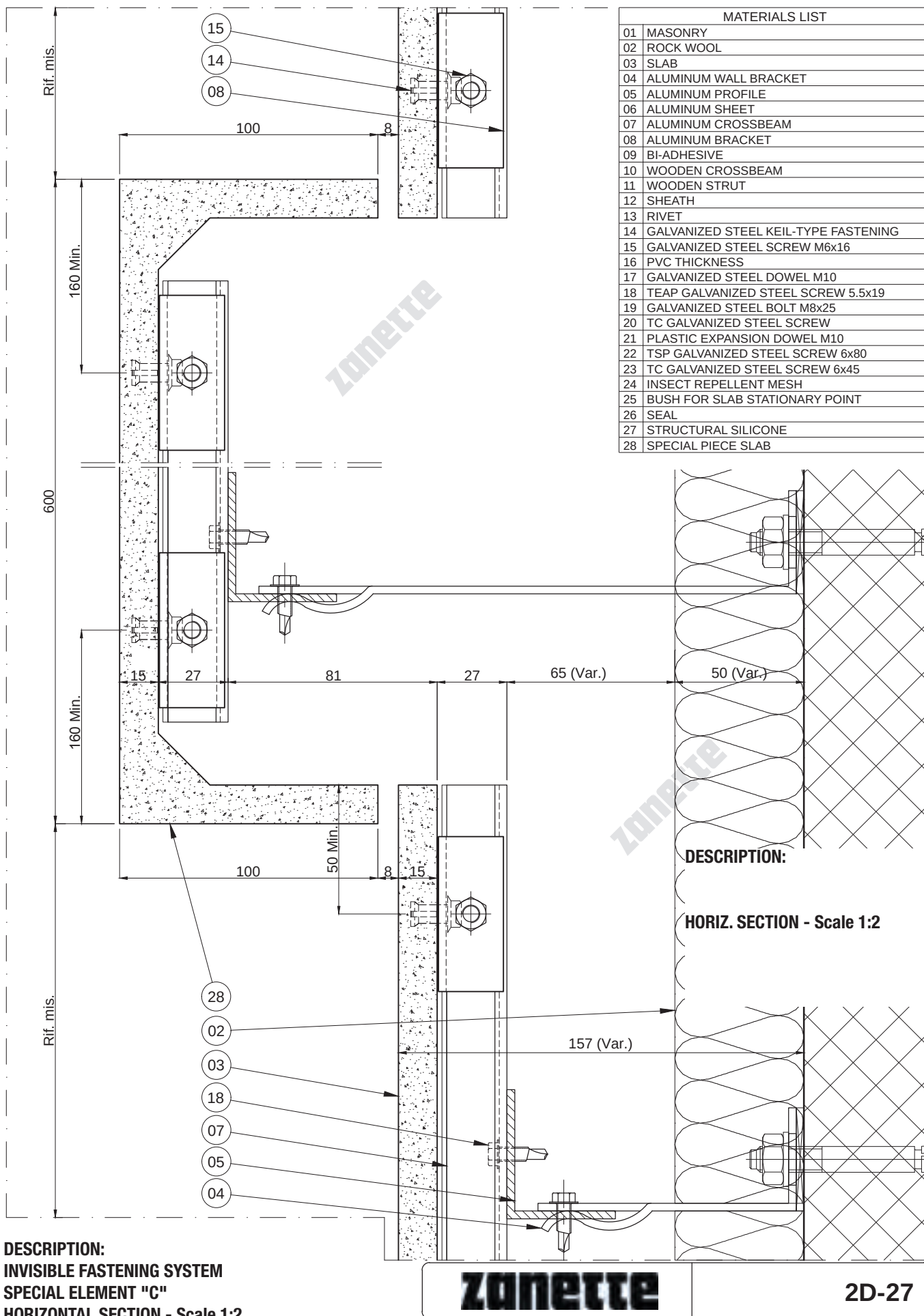
2D-12



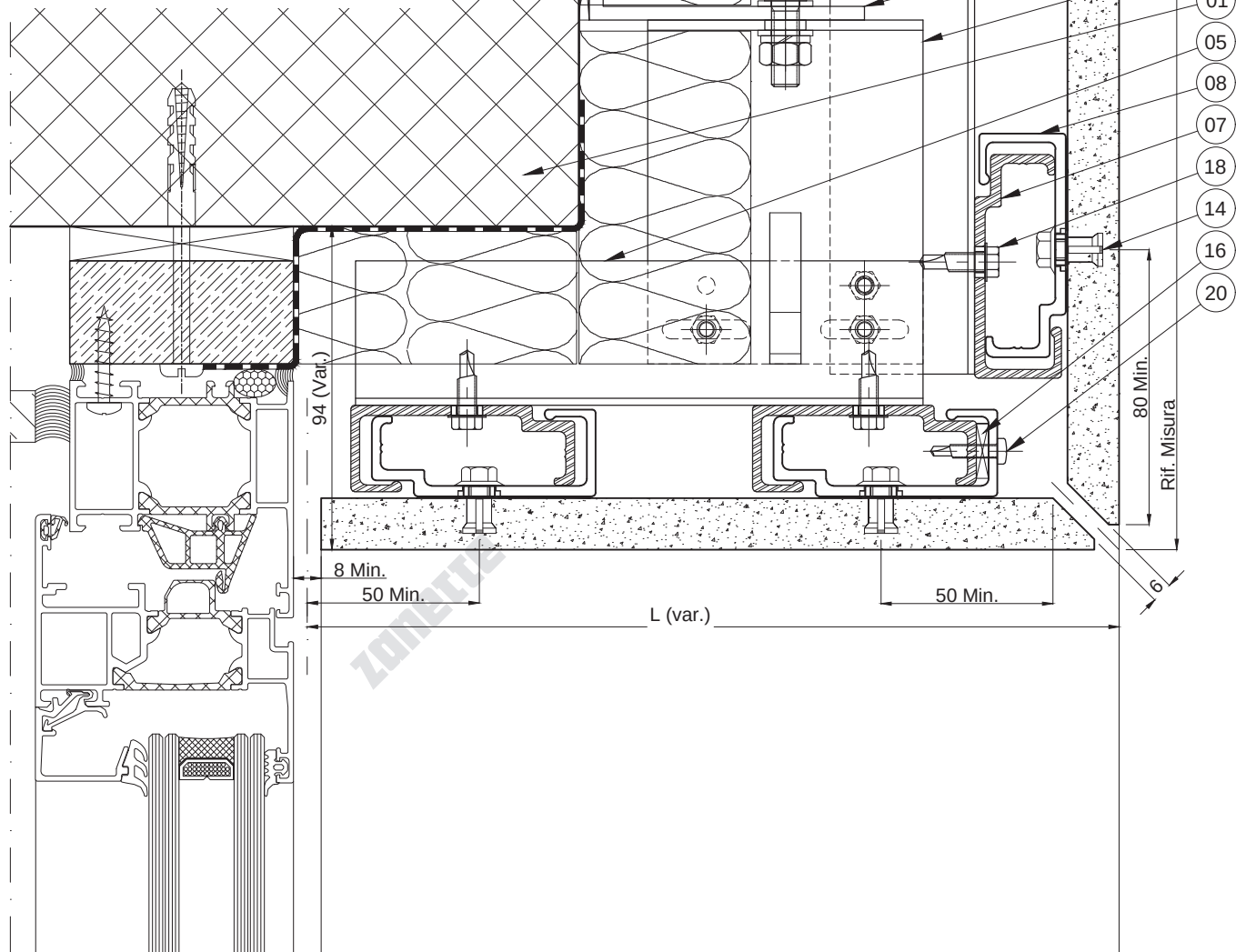
DESCRIPTION:
INVISIBLE FASTENING SYSTEM
CORNER ELEMENT (SPECIAL ELEMENT)
HORIZONTAL SECTION - Scale 1:2

zanette

2D-26



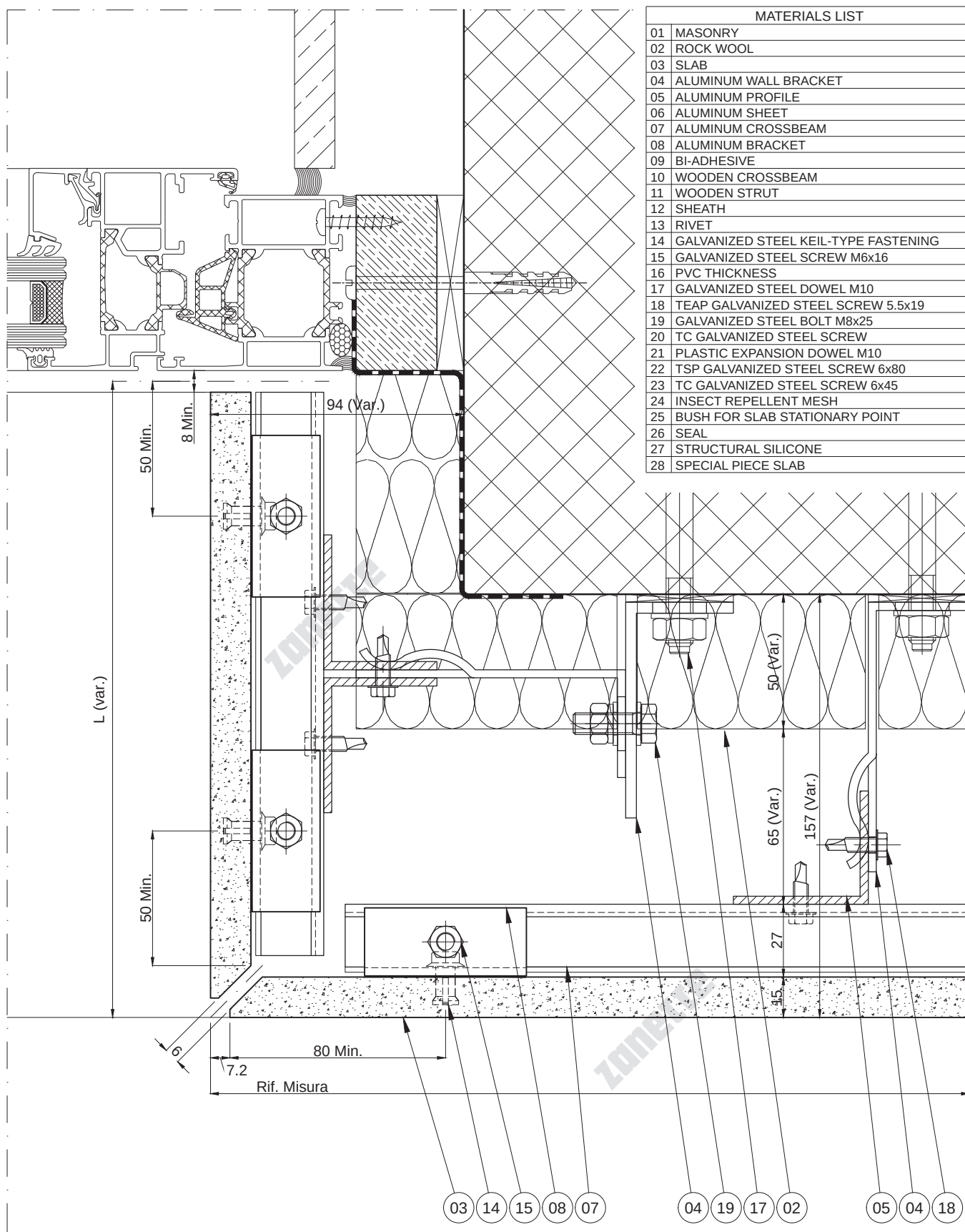
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SLAB CLADDING CEILING
VERTICAL SECTION - Scale 1:2

zanette

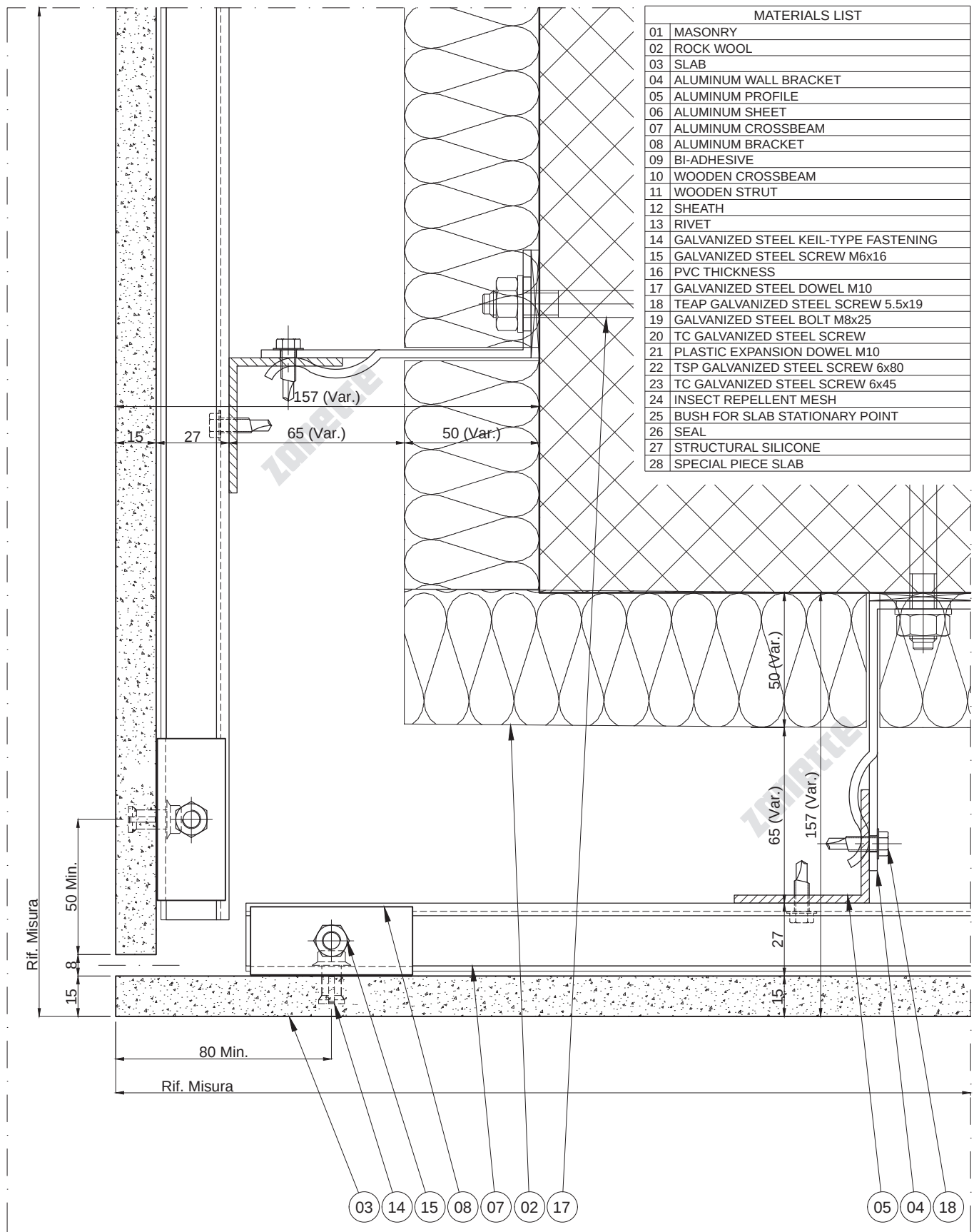
2D-30



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SLAB CLADDING FRAME
HORIZONTAL SECTION - Scale 1:2

zanette

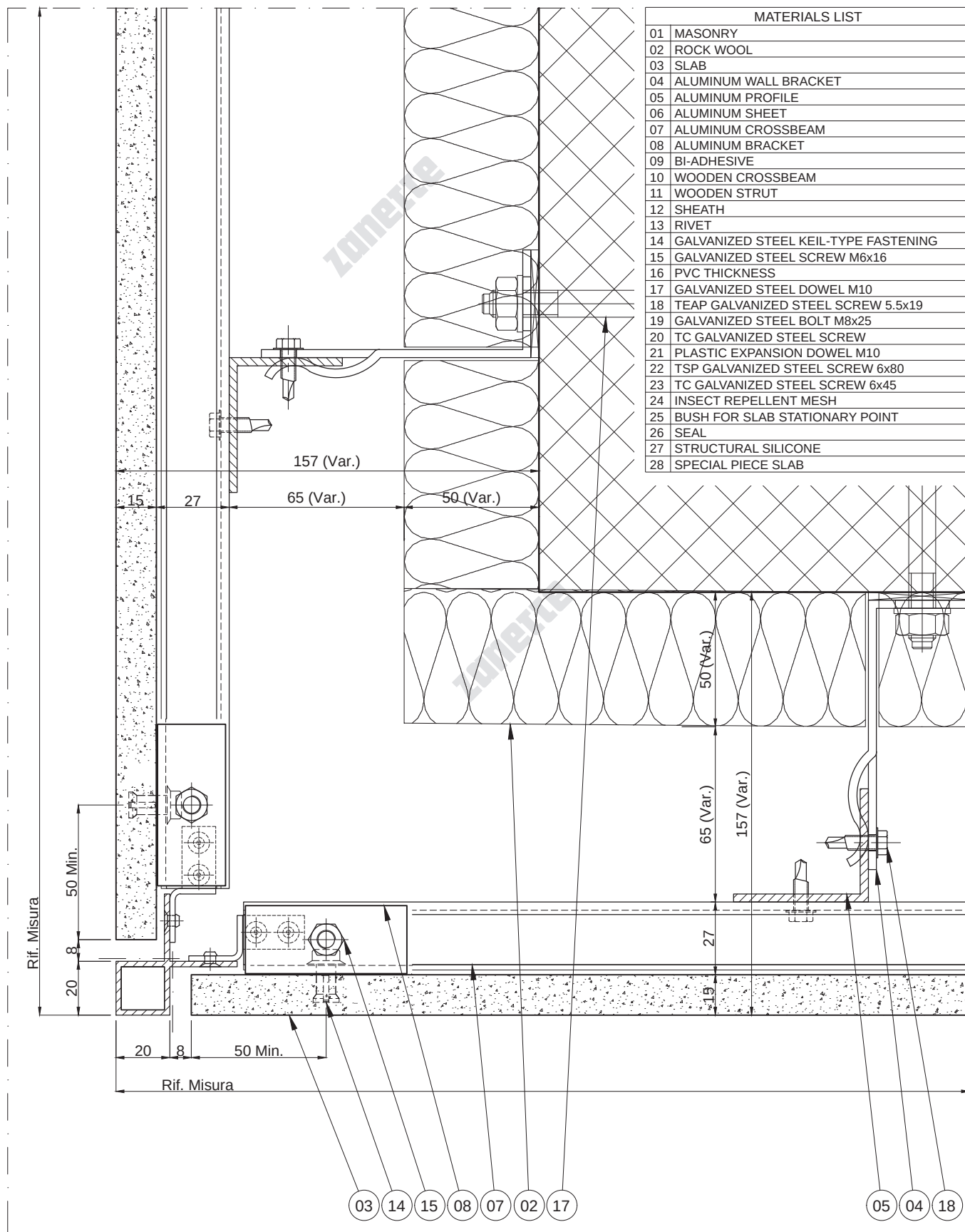
2D-31



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
CORNER DETAIL
HORIZONTAL SECTION - Scale 1:2

zanette

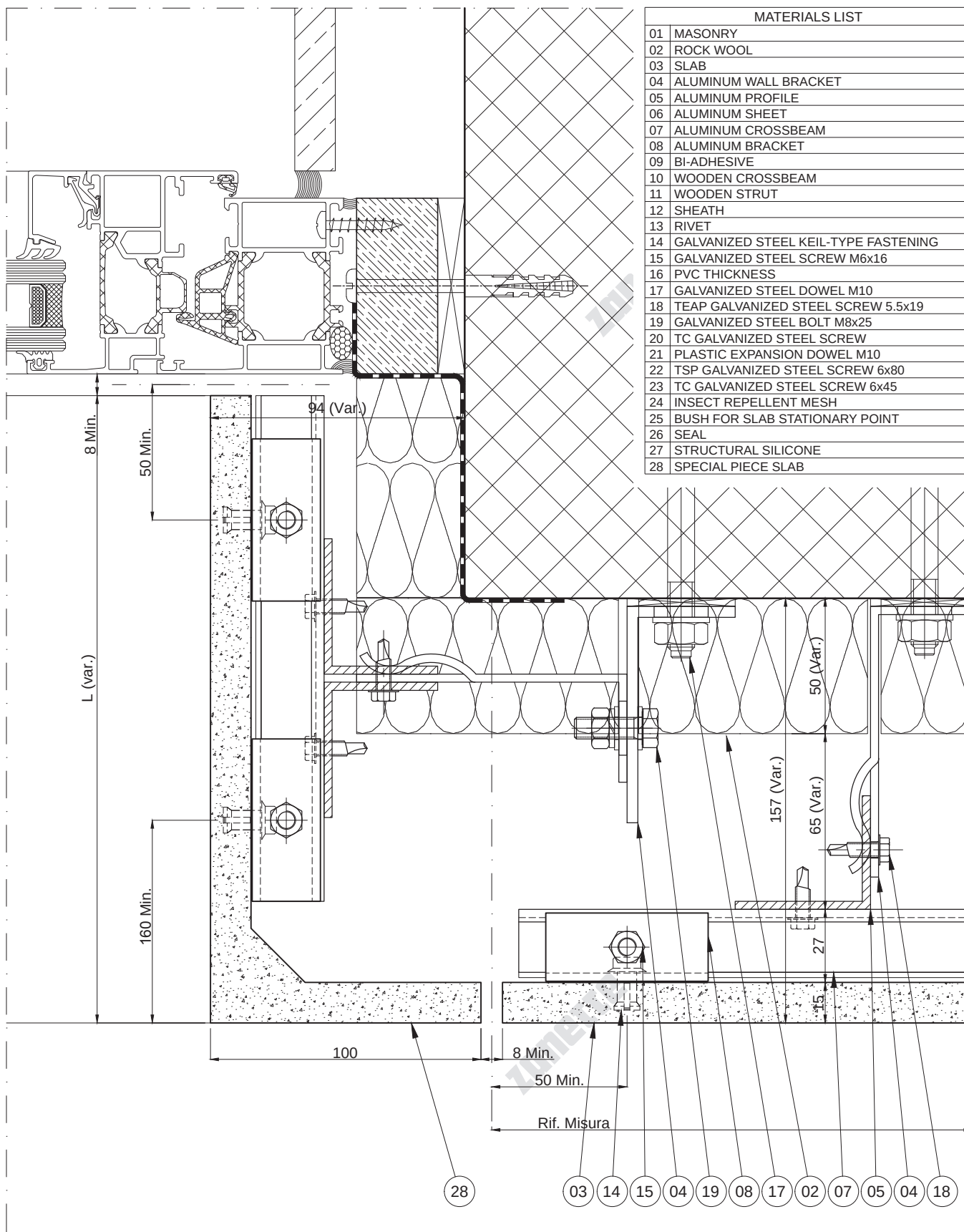
2D-33



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
CORNER DETAIL
HORIZONTAL SECTION - Scale 1:2

zanette

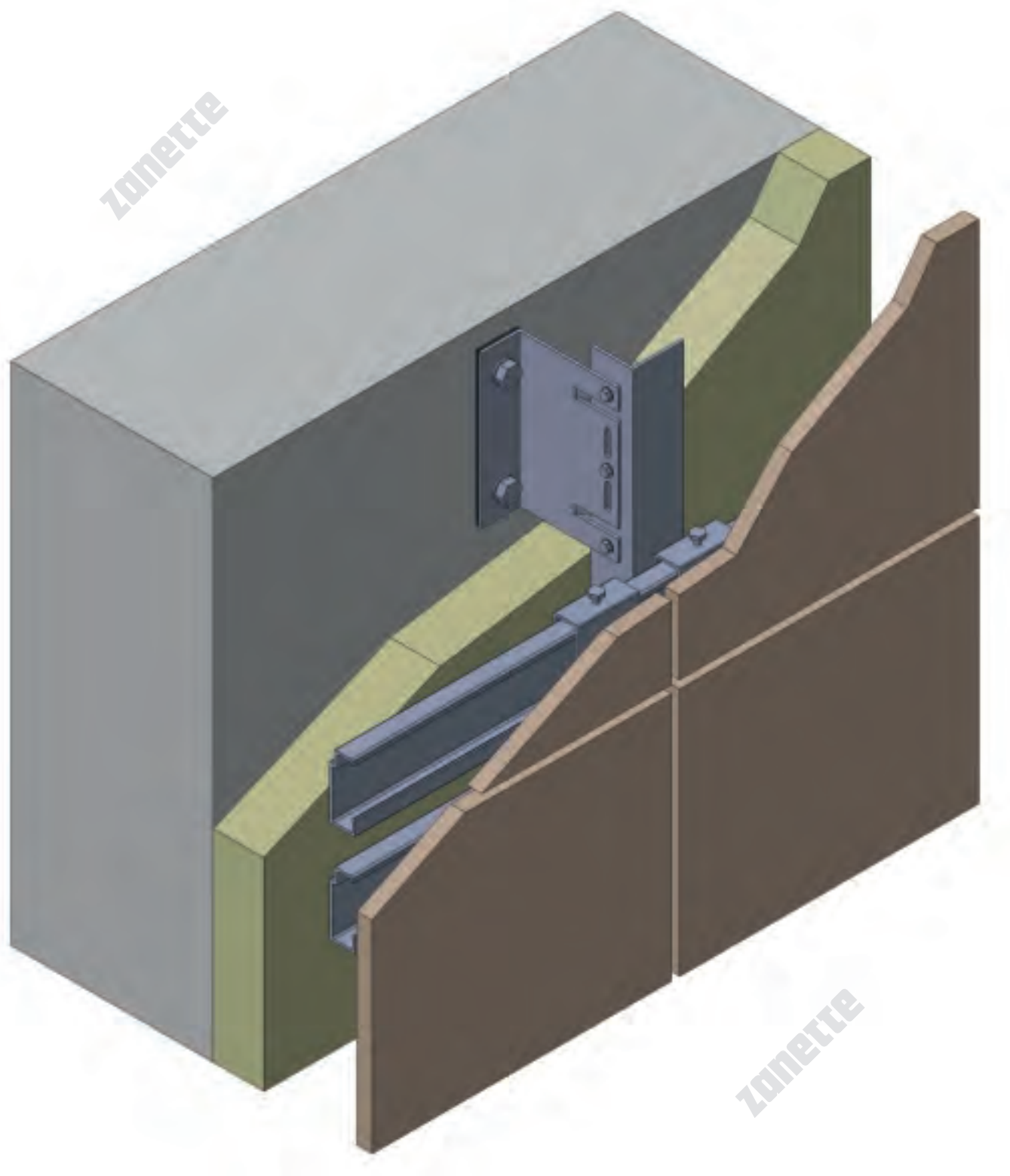
2D-47



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
CORNER ELEMENT
HORIZONTAL SECTION - Scale 1:2

zanette

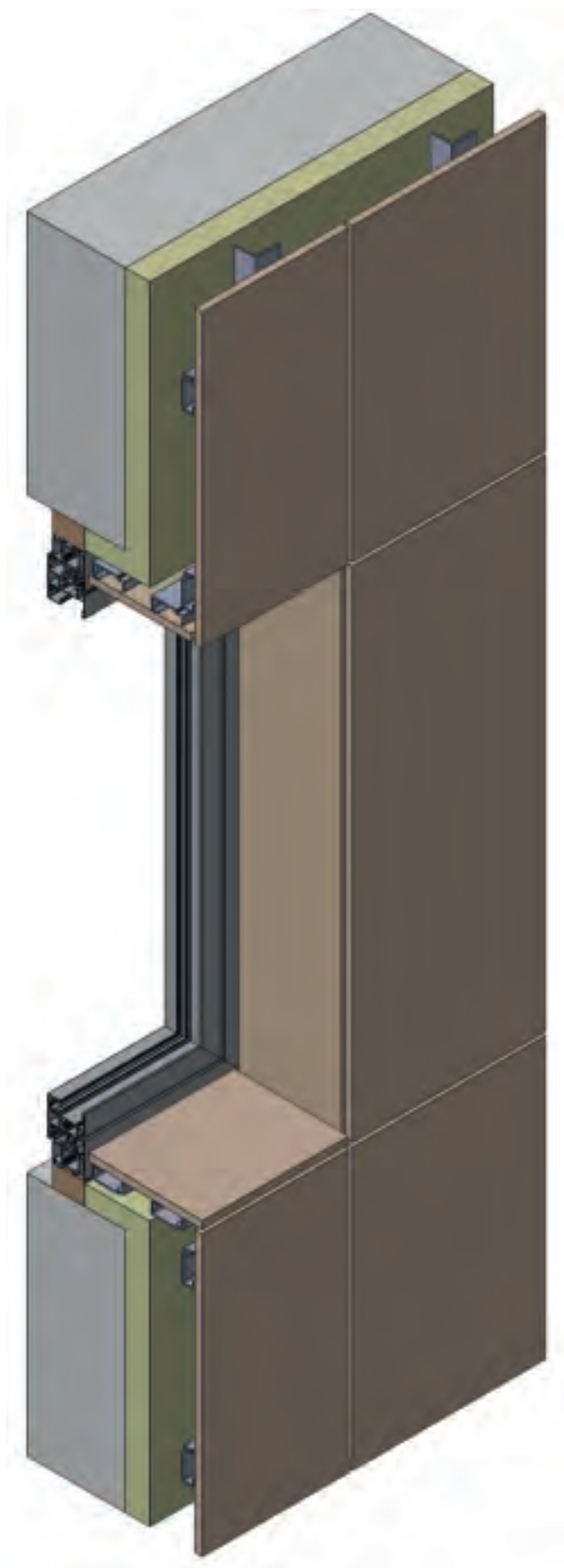
2D-13



DESCRIPTION:
INVISIBLE FASTENING SYSTEM

zonette

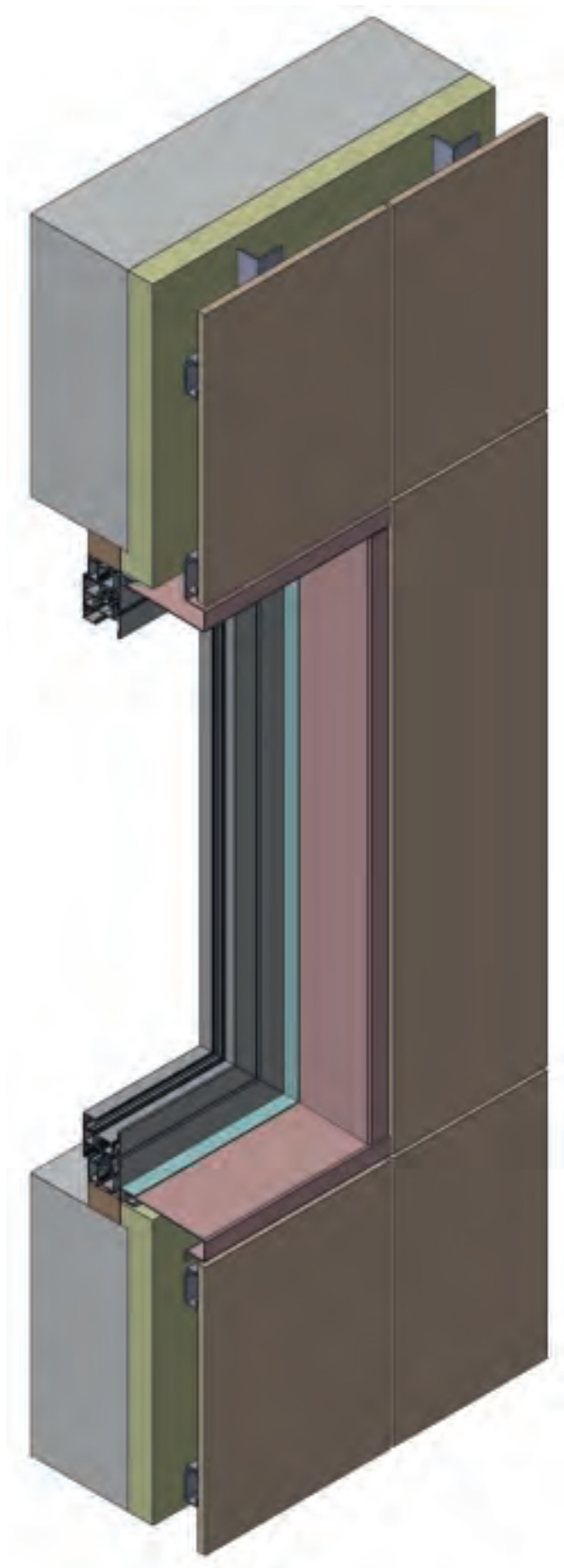
3D-02



DESCRIPTION:
WINDOW WITH INVISIBLE FASTENING SYSTEM

zanette

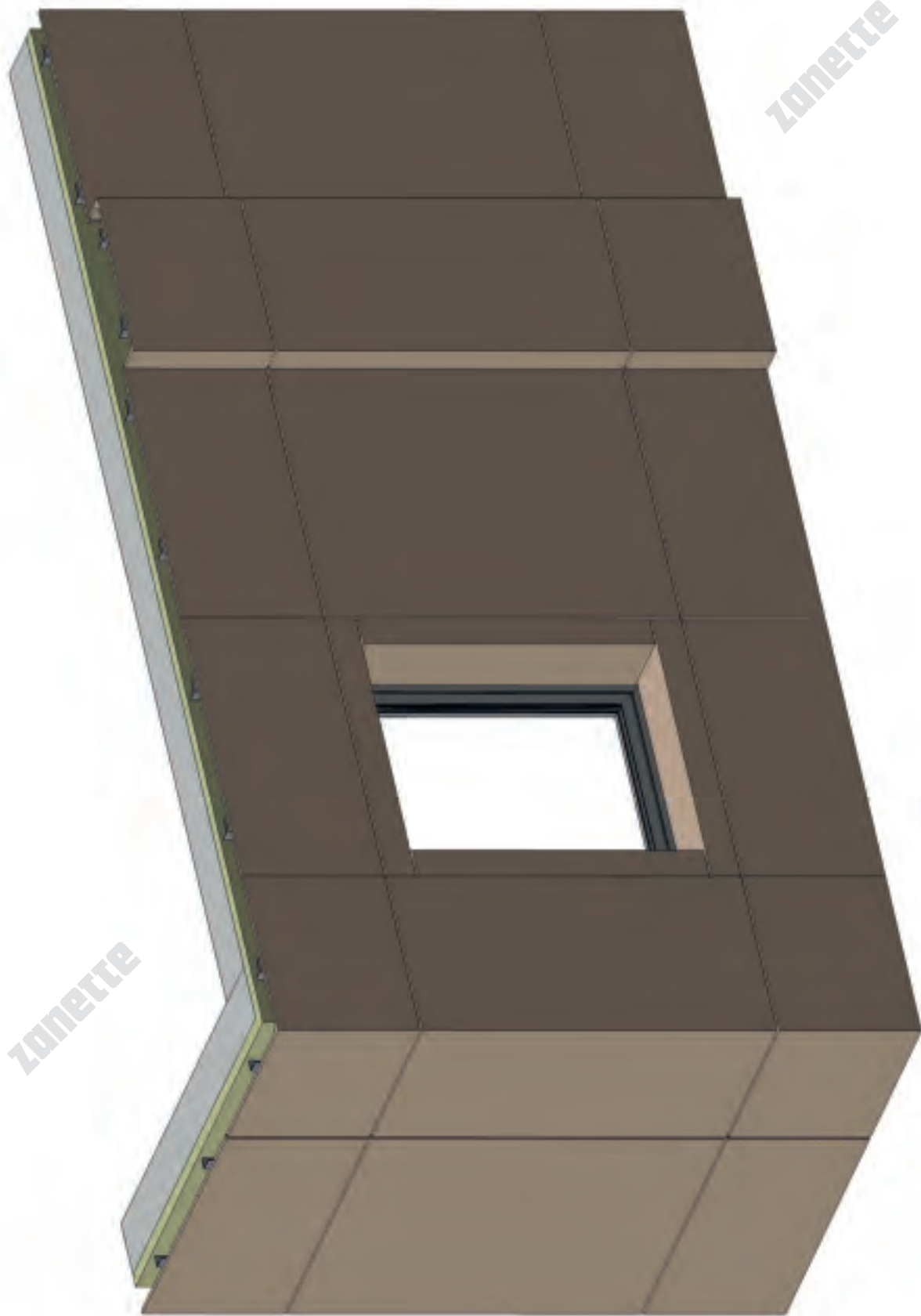
3D-05



DESCRIPTION:
INVISIBLE FASTENING SYSTEM ALUMINIUM FRAME

zanette

3D-07



DESCRIPTION:
WINDOW WITH INVISIBLE FASTENING SYSTEM WITH "C" ELEMENT AND CORNER ELEMENT

zonette

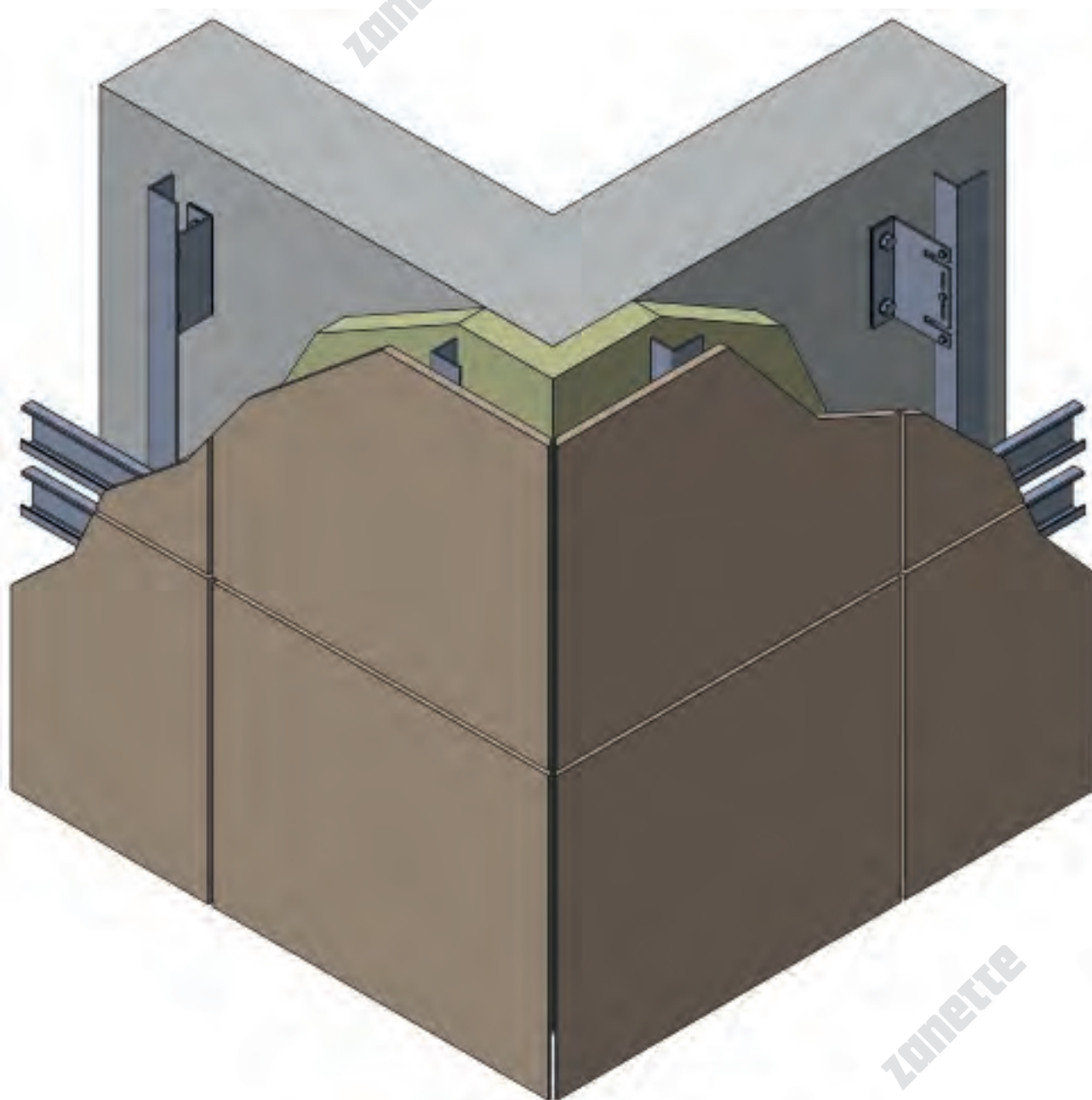
3D-10



DESCRIPTION:
WINDOW WITH INVISIBLE FASTENING SYSTEM,
"C" ELEMENT

zonette

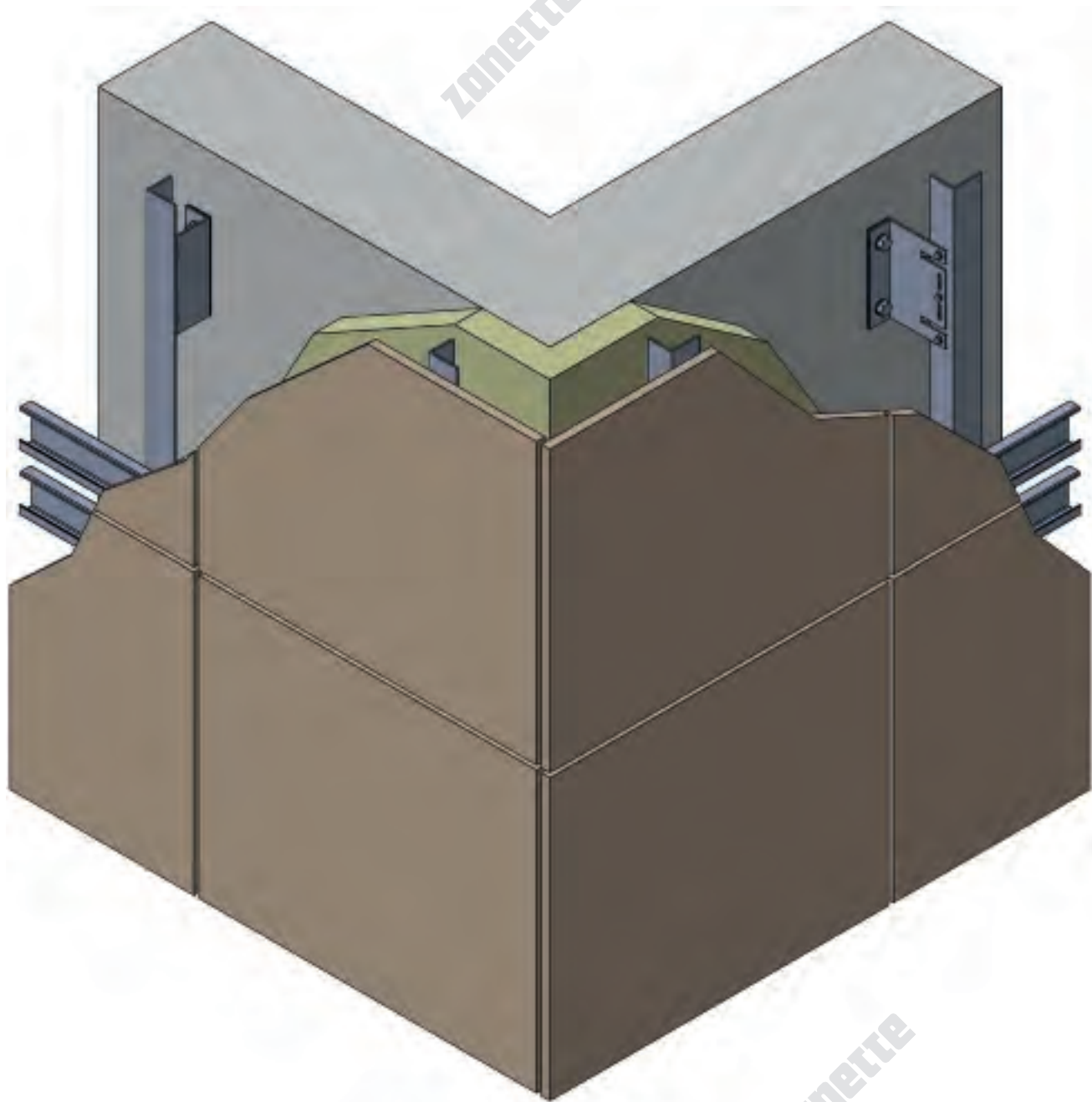
3D-09



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
45° CUTTING CORNER ELEMENT

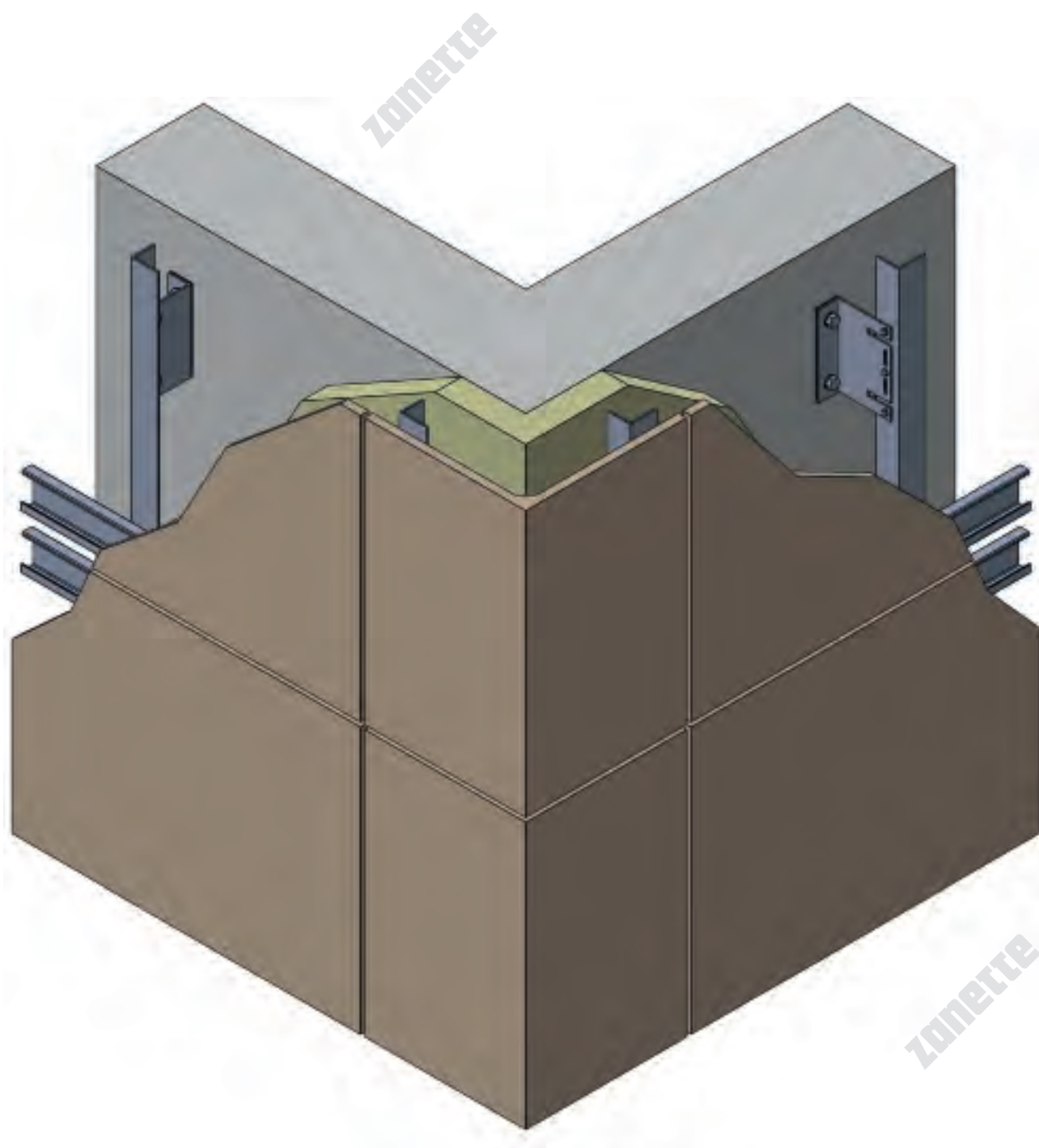
zonette

3D-14



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SHARP EDGE CORNER ELEMENT

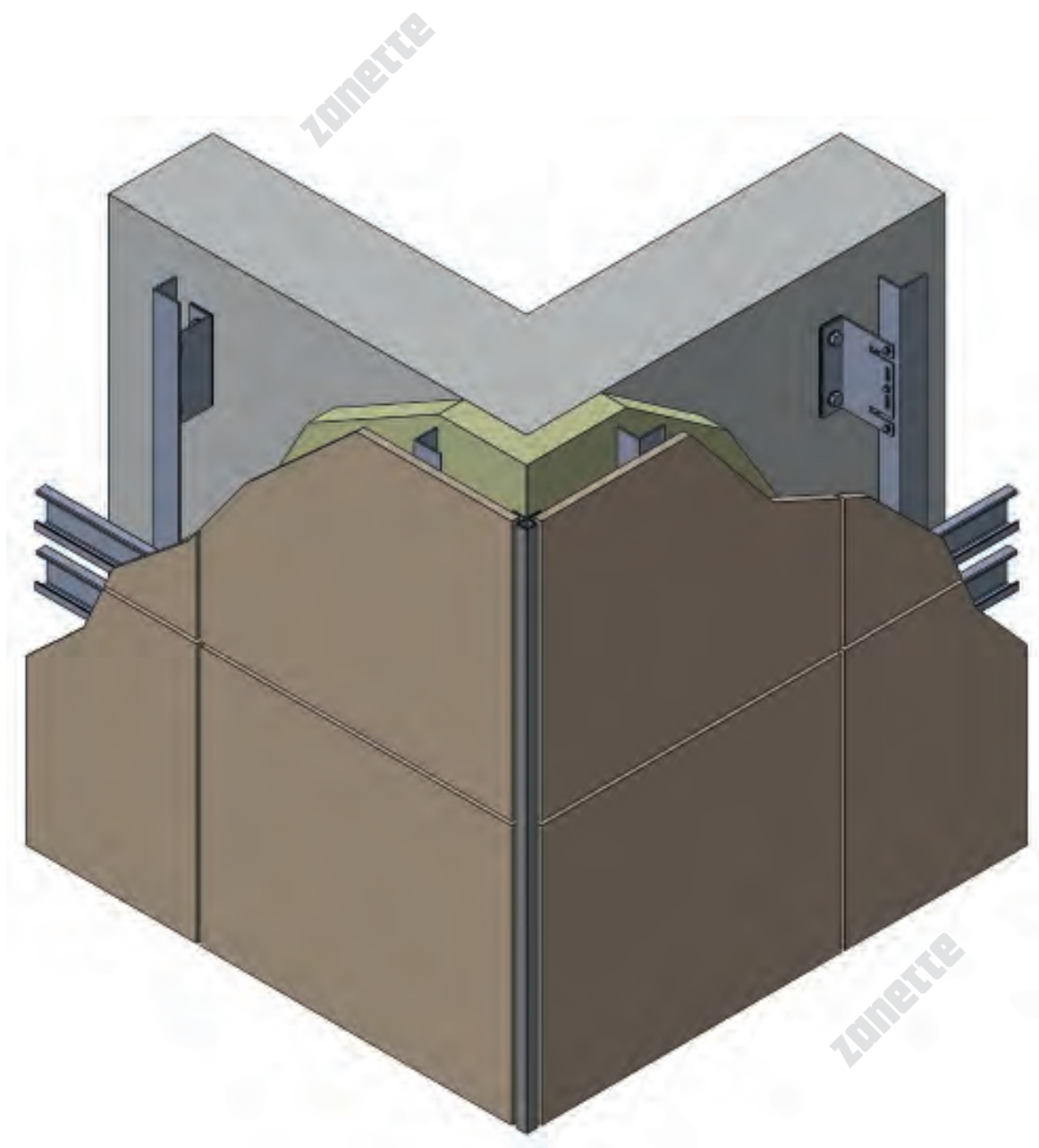
zonette**3D-15**



DESCRIPTION:
INVISIBLE FASTENING SYSTEM
SPECIAL CORNER 300X300

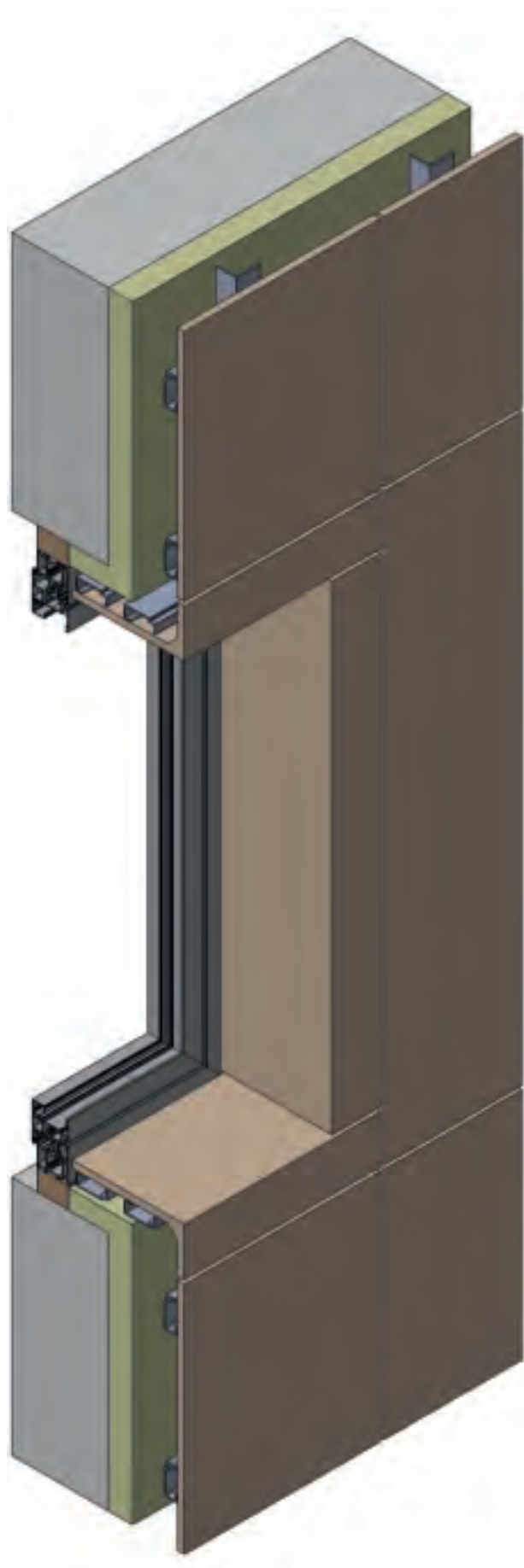
zonette

3D-16



DESCRIPTION:
CORNER WITH PROFILE
INVISIBLE FASTENING SYSTEM

zonette**3D-18**



DESCRIPTION:
WINDOW WITH
SPECIAL ELEMENTS

zonette

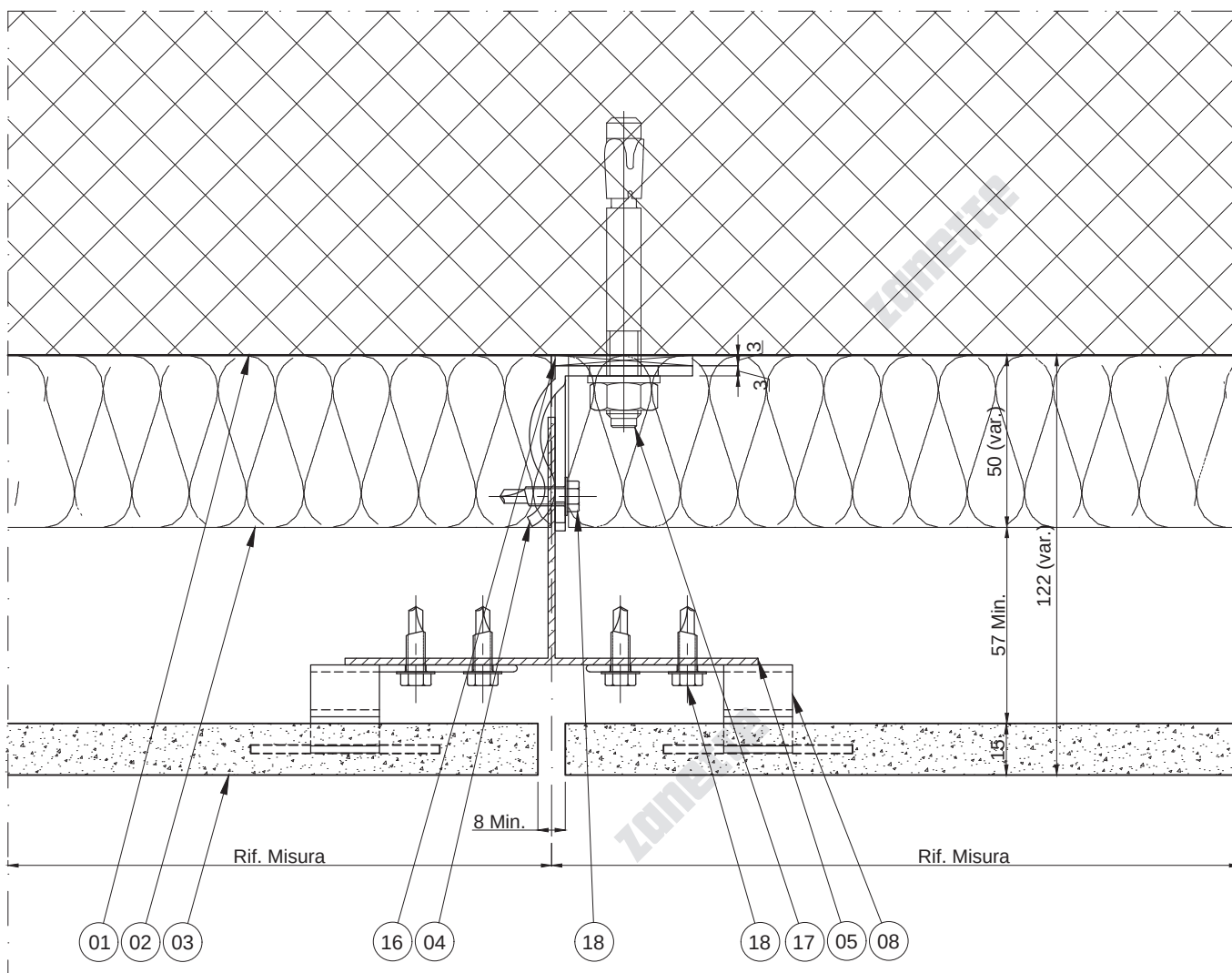
3D-08

Other fastening system



CLADIA®

with
Ductal[®]_{inside}



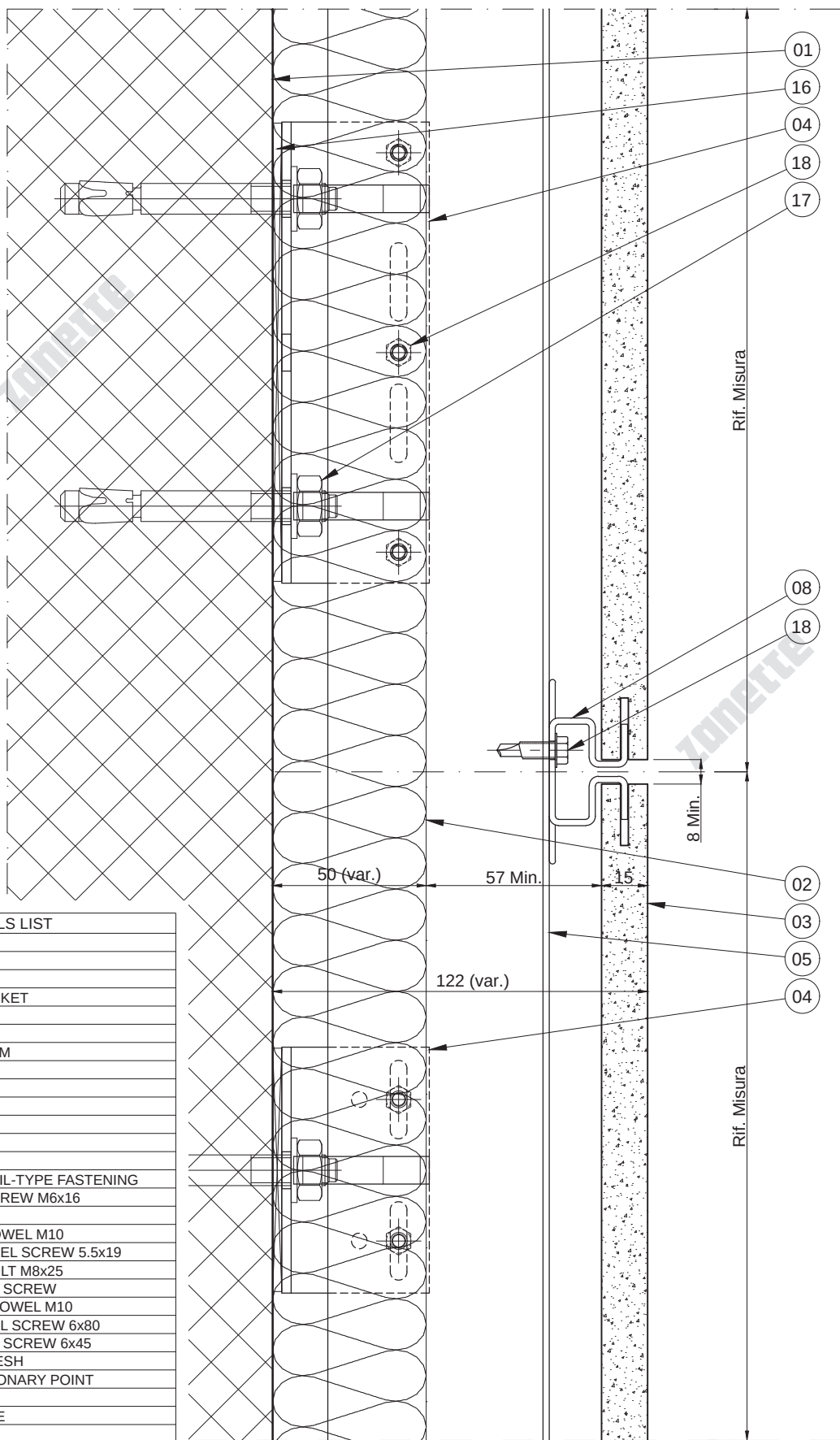
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
INVISIBLE FASTENING SYSTEM BRACKET
AND STRUT FASTENING T120/52
HORIZONTAL SECTION - Scale 1:2

Zanette

2D-24

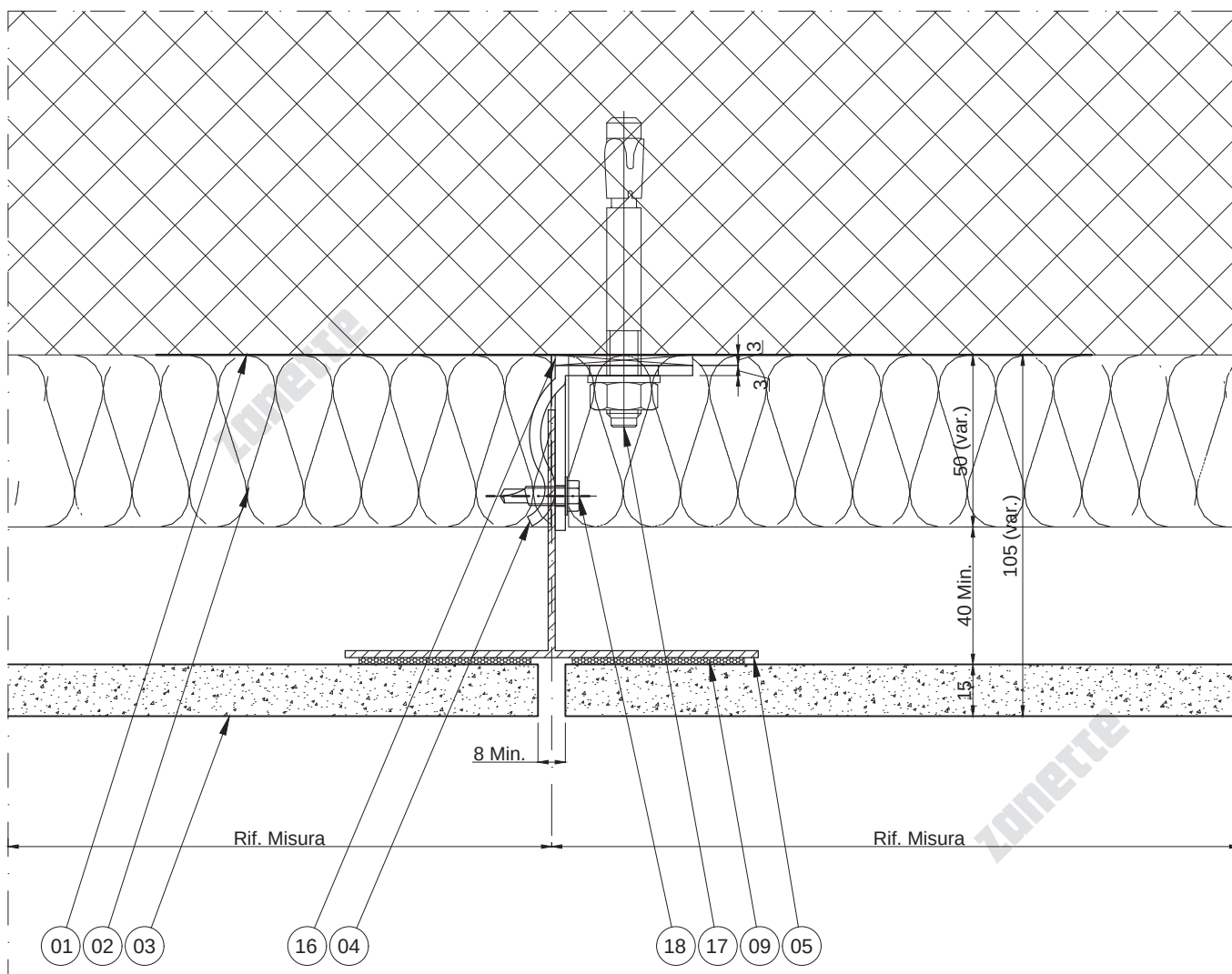
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
INVISIBLE FASTENING SYSTEM BRACKET
AND STRUT FASTENING T120/52
VERTICAL SECTION - Scale 1:2

Zonette

2D-25



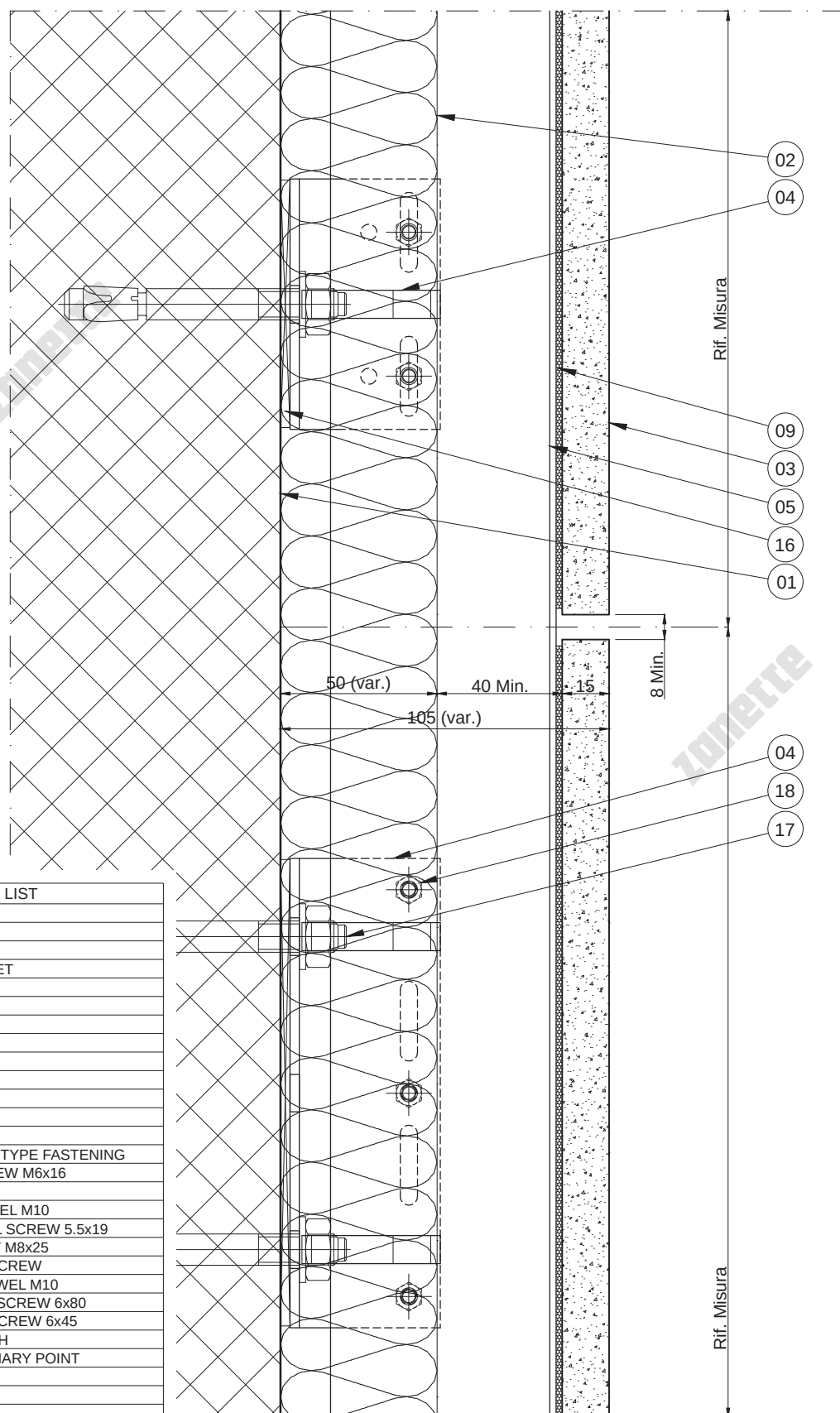
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
GLUED SLABS SYSTEM BRACKET AND
STRUT FASTENING T120/52
HORIZONTAL SECTION - Scale 1:2

Zanette

2D-14

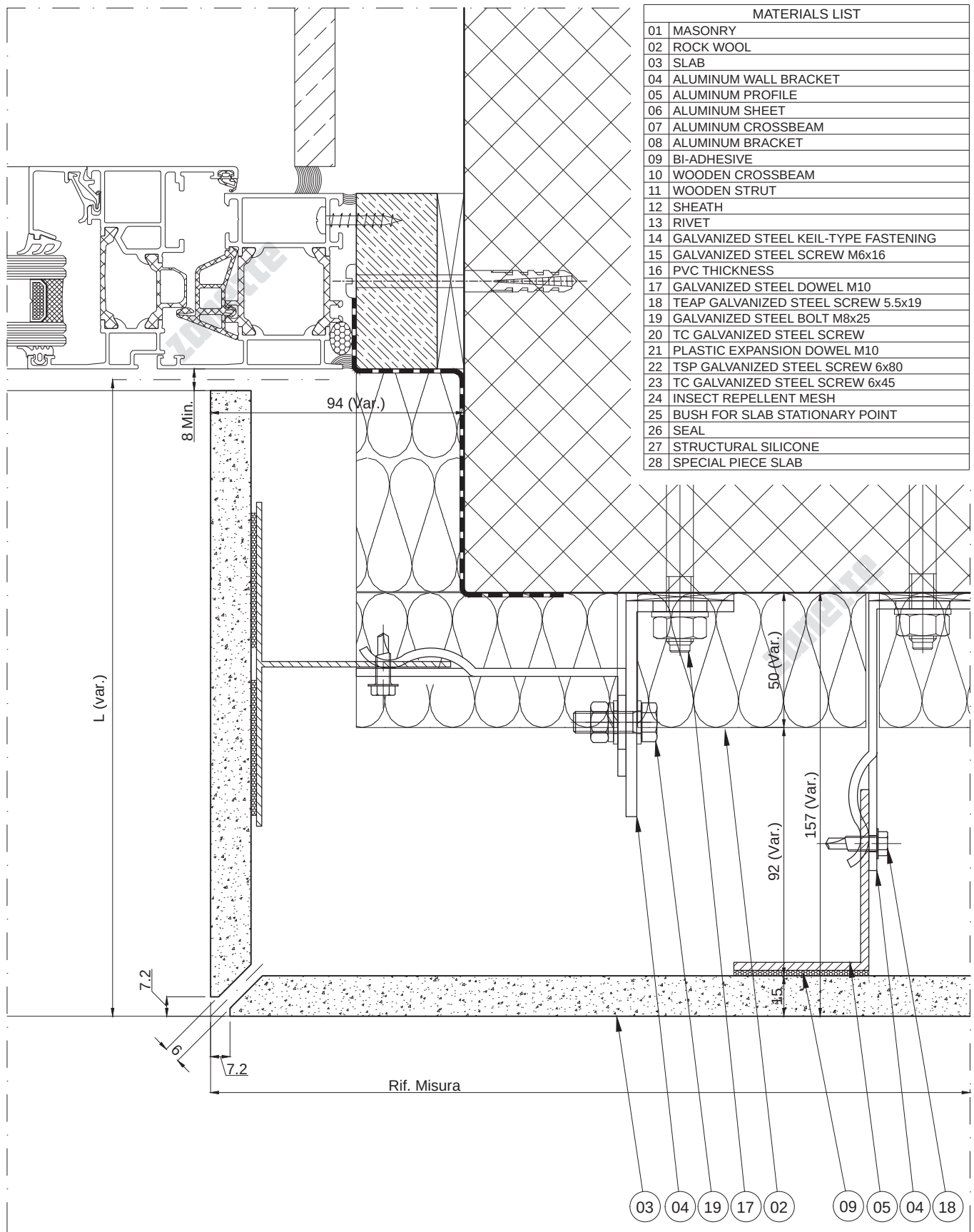
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
GLUED SLABS SYSTEM BRACKET WHIT
FIX / MOVABLE POINT STRUT FASTENING T120/52
VERTICAL SECTION - Scale 1:2

zanette

2D-15

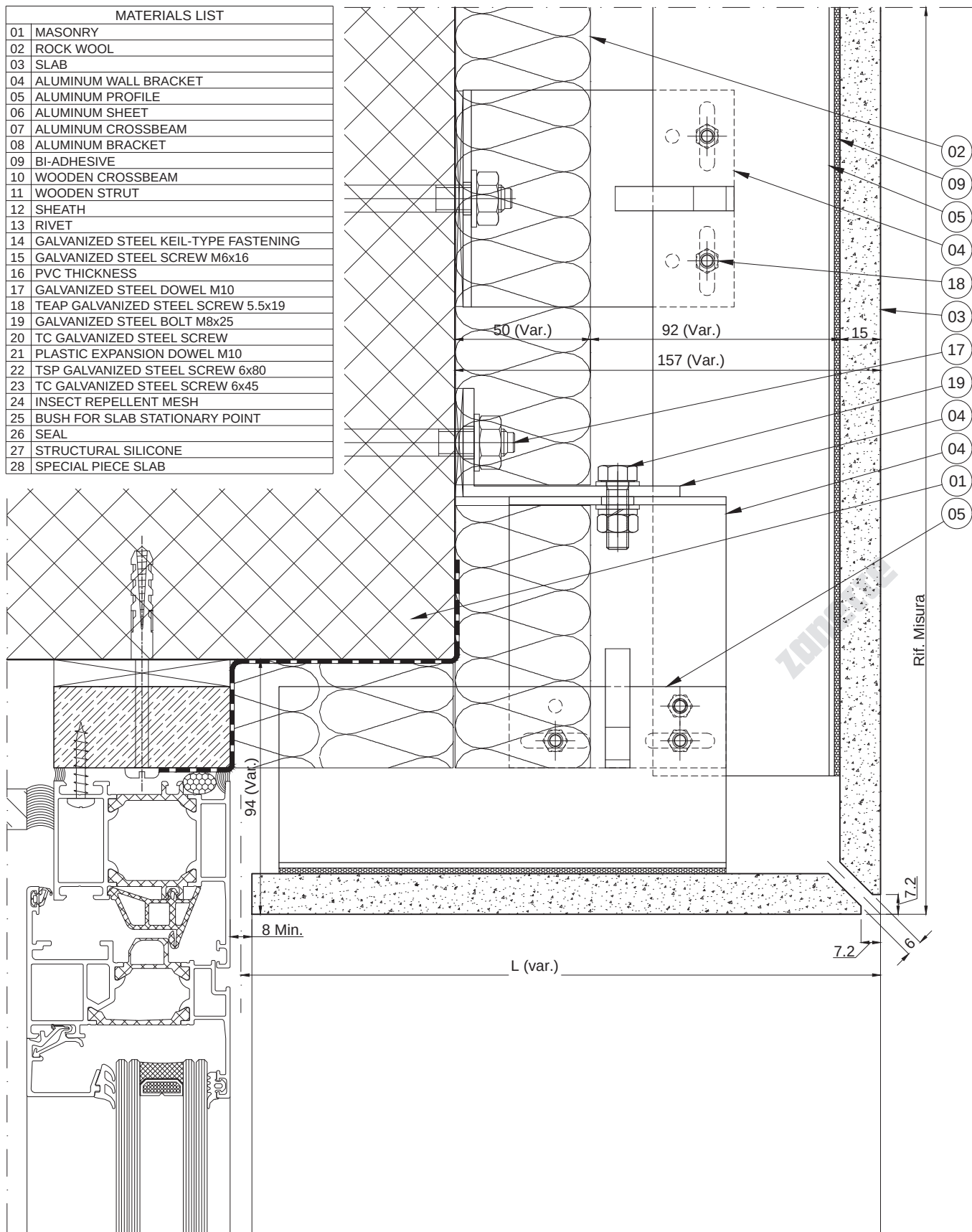


DESCRIPTION:
GLUED SLABS SYSTEM SLAB CLADDING FRAME

HORIZONTAL SECTION - Scale 1:2

zanette

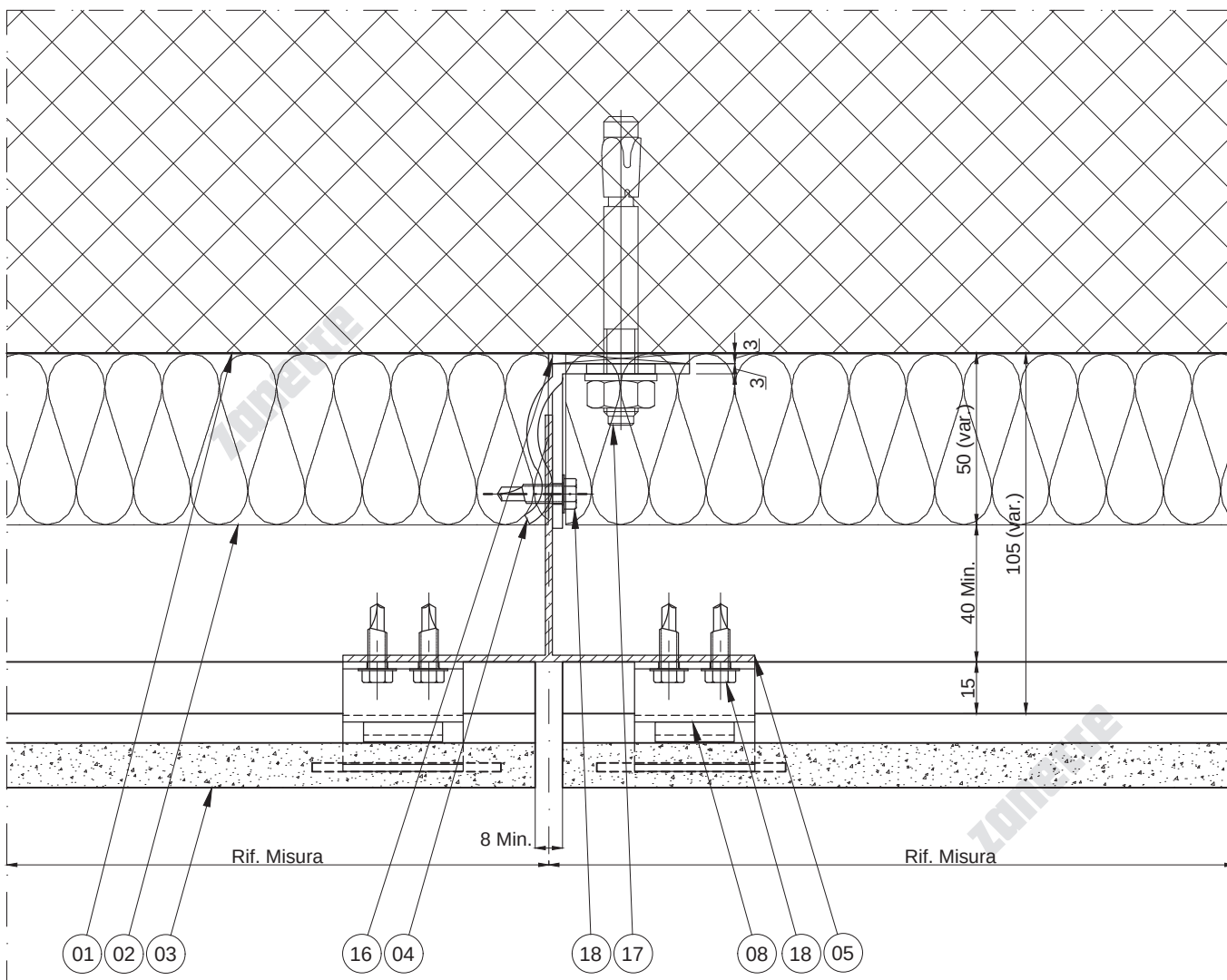
2D-28



DESCRIPTION:
GLUED SLABS SYSTEM SLAB CLADDING CEILING

VERTICAL SECTION - Scale 1:2

2D-29



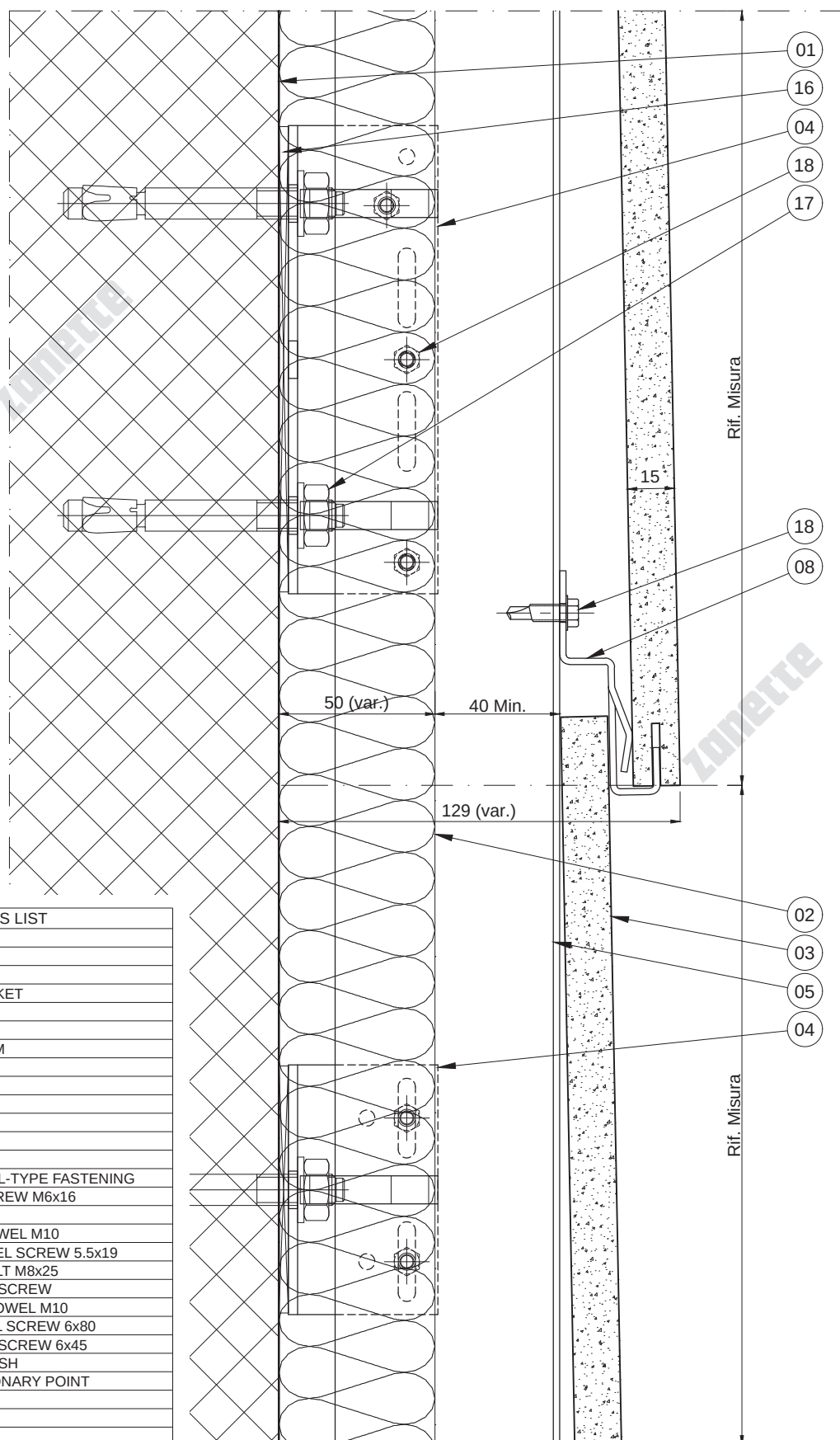
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
SYSTEM WITH ALIGNED SHINGLES BRACKET
AND STRUT FASTENING T120/52
HORIZONTAL SECTION - Scale 1:2

zanette

2D-18

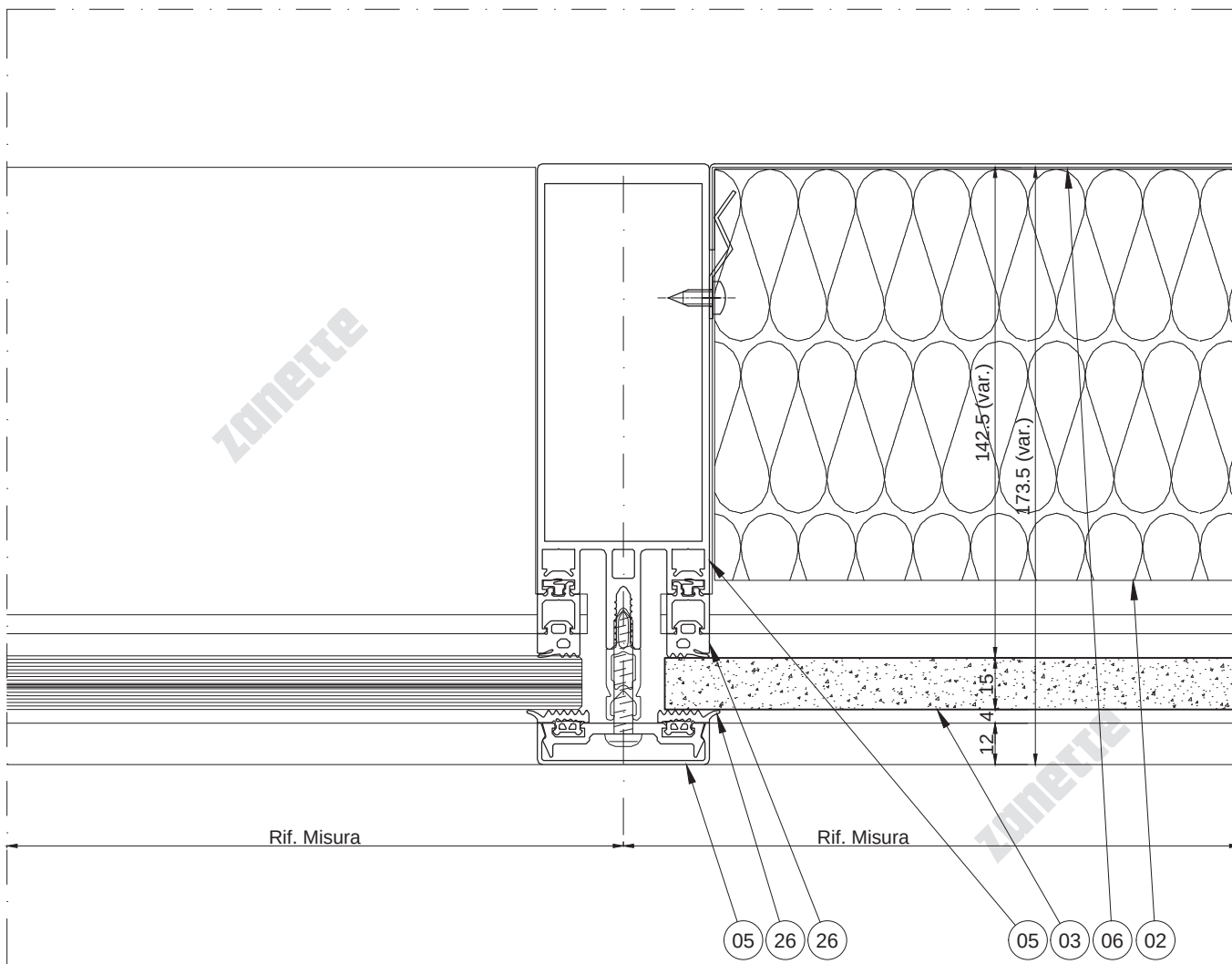
MATERIALS LIST	
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02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB



DESCRIPTION:
SYSTEM WITH ALIGNED SHINGLES BRACKET
AND STRUT FASTENING T120/52
VERTICAL SECTION - Scale 1:2

zonette

2D-19



MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

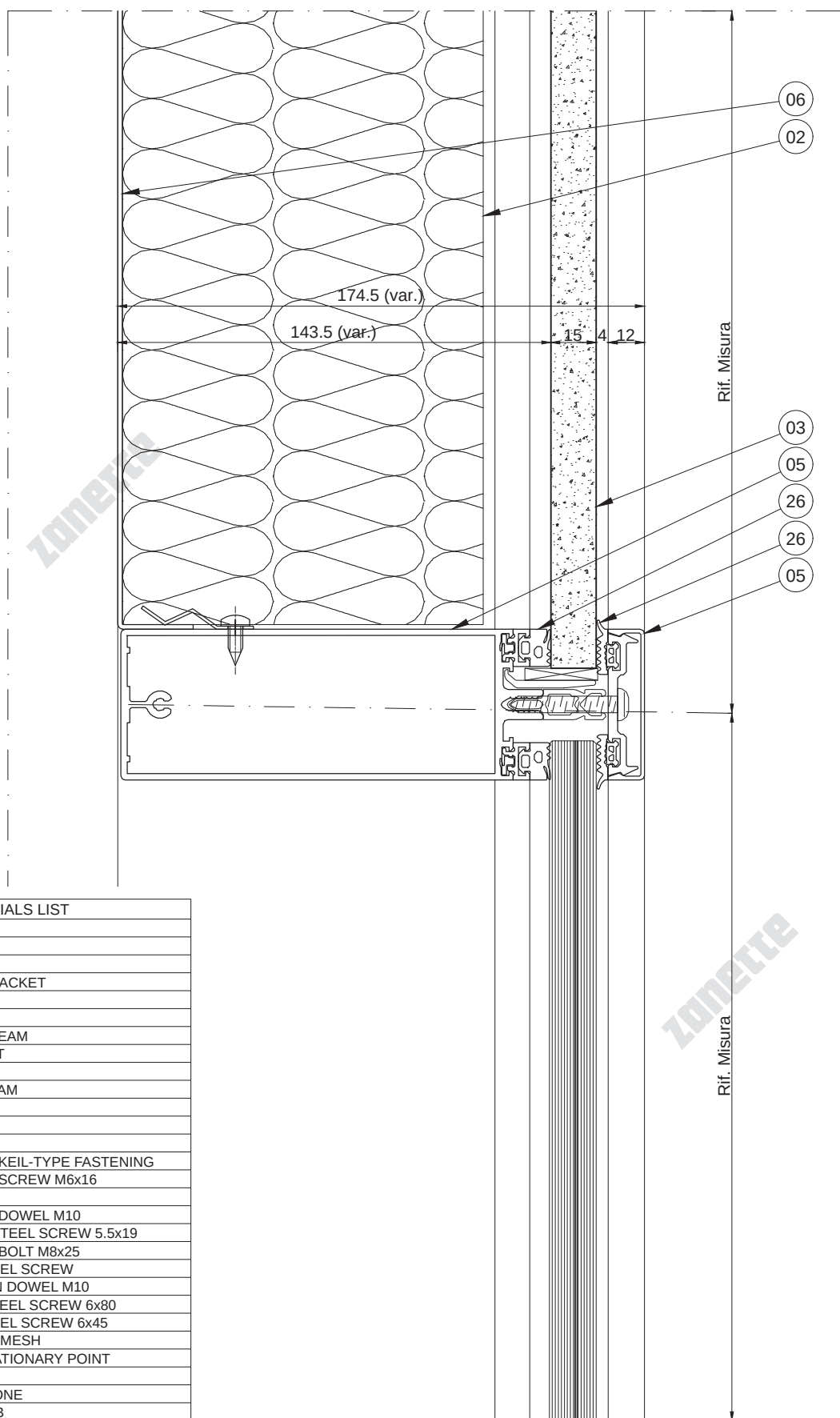
DESCRIPTION:
CLADDING SYSTEM STRUT AND CROSSBEAM

HORIZONTAL SECTION - Scale 1:2

Zanette

2D-20

MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

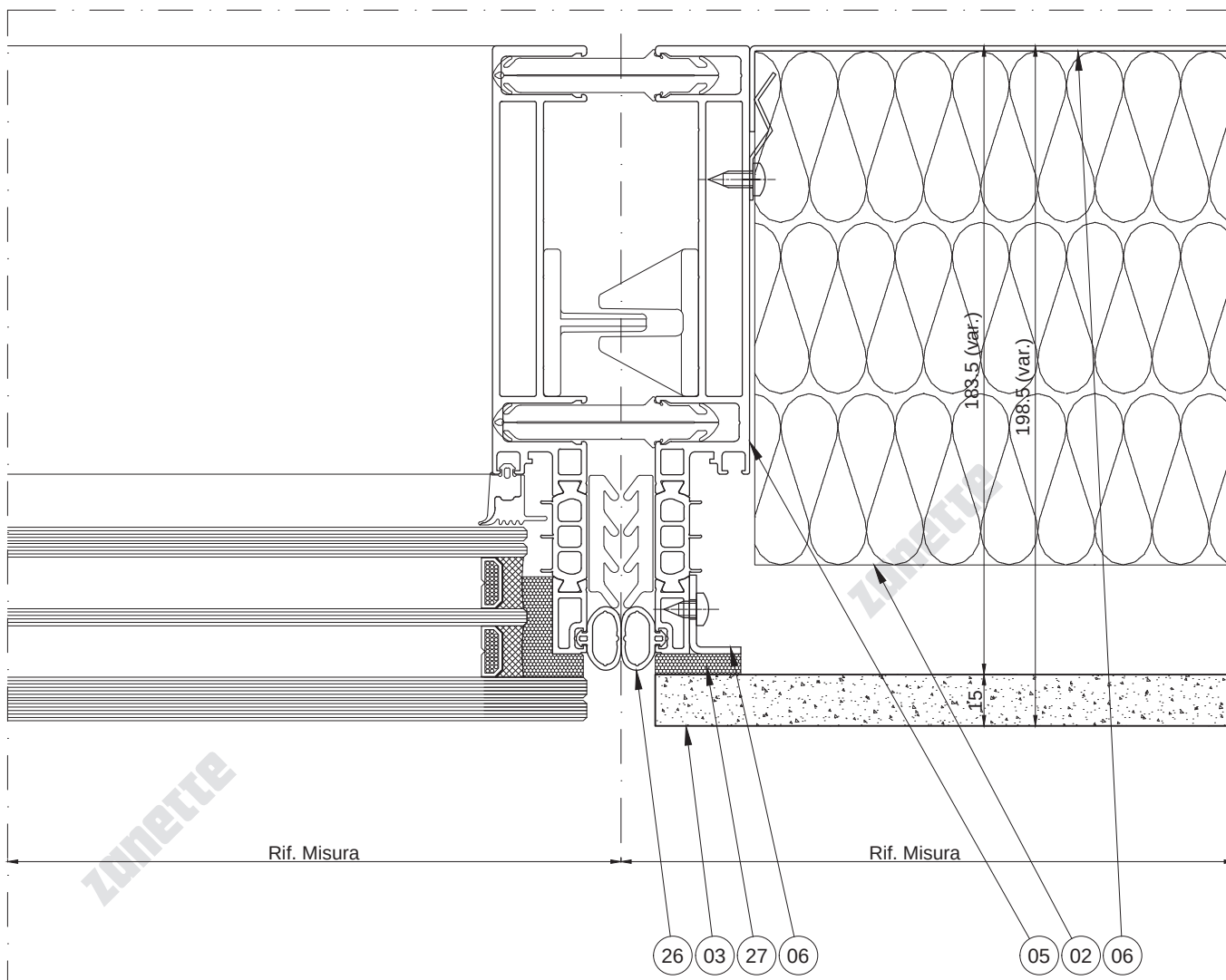


DESCRIPTION:
CLADDING SYSTEM STRUT AND CROSSBEAM

VERTICAL SECTION - Scale 1:2

Zanette

2D-21



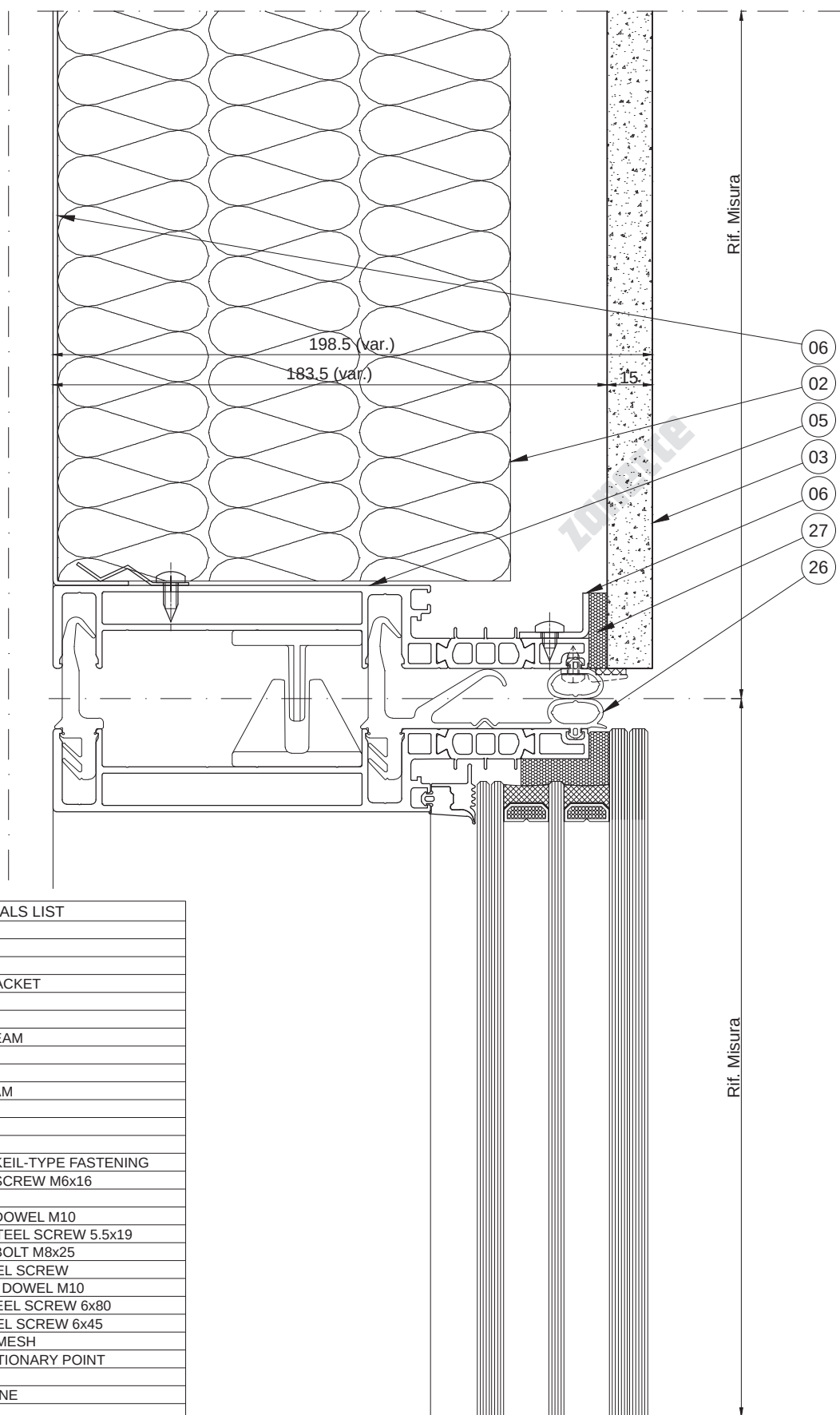
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
CELL CLADDING SYSTEM

HORIZONTAL SECTION - Scale 1:2

Zanette

2D-22



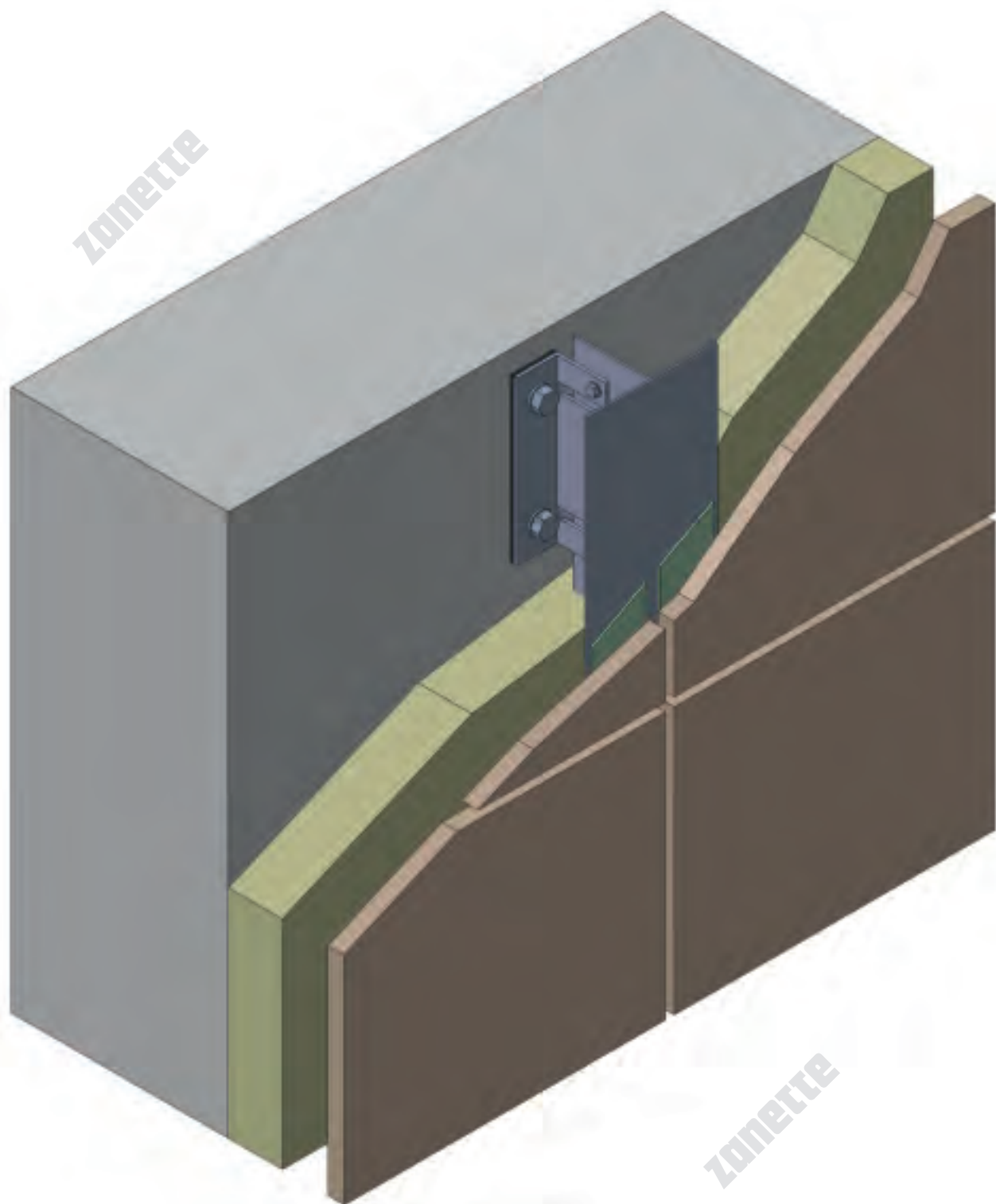
MATERIALS LIST	
01	MASONRY
02	ROCK WOOL
03	SLAB
04	ALUMINUM WALL BRACKET
05	ALUMINUM PROFILE
06	ALUMINUM SHEET
07	ALUMINUM CROSSBEAM
08	ALUMINUM BRACKET
09	BI-ADHESIVE
10	WOODEN CROSSBEAM
11	WOODEN STRUT
12	SHEATH
13	RIVET
14	GALVANIZED STEEL KEIL-TYPE FASTENING
15	GALVANIZED STEEL SCREW M6x16
16	PVC THICKNESS
17	GALVANIZED STEEL DOWEL M10
18	TEAP GALVANIZED STEEL SCREW 5.5x19
19	GALVANIZED STEEL BOLT M8x25
20	TC GALVANIZED STEEL SCREW
21	PLASTIC EXPANSION DOWEL M10
22	TSP GALVANIZED STEEL SCREW 6x80
23	TC GALVANIZED STEEL SCREW 6x45
24	INSECT REPELLENT MESH
25	BUSH FOR SLAB STATIONARY POINT
26	SEAL
27	STRUCTURAL SILICONE
28	SPECIAL PIECE SLAB

DESCRIPTION:
CELL CLADDING SYSTEM

VERTICAL SECTION - Scale 1:2

zonette

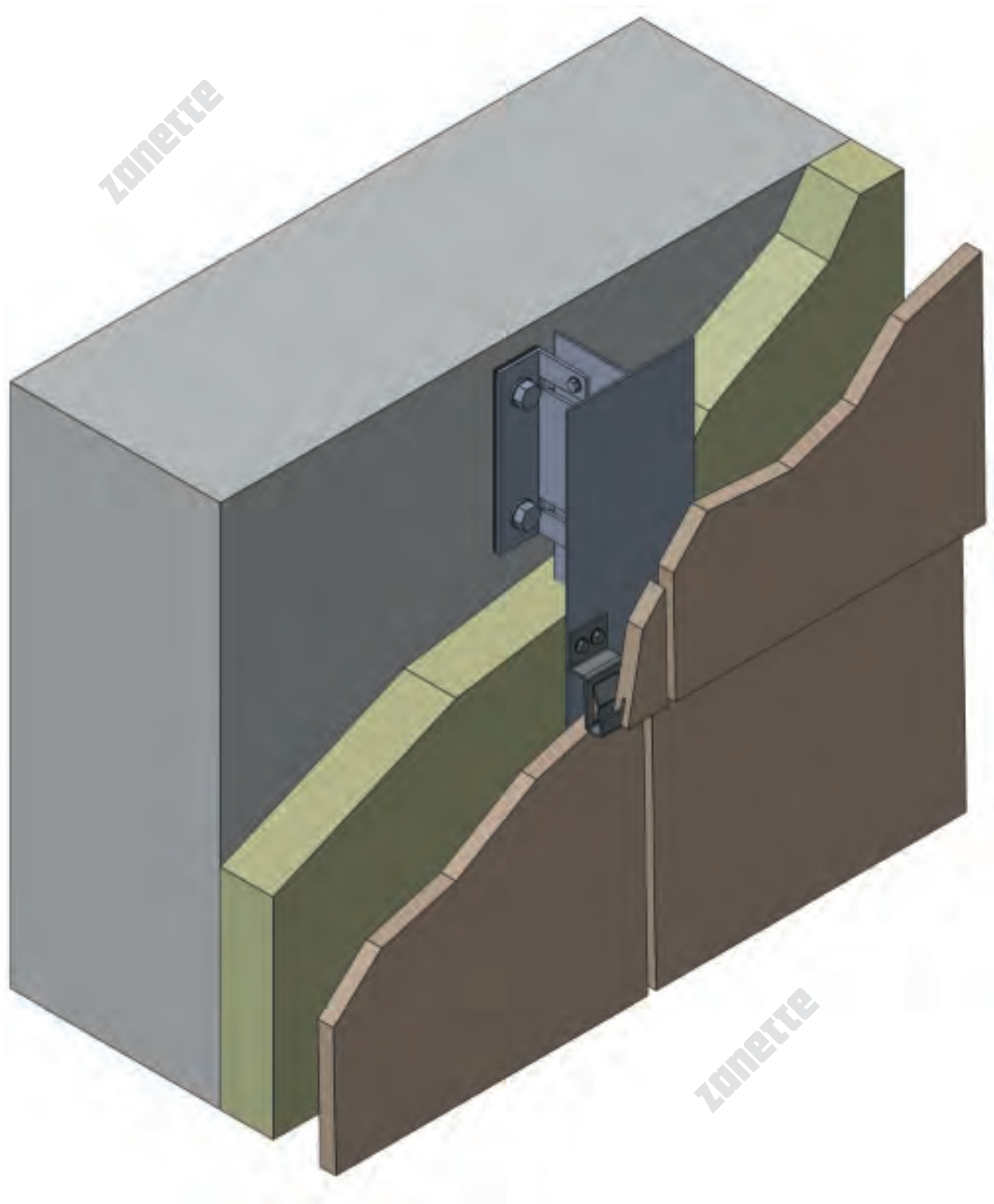
2D-23



DESCRIPTION:
SYSTEM WITH GLUED SLABS

zonette

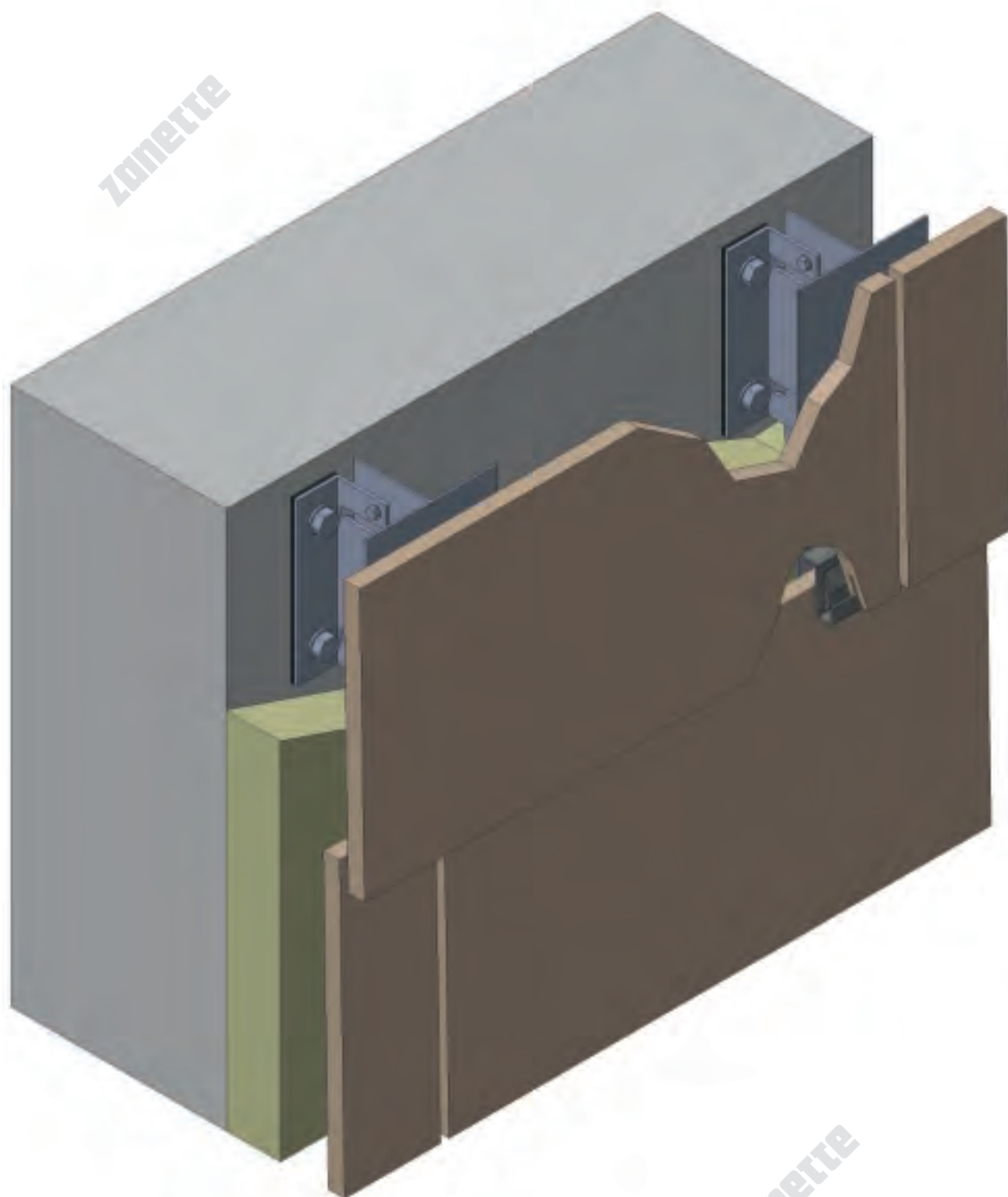
3D-03



DESCRIPTION:
SYSTEM WITH ALIGNED SHINGLES

zonette

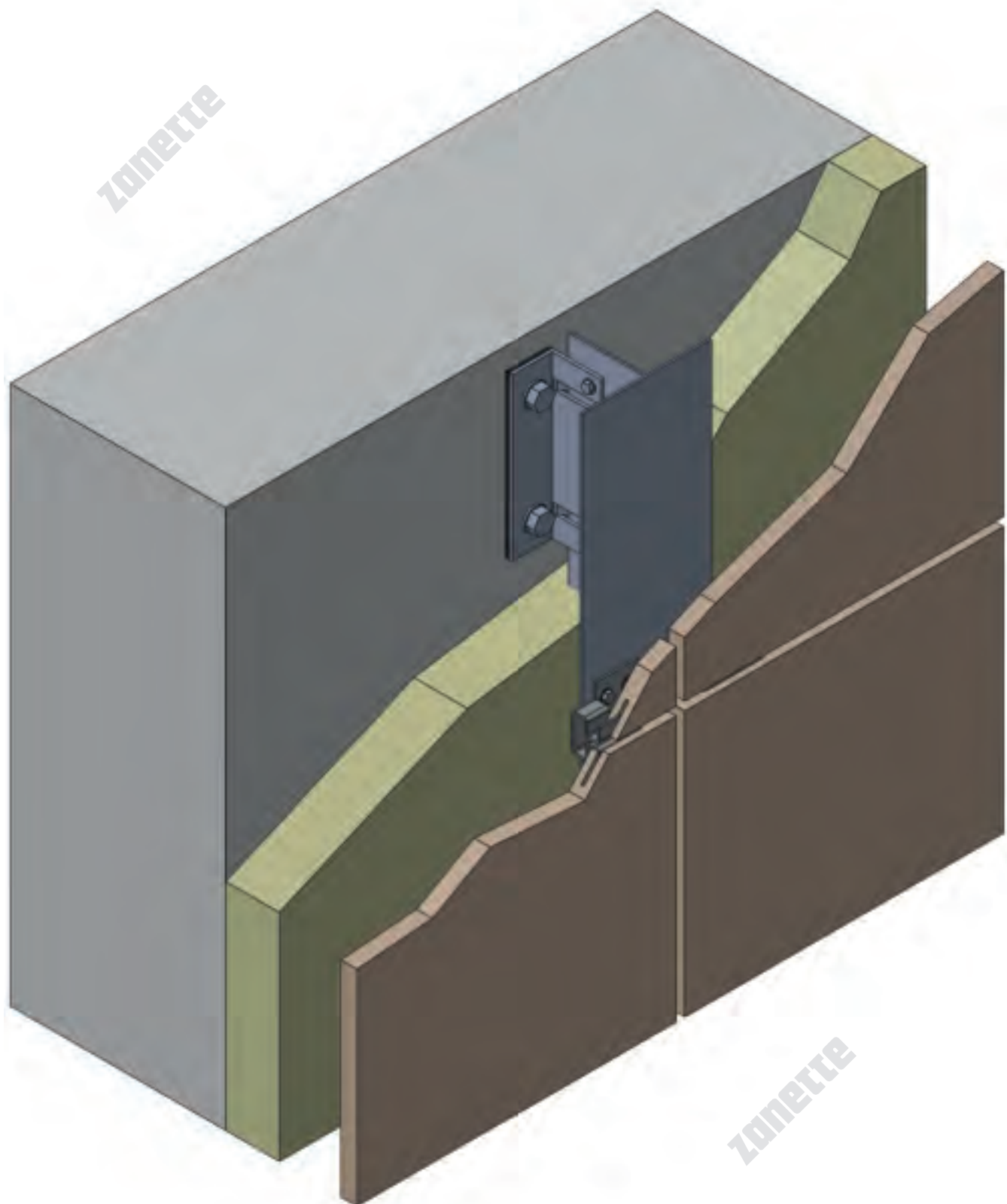
3D- 11



DESCRIPTION:
SYSTEM WITH STAGGERED SHINGLES

zonette

3D-12



DESCRIPTION:
SYSTEM WITH KERF FASTENING

zonette

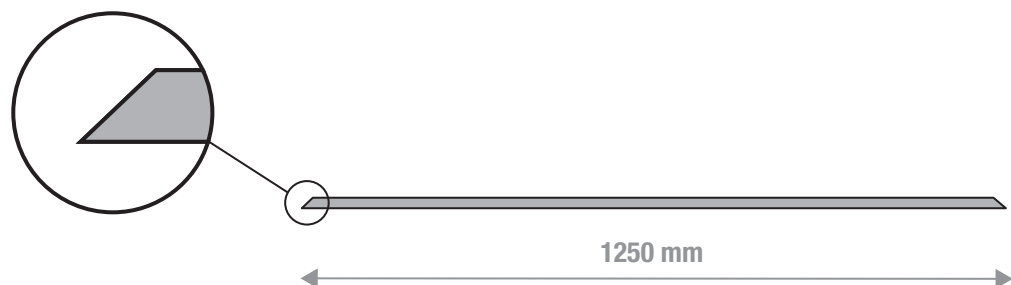
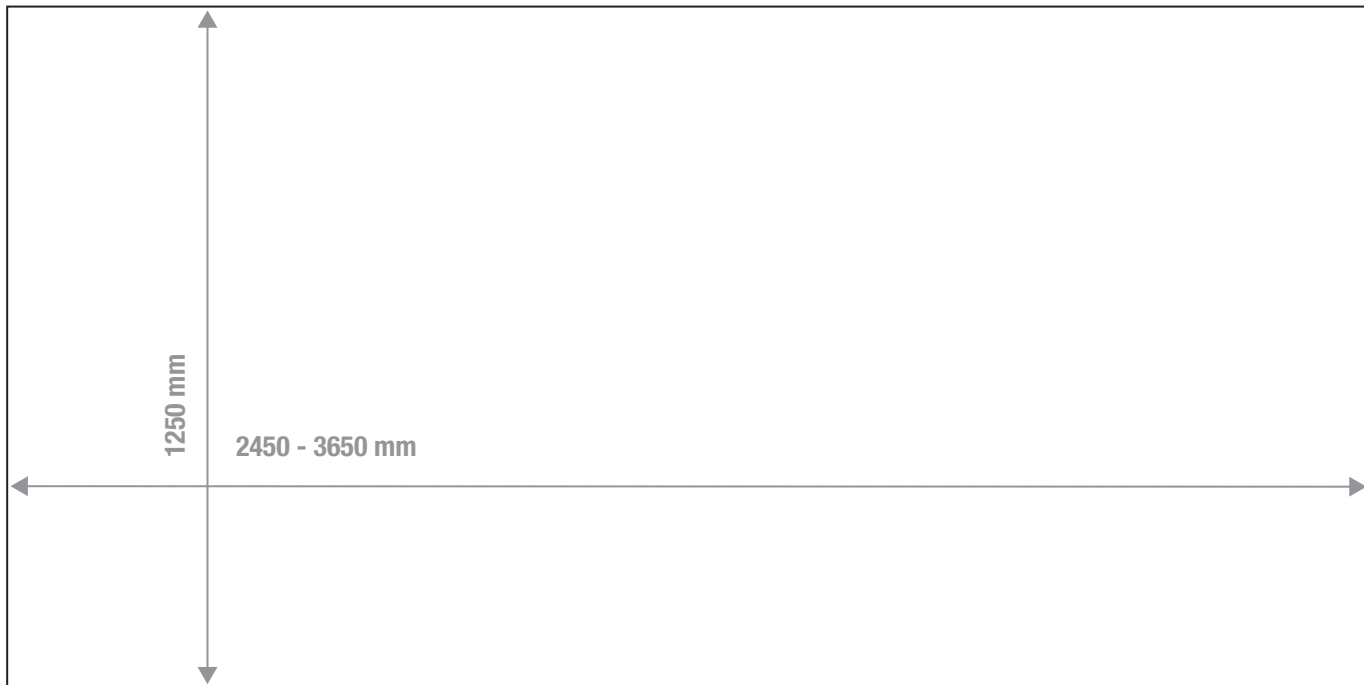
3D-13

6. "Rough slab"

CLADIA®, with Ductal® inside, is also available in the version "Rough slab"; a slab with standard dimensions rough edges for customers who want to customize their dimension and finishes.



6.1 Technical specifications "Rough slabs"



Technical specifications	Unit		
Nominal dimension	mm	1250x2450	1250x3650
Thickness	mm	15	15
Minimum garanted	mm	1200x2400	1200x3600
Slab area	m ²	3,00	4,50
Weight of the slab	kg	≈ 101	≈ 150
Weight, per m ² of the slab	kg	≈ 33	≈ 33

Slab with smooth surface



Slab with matrix surface



Thickness "Rough slabs" (SP)	Tollerance mm	H1 mm
15 mm	± 1	1 - 10 *

* Depending on the finishes request.



6.2 Parameters of processing of "Rough slabs"



CLADIA®, with Ductal® inside, arrive on pallets in packages suitable for unloading as requested by the customer (10/15/20 Q.li) positioned on top of each other with a special polyethylene foam mattress of about 2 mm interposed.

After performing the operations using water, the pieces must be dried on both sides and positioned on suitable supports, with a maximum support distance of 40 cm, which guarantee good ventilation throughout the piece for at least 6-8 hours. Subsequently the slabs can be packed on pallets that guarantee perfect flatness both during transport and storage, always overlapping the closed cell polyethylene foam mat.

It is advisable to insert the instructions on the package. 4.4. HANDLING AND STORAGE MODES.

Cutting with disk

Disk rotation parameters		Cutting parameters (mm/min)	
Ø Disk	Spindle rotation /min	Entry speed of the cutting slab	100 - 150
300	2500 - 3000	Advance cutting straight	2000 - 2500
350	2000 - 2500	Advance oblique cutting (45°)	800 - 1000
400	1500 - 2000	IMPORTANT: Indicative values to be tested based on the type and brand of the tools.	
450	1000 - 1500		

Shaped cutting with cutter

Cutting tool cutter thickness	Lowering (mm/min.)	Advancement (mm/min.)	Spindle rotation (/min.)
20 mm	150 - 200	200 - 400	2000 - 5000 <i>Variable base on the diameter</i>



Disclaimer

This Technical Manual 1.1 has been conceived with the aim of providing guidelines and providing useful planning tips, installation and maintenance and processing of the slabs CLADIA®, with Ductal® inside.

The information contained reflects the state of the art of knowledge technical-scientific and operational possessed by the manufacturer at the time of publication, we therefore invite you to refer to the latest updated version, always available at **www.zanette.com** in the download area.

For the above, Zanette is not responsible for any damage that should occur in application of the information and suggestions contained in this technical manual, because of information and suggestions alone, they always must be preventively verified by the user.

Zanette Srl also reserves the right to make technical modifications of any kind without notice and without direct communication to any party.

When the material is delivered, it is advisable to check the colour taking into consideration the shades, workmanship and dimensions of CLADIA®, with Ductal® inside, because complaints about material laid with defects already present at time of delivery will not be accepted.

In the event of claim it is advisable to urgently notify Zanette Srl and their experts who will support you.

www.zanette.com

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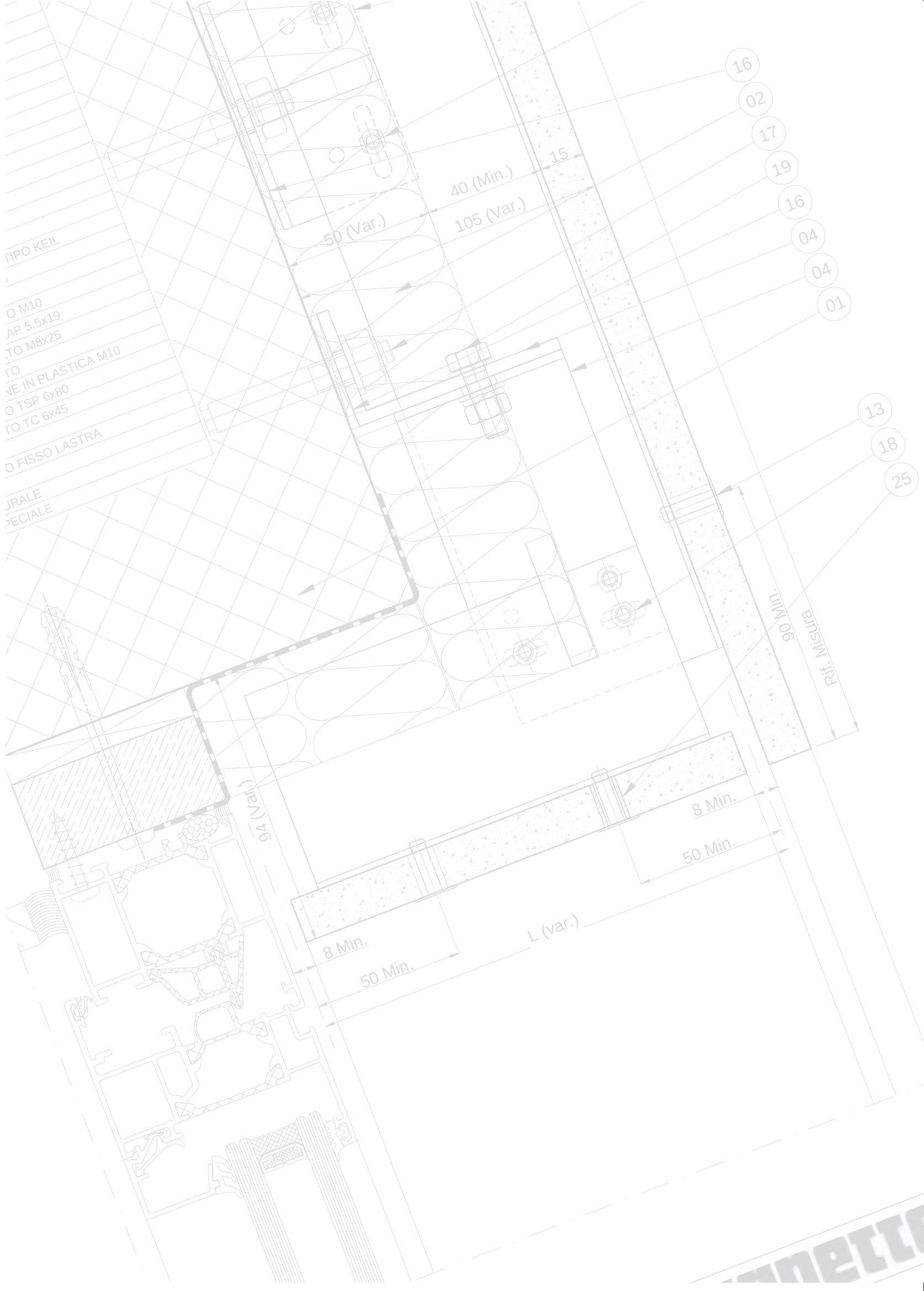
info@zanette.com



TIPO KEIL

O M10
AP 5.5x19
TO M8x25
TO
NE IN PLASTICA M10
O TSP 6x80
TO TC 6x45
O FISSO LASTRA

JRALE
PECIALE



zanette



**CLADDING
PRECAST BUILDING
WINDOWS
INTERIOR
BUILDING
ENERGY+**

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CLADIA®

with
Ductal® inside

www.cladia.it

CLADIA®, with Ductal® inside, the curtain wall cladding made in Italy by ZANETTE