

**02/05**

# **BT1 SYSTEM TECHNICAL MANUAL**



**BERGAMI**  
CLADDING SOLUTION SYSTEMS

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**Dear Customer,**

*The choice of façade cladding is an essential aspect that will allow you not only to make the building more aesthetically pleasing, but above all to protect it over time, to increase the value of the property, energy performance and indoor comfort and, above all, to zero the impact of routine maintenance that over time affects classic plaster-clad buildings. Offering great creative freedom, our company's systems allow designers to create any type of ventilated façade, as well as cladding even for false ceilings, transforming buildings into real architectural jewels.*

**Andrea Bergami**

A handwritten signature in black ink, reading "Andrea Bergami". The signature is fluid and cursive, with the first name "Andrea" and the last name "Bergami" clearly distinguishable.







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## THE BERGAMI COMPANY

**Bergami is a company operating for almost 40 years in the field of ventilated façades and, more generally, of façade coverings that can be defined as "hi-tec."**

Through the experience gained first as a direct operator on the end customer and, later, as a service provider for companies in the sector, **we have come to develop, patent, use and refine our substructure systems, completely different from the conventional form adopted by the market and the technical evolution concerning them.**

Our philosophy is based on the aesthetic result and practicality of use.

**Offering Bergami systems today, means**

**differentiating yourself from all others and standing out for uniqueness and fine finishes from the standard market offerings.**





## INTRODUCTION TO THE MANUAL

This brochure is an example of how the patented system Bergami BT1 can be used applied to a ventilated façade of a building having most standard typological case studies to be solved in the design/execution phase of the work.

For convenience of understanding, the description of the system has been elaborated by describing its construction phases, i.e., laying installation by paying particular attention to:

- the construction details;
- the uses of the various elements that make up the BT1 system catalog;
- the finishes that transform an execution standard in a perfect execution.

**N.B.** it is always appropriate and recommended to start from a precise survey of the case study, in particular by using scanning systems 3D of the building (laser scanner or photogrammetry of the elevations) in order to obtain an adequate and precise design that allows a prefabrication of the elements minimizing errors in the installation and optimizing, therefore, the result and the time of execution.



# 3

## "CONSTRUCTION" OF THE BT1 SYSTEM

- 01** Existing building
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## 01. Existing building



**Fig.01** | Example of a building in which the most common problems to be solved in the design and implementation of a ventilated façade are addressed. Such intervention cases can affect all types of buildings and, in particular, those for residential use.

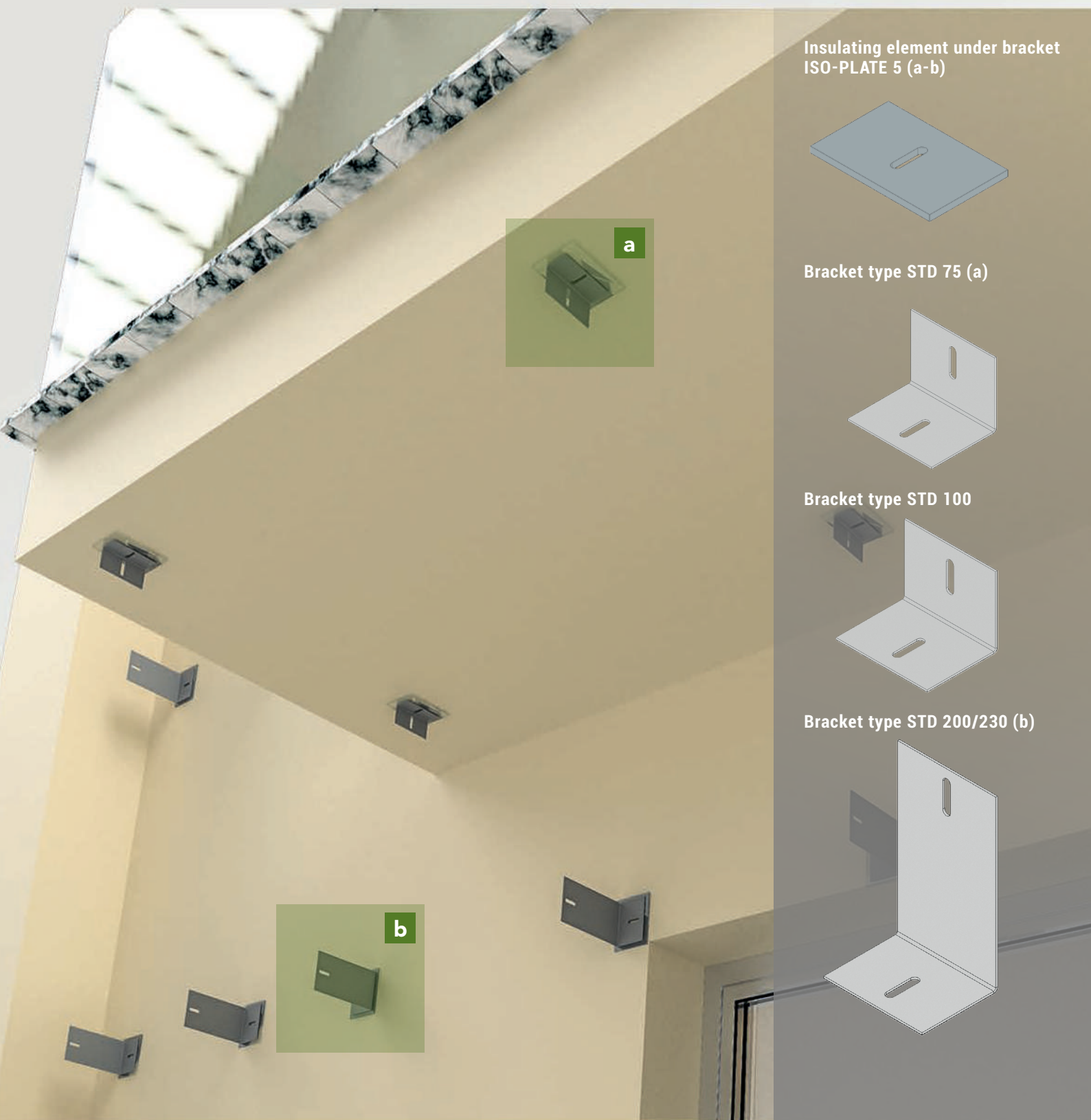
## 02. Bracket placement



**Fig.02** | Application of the grid of brackets on the outer envelope, based on the alignments of the vertical pitches of the frames and the vertical distribution provided at the design stage.



## 02.a Fixing brackets/insulators



**Fig.02.a** | Between the brackets and the wall support, the ISOPLATE 5 insulator is applied to mitigate the thermal bridges. Special attention should be paid to the choice of the type of fastener to be used to apply the brackets to the masonry, appropriately weighted according to the type of support.

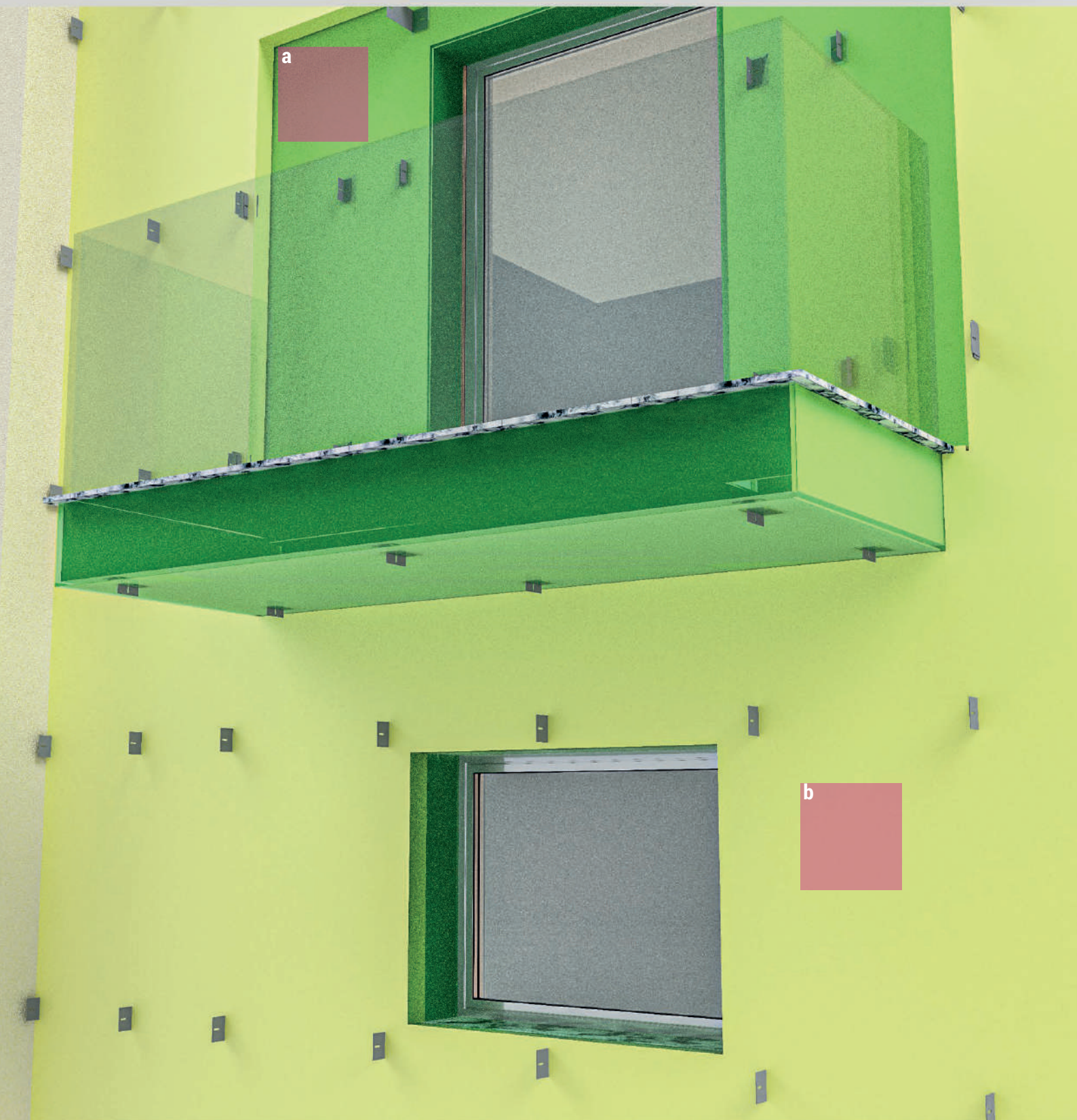
## 03. Thermal insulation



**Fig.03 |** Application, on the envelope, of thermal insulation according to the fixing specifications peculiar to the material employed. The system does not require the need to restore the surface homogeneity of the wall substrate, but instead, the homogeneity of the insulation function is required.



## 03.a Detail of the types of thermal insulation



**Fig.03.a** | Thermal insulations of different thicknesses were used in the example presented, simulating case histories as much as possible real ones. A first type of thermal insulation is the 20 mm (a) high-density insulation, applied in areas of the envelope with contained projections (balconies, hallways, window frames, etc.). In areas of the envelope where problems of minimum thicknesses on overhangs are not found, 120 mm insulation (b) has been assumed instead.



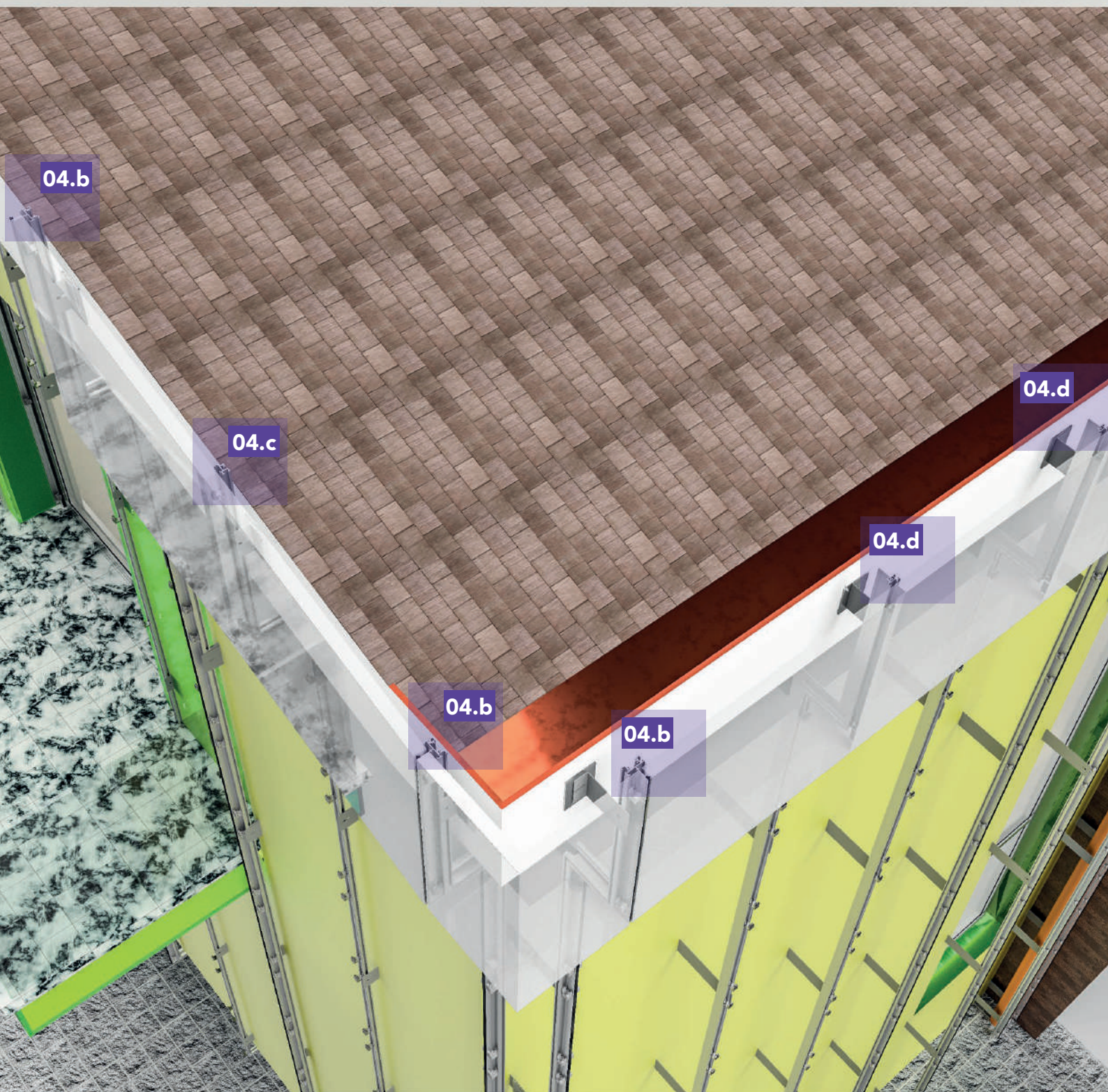
## 04. BT1 system installation



**Fig.04** | We proceed with the installation of the patented Bergami BT1 system on the bracket grid by means of the bolts provided, in order to adjust the frames by means of the sliding slots on the aluminum profiles. In particular, it is advisable to respect the overhangs and pitches established, aligning everything with the planes resulting from the x-y-z axes, in order to obtain a workmanlike result.



## 04.a Standard application example



**Fig.04.a** | In this view you can notice the detail of standard applications. Specifically on the left is a horizontally developed panel supported by M-BT1 frames in the vertical joints and the MC-BT1 frame placed as a concealed attachment center; in the center can be seen a corner panel supported by M-BT1 frames in the vertical joints; on the right a panel developed horizontally supported by the M-BT1 frames in the vertical joints and the MC-BT1 frames + the R-BT1 reinforcements placed as central hidden hooks.



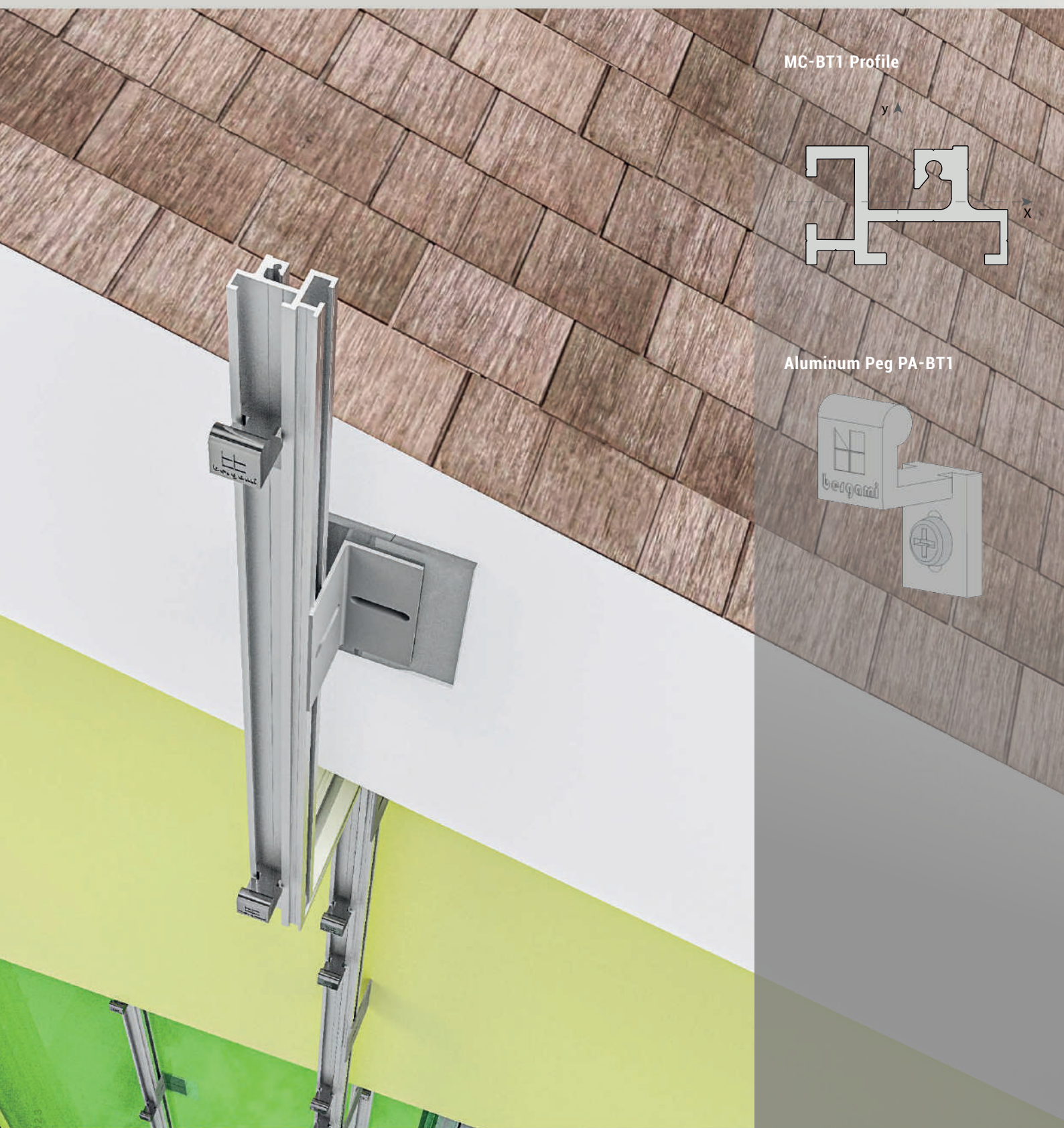
## 04.b Detail of the M-BT1 profile + PN-BT1 peg



**Fig.04.b** | In this view, it is particularly important to note the detail of the standard M-BT1 grating profile combined G-BT1/2 gasket, with self-extinguishing PN-BT1 plastic peg.

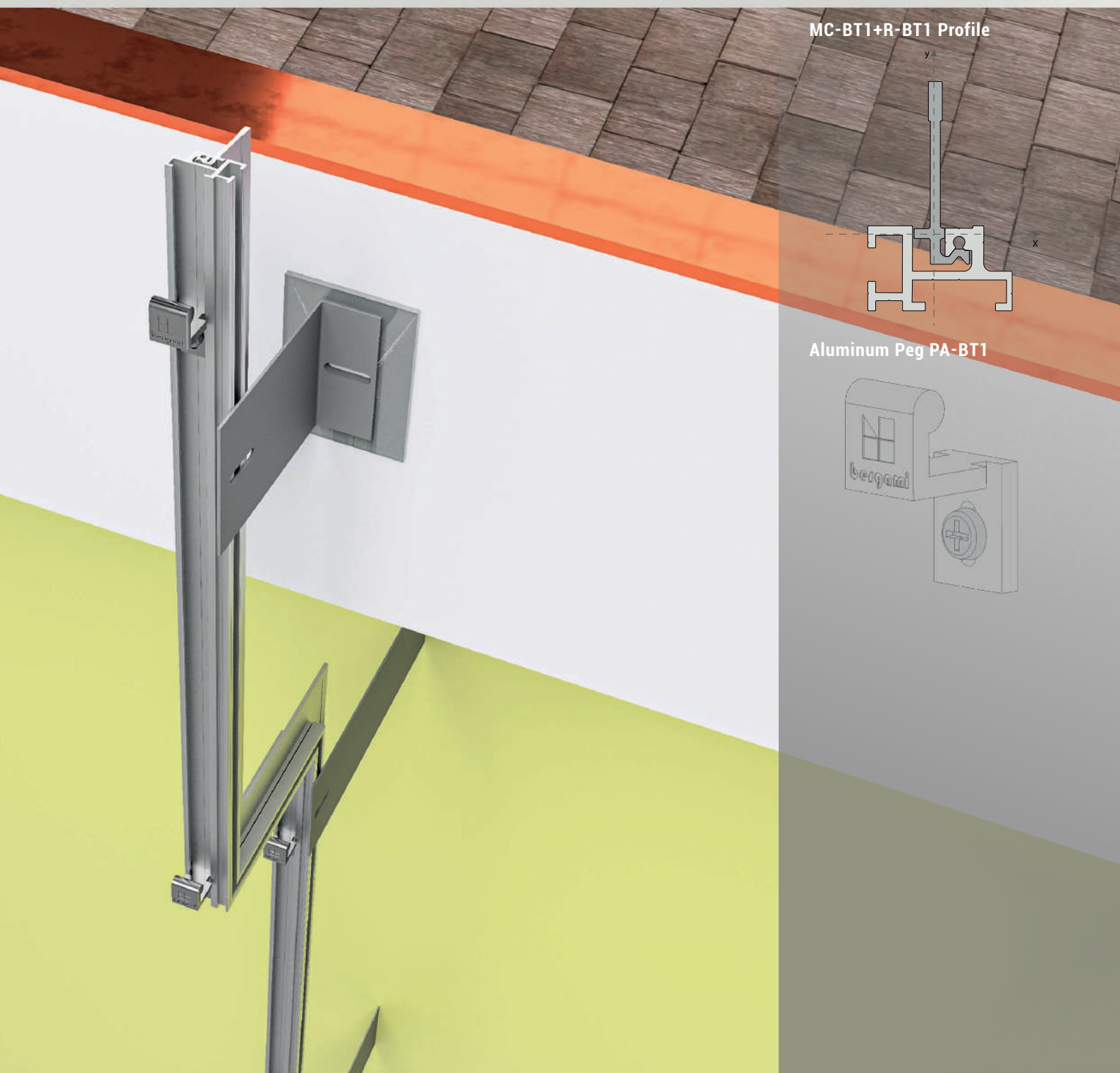


## 04.c Detail of MC-BT1 profile + PA-BT1 peg



**Fig.04.c** | In this view, you can see the detail of the MC-BT1 concealed reinforcement coupling profile that allows for a "minimal juxtaposed" joint (i.e., almost zero architectural joint), which is ideal for balcony areas where reduced overall thickness is required. The profile is combined with the PA-BT1 metal peg.

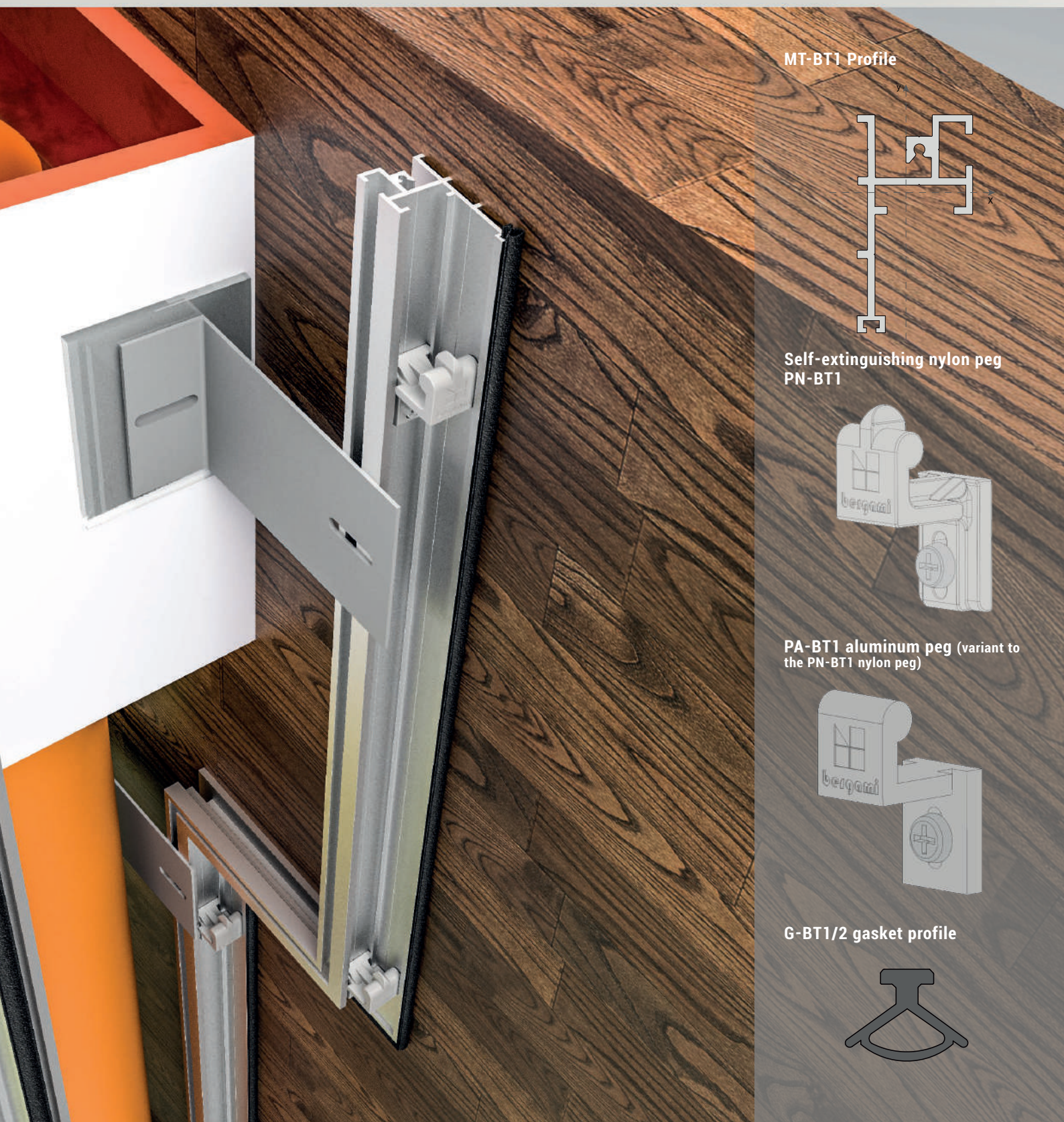
## 04.d Detail of the MC-BT1+R-BT1 profile + PA-BT1 peg



**Fig.04.d** | In this view you can see the detail of the MC-BT1 concealed coupling profile, coupled with the R-BT1 reinforcement profile and combined with the PA-BT1 metal peg. This solution is particularly suitable where, for technical or architectural reasons, an installation with vertical bracket spacing of about 2m is required (refer to technical brochure no. 04/06 "Calculations, tables and structural verifications").



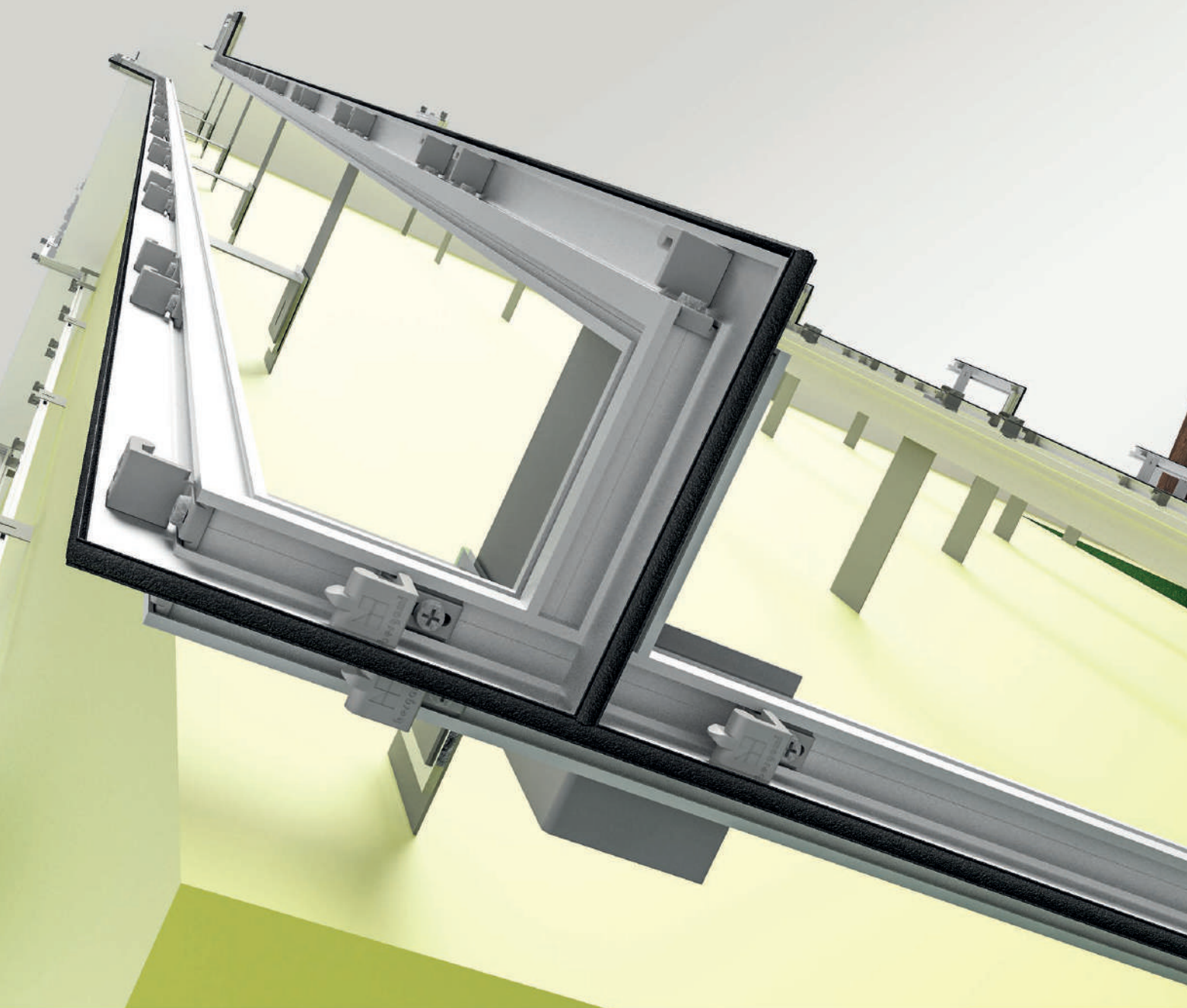
## 04.e Detail of the MT-BT1 profile + PN-BT1 peg



**Fig.04.e** | This view shows the detail of the MT-BT1 end profile combined with G-BT1/2 gasket, with PN-BT1 self-extinguishing plastic peg.

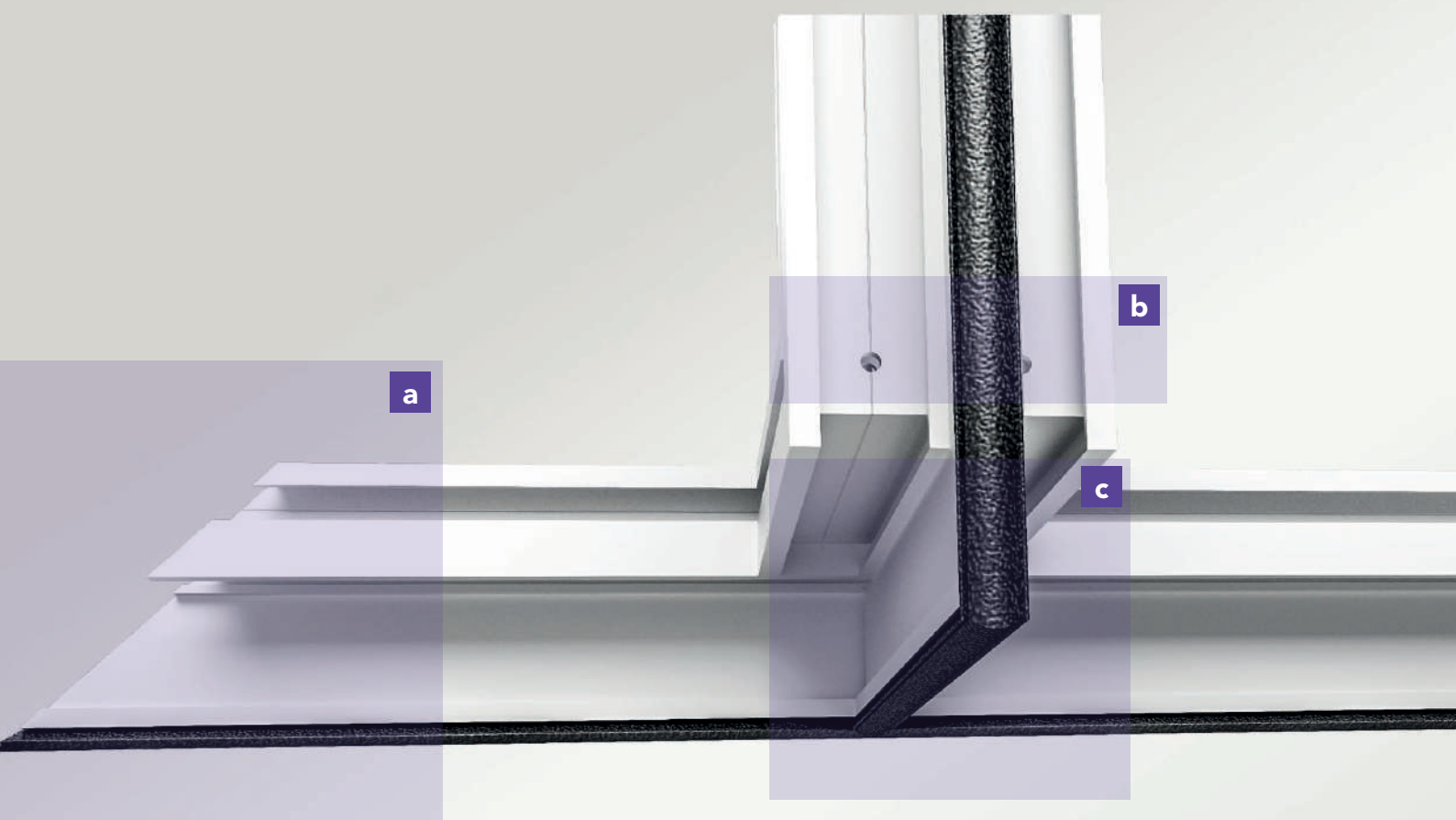


## 04.f Detail of the corners and "T" intersections



**Fig.04.f** | An example of a solution for corner intersections of the system can be seen in detail in this view; this solution can be applied for angles: interior, exterior, right/left side, as well as T-intersection situations. These solutions, of course, can be applied with varying gradations.

## 04.g Drilling and shouldering



**Fig.04.g** | In this view you can see the details of the types of machining that can be performed (cutting, drilling and shouldering) for the composition of corners and "T" intersections between the profiles of the BT1 system. Note, from the colored boxes highlighted in the view, degree cutting for mainsails (a); drilling for corner joints, for inside, outside and side (b); shoulders for "T" joints (c).



## 04.h Horizontally staggered panels



**Fig.04.h |** In this view, you can see the detail regarding the possibility of easily creating subdivisions that involve horizontally staggered paneling, thanks to the right/left split peg system; this also preserves from having to replicate the machining of the staggered hooks on the paneling, standardizing the same stamping processes and maintaining the integrity and rigidity of the lateral reinforcement folds of the panels.



## 04.i Horizontally staggered panels



**Fig.04.i** | Also in this other view, the staggered application of the PN-BT1 and/or PA-BT1 rungs can be seen.



## 05. Ventilation grids



**Fig.05 |** Ventilation grids are then installed. These elements make it possible to generate a cavity ventilated gap between the thermal insulation and the final envelope cladding, generating a "stack effect" of ventilation from the bottom upward and a consequent increase in the thermal performance of the envelope, with indoor comfort benefits during both summer and winter climates. The application of the ventilation system, through the application of grilles at the base, on the top of the building and at points of discontinuity (balconies, projections, etc.), distinguishes a ventilated façade from a façade simply clad.



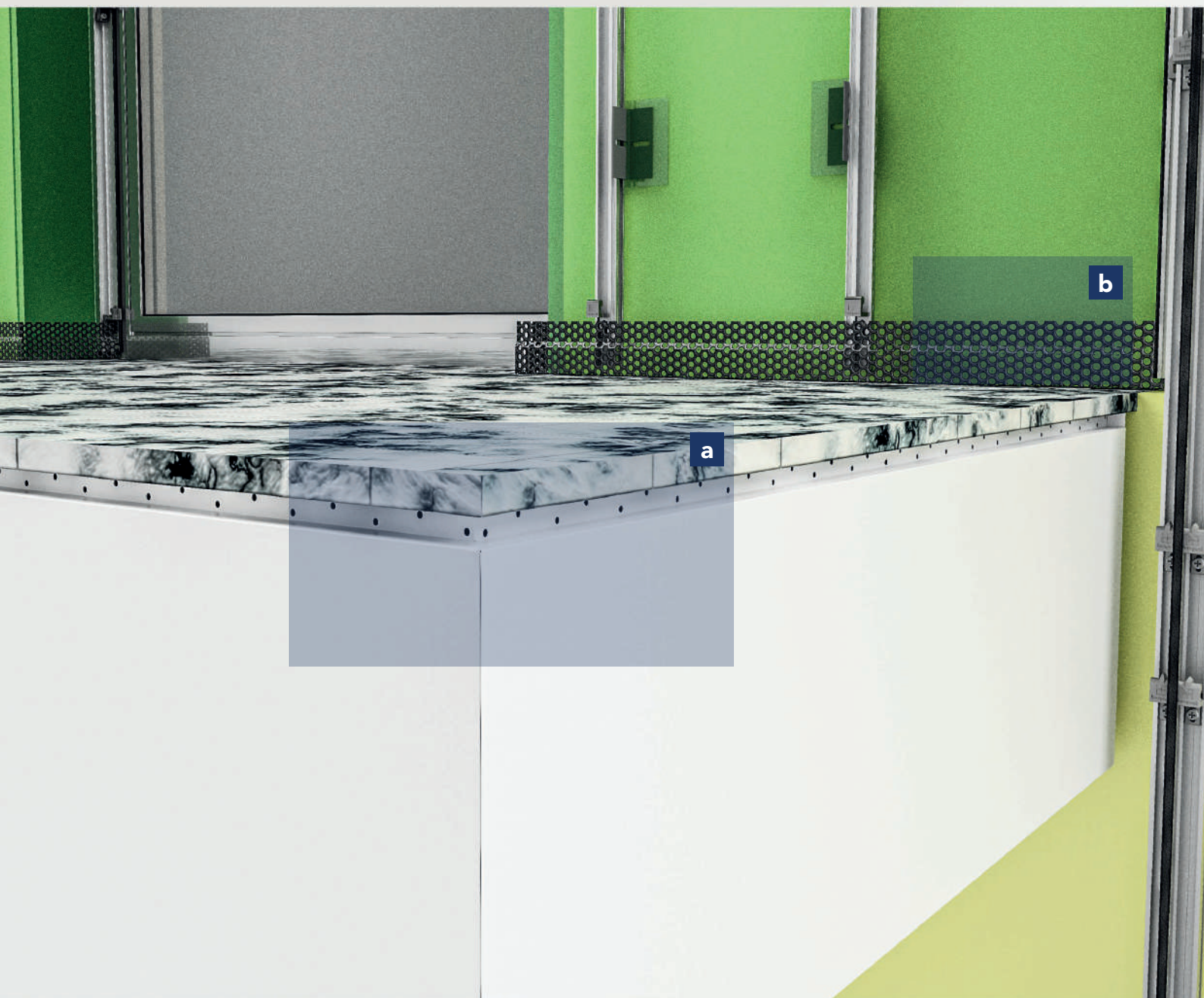
## 05.a Lower ventilation



**Fig.05.a** | In this view you can see the detail of the application of sheet metal guttering made of perforated sheet metal (adequate to prevent the formation of receptacles and insect nests), which form the grid necessary for the ventilation of the façade.



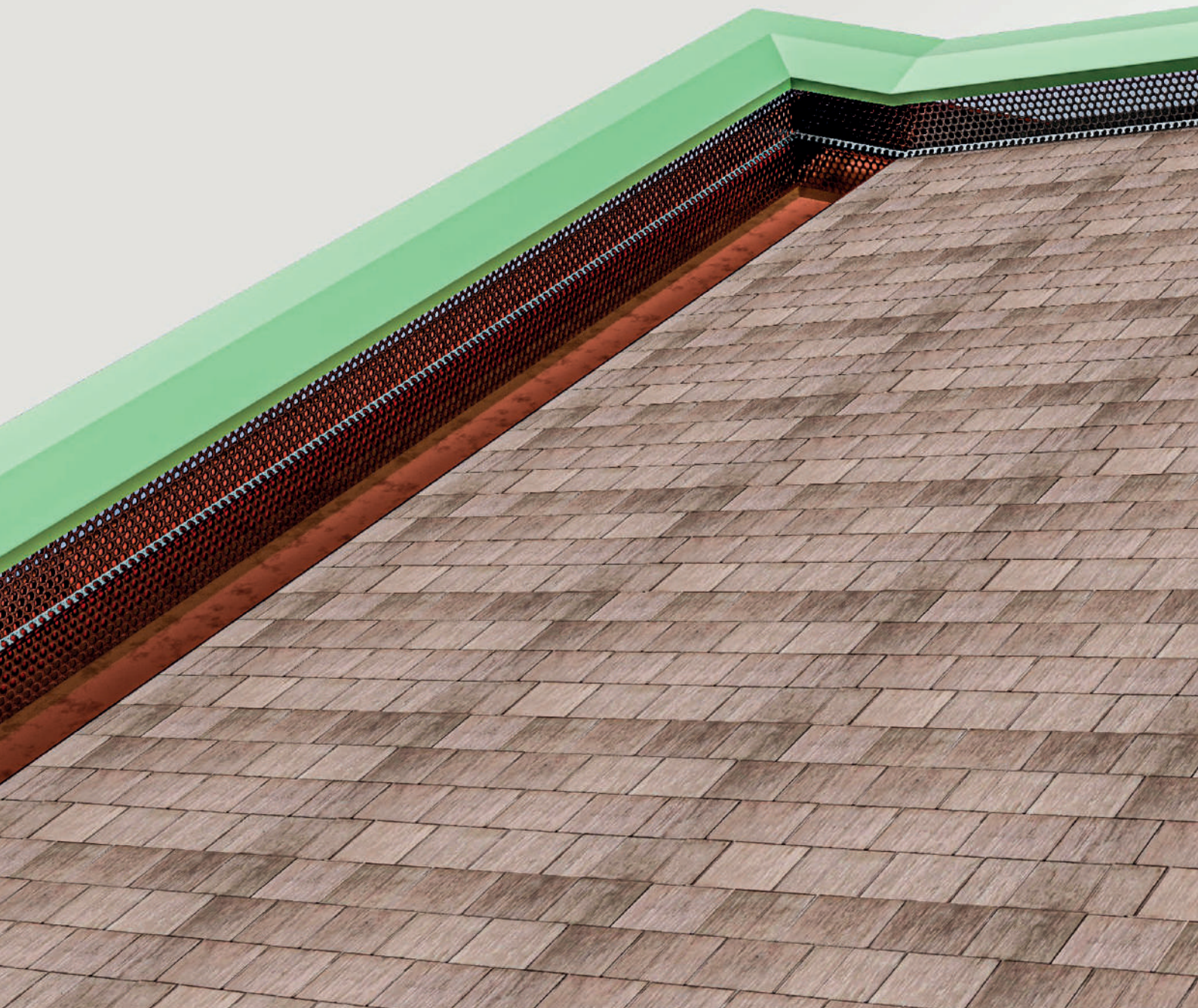
## 05.b Balcony area ventilation



**Fig.05.b** | This view shows the detail of an example of working on the panels through microperforations (a) that allow ventilation of the façade at points of discontinuity (balcony, overhangs, etc.). Note, from the colored boxes highlighted in the view, the resumption of the ventilation system at the surface finish of the slab projecting (b).



## 05.c Upper ventilation



**Fig.05.c** | In this view, you can see the detail of the application of sheet metal guttering made of perforated sheet metal (adequate to prevent the formation of receptacles and insect nests), which is necessary in the upper part of the building (beyond the eaves) for proper ventilation of the façade.



## 06. DELUXE intradoses



**Fig.06** | We proceed with the installation of the intradoses and special panels (corners, ends, etc.) so that they can be fixed on the central gasket-bearing core of the BT1 substructure (in case there is a need). DELUXE intradoses are an integral part of the panelling and blend harmoniously into the surroundings, offering the finishes of a luxury in the absence of visible fixings.



## 06.a LINEAR DELUXE intradoses



**Fig.06.a** | In this view you can see the detail of the LINEAR DELUXE intrados. The intrados panels integrate linearly with the stylistic context of the façade. This type of intrados is achieved with the use of the MC-BT1 frame laid with minimal juxtaposed joint (i.e., almost zero architectural joint), but it can also be achieved by using other frames of the BT1 system.



## 06.b DESIGN DELUXE intradoses



**Fig.06.b** | In this view you can see in detail the DESIGN DELUXE intrados obtained, in this example, through the use of the M-BT1 frame with a standard 10mm vertical joint (this system can also be realized using other frames of the BT1 system). The panels create a frame around the window frame, which can be coplanar or projecting from the edge of the façade panels, forming moldings (also curved or out-of-plane), provided with mainsail corners and refined architectural finishes, which can remain integrated into the subdivision of the panelling or be made in different shapes and colors (always perfectly integrated into the stylistic context of the façade).

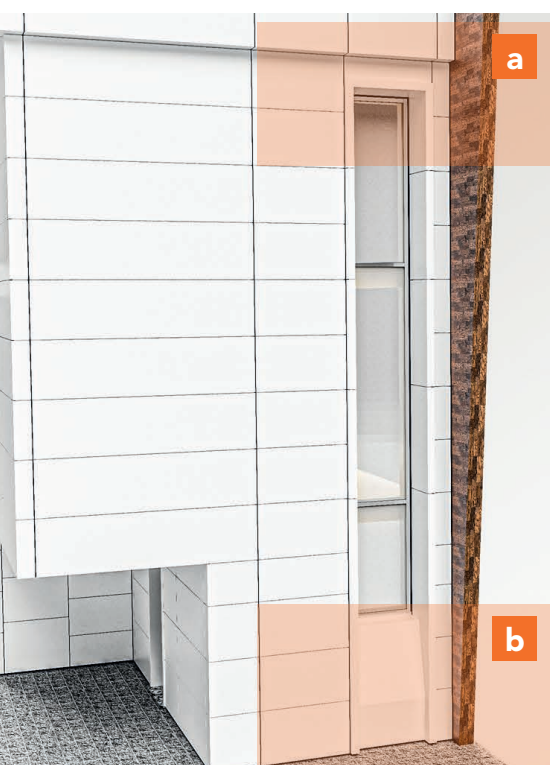


## 06.c LINEAR DELUXE aesthetics



**Fig.06.c** | In this view you can see the detail of the overall aesthetics offered by the LINEAR DELUXE intrados.

## 06.d DESIGN DELUXE aesthetics



**Fig.06.d** | In these views you can see the details of the overall aesthetics offered by the DESIGN DELUXE intrados, particularly the top of the intrados (a) and the ground attachment (b).

## 07. Panelling



**Fig.07** | We proceed with the installation of all lattice panels starting from the bottom to the top. G-BT1/2 gasket serves as an aesthetic cover for the vertical joints; this element compensates for seasonal thermal expansion and, its ductility and elasticity, allows the panel to maintain its original position. This system, therefore, does not require the fixing of each panel to maintain its alignment over time and allows for easy replacement of any damaged panels, without the need to disassemble entire vertical columns to get to the damaged panel (which is usually positioned at the footer).



## 08. BASIC intradoses



**Fig.08 |** The solution called BASIC obviates any problems of subdivision of the panels and the coincidence with the joints of the same, which prevents the application of the DELUXE intradoses; this type of boarding makes the processing and installation more standardizable in situations of windows that are not perfectly aligned horizontally and vertically with each other. These intradoses are installed as the terminal finish of the cladding work.

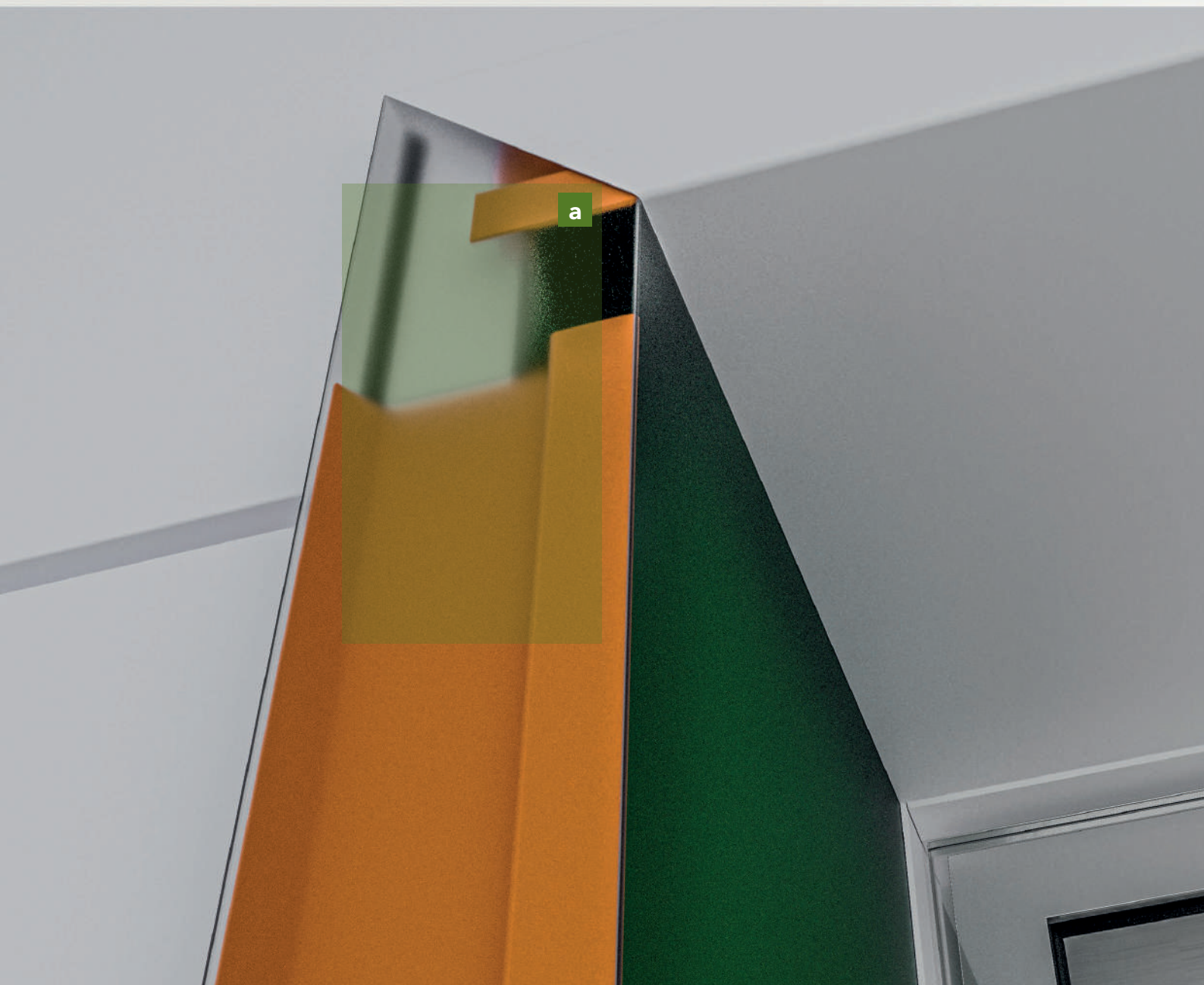
## 08.a SIMPLY BASIC intradoses



**Fig.08.a** | In this view, you can see the detail of the SIMPLY BASIC boarding. We proceed with the installation of the plates which are used to align and support the intradoses, and then with the fitting of the intradoses and the mechanical fastening of them by means of screws or rivets placed laterally on the perimeter of the outer crown. Note, from the colored box highlighted in the view, the alignment plates, shown in orange (a).



## 08.b SMART BASIC intradoses



**Fig.08.b** | In this view, you can see the SMART BASIC intrados in detail. We proceed with the installation of the sheets that are used to align and support the padding. Next we proceed with the attachment of the intrados, proceeding from the outside of the plates to the inside. We then proceed to sock the intrados onto the sliding profile previously anchored on the outer frame of the window frame. Note, from the colored box highlighted in the view, the alignment sheet metal alignment, shown in orange (a).

## **08.c** SIMPLY BASIC aesthetics



**Fig.08.c** | In this view you can see the detail of the overall aesthetics of the SIMPLY BASIC intrados. The application of this type of intrados can include perimeter fixings on the outer crown.



## 08.d SMART BASIC aesthetics



**Fig.08.d** | In this view, the detail of the overall aesthetics of the SMART BASIC intrados can be seen. The application of this type of intrados usually does not involve visible fixings.

## 09. Finished work



**Fig.09 |** In this view, you can see the clean, refined aesthetics of a well-executed cladding made possible by a sub-structure system that offers aesthetic solutions that are the minimum necessary condition to distinguish an industrial finish from a residential and valuable finish that the patented BT1 system offers.

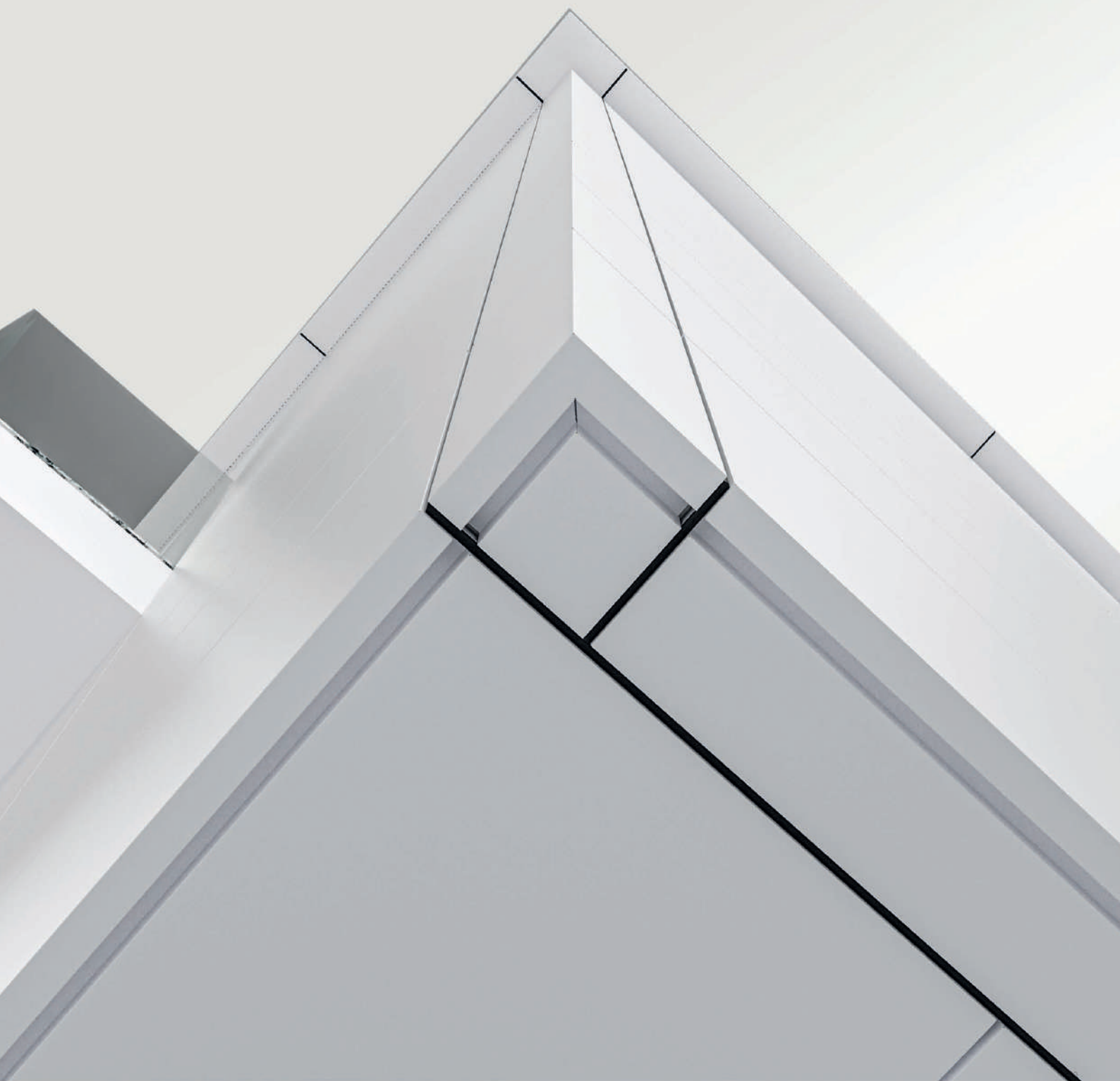


## 09.a Entrance hall detail



**Fig.09.a** | In this view, the entrance hall area of the building can be seen in detail.

## **09.b** Detail of the corner solution of the building



**Fig.09.b** | In this view, the corner solution of the building can be seen in detail.



## 09.c Detail intrados of projecting element



**Fig.09.c** | In this view you can see the detail of the soffit of the projecting elements. Consider that these elements can also be applied as suspended ceilings for interior room coverings or cladding for flat roofs.

## **09.d** Detail on glass façade with 45-degree intradoses



**Fig.09.d** | In this view, a glass window frame and its intrados molding cut at 45° can be seen in detail.



## 09.e Detail of some design moldings



**Fig.09.e** | In this view you can see in detail the ground attachment of the window frame with possible moldings that can be customized in shape and size.

## 09.f Detail of horizontally staggered panels



**Fig.09.f** | The horizontal offset of the panels can be seen in detail in this view.



## 09.g Detail of panel for crowning element



**Fig.09.g** | In this view you can see in detail the panels made with crowning element.



## CONTACTS ADDRESSES AND SOCIAL

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[illegible]

## VENTILATED FACADES AND CLADDING

The only system with closed-gap  
vertical gasket and staggered panels



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