PRODUCT DATA SHEET

Revision date: 01/02/2019

1.Product manufacturer:

Bella Plast Sp. z o.o.s.k.
Długa street No. 86, 05-075 Warszawa - Wesoła
tel. +48 22 783 64 64

2. Product designation:

PVC façade strips for rustication BP11 H1, BP11H2R, BP11H3R, BP11H5R
PVC façade strips for rustication with fibreglass mesh BP11H1S, BP11H2RS, BP11H3RS, BP11H5RS,
PVC façade strips for rustication closed with lost element BP11H2N and BP11H3N (together with system PVC internal and external corner bead).
PVC façade strips for rustication closed with lost element with fibreglass mesh BP11H2NS and BP11H3NS (together with system PVC internal and external corner bead).

3. PCGS product classification: 22.23.19.0

4. Technical specification

PVC rustication strips are made of hard polyvinyl chloride with the addition of modifiers which increase strip mechanical resistance as well as with the addition of stabilizers.

Rustication strips are available in white technical colour and are intended for painting.
The manufacturer does not guarantee the repeatability of colour of each subsequent production batch.

5. Intended use and application range of the product.

PVC façade strips for rustication are intended for use in residential buildings and public buildings to the extent resulting from their technical properties.
Façade strips are used only for making decorative rustications (grooves) in the thermal facade, commonly referred to as External Thermal Insulation Composite Systems or ETICS, also referred to as a "light-wet" method with the use of façade thermal cladding: foamed (extruded) polystyrene, mineral wool and thin-layer plasters.
The assembly of the strip should be carried out in the external surface of the façade.
The perforated outer edges of the strips should be completely covered by the fibreglass reinforcement mesh on the façade and tightly bonded together.
The combination of reinforcing fibreglass mesh with a PVC rustication strip should be made with an adhesive intended for bonding fibreglass mesh to façade thermal cladding: foamed (extruded) polystyrene, mineral wool. Gluing the BP11 series façade strip to the façade thermal cladding and covering the perforated edges of the façade strip with a reinforcing mesh should be done in the same gluing operation.

Joining of strips: for longitudinal joining of strips it is recommended to use longitudinal connectors, also available from the manufacturer. Connectors with trade names: BP11Ł stabilise the connection of strips and additionally seals the strips.
Rustication strips referred to as BP11H2R, BP11H3R, BP11H5R as well as BP11H2RS, BP11H3RS, BP11H5RS are protected with red PE film. The PE film should be removed from the strip after plastering of the façade surface.
Rustication strips referred to as BP11H1 and BP11H1S do not have the protective PE film.
Rustication strips referred to as BP11H1 and BP11H1S are filled with high density polyethylene foam (PE) in black colour. PE foam is the lost element, which should be removed after plastering the façade surface. The PE foam inside strips helps in applying the adhesive and plaster directly to the foam surface without the risk of contamination of the strip interior.
BP11HN and BP11HNS feature a tight external flat-shaped closure. This element is the lost element, which should be removed after plastering.

When installing PVC rustication strips of BP11S and BP11HNS series (versions with fibreglass mesh) - the fibreglass mesh bands on the strip should be overlapping (from above); the mesh is then to be covered with fibreglass mesh of the façade system in the same gluing operation. Perforated wings of the rustication strip should also be covered with the façade fibreglass mesh and embedded in glue distributed on the outside of the wings.
The use of polyurethane assembly foam (PU) or to installing the strip in the groove, as well as any other seals, joints other than glue for submerging the fibreglass mesh using the ETICS technology is not allowed - at any stage of the assembly of PVC rustication strips.

The groove in the thermal cladding must be completely covered with glue to submerge the fibreglass mesh over the entire surface.
Rustication strips must not be installed using the so-called “spot gluing" or without glue between the strip and the thermal cladding.
Polyurethane foam must not be used for installing rustication strips.

When installing PVC rustication strips directly next to window openings or other parts of the façade with a different structure than the façade itself, in which rustication strips were installed - it is recommended to leave a distance of at least 8 cm from such elements and from the edge of the window opening (corners around the window). If the rustication strip is trimmed at least 8 cm before the corner of the window opening, it will preserve the thermal and strength parameters around the window where the working conditions of the façade are unfavourable and by their nature the strips are exposed to faster wear and destruction due to with uneven temperature distribution in the thermal cladding. This location of the rustication strips does not break the protective corner bead with mesh at the corner around the window.

Treatment of strips:

Strip trimming has no impact on health, it can be cut with a knife or a fine-toothed hand saw.
Because of the fibreglass mesh on strip versions with fibreglass mesh - it is absolutely necessary to wear protective gloves and safety glasses.

Rustication strips should be painted with facade paints: silicone, acrylic or silicate paints (for outdoor use, outdoor façade paint); the surface to be coated with paint must be first cleaned to remove any dirt, dust, oil and other impurities that may affect the adhesion of the paint.
Painting with the above mentioned paints does not require the use of primer.

It is recommended that the façade paint from the above mentioned paint groups be of the same type as the type of plaster used, for instance in case of silicone plaster, also silicone paint should be used and the best way is to use paint from the same manufacturer as the plaster manufacturer, prepared from the same colour palette, using the same mixer as for the plaster used.
If the above recommendation is followed, will ensure similar ageing of the paint used to coat the rustication strip and the plaster.
In order to obtain the best aesthetic effect, it is recommended to paint the BP11 series façade strips with the above mentioned paints in the RAL colour of the plaster used.
Paints containing acetone and/or organic solvents reacting with polyvinyl chloride must be excluded.

In case of façade plasters and paints with a relatively dark colour and in places exposed to sun as well as wherever heat sources other than sunlight (such as air conditioners, luminaires, etc.) may be located close to the façade and in particular close to PVC rustication strips - the risk of overheating of PVC rustication strips and/or overheating of the surroundings of rustication strips must be absolutely considered. The risk of overheating must also be considered if PVC rustication strips are installed close to other elements, parts of the façade (such as dark plaster or grey glue to submerge the fibreglass mesh - left on the façade) or close to other building materials which, by absorbing solar or other energy, may emit or transfer heat to PVC rustication strips and/or surroundings of rustication strips
As the above mentioned circumstances may occur- the manufacturer of the product determines and thus permits the maximum, limit temperature up to which the rustication strip can be heated - which is 52 degrees Celsius. Exceeding the temperature of the PVC rustication strip above 52 degrees Celsius will exclude manufacturer's liability for the product as well as the warranty for the product.

Therefore, the manufacturer is not responsible for the destructive effects of heating of PVC rustication strips above 52 degrees Celsius and possible losses caused by such circumstances, which may occur in respect of the rustication PVC strip itself as well as in respect of other elements such as corner beads for rustication, longitudinal connectors for rustication, cross connectors for rustication strips and other parts of the façade which would be damaged due to absorption of heat from the PVC rustication strips.
The conditions of use for rustication strips should be consulted with the designer, who should design the façade in such a way that the PVC strip may not, in any case, exceed the temperature of +52 degrees Celsius or even if the temperature exceeds 52 degrees Celsius - the strip may not become a heat transmitter that could in turn damage other parts, façade elements, luminaires, drain pipes, etc.

In addition, the guidelines of plaster manufacturers and manufacturers of thermal cladding - in particular manufacturers of extruded polystyrene and other elements of the system - especially with regard to thermal resistance - must be observed, as well as the ITB instruction No. 447/2009 (IBT - Building Research Institute in Warsaw) must be followed.

6. Product range

PVC façade strips for rustication are manufactured in the following dimensions*:

STRIPS WITHOUT FIBREGLASS MESH:
- * the digit in the product designation, such as "2" or "3", denotes the width of the strip (groove) in (cm):

BP11 H1 L300: width 10mm, depth 10mm, length 3000mm
BP11 H2R L300: width 20mm, depth 20mm, length 3000mm
BP11 H3R L300: width 30mm, depth 20mm, length 3000mm

BP11 H5R L300: width 50mm, depth 20mm, length 3000mm
BP11 H2N L300: width 20mm, depth 20mm, length 3000mm
BP11 H3N L300: width 30mm, depth 20mm, length 3000mm - together with system PVC internal and external corner bead.

STRIPS WITH FIBREGLASS MESH: (bands 10cm wide each)
- * the digit in the product designation, such as "2" or "3", denotes the width of the strip (groove) in (cm):
BP11 H1S L300: width 10mm, depth 10mm, length 3000mm
BP11 H2RS L300: width 20mm, depth 20mm, length 3000mm
BP11 H3RS L300: width 30mm, depth 20mm, length 3000mm
BP11 H5RS L300: width 50mm, depth 20mm, length 3000mm
BP11 H2NS L300: width 20mm, depth 20mm, length 3000mm
BP11 H3NS L300: width 30mm, depth 20mm, length 3000mm - together with system PVC internal and external corner bead.

7. Packaging, storage, transportation

PVC façade strips for rustication are packed in cardboard boxes protecting the strips against damage in transportation.

Number of pieces in one cardboard box: 20 - with the exception of BP11H2N and BP11H3N strips, with 15 pieces each in one cardboard box.

Storage: maximum number of layers: 15.

Storage location: dry, cool, with even surface, away from heat sources, such as heating stoves.

Storage position: horizontal.

8. Chemical resistance

The product does not react chemically with any solid construction material that can be found on the construction site. The product is resistant to ageing. The product is not biodegradable in a humid environment. The product is not resistant to organic solvents such as acetone, benzene.

9. Additional information

The product conforms with the following documents:

NATIONAL TECHNICAL ASSESSMENT ITB-KOT-2017/0249 Z DNIA 12.12.2017 (published by the Building Research Institute [Instytut Techniki Budowlanej] in Warsaw)

HYGENIC APPROVAL no. BK/B/0823/01/2018 of 7 September 2018 (issued by the National Institute of Hygiene [Instytut Higieny] in Warsaw)

10. GUARANTEE.

The manufacturer grants a guarantee for the product as per the Polish Building Law Act as well as European Union legislation for the construction industry - except for the situations described in point 5 and except mechanical and chemical damage as well as improper storage and/or installation, performed contrary to this Technical Data Sheet.

Assembly stages of rustication strips and guidelines for partial and final acceptance of the assembly works.

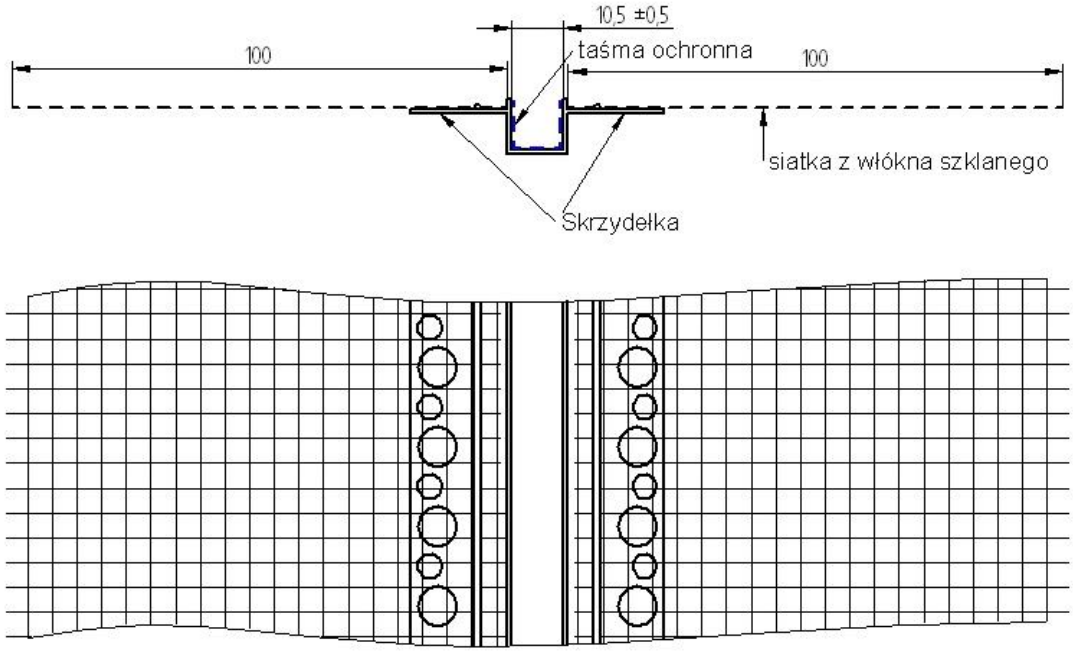
STAGE 1.

- Carry out the grooving in the thermal cladding in a place consistent with the technical documentation.
- The width and depth of the groove should suit the dimensions of the rustication strip to be used; the size of the groove should be wider by at least 5 mm than the external dimensions of the PVC rustication profile.
- The interior of the groove should be covered with glue to submerge the fibreglass mesh in a layer at least 10 mm thick (FIG. A). At the same time, spread the glue over the groove and under the groove on the surface of the thermal cladding and immediately insert the rustication strip (FIG. B)
- Make sure that the profile of the PVC strip for rustication is completely (along its entire length) submerged in the glue.
- It is not allowed to have no glue between the PVC rustication profile and the thermal cladding.
- Inserting the strip into the groove will push out and squeeze out some of the glue from the groove. The façade fibreglass mesh should be submerged in the glue and the excess glue should be collected and redistributed over the fibreglass mesh (FIG. C).
- The perforated wings of the rustication strip should be submerged in glue and covered with the façade fibreglass mesh.
- The total thickness of the adhesive layer should not exceed 2 - 2.5 mm.

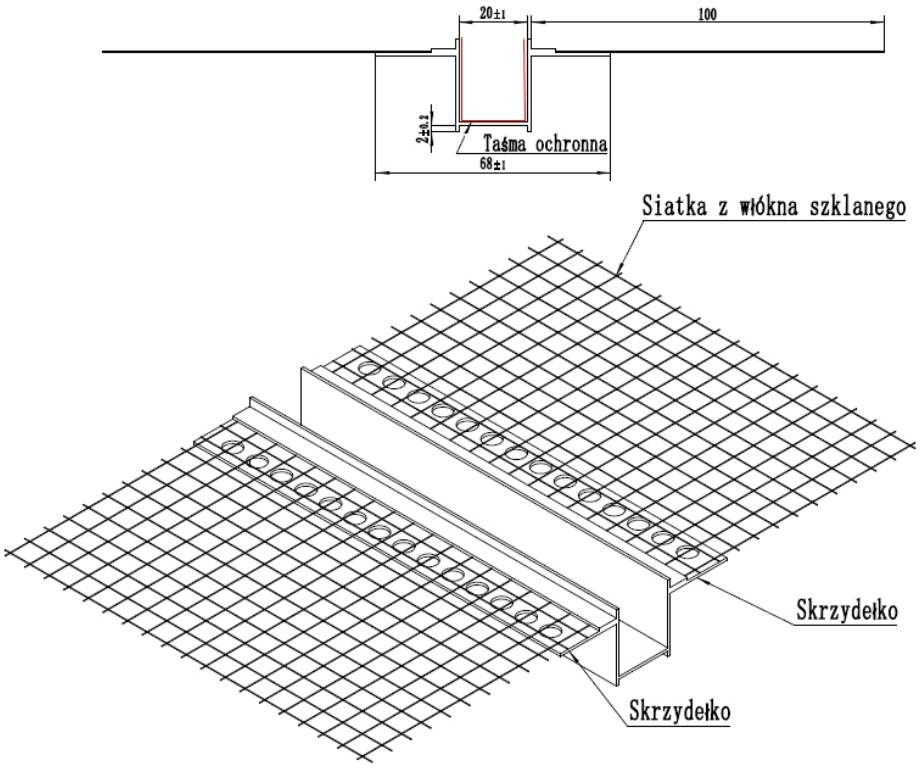
ACCEPTANCE OF STAGE 1:

- Verify the position of the rustication strips for vertical and horizontal alignment with the façade.
- Verify the rustication strips for their position in one plane. To do this, place the batten (spirit level) on the installed strips in place of protruding walls (plaster stoppers, FIG. E) and make sure that all strips are in the same plane in relation to each other. It is justified to use the tolerance table for cat. III plasters according to PN-70/B-10100.
- Make sure that the perforated wings of the rustication strips are submerged in the glue and that the façade fibreglass mesh covers them with overlap (FIG. C).
- Make sure that the submerged fibreglass mesh is completely covered with glue.
- Check if any space has been left for plaster (FIG. C). For this purpose it is necessary to assess whether at least 2 - 3 mm of free space has been left between the adhesive surface and the protruding walls (plaster stoppers) of the rustication strips.
- The maximum adhesive layer (max. 2 - 2.5 mm), resulting from submerging the façade fibreglass mesh, must not be exceeded. If the adhesive is too thick, it can crack and increase the weight of the façade.
- It is not allowed to apply glue flush with the protruding walls of the rustication strips (plaster stoppers), thus preventing the future proper distribution of the plaster, which must be finished in place of the protruding walls in the rustication strip (RYS E).

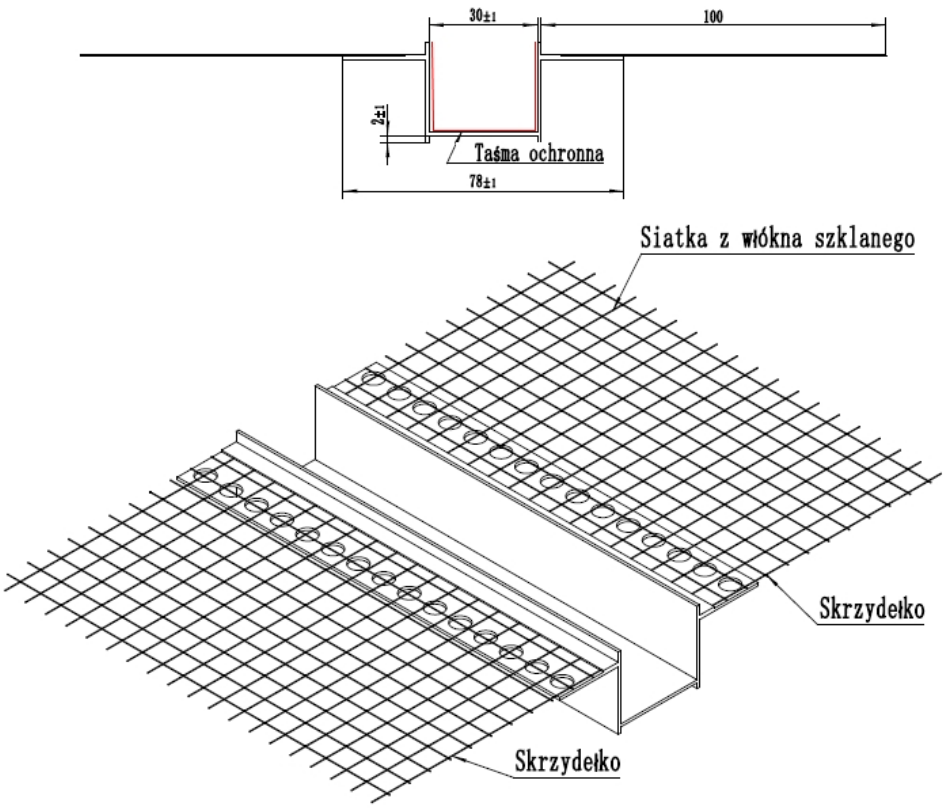
DRAWINGS:



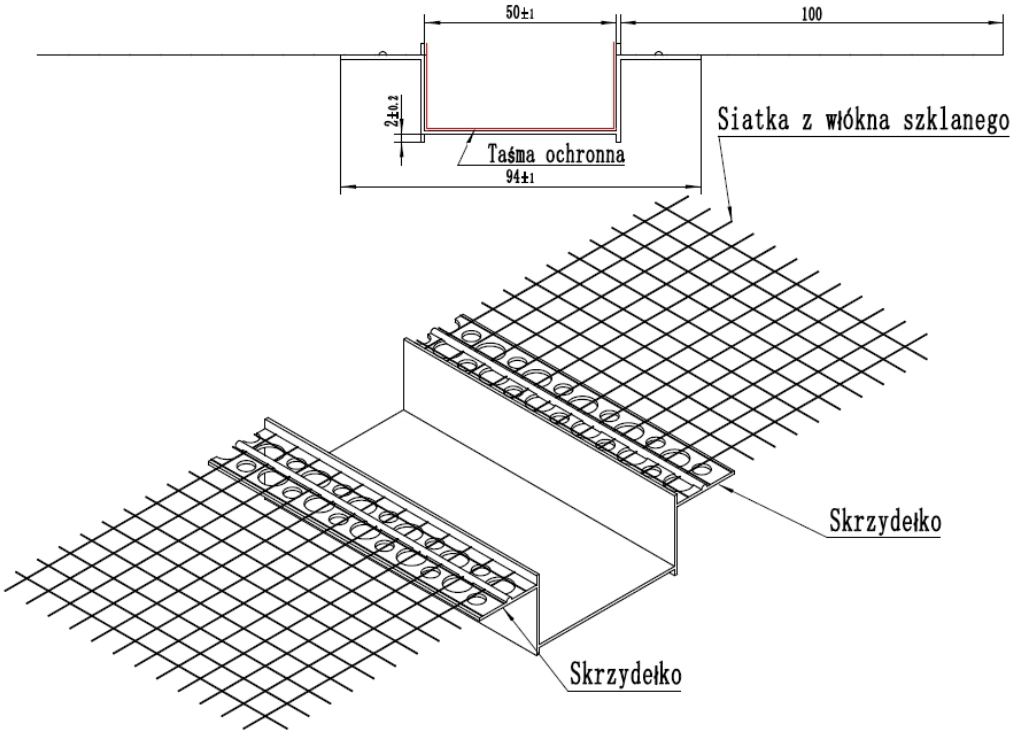
BP11 H1S



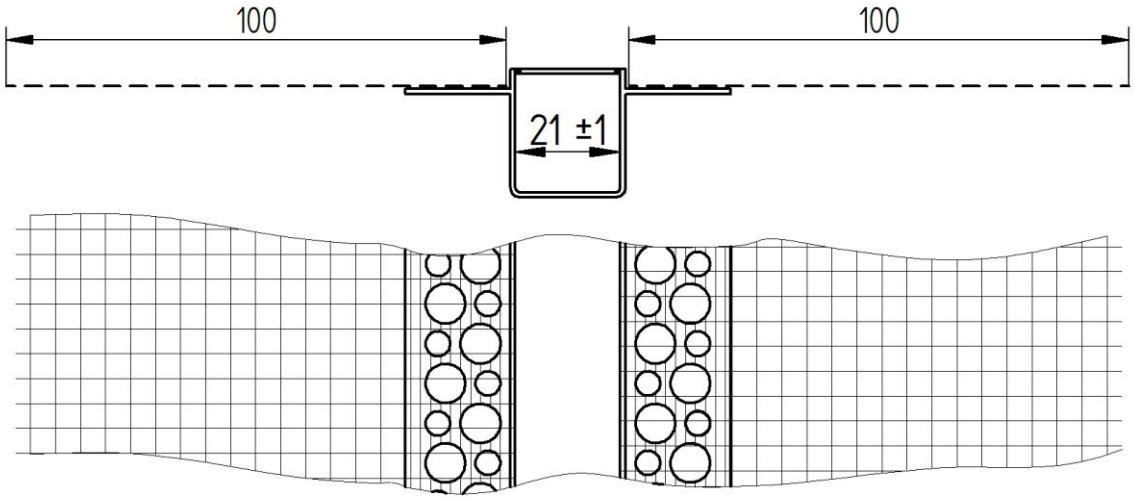
BP11 H2 RS



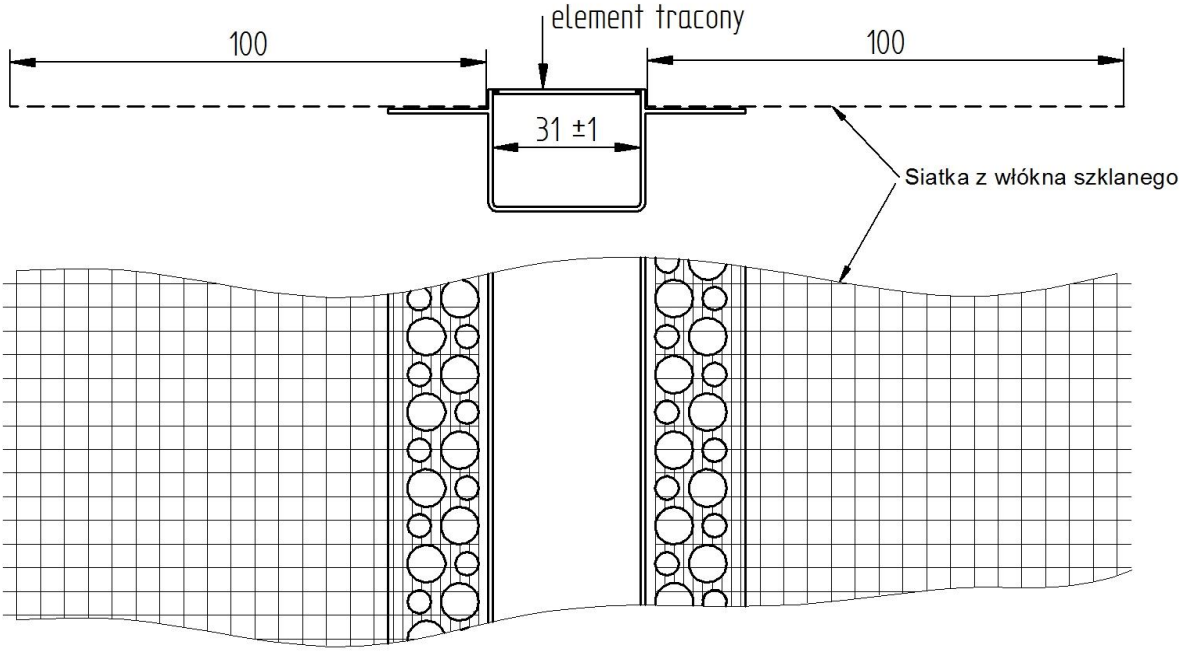
BP11 H3RS



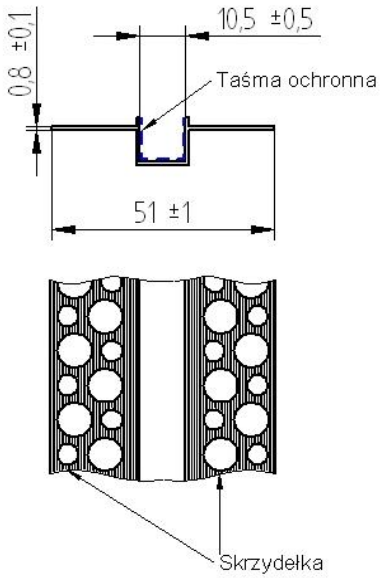
BP11 H5 RS



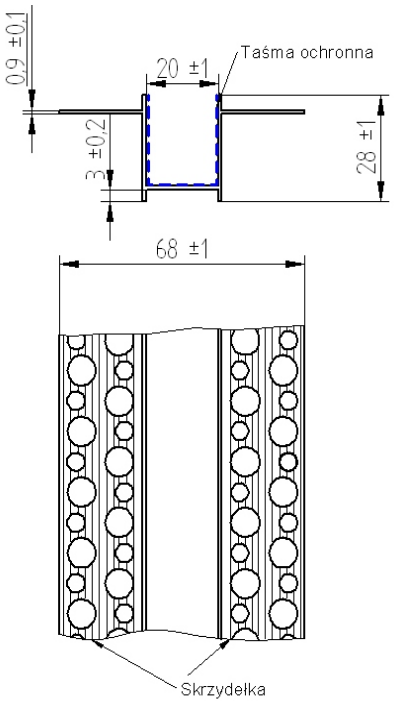
BP11 H2 NS



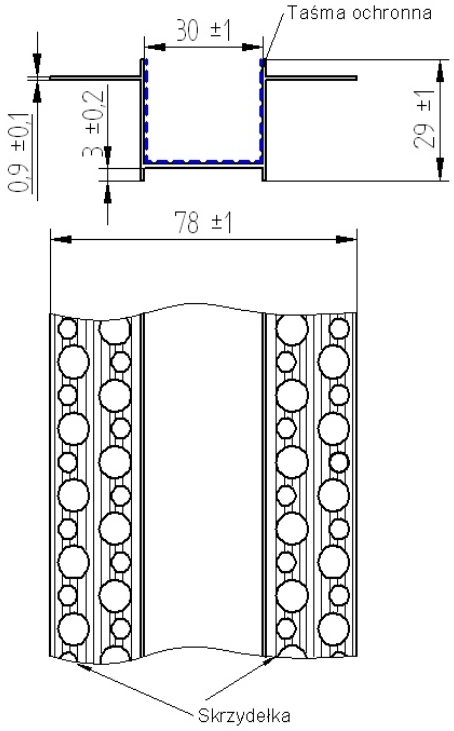
BP11 H3NS



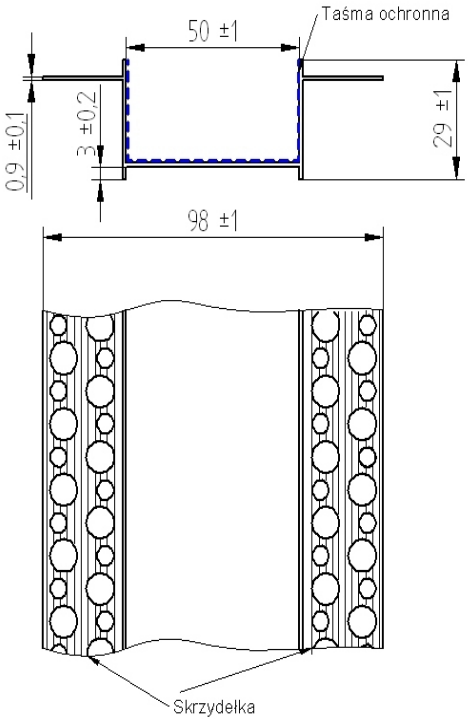
BP11 H1



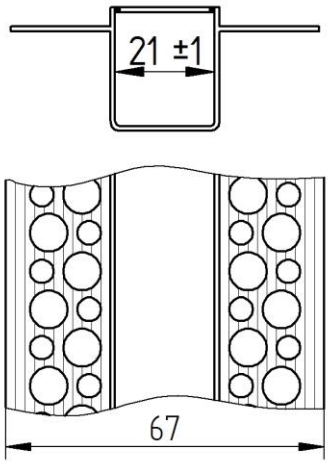
BP11 H2R



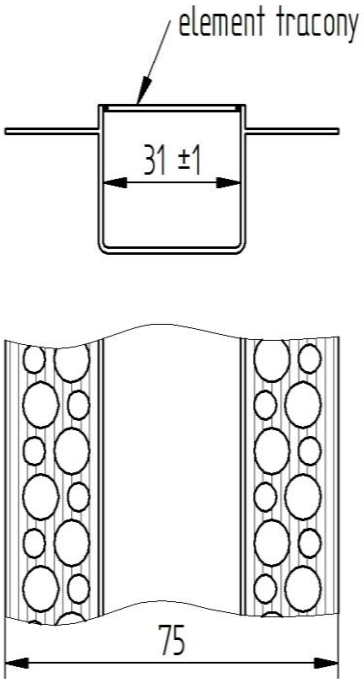
BP11 H3R



BP11 H5R



BP11 H2 N



BP11 H3 N

STAGE 2

- After the adhesive has dried up, the entire façade surface must be primed.
- After the primmer has dried up, plastering may start, in weather conditions approved by the plaster manufacturer and construction site manager.
- The plaster to be applied should be distributed in such a way that a trowel is guided along the protruding walls of the rustication strips (plaster stoppers) - FIG. D. The plaster must be closed and limited at the rustication strip in the point of the protruding strip wall (plaster stopper FIG. E).
- The surface of the plaster must not be higher than the protruding walls of the rustication strip (plaster stoppers) (FIG. E).
- The plaster thickness in case of dashed/textured plasters (thin layer plasters) should not exceed 2.5 - 3 mm. At the same time, the plaster thickness should not be less than 2 mm. Exceeding the maximum plaster layer thickness results in plaster cracks and increased weight of the façade.
- Upon completion of plastering it is possible to remove the protective foil or foam (depending on the version of the rustication strip).

ACCEPTANCE OF STAGE 2:

- Use a spirit level to check the plaster for acceptable unevenness.
- Make sure that the plaster surface is not higher than the plaster stoppers in the rustication strip (FIG. E)
- In the test of dimensional deviations in thin layer plasters the table of deviations should be used as for internal plasters of category III (according to PN-70/B-10100) subject to the exclusion from the assessment of individual hairline scratches of up to 2 mm wide, because such scratches do not reduce the technical properties of the plaster. In case of a larger number of concentrated cracks, even with a width not exceeding 0.2 mm, it is necessary to assess whether they deteriorate the technical properties of the plaster and how their presence affects the appearance of the facade (individual cracks or multiple cracks evenly located).

When testing dimensional deviations of thin layer plasters according to the above mentioned standard and according to "Technical specification of execution and acceptance of construction works" of the ITB (Building Research Institute) in Warsaw (388/2003) and of ITB Instruction 344/2002 - it is possible to examine only the plaster surface and its other technical properties rather than the distance between the plaster surface and the installed finishing profile (rustication strip, drip nose, window expansion joint strip, corner bead, etc.).

In this case no standard has been drafted defining any relation in dimensions and distances between the plaster surface and the finishing profile. Therefore, the differences in distances between the plaster surface and the finishing profile should not be examined by means of a spirit level and no conclusions should be drawn on the basis of such measurements on the quality of plaster-profile connection from the point of view of dimensions and the PN-70/B-10100 standard mentioned above.

The above mentioned instructions of the Building Research Institute, the PN-70/B-10100 standard and the frequently applied DIN 18202 standard refer only to the examination of plaster evenness, absorbability, thermal impact resistance. These documents assume the obligation to use finishing profiles on an ETICS façade. However, they do not specify in any way the position of the finishing profiles in relation to the plaster surface. The location of finishing profiles on an ETICS façade in relation to the plaster remains the matter of Technical Approvals for finishing profiles, recommendations of manufacturers of such profiles and Technical Data Sheets issued by the Manufacturers of finishing profiles.

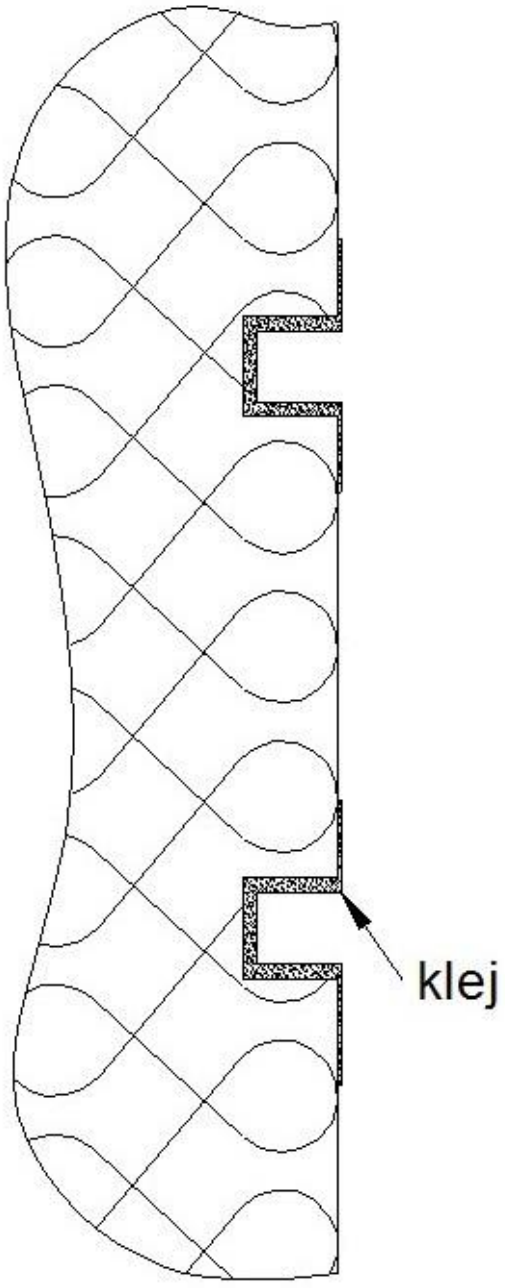
It should be assumed that each finishing profile made of PVC used on an ETICS façade (such as rustication strip, corner beads, etc.) introduces additional elements of different dimensions in the plaster layer, which

must logically result in these elements being located above the plaster surface. Depending on the type of finishing profile used, a part of a specific profile will protrude even a few millimetres above the plaster surface. It is erroneous and contrary to the art of construction as well as the law to expect that the finishing profile be flush with the plaster surface. On the one hand, this results in installation of the profile contrary to manufacturer's Technical Data Sheet, and on the other hand, it contributes to achieving an adhesive and plaster layer with a thickness significantly exceeding the permitted dimensions.

- Make sure that the finishing profiles are not stained with glue or plaster debris in places intended for exposure, such the inside of a rustication profile.
- Check the finishing profiles for discoloration, cracks and other mechanical damage

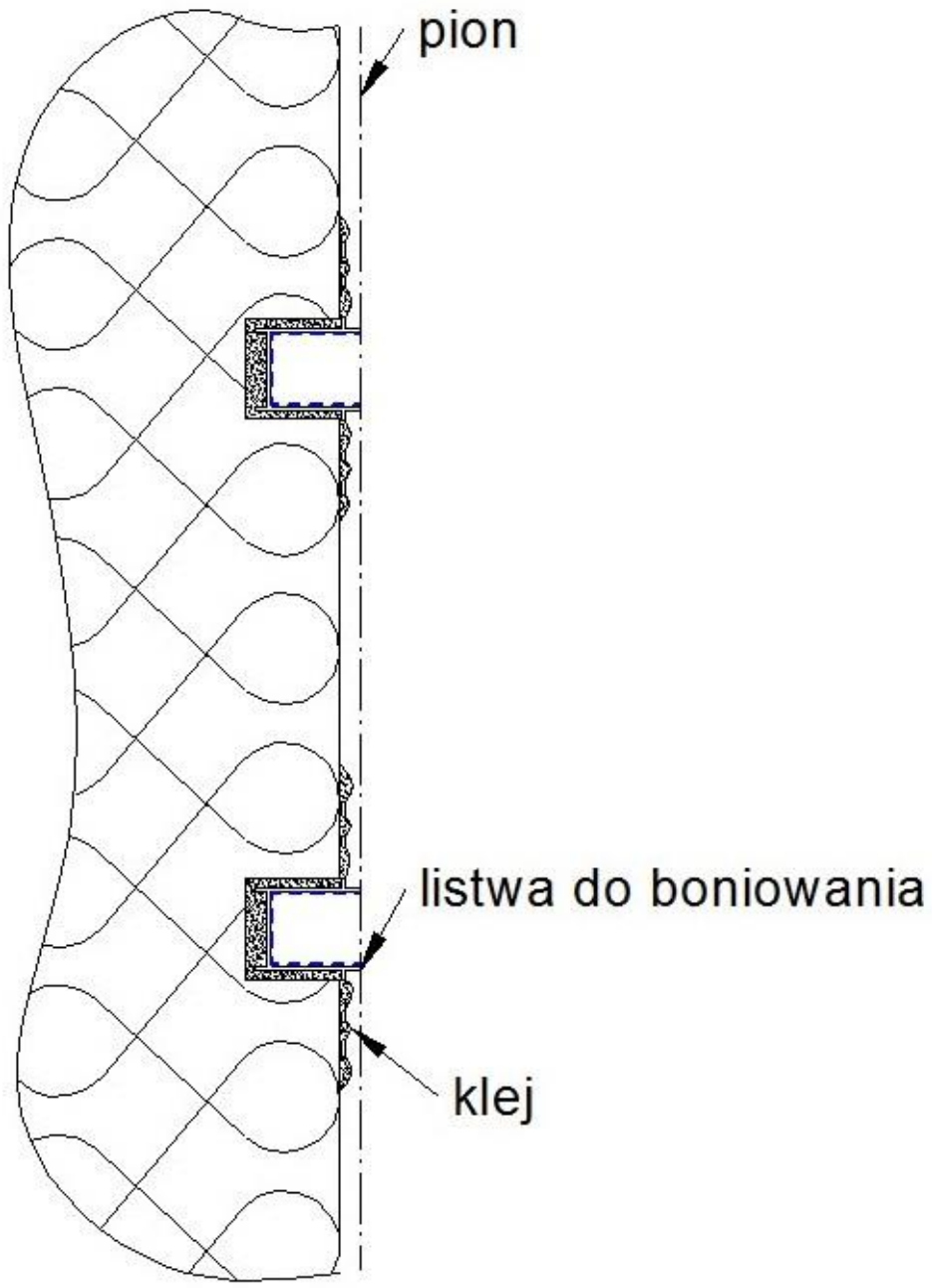
DRAWINGS:

rys. A



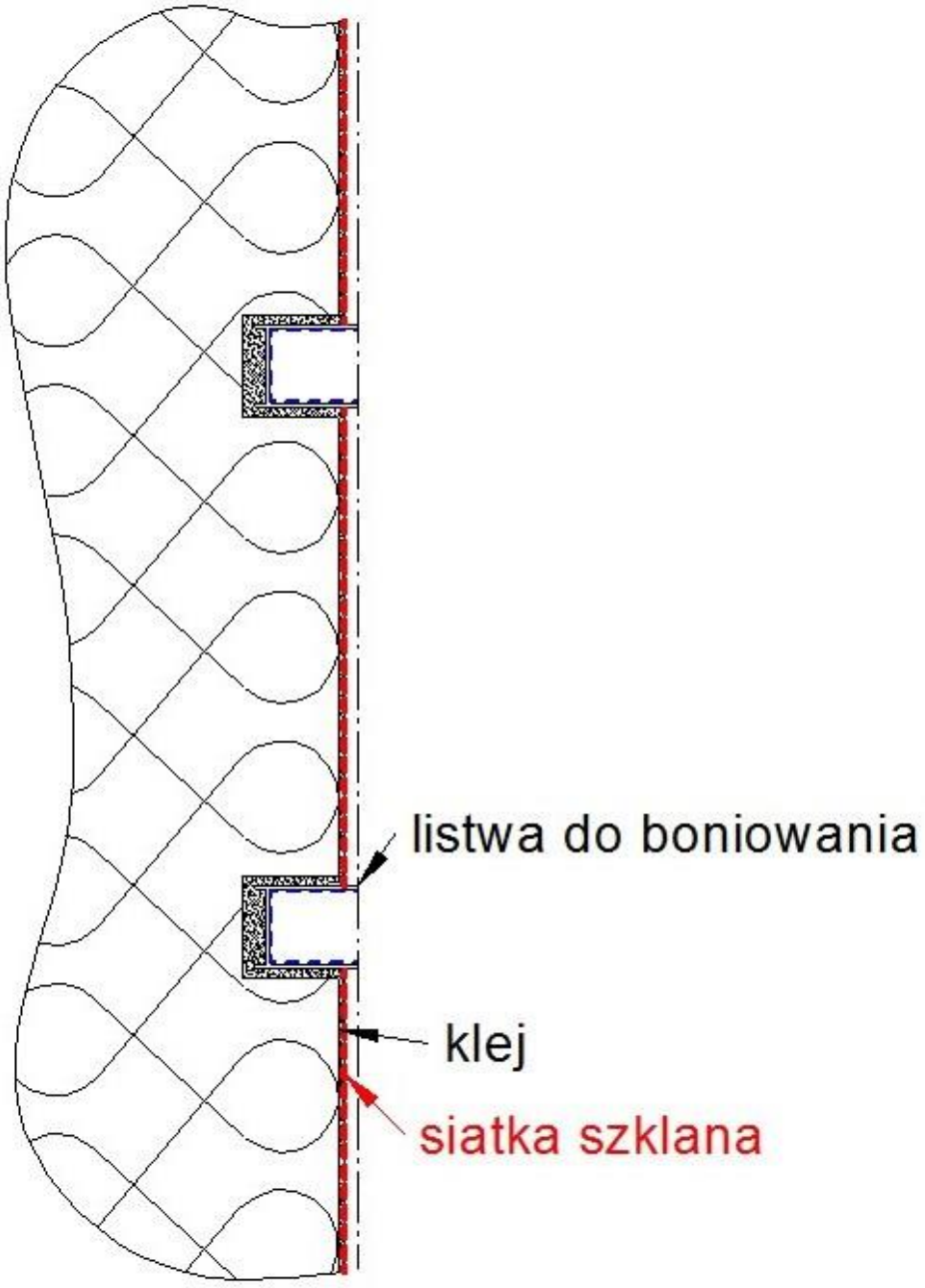
Rys. A	Fig. A
klej	advesive

rys. B



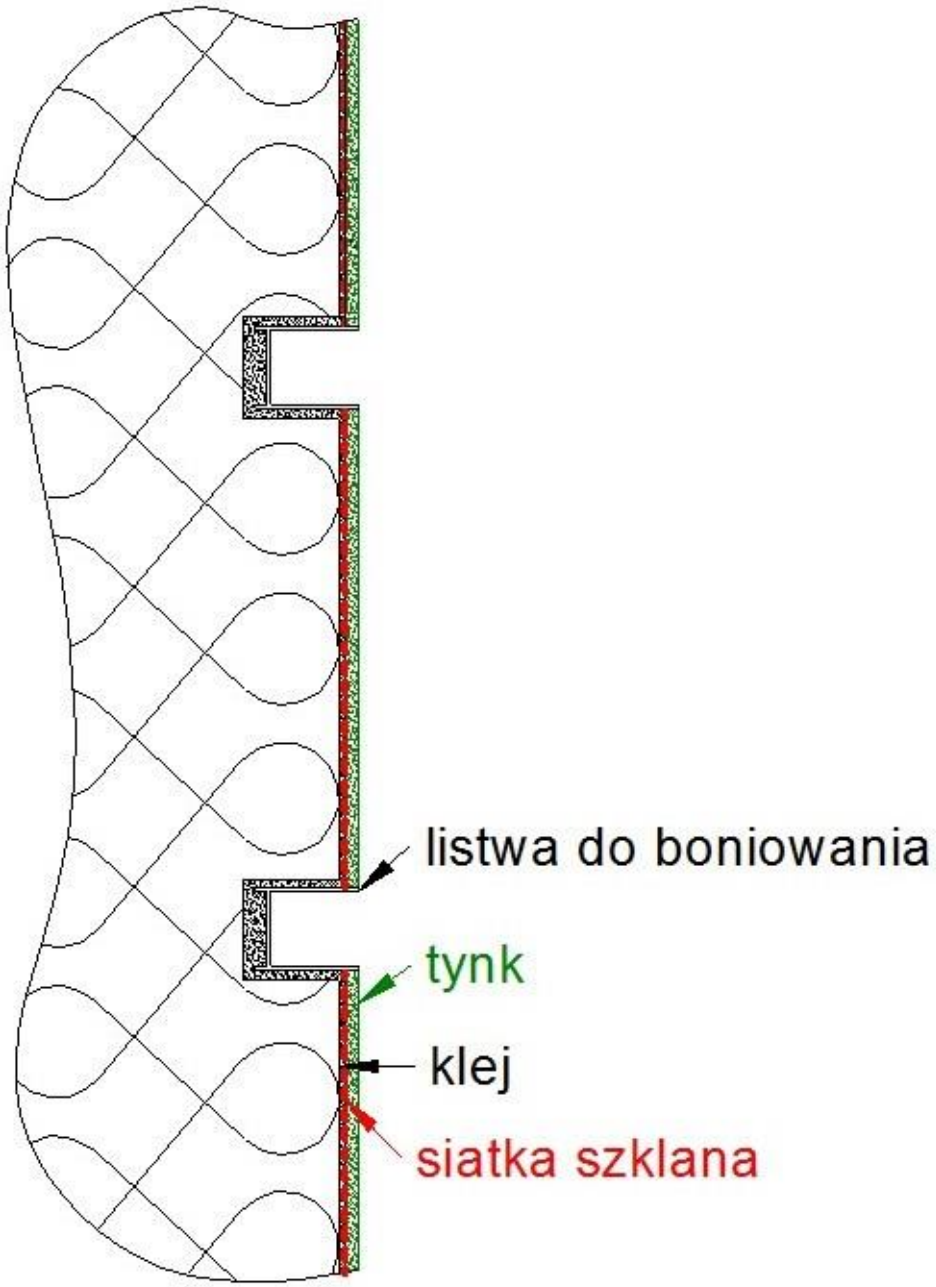
Rys. B	Fig. B
pion	Plumb
Listwa do boniowania	Rustication strip
Klej	adhesive

rys. C



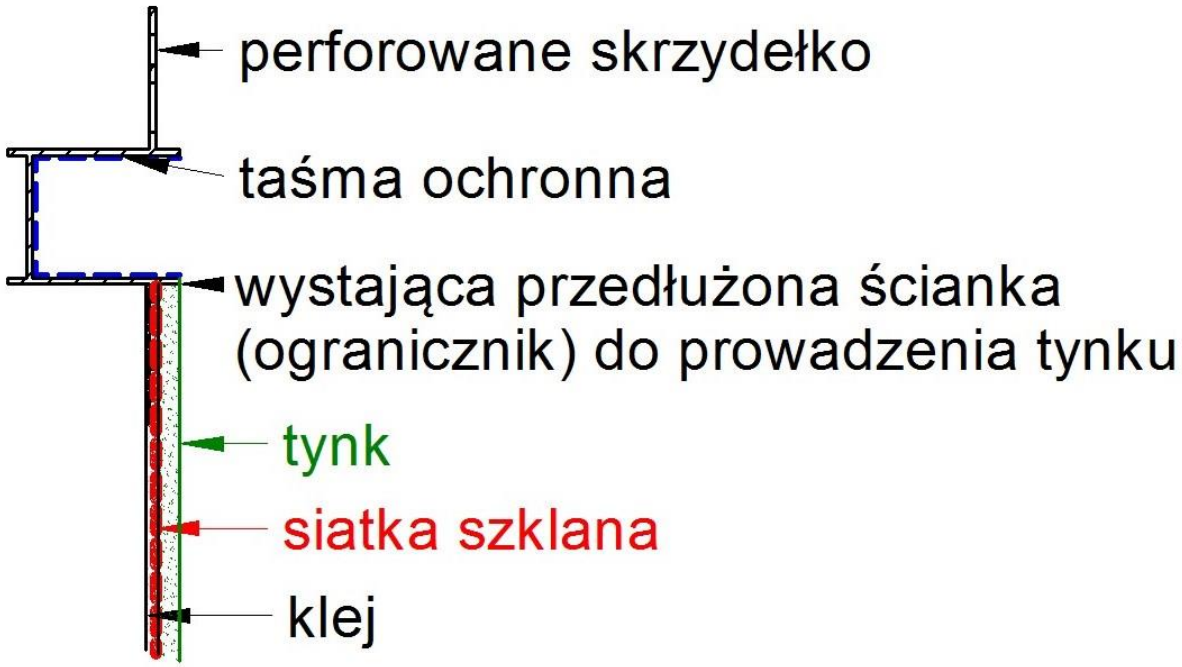
Rys. C	Fig. C
Listwa do boniowania	Rustication strip
Klej	adhesive
Siatka szklana	Fibreglass mesh

rys. D



Rys. D	Fig. D
Listwa do boniowania	Rustication strip
Tynk	plaster
Klej	adhesive
Siatka szklana	Fibreglass mesh

FIG E



Drafted by: Piotr Szabelewski- Director / Member of the Management Board for Bella Plast Sp. z o.o. s.k

Perforowane skrzydełko	Perforated wing
Taśma ochonna	Protective film
Wystająca przedłużona ścianka (ogranicznik) do prowadzenia tynku	protruding wall (plaster stoppers) for plaster spreading
Tynk	plaster
Siatka szklana	Fibreglass mesh
klej	adhvesive