FIRE RESISTANCE CLASSIFICATION REPORT No. 20801B

OWNER OF THE CLASSIFICATION REPORT

JUUNOO nv
Blokkestraat 51
8550 Zwevegem
Belgium

INTRODUCTION

This classification report defines the classification assigned to a non-loadbearing wall – type: JUUNOO 75 + Habito 12.5 mm, in accordance with the procedures given in EN 13501-2:2016: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of 10 pages and 10 annexes and may only be used or reproduced in its entirety.

1 Details of classified product

1.1 General

The element, type: JUUNOO 75 + Habito 12.5 mm, is defined as a non-loadbearing wall with fire resistance characteristics.

1.2 Description

The element, JUUNOO 75 + Habito 12.5 mm, is fully described below, in support of this classification. The drawings of the test element as it was tested, are enclosed in the annexes 1 till 10 of this classification report.

1.2.1 Composition of the test specimen as tested

The test specimen is a non-loadbearing partition wall composed of a metal frame which is provided with a single layer of gypsum boards per side. The partition wall is insulated and constructed symmetrically.

Outer dimensions of the test specimen:

- height: 3000 mm;
- width: 3000 mm;
- thickness: 103.8 mm.

1.2.1.1 Metal frame

The metal frame is composed of horizontal U-profiles at the upper and lower horizontal edge connection. In between these, vertical C - and ∑ - profiles are installed.

Edge profiles

[1] I75 profile top – brand and type: JUUNOO I75 – material: galvanized steel – thickness: 0.8 mm – section dimensions: 40 mm x 77 mm x 40 mm – total length during fire test: 2400 mm.

- position: applied horizontally at the upper horizontal edge connection of the wall with the concrete furnace frame;
- fixing:
  - by means of nail plugs [5];
  - to the concrete furnace frame;
  - c/c distance: 600 mm.

[2] C75 profile top – brand and type: JUUNOO C75 – material: galvanized steel – thickness: 0.8 mm – section dimensions: 19 mm x 73.6 mm x 18 mm – length: 400 mm.

- position: slid over the I75 profile top [1] with an overlap of 50 mm (NV);
- fixing:
  - by means of 2 nail plugs [5] per C75 profile top [2];
  - to the concrete furnace frame.

[3] I75 profile bottom – brand and type: JUUNOO I75 – material: galvanized steel – thickness: 0.8 mm – section dimensions: 40 mm x 75.4 mm x 40 mm – total length during fire test: 2400 mm.

- position: applied horizontally at the lower horizontal edge connection of the wall with the concrete furnace frame;
- fixing:
  - by means of nail plugs [5];
  - to the concrete furnace frame;
  - c/c distance: 600 mm.

[4] C75 profile bottom – brand and type: JUUNOO C75 – material: galvanized steel – thickness: 0.8 mm – section dimensions: 19 mm x 73.6 mm x 18 mm – length: 400 mm.

- position: slid over the I75 profile bottom [3] with an overlap of 50 mm (NV);
- fixing:
  - by means of 2 nail plugs [5] per C75 profile bottom [4];
  - to the concrete furnace frame.

[5] Nail plug – brand and type: FLASHfix 5x30 – material: steel – diameter: 3.2 mm – length: 33 mm – with nylon plug – diameter: 5 mm – length: 30 mm.

[6] C75 extendable profile – brand and type: JUUNOO C75 – material: galvanized steel – thickness: 0.8 mm – max length: 3500 mm – min length: 2000 mm – length during the test: 2958 – length separate profiles: 1879 mm.

- the top [6a] and bottom [6b] of the extendable profile are slid into each other with an overlap of 640 mm. A C75 quickspan [7] fixing makes sure the profiles are held into place at the desired height (see annex 7).
- position: applied vertically in between the horizontal C75-profiles [2], [4] , at the fixed and flexible edge connection of the wall with the concrete furnace frame;

- fixing of the fixed edge:
  - by means of nail plugs [5];
  - to the concrete furnace frame;
  - c/c distance: 750 mm.
- clearances:
  - at the top: 20 mm;
  - at the bottom: 20 mm;

consisting of:

[6a] C75 extendable profile top – material: galvanized steel – thickness: 0.8 mm – dimensions of the section: 7 mm x 51 mm x 75.4 mm x 51 mm x 7 mm – length: 1950 mm.

- fixing:
  - by means of 2 rivets [8];
  - to the C75 profile top [2].

[6b] C75 extendable profile bottom – material: galvanized steel – thickness: 0.8 mm – dimensions of the section: 48.5 mm x 73.5 mm x 48.5 mm – length: 1950 mm.

- fixing:
  - by means of 2 rivets [8];
  - to the C75 profile bottom [4].

[7] C75 quickspan – brand and type: JUUNOO C75 quickspan – material: steel – steel thickness: 2 mm – dimensions: see annex 7.

[8] Rivet – material: aluminium – diameter: 3.8 mm – length: 8 mm.

[9] Sealing strip – brand and type: Gyproc PE3x30mm – material: polyethylene (PE) closed cell – section dimensions: 3 mm x 30 mm.

- number: 1 strip along the full length of the profiles;
- position:
  - applied on the back of the horizontal profiles [1]-[4];
  - applied on the back of the C75 extendable profile [6] at the fixed edge of the concrete furnace frame;
- fixing: self-adhesive.

Intermediary profiles

[10] I75 extendable profile – brand and type: JUUNOO I75 – material: galvanized steel – thickness: 0.8 mm – length: 2960 mm.

- the top [10a] and bottom [10b] of the extendable profile are slid into each other with an overlap of 783 mm (NV). A I75 quickspan [11] fixing makes sure the profiles are held into place at the desired height (see annex 10).
- position: applied vertically in between the horizontal I75 profiles [1], [3];
- c/c distance: 600 mm;
- clearances:
  - at the top: 20 mm;
  - at the bottom: 20 mm;

consisting of:

[10a] I75 extendable profile top – dimensions of the section: see annex 8 – length: 1780 mm.

- fixing:
  - by means of 2 rivets [8] ;
  - to the I75 profile top [1].

[10b] I75 extendable profile bottom – dimensions of the section: see annex 9 – length: 1780 mm.

- fixing:
  - by means of 2 rivets [8] ;
  - to the I75 profile bottom [3].

[11] I75 quickspan – brand and type: JUUNOO I75 quickspan – material: steel – steel thickness: 2 mm – dimensions: see annex 10.

1.2.1.2 Lining

The metal frame is provided with a single layer of gypsum boards on both sides. The vertical joints of the layers on both sides coincide at the vertical mullions.

[12] Gypsum board – brand and type: Gyproc® Habito® 12.5 mm – material: gypsum – thickness: 12.5 mm – maximum dimensions: 1200 mm x 2600 mm – surface mass: 11.86 kg/m² – moisture content: 0.53 % at 50°C.

- number: 1 layers on each side;

- fixing:
  - by means of gypsum board screws [13];
  - to the profiles of the metal frame;
  - c/c distance: 250 mm.

Exposed side:

- the horizontal joint is positioned at 400 mm from the top;

Unexposed side:

- the horizontal joint is positioned at 400 mm from the top;

[13] Gypsum board screw – brand and type: Gyproc® Snelbouwschroeven TT3,5/25 mm – material: phosphated steel – diameter: Ø3.5 mm – length: 25 mm.

1.2.1.3 Insulation

[14] Insulation – brand and type: Rockwool® Rocksono Base – material: rock wool – thickness: 60 mm – maximum dimensions: 1200 mm x 600 mm – density: 33.8 kg/m³.

- position: inside the wall over the entire surface;
- fixing: slightly clamped between the flanges of the metal frame.

1.2.1.4 Finishing products

[15] Joint tape – brand and type: Gyproc P50 – thickness: 0.2 mm – width: 50 mm.

- position: applied on all vertical and horizontal joints of the lining;
- fixing: incorporated in the jointfiller [17].

[16] Jointfiller – brand and type: Gyproc Jointfiller 45.

- position: applied on all joints and screw heads.

2 Test reports/EXAP reports and test results in support of the classification

2.1 Test reports/EXAP reports

Name of the laboratory	Report ref. no.	Name of the owner	Date of the test	Method
WFRGENT nv	20801A	JUUNOO nv	17/02/2021	EN 1364-1:2015

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1:2020.

Direction of exposure: The test specimen is a symmetrical construction.

No extra load supplementary to the own weight of the non-loadbearing wall was applied during the test.

One vertical edge is free, the other edges are fixed.

2.2 Test results

Parameters	Results
Thermal insulation – I	
ΔT_m = 140°C	94 minutes
ΔT_M = 180°C	72 minutes
Integrity – E	
Spontaneous and sustained flaming	99 minutes
Failure with ∅ 6 mm gap gauge	99 minutes, no failure(2)
Failure with ∅ 25 mm gap gauge	99 minutes, no failure(2)
Ignition of cotton pad	99 minutes, no failure(3)
Radiation – W	
Radiation intensity = 15 kW/m²	99 minutes, no failure(1)

(1) The test was discontinued after 99 minutes at the test sponsor's request.
(2) No failure until the moment of spontaneous and sustained flaming.
(3) No failure until the moment of failure of the thermal insulation (I).

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2016.

3.2 Classification

The element, type: JUUNOO 75 + Habito 12.5 mm, is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

The classifications are valid for both sides of the non-loadbearing wall.

EI 60, EI 45, EI 30, EI 20, EI 15

EW 90, EW 60, EW 30, EW 20

E 90, E 60, E 30, E 20

3.3 Field of direct application

This classification is valid for the following end use applications according to EN 1364-1:2015.

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

a) unlimited increase in the width of the wall;
b) unlimited decrease in height of the wall of 3 m;
c) increase in height of the wall up to 4 m, if the expansion allowances are increased pro-rata;
d) increase in the thickness of the wall (≥ 103.8 mm);
e) increase in the thickness of component materials;
   - steel profile depth (≥ 73.5 mm);
   - thickness of the plasterboard (≥ 12.5 mm);
f) decrease in linear dimensions of the boards, but not the thickness:
   - width (≤ 1200 mm);
   - height (≤ 2600 mm).
g) decrease in stud spacing (≤ 600 mm);
h) decrease in distance of fixing centres:
   - metal frame to the surrounding supporting constrction (≤ 750 mm);
   - lining to the metal frame (≤ 250 mm);
i) increase in the number of horizontal and vertical joints;
j) only horizontal and vertical joints (of the type tested) are permitted.
k) The non-loadbearing wall may be installed in a high density rigid supporting construction which has the same or greater classified fire resistance than used in the test:
   - density (≥ 2000 kg/m³).

4 Limitations

This classification report does not represent type approval nor certification of the products.

SIGNED

Mark Van den Bergh
(Signature)
Project assistant
Ghent
2022.02.23 07:11:47 +01'00'

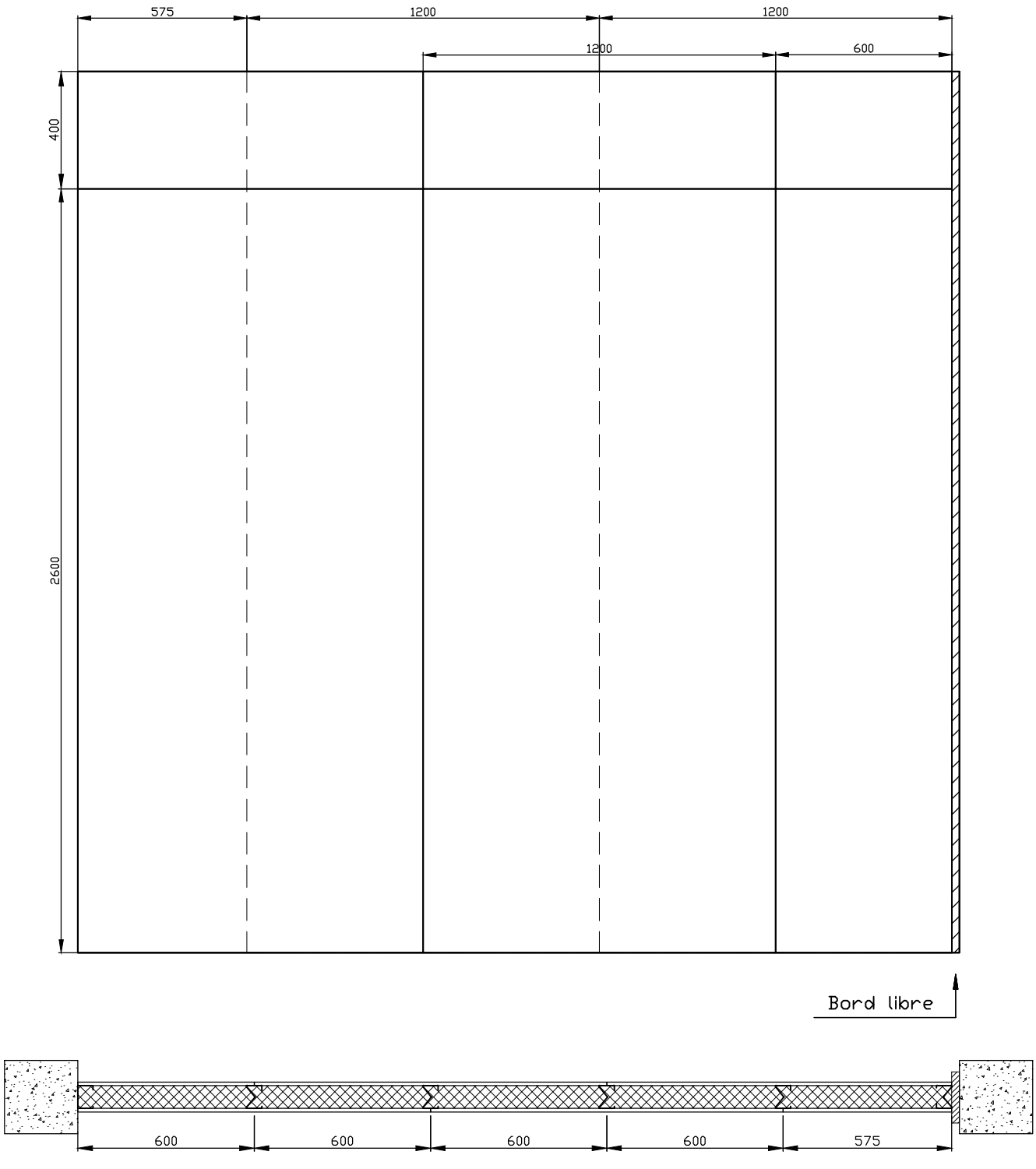
APPROVED

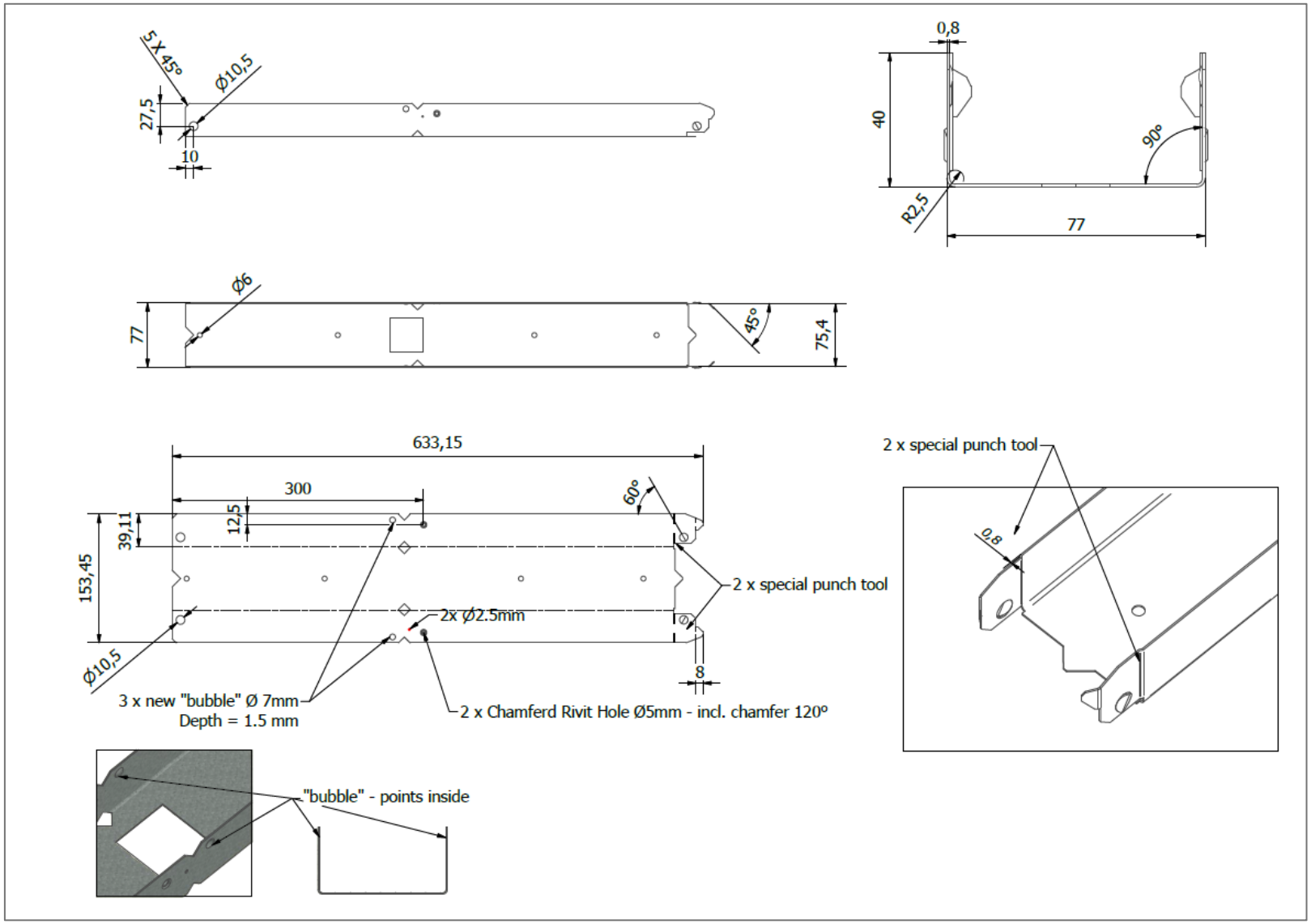
Seppe Van Damme
(Signature)
Projectleader
Ghent
2022.02.23 07:56:42 +01'00'

This document is the original version of the classification report and is written in English.

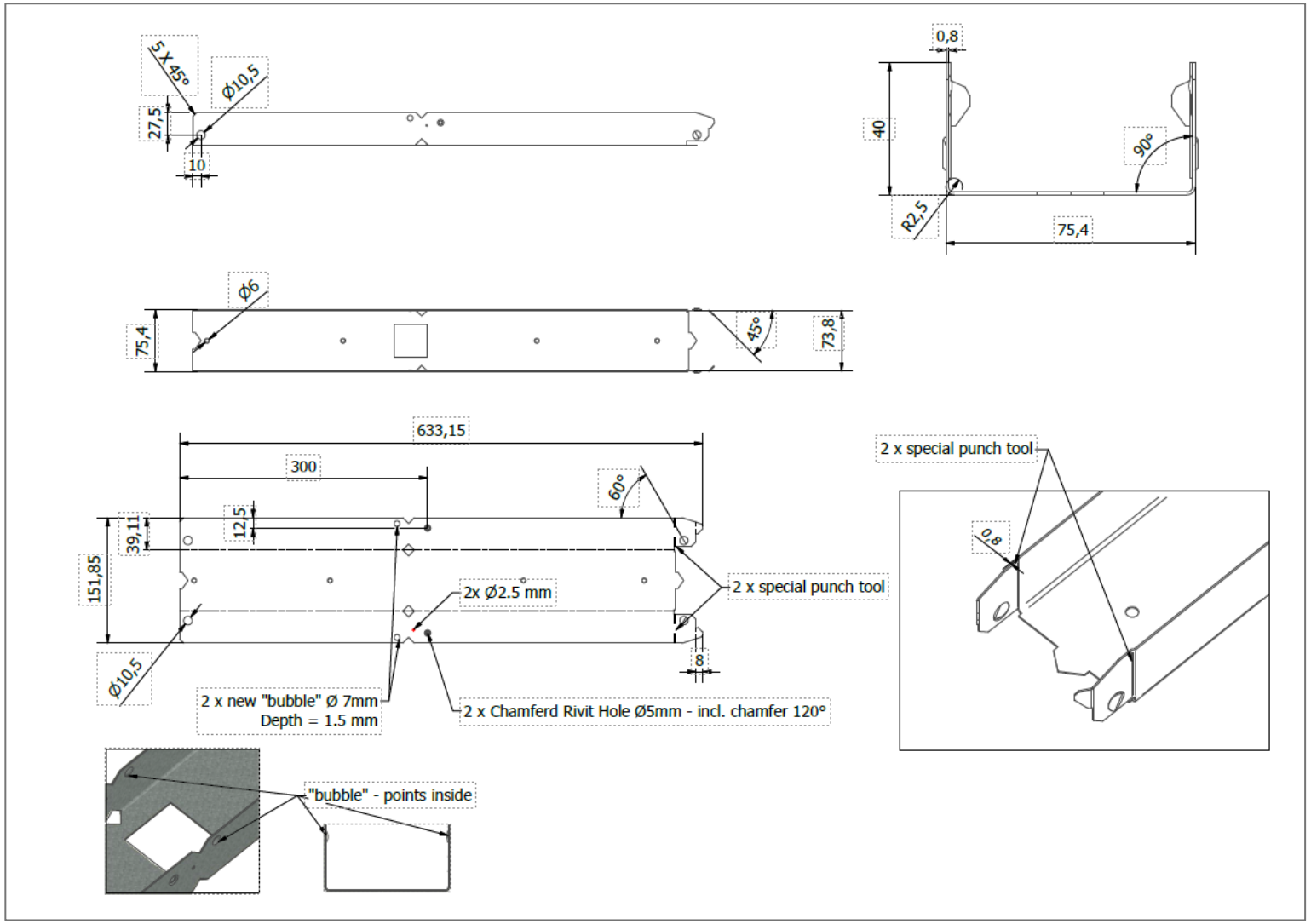
In case of doubt, the most recent version prevails, originally issued in English.

Front view (unexposed side) - dimensions



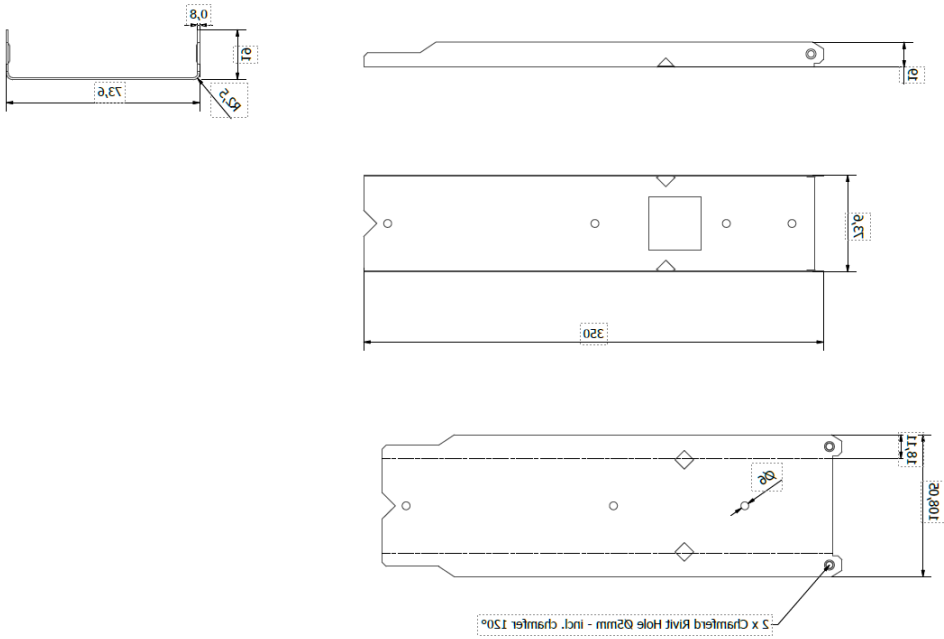


This drawing was provided by the manufacturer.

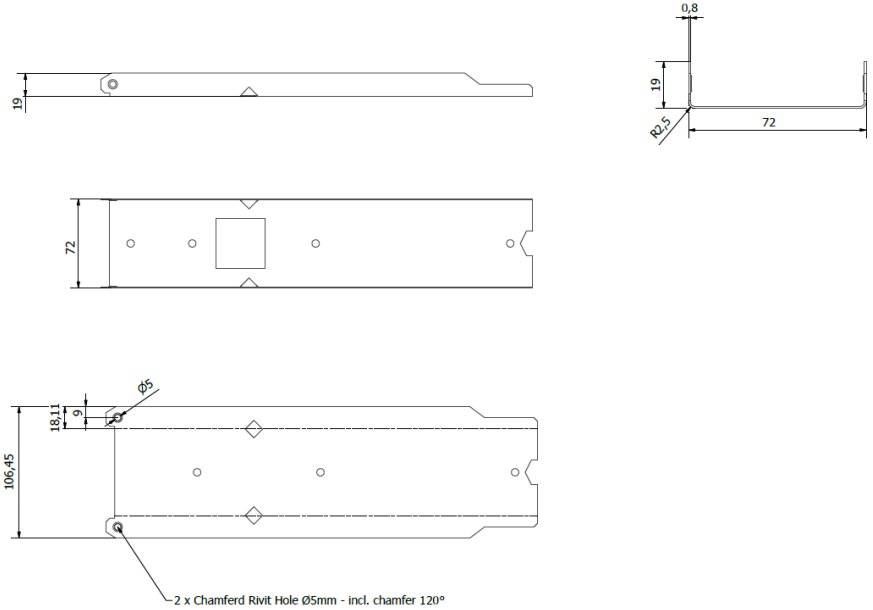


This drawing was provided by the manufacturer.

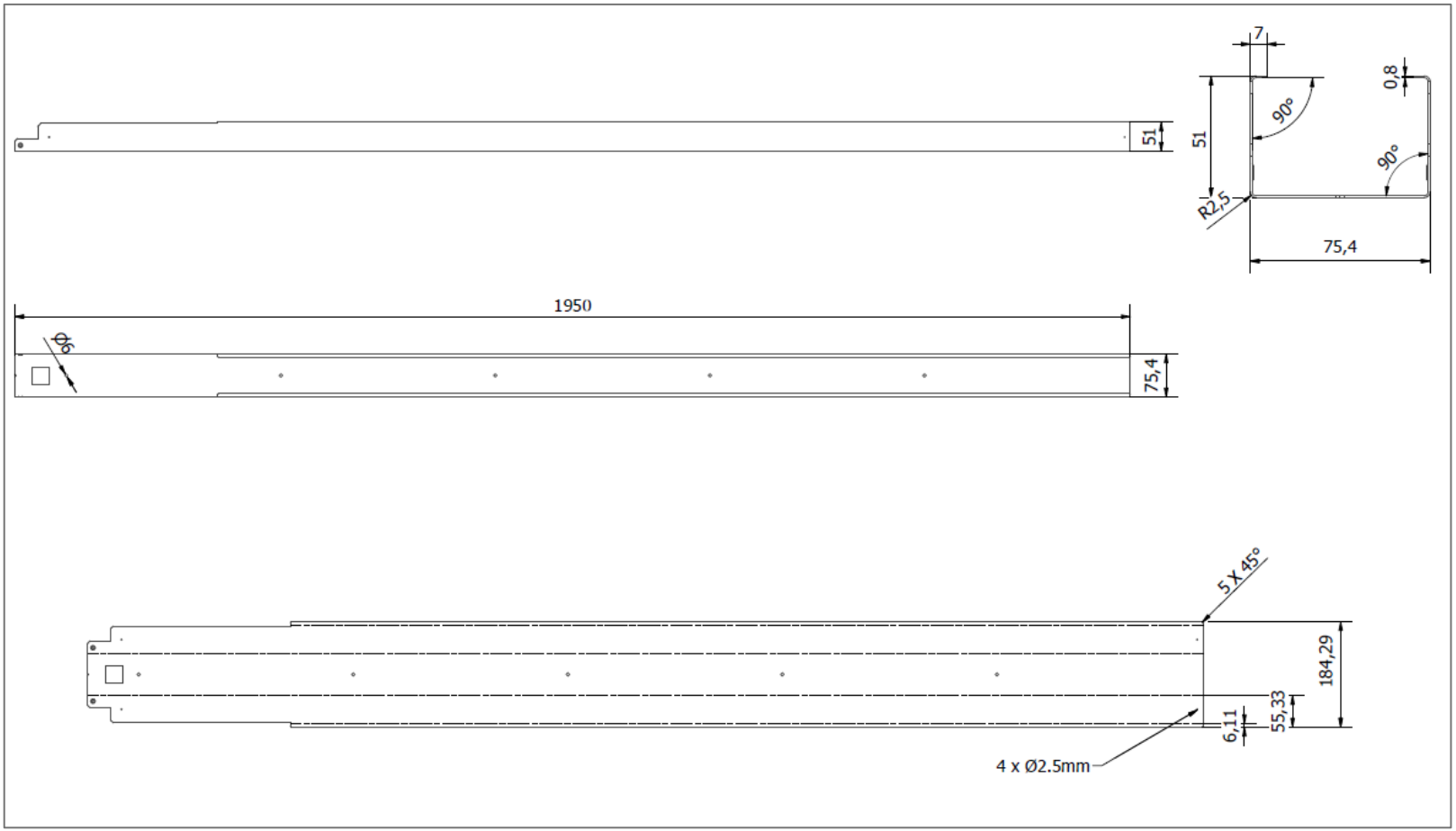
C75 profile top [2]



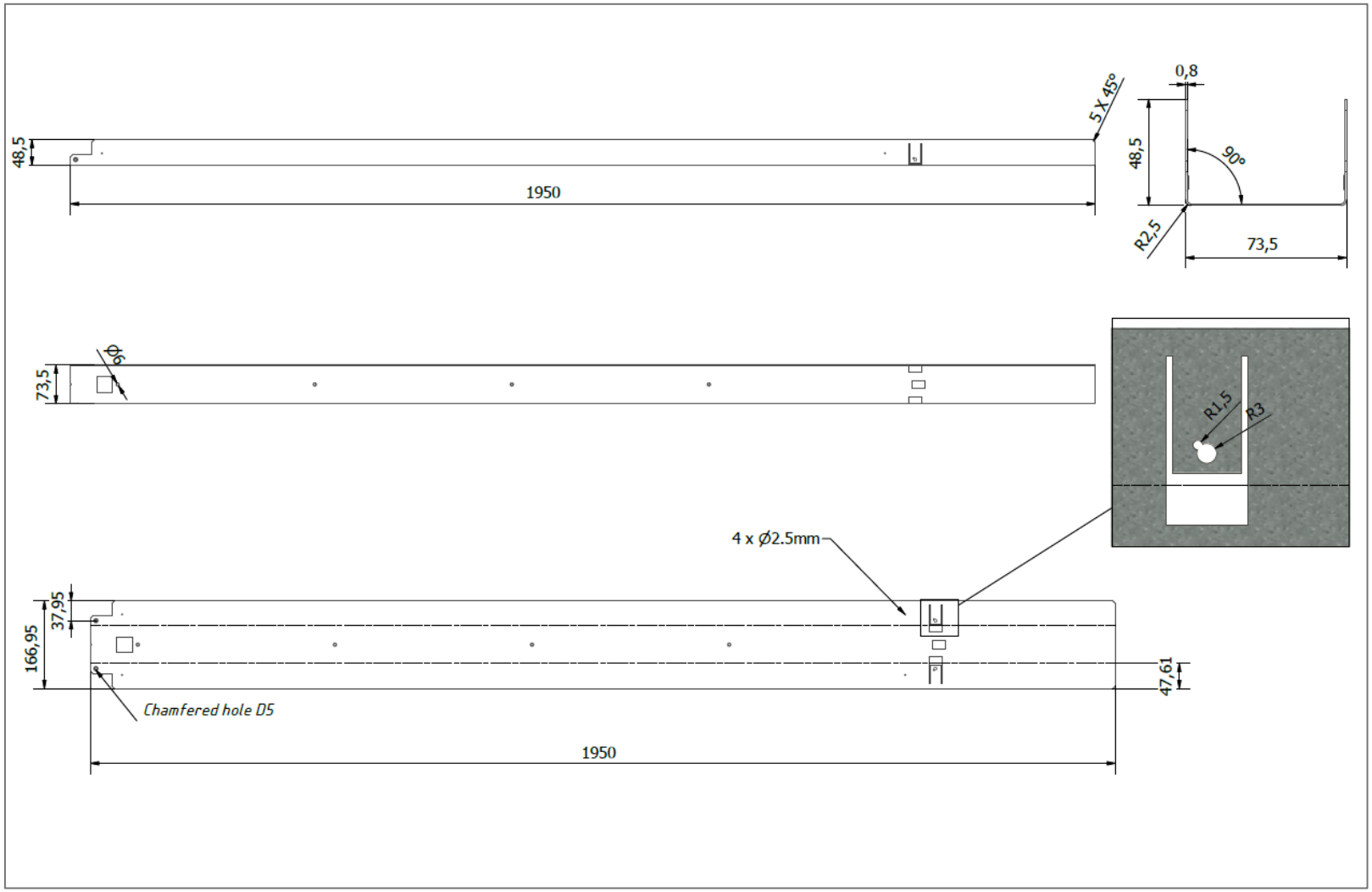
C75 profile bottom [4]



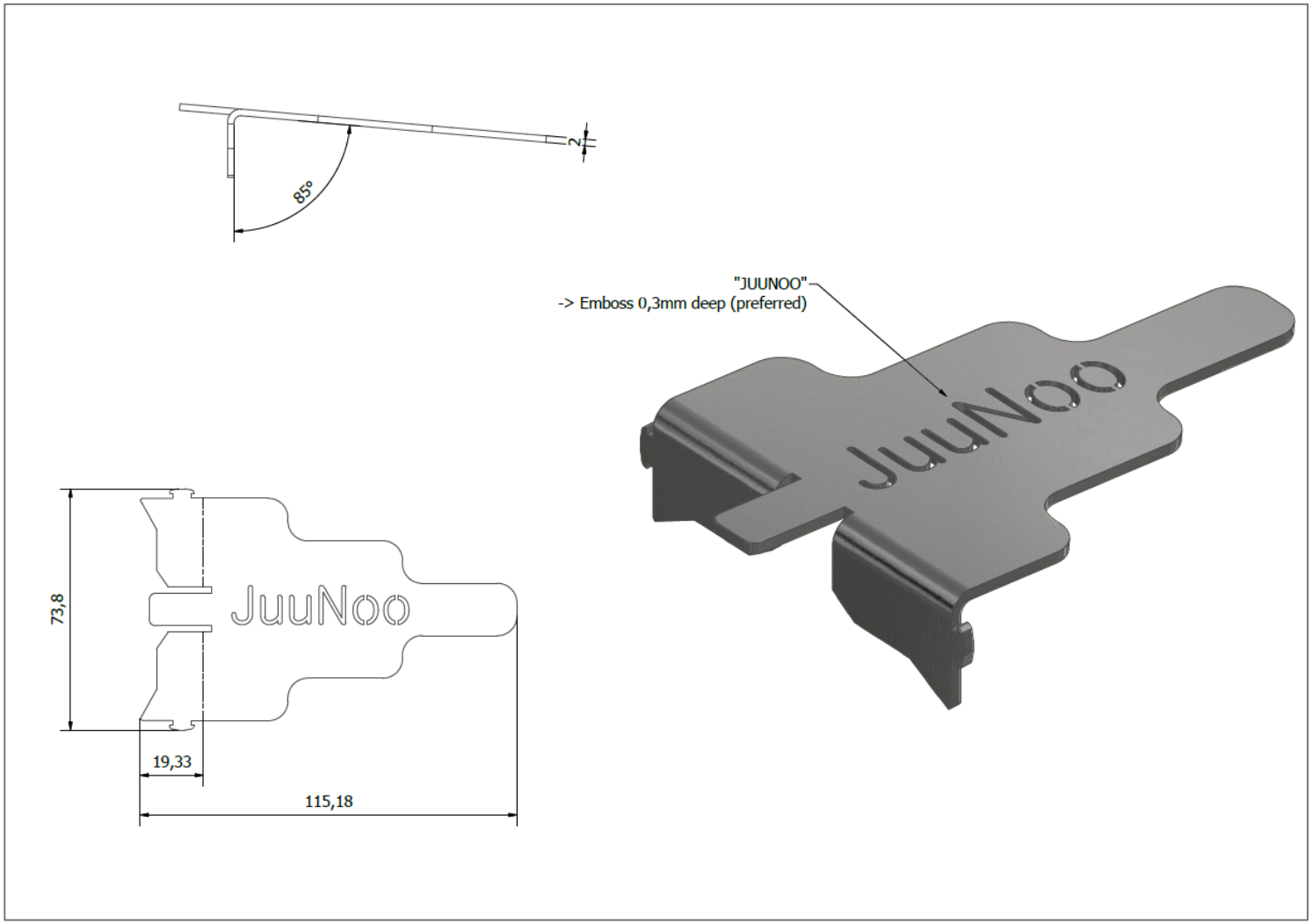
This drawing was provided by the manufacturer.



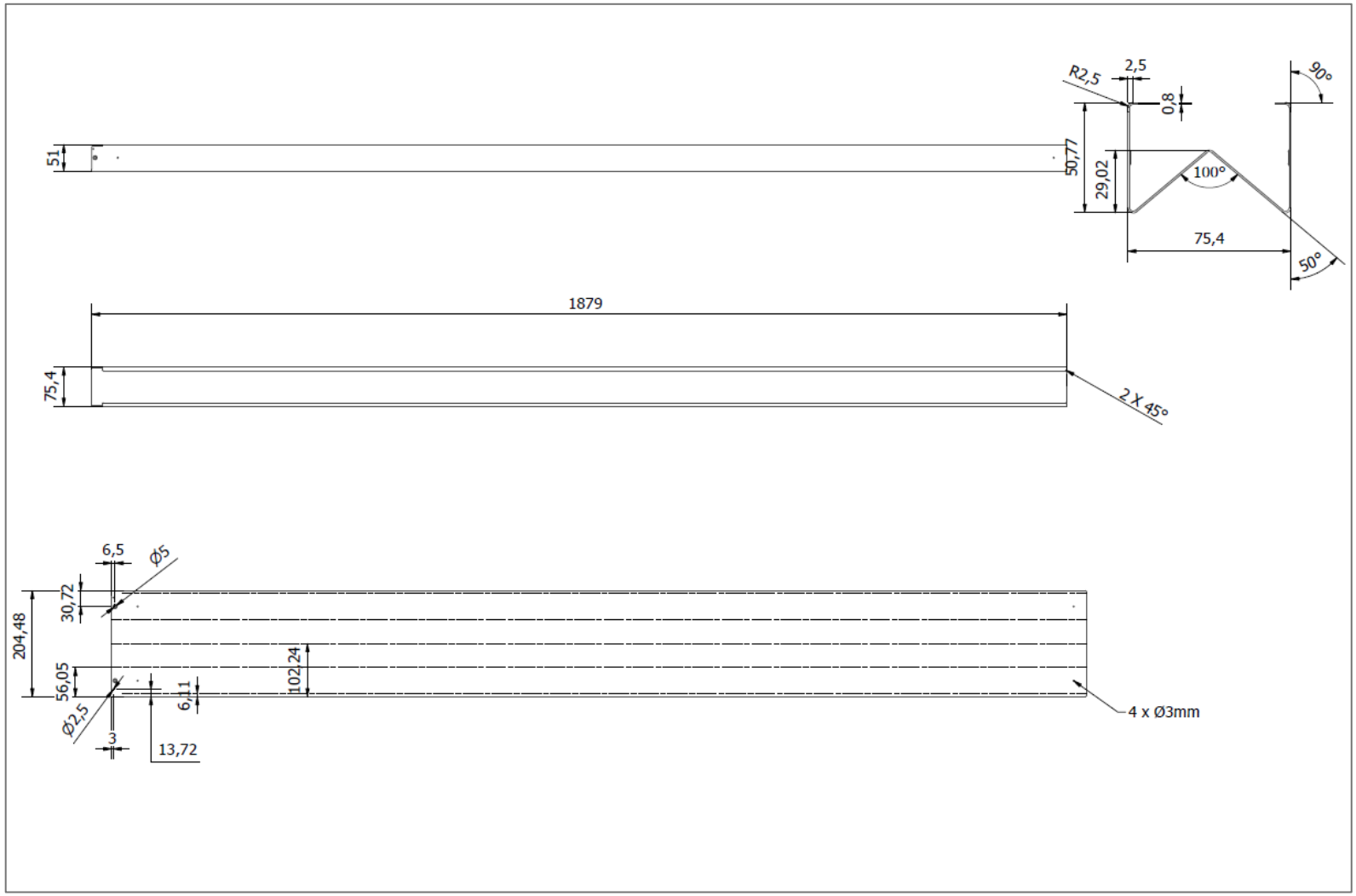
This drawing was provided by the manufacturer.



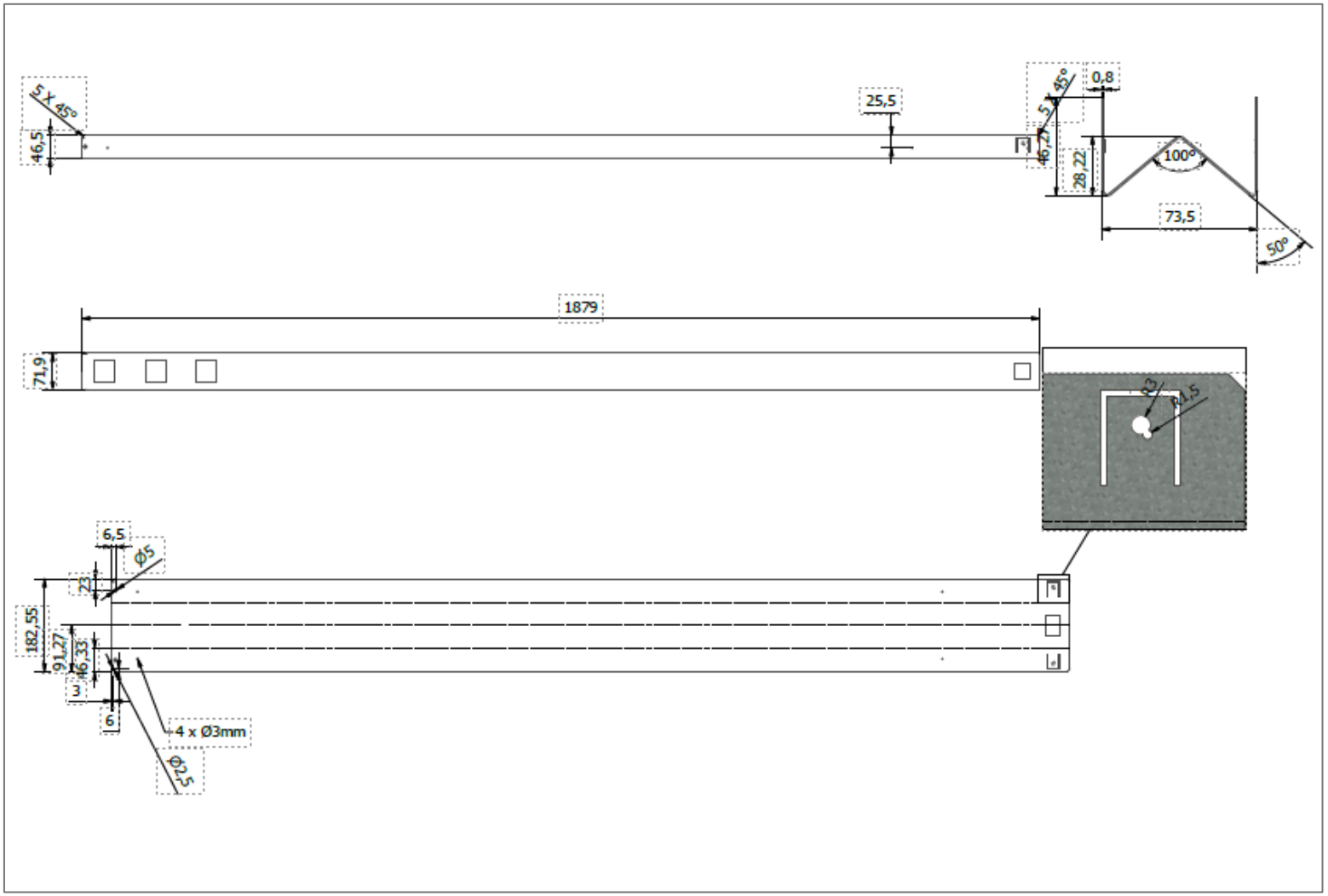
This drawing was provided by the manufacturer.



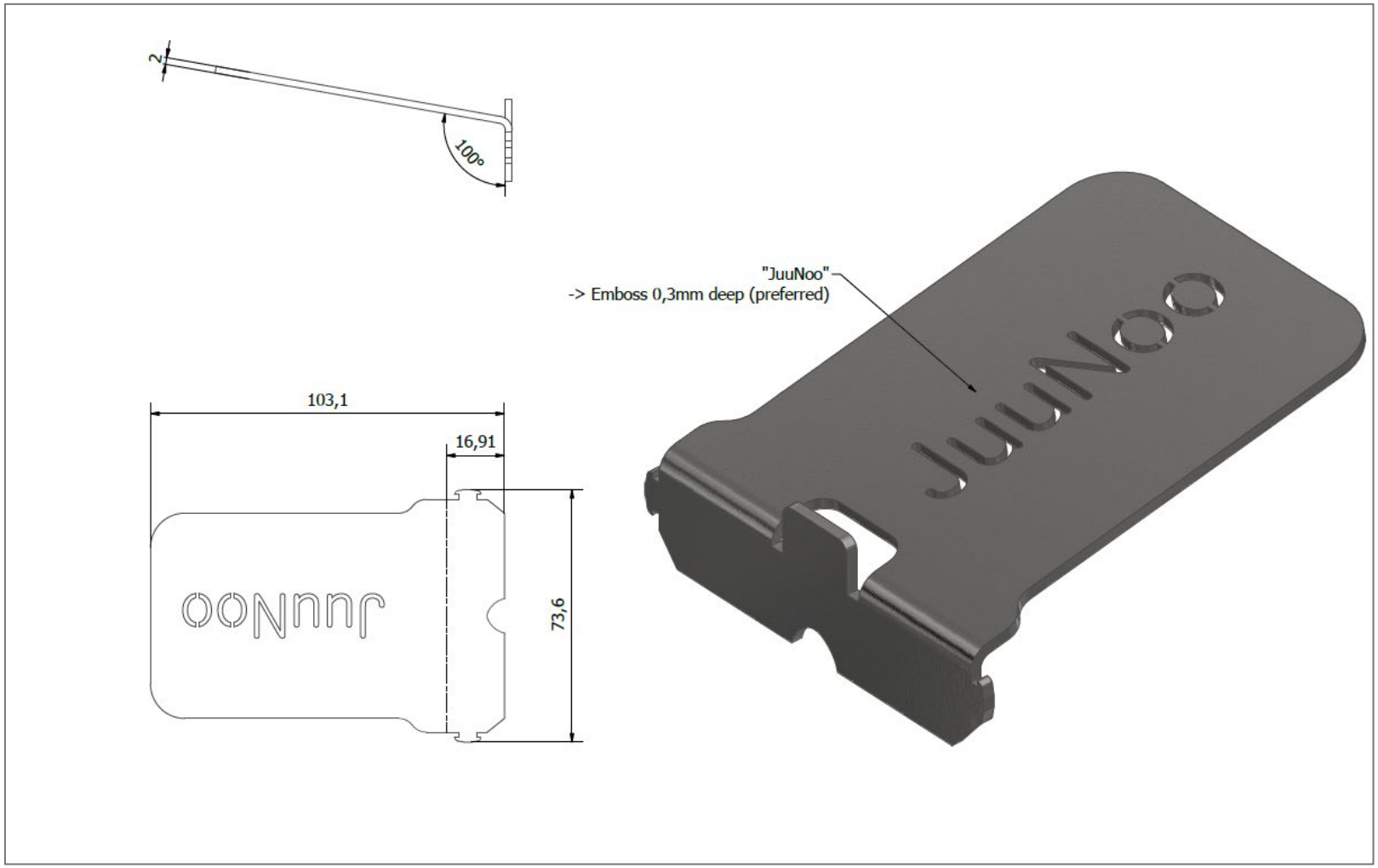
This drawing was provided by the manufacturer.



This drawing was provided by the manufacturer.



This drawing was provided by the manufacturer.



This drawing was provided by the manufacturer.