

FIRE RESISTANCE CLASSIFICATION REPORT No. 17082B

Owner of the classification report

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Introduction

This classification report defines the classification assigned to a non-loadbearing glazed wall (type: Pyrobel 17N_Schüco ADS 80 FR 60 aluminium frame), in accordance with the procedures given in EN 13501-2:2007+A1:2009: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of 8 pages and 7 annexes and may only be used or reproduced in its entirety.

1 Details of classified product

1.1 General

The element, Pyrobel 17N_Schüco ADS 80 FR 60 aluminium frame, is defined as a non-loadbearing glazed wall.

1.2 Description

The element, Pyrobel 17N_Schüco ADS 80 FR 60 aluminium frame, 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 7 of this classification report.

1.2.1 Composition of the test specimen as tested

The test specimen is a non-loadbearing glazed wall composed of glass panes in an insulated aluminium frame.

Dimensions of the wall:

- height: 3000 mm;
- width: 3000 mm;
- thickness: 80 mm.

1.2.1.1 Glazing system:

[1]-[7] Glass panes – type: Pyrobel 17N – nominal thickness: 17.8 mm ± 1.6 mm – measured thickness: 16.2 mm till 18.1 mm.

- position: shown in annex 1;
- fixing: clasped between the glazing beads;
- orientation: the glass panes are symmetrical.

	Dimensions of the glass panes: (width x height)	Dimensions of the exposed area: (width x height)	Reference:
[1]	500 mm x 2888 mm	464 mm x 2852 mm	CM30095-02-501
[2]	1350 mm x 2888 mm	1314 mm x 2852 mm	CM30095-01-501
[3]	435 mm x 1002 mm	399 mm x 966 mm	CM30095-04-502
[4]	435 mm x 1002 mm	399 mm x 966 mm	CM30095-04-501
[5]	435 mm x 990 mm	399 mm x 954 mm	CM30095-05-501
[6]	435 mm x 990 mm	399 mm x 954 mm	CM30095-05-502
[7]	917 mm x 800 mm	881 mm x 764 mm	CM30095-03-501

- [8] Setting block – material: calcium silicate – dimensions: 70 mm x 18 mm x 7 mm.
- number: two per glass pane;
 - position: under the glass pane.
- [9] Clip-on bead – brand and type: Schüco clipped beads – material: aluminium – wall thickness: 1.5 mm (MV).
- position: at the exposed and unexposed side;
 - section dimensions:
 - exposed side: 28 mm x 25 mm (reference: 173 220);
 - unexposed side: 17 mm x 25 mm (reference: 173 820);
 - fixing: clicked into the (intermediate) tube profiles.
- [10] Thermal isolation – brand and type: Schüco fireboard – material: hydrated silicate reinforced with glass fibre – density: 1629 kg/m³ (MV) – reference: 267 967 (exposed side) and 266 602 (unexposed side).
- position: inside the clip-on beads.
- [11] Glazing gasket – brand and type: Schüco EPDM glazing gasket – material: rubber – thickness: 7 to 8 mm – reference: 284 306.
- position: at the exposed side;
 - fixing: clipped on the exposed clip-on beads.
- [12] Glazing gasket – brand and type: Schüco EPDM glazing gasket – material: rubber – thickness: 5 mm – reference: 224 267.
- position: at the unexposed side;
 - fixing: clipped on the unexposed clip-on beads.

1.2.1.2 Framing system:

The framing system includes the frame components, intumescent strip, thermal insulation and fixing parts.

[13] Tube profile – brand and type: Schüco profile – material: aluminium – outer dimensions: 59 mm x 80 mm – reference: 150 330.

- number: two horizontal and two vertical profiles;
- position: at the outer edges;
- fixing to the concrete frame:
 - with anchors [14] – material: steel – brand and type: Hilti 100 HT – diameter: 10 mm – length: 112 mm;
- fixing: the horizontal and vertical tube profiles are connected to each other by means of L-shaped aluminium corner cleats. The corner cleats are fixed to the horizontal and vertical profiles by means of nails;
- centre-to-centre distance: see annex 1.

[15] Anchor steel plate – brand and type: Schüco anchor steel plate – material: steel – dimensions: 57 mm x 43 mm x 1.5 mm – reference: 242 035.

- position: between the tube profile and the mineral wool;
- fixing to the tube profile:
 - clamped into the tube profile and fixed with a screw [16] – diameter: 4 mm – length: 15 mm.

[17] Intermediate tube profile – brand and type: Schüco profile – material: aluminium – outer dimensions: 84 mm x 80 mm – reference: 150 380.

- number: three horizontal and three vertical profiles;
- position: between the glass panes;
- fixing: intermediate tube profiles are connected to the other (intermediate) tube profiles by means of T- and X-shaped aluminium corner cleats. The corner cleats are fixed to the (intermediate) tube profiles by means of nails;
- centre-to-centre distance: see annex 1.

[18] Thermal isolation – brand and type: Schüco fireboard – material: hydrated silicate reinforced with glass fibre – density: 1629 kg/m³ (MV) – reference: 266 600 (exposed and unexposed side) and 266 601 (in the centre).

- position: inside the (intermediate) tube profiles at the exposed side, the centre and the unexposed side.

[19] Glazing clip – brand and type: Schüco glazing clip – material: steel – reference: 266 500.

- position: between the (intermediate) tube profiles and the glass panes (see annex 6).
- centre-to-centre distance: 159 mm to 433 mm (see annex 6).

[20] Fixing plate – brand and type: Schüco fixing plate – material: steel – reference: 242 033.

- position: on top of the glazing clips where an anchor is used;
- fixing: clamped between the screw head of the anchor and the glazing clip.

[21] Intumescent strip – material: graphite-based – section dimensions: 28 mm x 2.4 mm – reference: 266 784.

- position: around the extremities of the glass panes on the (intermediate) tube profiles;
- fixing: self-adhesive to the (intermediate) tube profiles.

[22] Setting block – material: calcium silicate – dimensions: 100 mm x 80 mm x 15 mm – density: 960 kg/m³ (NV).

- position: under the aluminium frame;
- centre-to-centre distance: 800-1000 mm.

[23] Mineral wool – brand and type: Thermal insulation Promat Promaglaf HTK 1100 – initial thickness: 25 mm – initial density: 96 kg/m³ (NV).

- position: between the tube profiles and the concrete frame, at the fixed edges.

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	17082A	AGC Glass Europe sa sa	10/04/2015	EN 1364-1:1999

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1:2012.

Direction of exposure: The fire resistant glass is symmetrical.
The glazing system is asymmetrical: the sizes of the glazing beads are different at the exposed- and unexposed side.
The framing system is symmetrical.

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

2.2 Test results

Parameters	Results
Thermal insulation – I	
$\Delta T_m = 140^\circ\text{C}$	51 minutes
$\Delta T_M = 180^\circ\text{C}$	48 minutes
Integrity – E	
Spontaneous and sustained flaming	60 minutes
Failure with gap gauge \varnothing 6 mm	60 minutes, no failure ⁽²⁾
Failure with gap gauge \varnothing 25 mm	60 minutes, no failure ⁽²⁾
Ignition of cotton pad	60 minutes, no failure ⁽¹⁾
Radiation – W	
Radiation intensity = 15 kW/m ²	60 minutes, no failure ⁽²⁾

(1) No failure until thermal insulation failure.

(2) The test was stopped after 60 minutes at the request of the sponsor.

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2007+A1:2009.

3.2 Classification

The element, Pyrobel 17N_Schüco ADS 80 FR 60 aluminium frame, is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

The classifications are valid for the direction as stated in clause 2.1.

EI 45, EI 30, EI 20, EI 15

EW 60, EW 30, EW 20

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 1364-1:1999.

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 and decrease of the width of the wall;
- b) unlimited decrease in height of the wall of 3 m;
- c) decrease in the linear dimensions of panes;
- d) change in the aspect ratio of panes provided that the largest dimension of the pane and its area are not increased;
- e) decrease in the distance between mullions and transoms;
- f) decrease in distance between fixing centres;

- g) increase in the dimensions of framing members;
- h) the use of screwed-on glazing beads;
- i) allowances for expansion;
- j) change in the angle of installation of up to 10° from the vertical.

4 Limitations

This classification document does not represent type approval nor certification of the product.

SIGNED

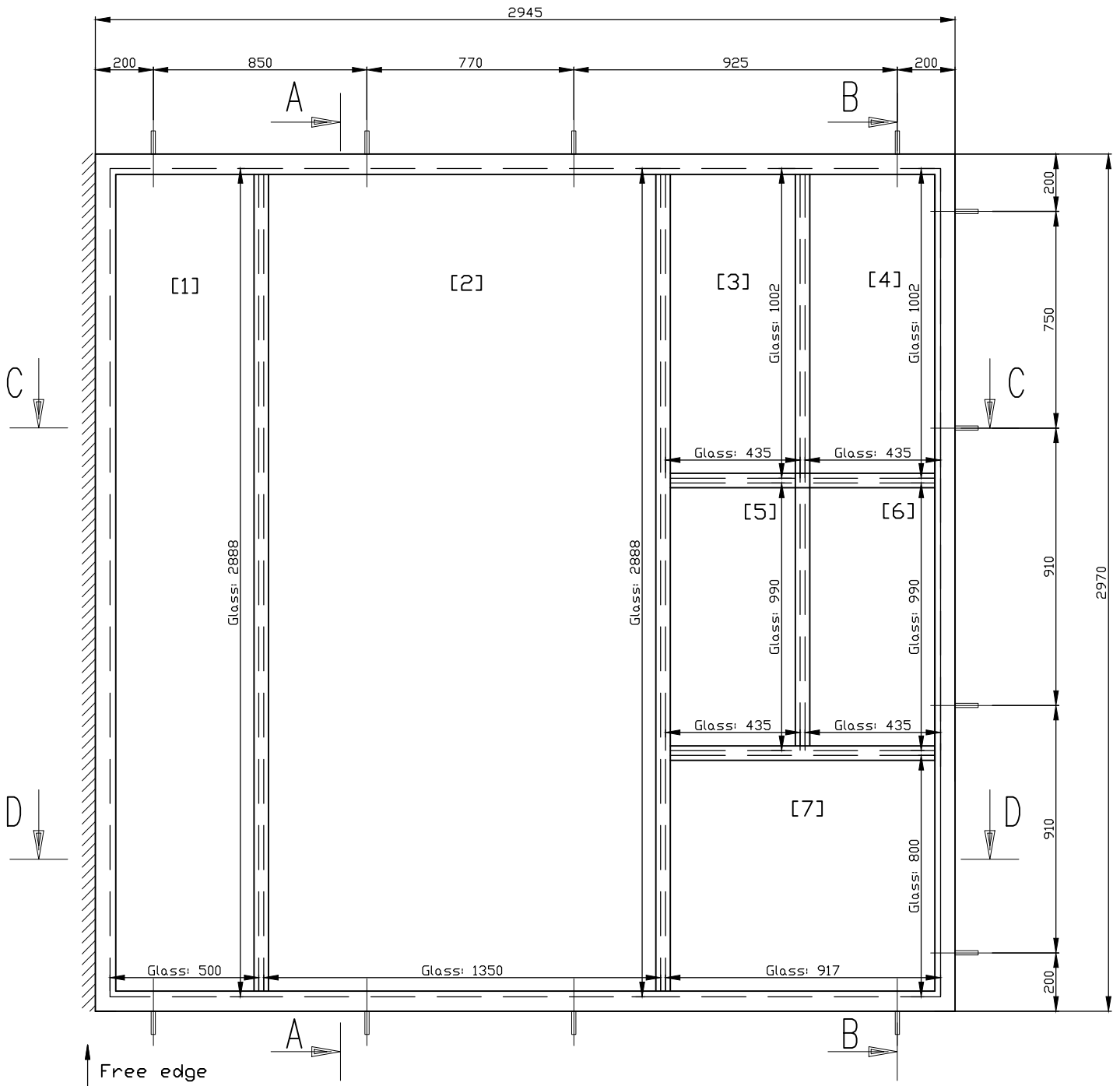
APPROVED

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

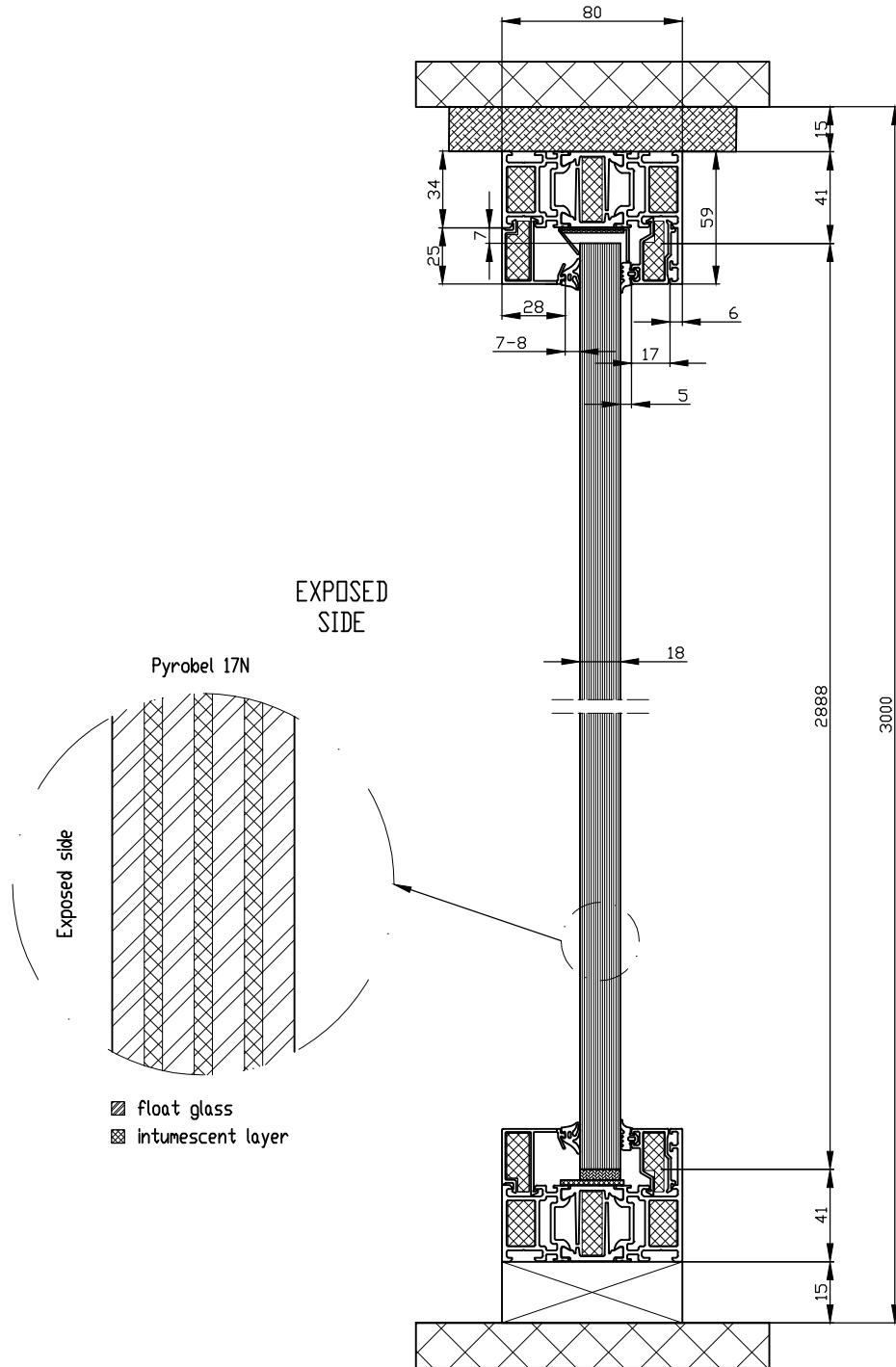
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Front view (unexposed side) - dimensions

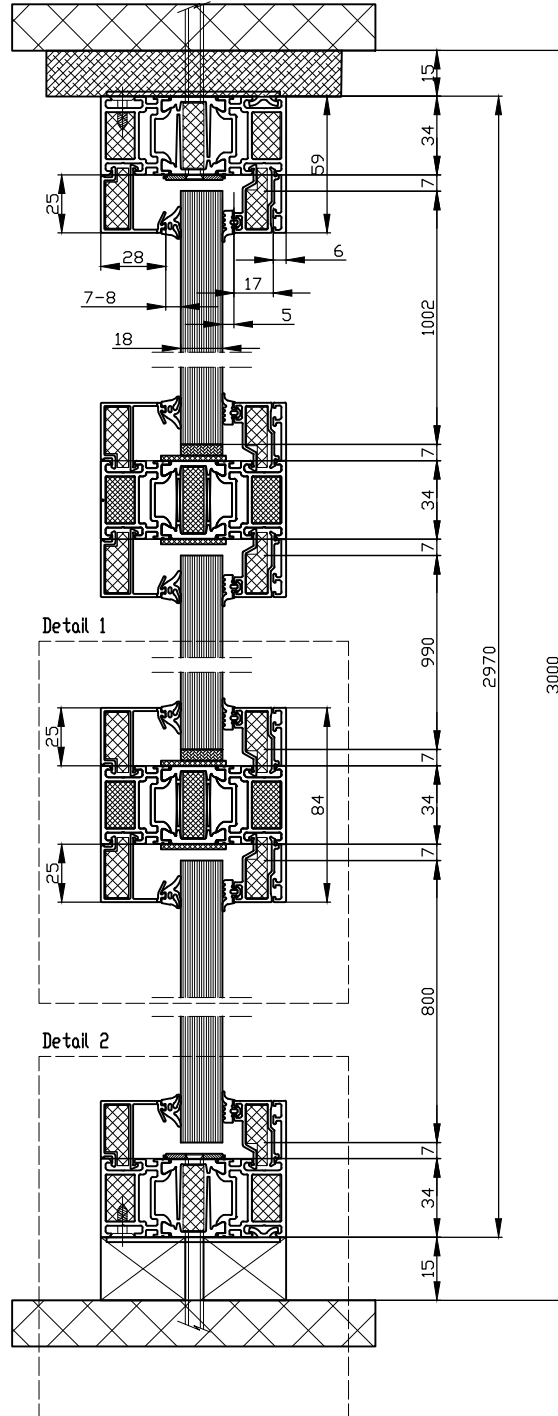


Section A-A - dimensions

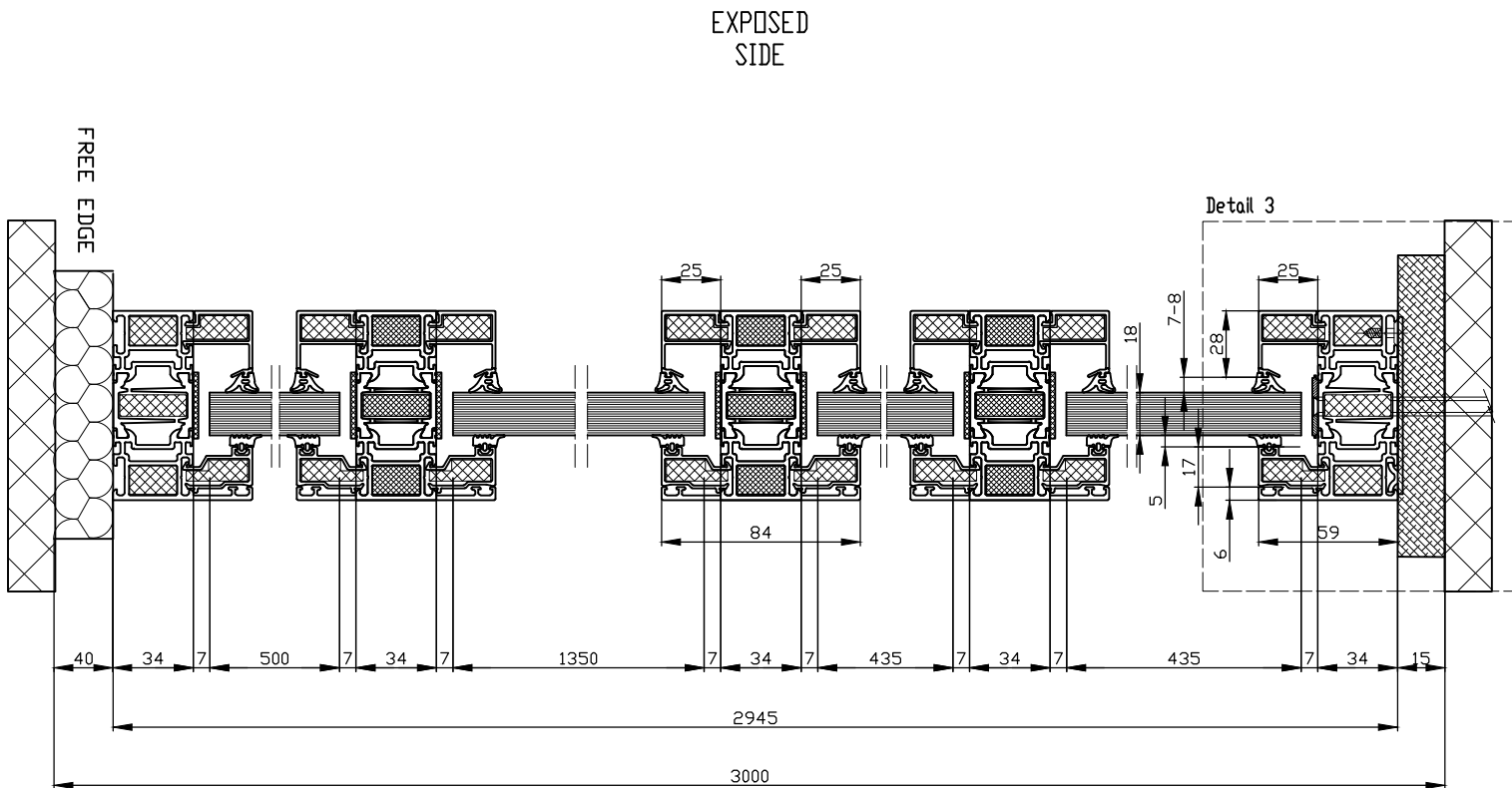


Section B-B - dimensions

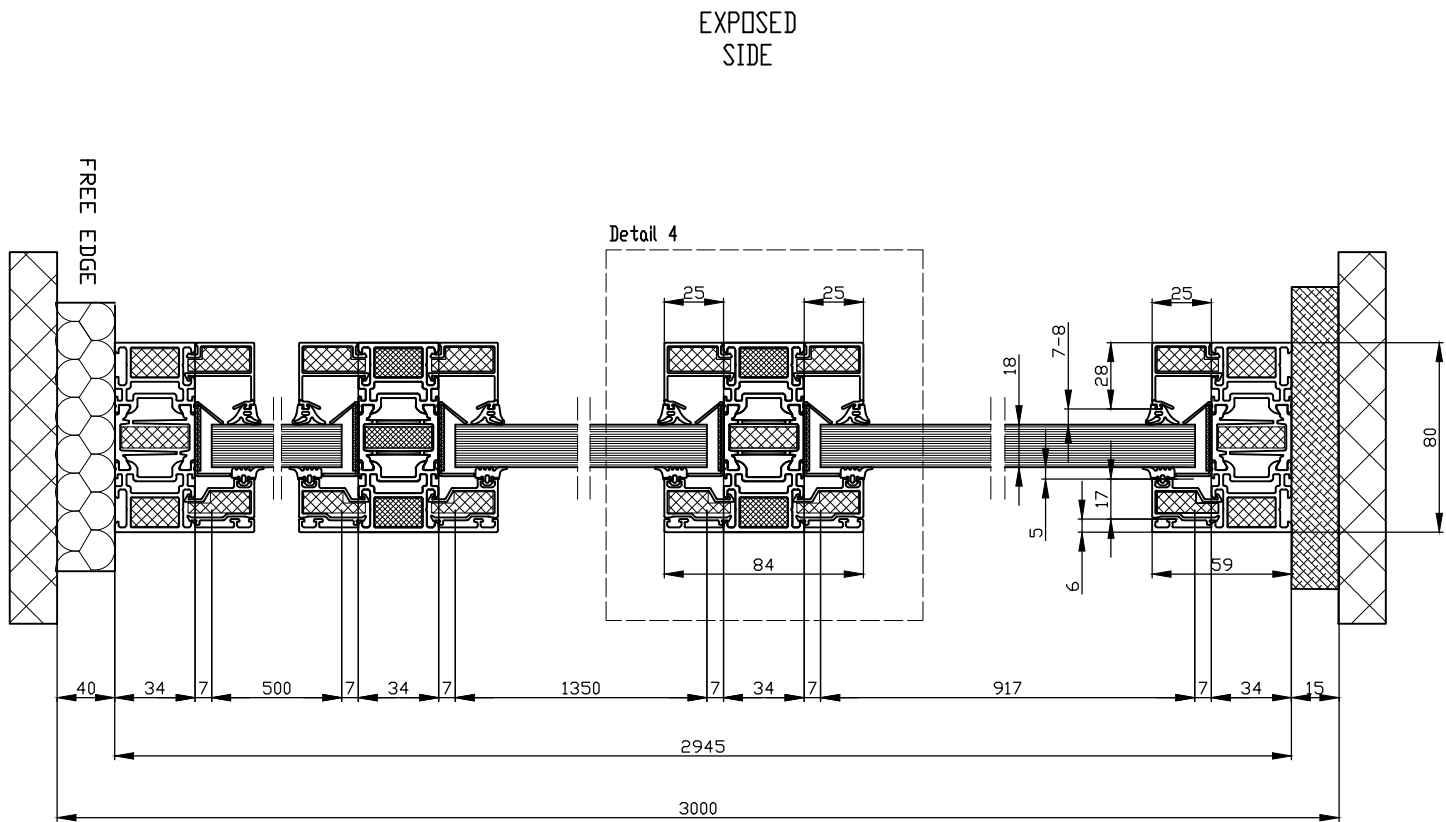
EXPOSED
SIDE



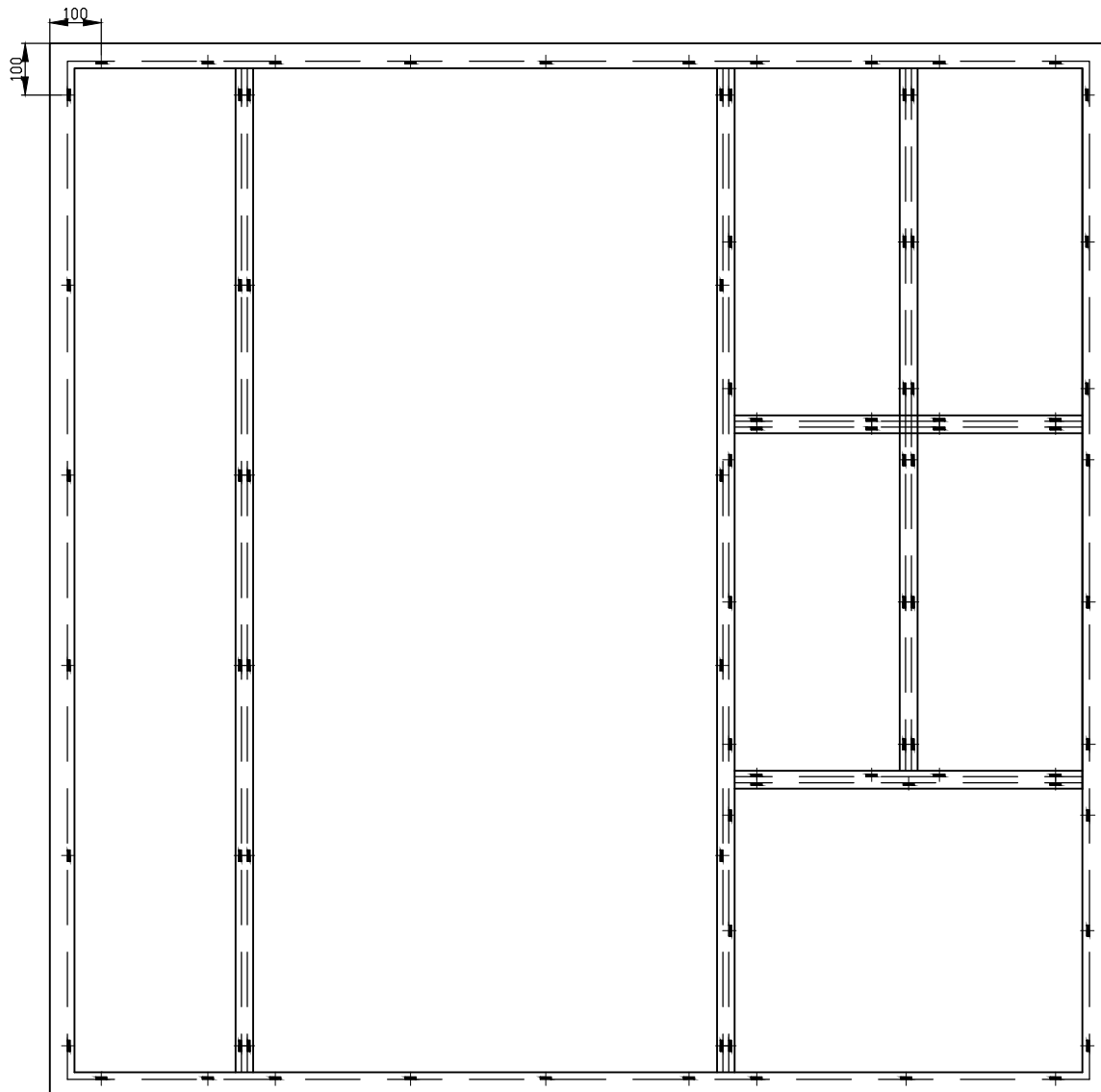
Section C-C - dimensions



Section D-D - dimensions



Position of the glazing clips [19]



At 100 mm from each corner of each glass and divide the remaining value to have equal distance to obtain the number clips mentioned on the drawing.

Details

