



warringtonfiregent
global safety

MEMBER OF **Bodycote** TESTING GROUP

FIRE RESISTANCE CLASSIFICATION REPORT No 13411B

Owner of the classification report:

RECTICEL N.V.
Tramstraat 6
B-8560 WEVELGEM

Introduction:

This classification report defines the classification assigned to a loadbearing roof (Eurothane Silver) in accordance with the procedures given in EN 13501-2: 2007: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

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



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1 Details of classified product

1.1 General

The element is defined as a loadbearing roof (Eurothane Silver). It is evaluated in respect of the fire performance characteristics given in clause 5 of EN 13501-2: 2007.

1.2 Product description

The element is fully described in the test report provided in support of this classification listed in clause 2.1.

Short product description:

The loadbearing roof consists of a warm steel deck, insulated with PIR boards, type: RECTICEL EUROTANE SILVER with a thickness of 80 mm and covered with a waterproofing membrane.

The profiled steel sheets are with a single overlap jointed together by means of self-drilling screws, one every 330 mm. The upper face of the profiled steel sheets is completely covered with a vapour control layer and with insulation boards. The insulation boards are fixed by means of screws and washers. A waterproofing membrane is placed on top of the insulation boards. The pieces of the waterproofing membrane overlap one another by 110 mm. The waterproofing membrane is fixed by screws and washers. The overlap is joined together with a welding agent and the seam of the overlapping is finished with sealing mastic.

Span of the roof: 6200 mm.

Exposed length of the roof: 6000 mm.

2 Reports and test results in support of this classification

2.1 Reports

Name of laboratory	Identification number of the report	Owner of the report	Date	Method
WFRGENT	13411A	RECTICEL N.V.	13/10/2008	EN 1365-2:1999

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1: 1999.

Direction of exposure: it's an asymmetrical construction, exposed to fire from below.
No load other than the own weight of the roof was applied on the exposed part of the roof.

The roof is provided with an unexposed corbelling on which a load is applied which simulates an adjacent roof field with a span of 6200 mm.

The transversal edges are fixed, the longitudinal edges are free.

2.2 Test results

Parameter	Results
Loadbearing capacity	
Time after which the deflection exceeds $D = L^2 / 400 d$ (mm)	No failure at test termination
Time after which the rate of deflection exceeds $dD/dt = L^2 / 9000 d$ (mm/min)	No failure at test termination
Integrity	
Time of ignition of cotton pad	No failure at test termination
Time of occurrence of sustained flaming	18 minutes termination
Time of failure of gap gauge criterion	No failure at test termination
Thermal insulation	
Time after which the mean temperature rise at the unexposed side exceeds 140 °C	No failure at test termination
Time after which the maximum temperature rise at the unexposed side exceeds 180 °C	No failure at test termination
Mechanical action	
No impact test	Not applicable

The test duration was 18 minutes.

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7.5.2 of EN 13501-2: 2007.

3.2 Classification

The element is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

REI 15

3.3 Field of direct application

Field of direct application according to EN 1365-2:1999.

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. Other changes are not permitted.

1) General:

- a) Decrease in the linear dimensions of panes.
- b) Change in the aspect ratio of panes provided that the largest dimension of the pane and its area are not increased.
- c) Decrease in the distance between mullions and transoms.
- d) Decrease in distance of fixing centres.

2) Extension of span:

No extension of span is permitted under direct application.

3) Angle of orientation:

The angle of installation in practice should be between 0° up to 15°.


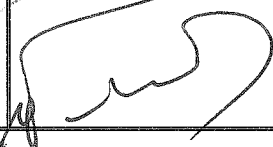
No load other than the own weight of the roof is allowed.

4 Duration of the validity of the classification report

At the time the standard EN 13501-2: 2007 was published, no decision was made concerning the duration of validity of the classification document.

5 Warning

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

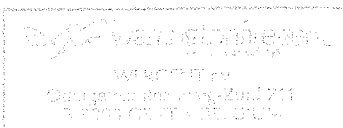
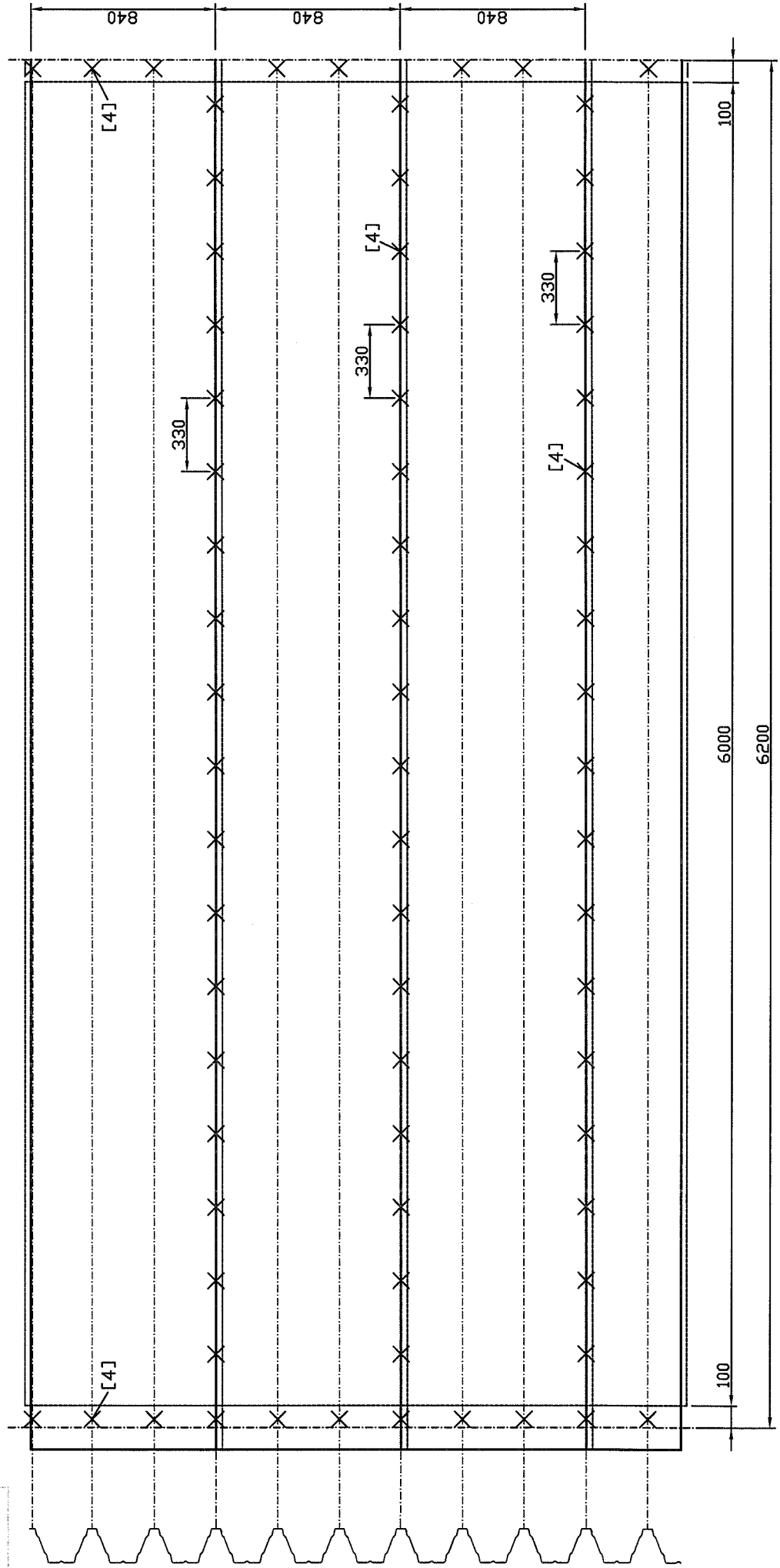
Report	Name	Signature*	Date
Prepared by	P. TACK		13 OCT 2008
Reviewed by	Prof. dr. ir. P. VANDEVELDE		13 OCT 2008
* For and on behalf of WFRGENT N.V.			

EN 13501-2 FSG REC 017 -version 1

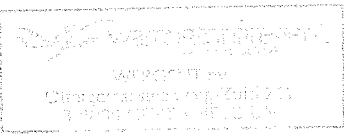
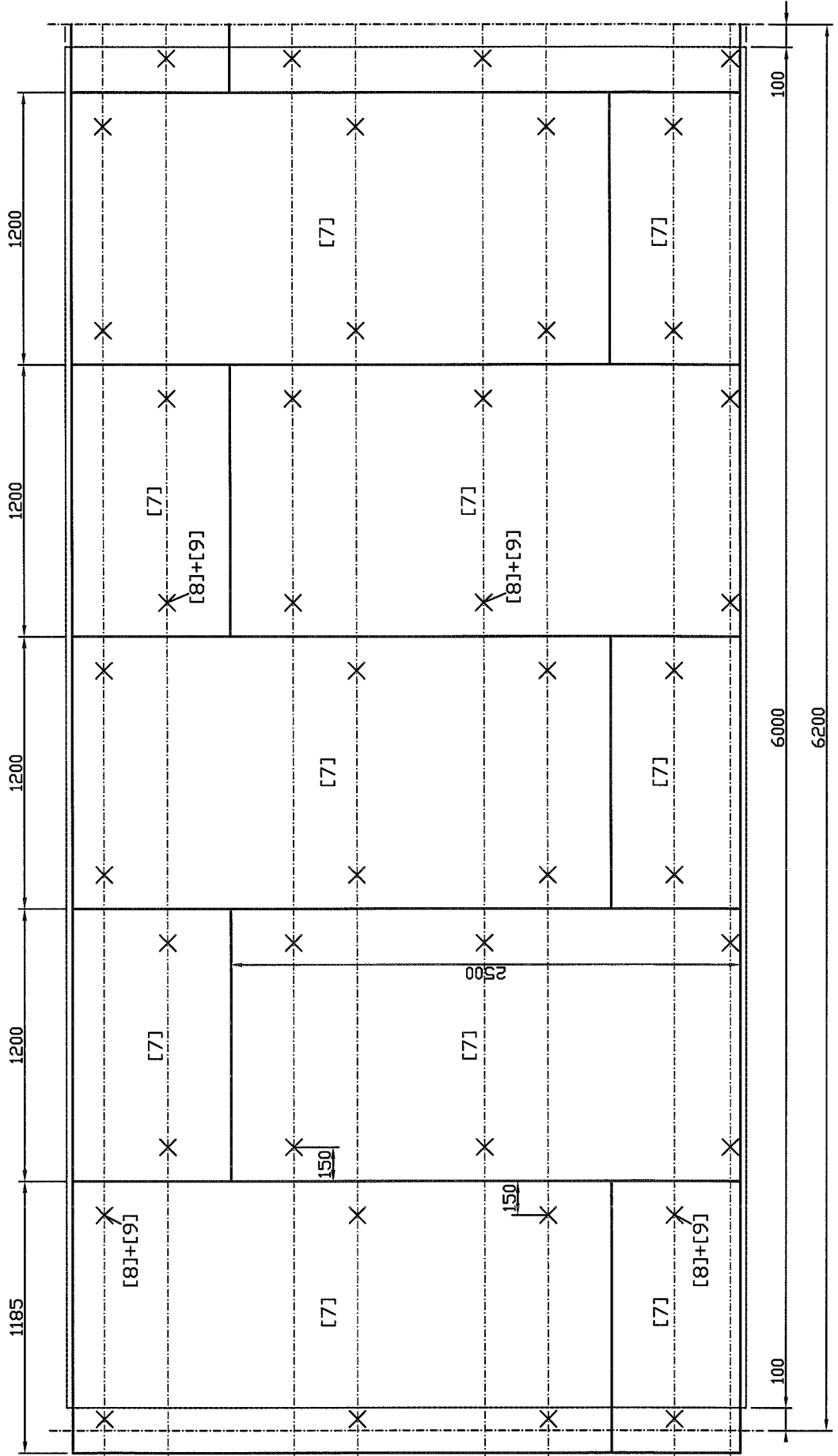
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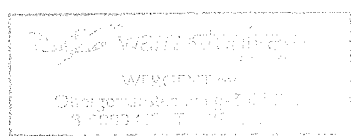
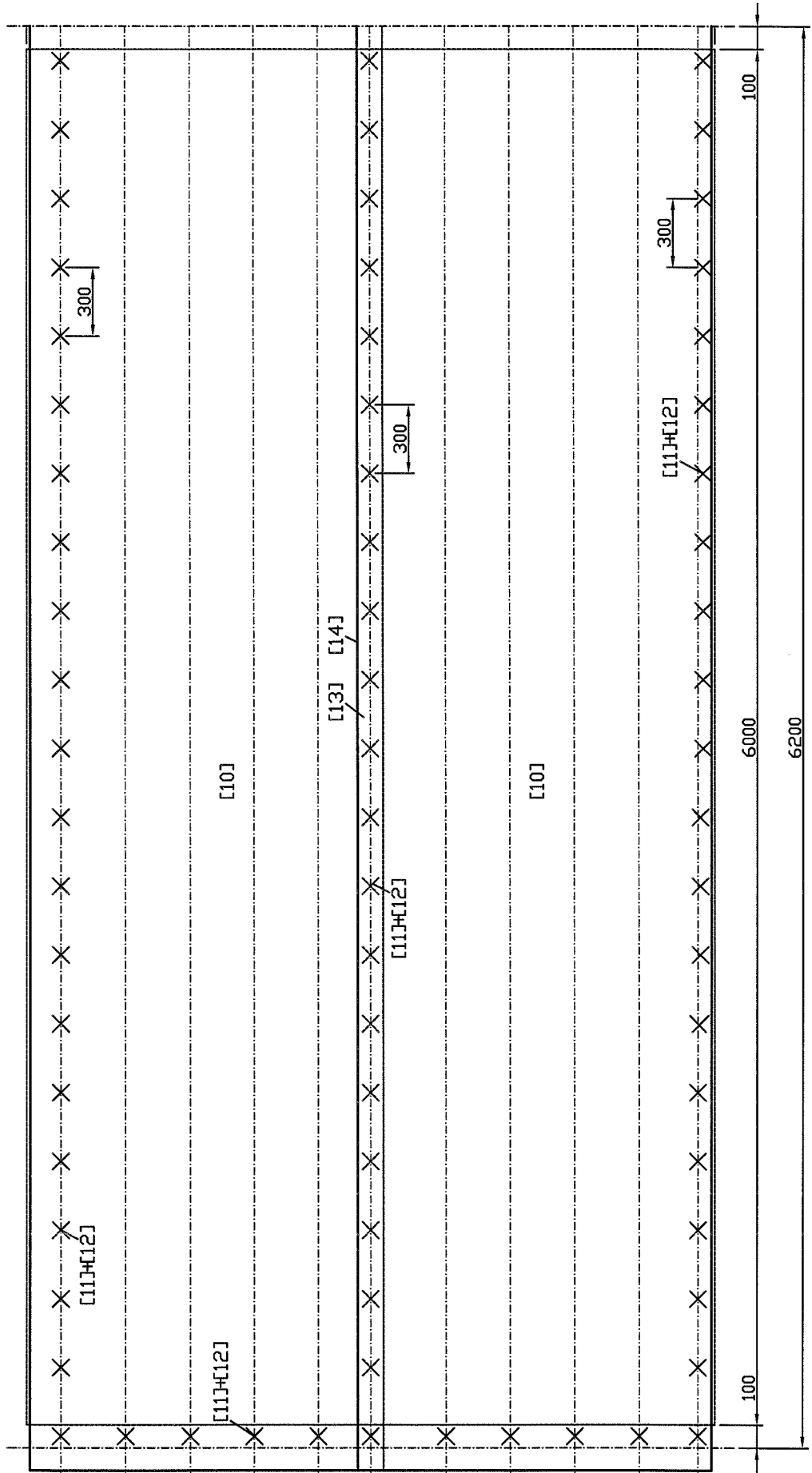
Planview - profiled steel sheets



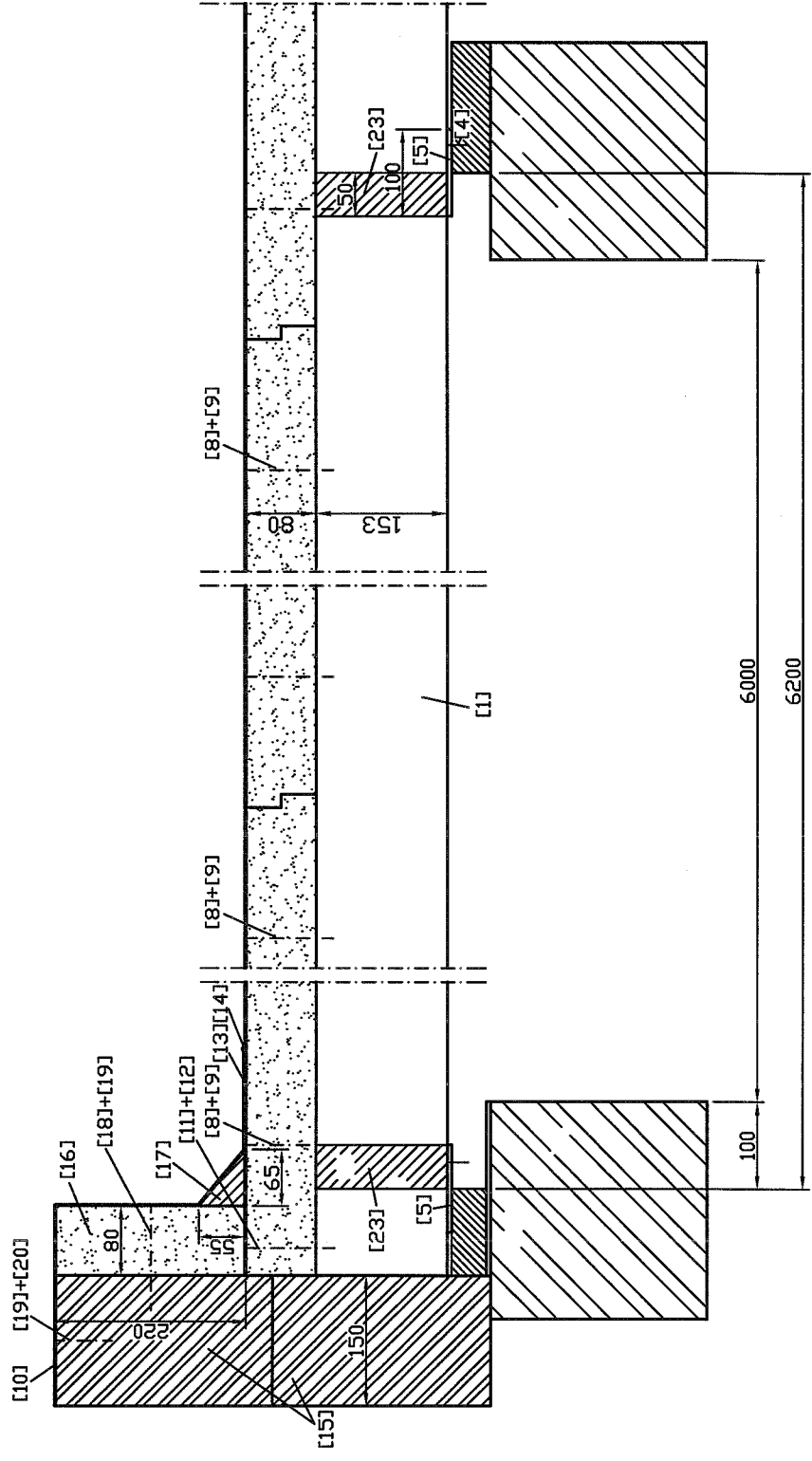
Planview - Insulation boards



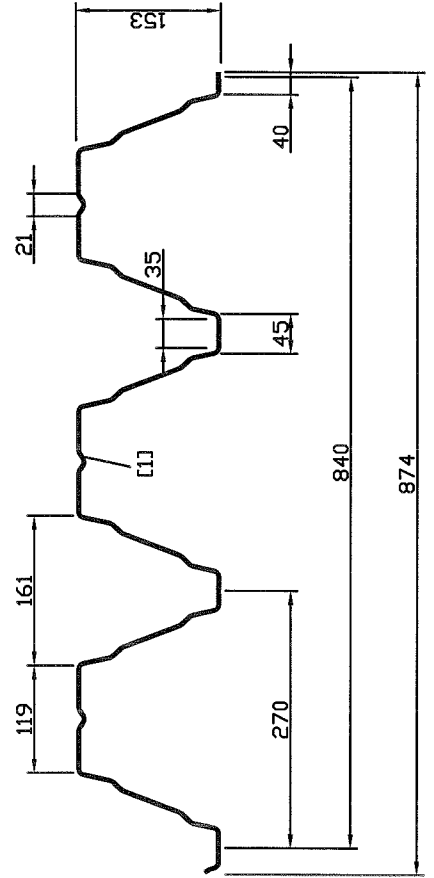
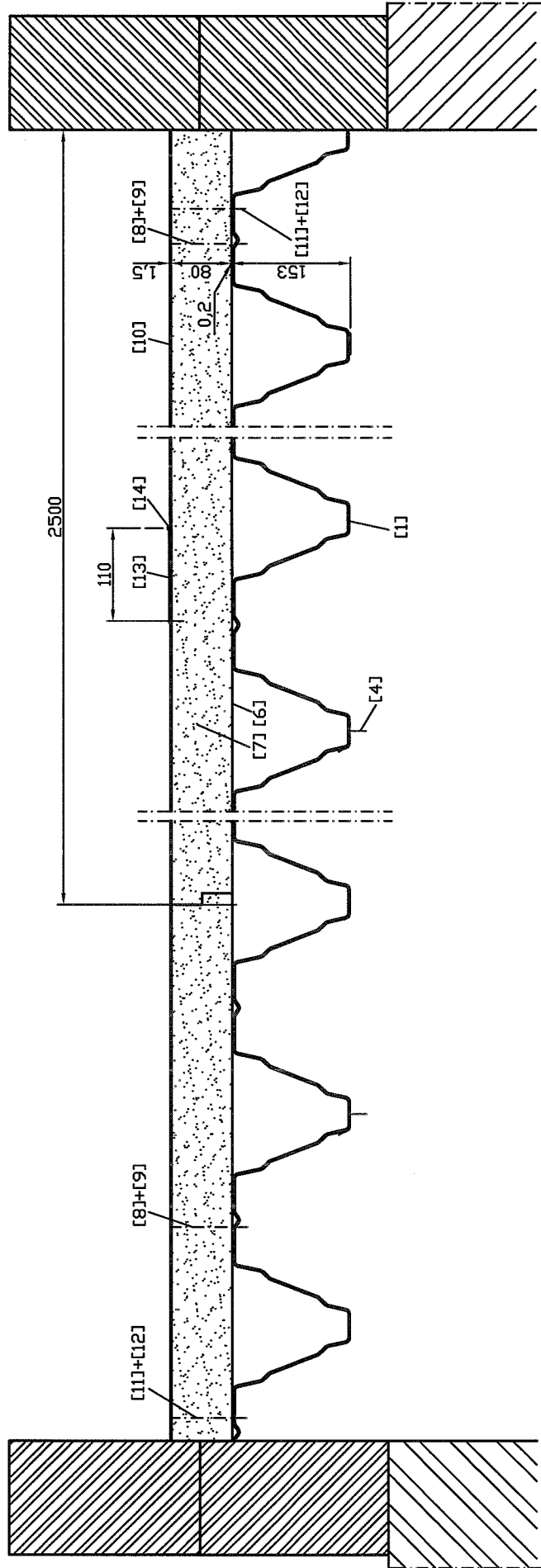
Planview - waterproofing membrane



Cut AA



Cut BB



LEGEND

- [1] Profiled galvanised steel sheet – trade and type name: CB PROFIL CB 150/280 – thickness: 0,75 mm, height: 153 mm, width: 874 mm – area weight: 10,7 kg/m² (NV).
- [4] Self-drilling screw – steel – diameter: 6,25 mm, length: 23 mm.
- [5] Steel section – key dimensions of the section: 100 mm x 5 mm.
- [6] Vapour control layer – plastic – dimensions: 7500 mm x 2970 mm – thickness: 0,2 mm – area weight: 195 g/m² (MV).
- [7] Insulation board – polyisocyanurate board, on both sides provided with a multi layer complex with a thickness of 0,2 mm containing aluminium foil – trade and type name: RECTICEL EUROTHANE SILVER – standard dimensions of the boards: 1200 mm x 2500 mm – thickness: 80 mm - density: 38 kg/m³ (MV).
- [8] Screw – steel – diameter: 4,75 mm, length: 100 mm.
- [9] Washer – steel – diameter: 70 mm, total thickness: 2,5 mm.
- [10] Waterproofing membrane – PVC – trade and type name: SIKA Sikaplan 12G – width: 1540 mm, length: 7500 mm, thickness: 1,2 mm – area weight: 1,53 kg/m² (NV).
- [11] Screw – steel – diameter: 4,85 mm, length: 100 mm.
- [12] Washer – steel – length: 82 mm, width: 40 mm, total thickness: 7,5 mm.
- [13] Welding agent – tetrahydrofuran (solvent) – trade name: SIKA TROCAL.
- [14] Sealing mastic – PVC – trade name: SIKA TROCAL.
- [16] Insulation board – polyisocyanurate board, on both sides provided with a multi layer complex with a thickness of 0,2 mm containing aluminium foil – trade and type name: RECTICEL EUROTHANE SILVER – height: 220 mm - thickness: 80 mm - density: 38 kg/m³ (MV).

- [17] Rock wool – triangular – length: 600 mm – dimensions of the section: 65 mm x 55 mm x 85 mm – density: 50 kg/m³ (NV).
- [18] Screw – steel – diameter: 6 mm, length: 120 mm.
- [19] Washer – steel – diameter: 50 mm, total thickness: 3,15 mm.
- [20] Hit anchor – steel – diameter: 6 mm, length: 65 mm.
- [23] Rock wool – cut out to the contours of the profiled steel sheets – density: 50 kg/m³ (NV).