Deutsches Institut für Bautechnik

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Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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European Technical Assessment

ETA-07/0117 of 23 April 2024

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Permanent shuttering kit "IZODOM"
Product family to which the construction product belongs	Non-load bearing permanent shuttering kit "IZODOM" based on shuttering elements of EPS
Manufacturer	izodom 2000 polska ul. Ceramiczna 2 98-220 Zdunska Wola POLEN
Manufacturing plant	Plant 1 Plant 2 Plant 3 Plant 4
This European Technical Assessment contains	155 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 340309-00-0305
This version replaces	ETA-07/0117 issued on 17 July 2017

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Specific part

1 Technical description of the product

1.1 Definition of the construction product

The shuttering kit "IZODOM" is used to construct non-load bearing permanent formwork for plain and reinforced concrete walls cast in-situ.

The "IZODOM" system comprises five types of walls:

- "IZOBasic
- "IZOStandard"
- "IZOEnergy",
- "IZOPassive" and "IZOPassive Plus"
- "UNIVERSAL","UNIVERSAL PLUS" and "UNIVERSAL PLUS PLUS".

These wall types are differentiated by:

- thickness of foam material in one of the shuttering leaves,
- design of the elements and
- thickness of the concrete wall core.

All elements are available in two types of foam material:

- White polystyrene and
- polystyrene enriched with graphite

In every type of wall

- standard shuttering elements,
- special shuttering elements and
- accessory parts are included.

Special shuttering elements are height adjuster elements, angle joint elements (45° and 90°) for inner and outer corners, hinge elements to realise walls with arbitrary angles, lintel elements and slab support elements. Accessory parts are auxiliary elements, height adjuster elements, trimming strips, plugs and closing elements as well as the ties.

1.2 Shuttering elements

1.2.1 Standard shuttering elements

The system contains the following types of shuttering elements:

MC	shuttering elements completely made of EPS (white or graphite polystyrene)
MCF	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and embedded plastic ties (see Annex A96 to A98, A101 and A103) to connect both shuttering leaves
MCFU	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and dismountable plastic ties (see Annexes A94, A95 and A102) to connect both shuttering leaves
MCFU-S	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and dismountable ties of plastic struts and steel wires (see Annexes A99 and A100) to connect both shuttering leaves

Shuttering elements MC form walls of the grid type and shuttering elements MCF, MCFU and MCFU-S form walls of the continuous type according to EAD 340309-00-0305, chapter 1.3.3. The main difference between the shuttering elements MCF and MCFU is that shuttering elements MCF and MCFU-S are delivered to the site in form of completed shuttering elements meanwhile elements MCFU are delivered on site in single parts (shuttering leaves and ties) and are completed to shuttering elements before erecting the formwork. In Table 1 of Annex A1 the main dimensions of the different shuttering element types in dependence on the wall types are given.

The horizontal surfaces at the top of the shuttering leaves are castellated, at the bottom they are alternately grooved. The vertical joining surfaces are smooth. The tightness of the vertical joints between the leaves of the shuttering elements is ensured. They may not open during concreting because of the interlocking horizontal joints. To facilitate amendments on site, all elements in the system have vertical grooves on external surfaces. One groove is 3 mm wide and 1 mm deep and the distance between the grooves is 5 cm. The grooves are used as cutting line, if the length of an element needs to be adjusted to the length of the wall.

Interior of the shuttering leaves T-shaped guides at 5 cm centres are placed. The guides are featured in all types of shuttering elements, regardless the wall thickness, core thickness and the type of used ties. They are necessary to fix OH and OB plugs at the narrow side of the uncut shuttering elements MC and the OC closing elements at the narrow sides of the shuttering elements MCF, MCFU or MCFU-S respectively at the opened narrow sides of the cut shuttering elements MC. The grooves and the T-shaped guides allow the application of the smallest modular dimension of 5 cm in horizontal direction.

A vertical modularity is ensured by using (depending on the needs) three types of height adjuster elements which are featured in the system. The height of the adjusters is 5 cm to enable construction of all wall types in the smallest modular dimension of 5 cm in vertical direction.

1.2.2 Special shuttering elements

For all wall types special shuttering elements are available. Additional to the shuttering type nomination (MC, MCF, MCFU and MCFU-S) for special shuttering elements the following nominations are used:

ML	Header elements (for lintels)
MLIP / MLA	Door and window head elements (Lintel with support on either end)
MP	Slab support elements
MH	Height adjuster elements
MHF	Height adjuster elements for hinge elements

For the description of the angel joint elements the following additional nominations are used:

L	left
R	right
I	inner corner
A	outer corner

The surfaces of the special shuttering leaves (horizontal and vertical) are equal to the surfaces of the standard shuttering elements (see section 1.2.1).

1.3 Accessory parts

1.3.1 Auxiliary elements MD 1/10 (Annex A88)

Auxiliary elements MD 1/10 are single shuttering leaves which are used for the construction of rectangular corners for walls with a thickness of 35 cm and 45 cm. The assembly of such wall corners is given in the Annexes B16 to B19.

1.3.2 Height adjuster elements MHD 1/10 (Annex A89)

Since shuttering leaves of the height adjuster elements MH and MHF are only 5 cm thick the extension with height adjuster elements MHD 1/10 is required when the outer shuttering leaf of the used element is thicker than 5 cm.

1.3.3 Trimming strips (Annex A90 to A92)

Two types of trimming strips are included in the kit:

- with a castellated surface
- with a grooved surface

The opposite side of the strip is smooth. The strips are used for finishing of:

- bottoms of header elements and door head elements (Annex A91 and A92)
- overhang parts of the walls

When packaging all castellated and grooved surfaces of all types of shuttering elements are covered by trimming strips. They provide the protection of the castellated and grooved surfaces during storage and transport.

1.3.4 Plugs (Annexes A79 and A80)

Upper plugs OH (Annex A79) and lower plugs OB (Annex A80) are half-elliptical elements used to close the ends of the shuttering elements MC of the wall types "IZOBasic", "IZOEnergy" and "IZOPassive". The plugs are used to build wall corners, window and door openings and blunt-ended internal walls. The form fit between the profiled contact surfaces of the plugs and the ties provide a tight connection to the plugs. The plug can be installed in the tie axis as well as 5 cm before or behind the axis.

1.3.5 Closing elements (Annexes A81 to A87)

It allows closing of the open narrow sides at corners, door openings and blunt-ended inside walls. The closing elements are installed vertically inside the shuttering element, by sliding it on the vertical T-guides made of foam material. The closing elements of the kit are listed in Annex A1, section 3.5.

1.3.6 corner reinforcing element (Annex A93)

Insert element used for 90degree corner blocks to strengthen the corner.

1.3.7 Ties

Tables 3a and 3b in Annex A1 show an overview on which ties are used for the various shuttering elements.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The kit is intended to be used for the construction of internal walls as well as external walls above or below ground which are load-bearing (structural) or non load-bearing (non structural), including those which are subjected to fire regulations.

When using this type of construction below ground a waterproofing according to applicable national rules shall be provided depending on whether non pressing water or pressing water is to be dealt with. The waterproofing shall be protected from mechanical damage by an impact resistant protective layer.

According to EOTA TR 034 the following use categories apply:

- Category IA 3: Product with no contact to indoor air.
- Category S/W 3: Product with no contact to and no impact on soil water, ground- and surface water.

The performance given in Section 3 are only valid if the shuttering elements are used in compliance with the specifications and conditions given in Annex B1.
The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the shuttering kit of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Resulting structural pattern	
MC elements	Grid type according to EAD 340309-00-0305, chapter 1.3.3
MCF, MCFU and MCFU-S elements	Continuous type according to EAD 340309-00-0305, chapter 1.3.3
Efficiency of filling	see Annex C1
Possibility of steel reinforcement	see Annex C1

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	
White polystyrene	Class E according to EN 13501-1
polystyrene enriched with graphite	Class E according to EN 13501-1
Plastic tie	No performance assessed
Plastic-Steel tie	No performance assessed
Influence of the shuttering kit on the fire resistance.	
MC elements (grid type)	R30 according to EAD 340309-00-0305, Annex A Table A2
MCF, MCFU and MCF-S elements (continuous type)	REI120 according to EAD 340309-00-0305, Annex A Table A1

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	
Substances, classified as Carc. 1A/1B [a)]	None of these raw materials are actively used in the manufacture of the construction product. [b) c)]
Substances, classified as Muta. 1A/1B [a)]	
Substances, classified as Acute Tox. 1, 2, 3; Repr. 1A/1B; STOT SE 1 and STOT RE 1 [a)]	
Use scenarios regarding BWR 3:	
IA 3	Product with no contact to indoor air
S/W 3	Product with no contact to and no impact on soil water, ground- and surface water.
Water vapour permeability	μ = 60 (EN ISO 10456)
Water absorption	No performance assessed
Water tightness	No performance assessed

[a)] In accordance with Regulation (EC) No 1272/2008
[b)] Active use is the targeted use of substances to achieve specific product properties. Substances that are present as impurities and/or as a secondary component in the product are therefore not to be regarded as "actively used".
[c)] Assessment based on the detailed manufacturers' statements on dangerous substances.

3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Bond strength	see Annex C2
EPS leaf to concrete	0.04 N/mm²
Resistance to impact load	No performance assessed
Resistance to filling pressure	bending tensile strength of the shuttering leaves ≥ 200 kPa (see also designation code of EPS in Annex A1, section 4.1) Strength to pull out of the ties ≥ 700 N.
Safety to personal injuries	The shuttering elements do not have sharp or cutting edges. Due to the soft surfaces of the shuttering leaves, there is no risk of abrasion or of cutting to people.

3.5 Protection against noise (BWR 5)

Essential characteristic	Performance
Airborne sound insulation	No performance assessed
Sound absorption	No performance assessed

3.6 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal resistance	
Concrete core 150mm	See table 1 Annex C3
Concrete core 200mm	See table 2 Annex C3
Concrete core 250mm	No performance assessed
Concrete core 400mm	See table 3 Annex C3
Thermal inertia	No performance assessed

3.7 Aspects of durability

Built-in finishes are not part of the assessed shuttering kit.

Essential characteristic	Performance
Resistance to deterioration	no performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No 340309-00-0305, January 2019, the applicable European legal act is Decision 98/279/EC as amended by Commission Decision 2001/596/EC of 8 January 2001.

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 23 April 2024 by Deutsches Institut für Bautechnik

Dr.-Ing. Lars Eckfeldt
Head of Section

beglaubigt:
Groth

Deutsches Institut für Bautechnik DIBt

Characteristics of shuttering kit

The "IZODOM" system comprises five types of walls:

- "IZOBasic
- "IZOStandard"
- "IZOEnergy",
- "IZOPassive" and "IZOPassive Plus"
- "UNIVERSAL","UNIVERSAL PLUS" and "UNIVERSAL PLUS PLUS".

These wall types are differentiated by:

- thickness of foam material in one of the shuttering leaves,
- design of the elements and
- thickness of the concrete wall core.

All elements are available in two types of foam material:

- white polystyrene and
- polystyrene enriched with graphite

In every type of wall standard shuttering elements, special shuttering elements and accessory parts are included. Special shuttering elements are height adjuster elements, angel joint elements (45° and 90°) for inner and outer corners, hinge elements to realise walls with arbitrary angles, header elements (for lintels), floor support elements and door head elements. Accessory parts are auxiliary elements, height adjuster elements, trimming strips, plugs and closing elements as well as the ties.

1 Standard shuttering elements

The system contains the following types of shuttering elements:

MC	shuttering elements completely made of EPS (white or graphite polystyrene)
MCF	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and embedded plastic ties (see Annex A96- A98, A101, A103) to connect both shuttering leaves
MCFU	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and dismountable plastic ties (see Annexes A94, A95, A102) to connect both shuttering leaves
MCFU-S	shuttering elements with shuttering leaves of EPS (white or graphite polystyrene) and dismountable ties of plastic parts and steel wires (see Annexes A99 and A100) to connect both shuttering leaves

Shuttering elements MC form walls of the grid type and shuttering elements MCF, MCFU and MCFU-S form walls of the continuous type according to EAD 340309-00-0305, chapter 1.3.3.

The main difference between the shuttering elements MCF, MCFU-S and MCFU is that shuttering elements MCF and MCFU-S are delivered on site as already mounted blocks/shuttering elements while MCFU-elements are delivered on site in single parts (shuttering leaves and ties) and are completed to shuttering elements before sticking together the formwork.

Permanent shuttering kit "IZODOM"	Annex A1 Page 1/7
Characteristics of the shuttering kit	

In Table 1 the main dimensions of the different shuttering element types in dependence on the wall types are given. The two numbers following the shuttering element type nomination mentioned above (MC, MCF, MCFU or MCFU-S) prescribes the length of the element in [m] and the thickness of the element in [cm].

Table 1: Main dimensions of the standard shuttering elements for different wall types

Wall type	Thickness [mm] of			Type of shuttering element	Annex
	inner shuttering leaf	concrete core	outer shuttering leaf		
IZOBasic	50	150	50	MC 2/25	A2
	40	70	40	MCF 1/15	A4
IZOStandard	50	150	100	MC 2/30	A14
IZOEnergy	50	150	150	MC 2/35	A23
IZOPassive	50	150	250	MC 2/45	A35
IZOPassive Plus	50	200	50	MCF 1/30+	A45
	50	200	250	MCF 1/50+	A46
UNIVERSAL					
IZOBasic	50	150	50	MCFU 2/25	A47
				MCFU-S 2/25	A52
IZOStandard	50	150	100	MCFU 2/30	A48
				MCFU-S 2/30	A53
IZOEnergy	50	150	150	MCFU 2/35	A49
				MCFU-S 2/35	A54
IZOPassive	50	150	250	MCFU 2/45	A50
				MCFU-S 2/45	A55
	50	400	50	MCFU 2/50	A51
				MCFU-S 2/50	A56
UNIVERSAL PLUS	50	200	50	MCFU 2/30+	A57
	50	200	100	MCFU 2/35+	A58
	50	200	150	MCFU 2/40+	A59
	50	200	250	MCFU 2/50+	A60
UNIVERSAL PLUS PLUS	50	250	50	MCFU 2/35++	A75
	50	250	100	MCFU 2/40++	A76
	50	250	150	MCFU 2/45++	A77
	50	250	250	MCFU 2/55++	A78

2 Special shuttering elements

For all wall types special shuttering elements are available. Additional to the shuttering type nomination (MC, MCF, MCFU and MCFU-S) for special shuttering elements the following nominations are used:

ML	Header elements (for lintels)
MLIP/MLA	Door and window head elements (lintel)
MP	Floor support elements
MH	Height adjuster elements
MHF	Height adjuster elements for hinge elements

For the description of the angel joint elements the following additional nominations are used:

L	Left
R	Right
I	Inner corner
A	outer corner

Table 2: Main dimensions of the special shuttering elements for different wall types

wall type	Thickness [mm] of			Type of special shuttering element	Annex
	inner shuttering leaf	concrete core	outer shuttering leaf		
IZOBasic	50	150	50	MCF 0.7/25	A3
				ML 1/25	A5
				MP 1/25	A6
				MH 1/25	A7
				MHF 0.7/25	A8
				MLA 1.2/25	A9
				MCB 1/25	A10
				MH 1/15	A11
				MCFU25 E90 RA/LI	A12
				MCFU25 E90 LA/RI	A13
IZOStandard	50	150	100	ML 1/30	A19
				MH 1/30	A20
				MP 1/30	A17
				MLA 1,2/30	A18
				MCFU30 E90 LA	A19
				MCFU30 E90 RA	A20
				MCFU30 E90 LI	A21
				MCFU30 E90 RI	A22

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wall type	Thickness [mm] of			Type of special shuttering element	Annex
	inner shuttering leaf	concrete core	outer shuttering leaf		
IZOEnergy	50	150	150	ML 1/35	A24
				MP 1/35	A25
				MLA 1,2/35	A26
				MCFU35 E45 RA	A27
				MCFU35 E45 LA	A28
				MCFU35 E45 LI	A29
				MCFU35 E45 RI	A30
				MH 1/35	A31
				MCFU35 E90 LA	A32
				MCFU35 E90 RA	A33
				MCFU35 E90 RI	A34
				MCFU35 E90 LI	A35
IZOPassive	50	150	250	ML 1/45	A37
				MP 1/45	A38
				MH 1/45	A39
				MLA 1,2/45	A40
				MCFU45 E90 LA	A41
				MCFU45 E90 RA	A42
				MCFU45 E90 RI	A43
				MCFU45 E90 LI	A44
Universal PLUS	50	200	50	MCFU30+ E90 RA/LI	A61
				MCFU30+ E90 LA/RI	A62
			100	MCFU35+ E90 LA	A63
				MCFU35+ E90 RA	A64
				MCFU35+ E90 LI	A65
				MCFU35+ E90 RI	A66
			150	MCFU40+ E90 LA	A67
				MCFU40+ E90 RA	A68
				MCFU40+ E90 RI	A69
				MCFU40+ E90 LI	A70
			250	MCFU50+ E90 LA	A71
				MCFU50+ E90 RA	A72
				MCFU50+ E90 RI	A73
				MCFU50+ E90 LI	A74

3 Accessory parts

3.1 Auxiliary elements MD 1/10 (Annex A88)

3.2 Height adjuster elements MHD 1/10 (Annex A89)

3.3 Trimming strips (Annex A90 to A92)

3.4 Plugs (Annexes A79 and A80)

Top and bottom plugs for elongating internal shutter walls to full-height close off.

3.5 Closing Elements (Annexes A81 to A87)

OC (Annex A81)	for closing off the narrow sides of the shuttering elements of the systems with 150 mm concrete core thickness ("IZOBasic", "IZOStandard", "IZOEnergy", "IZOPassive" and "UNIVERSAL" (MCFU 2/25, MCFU 2/35, MCFU-S 2/25 and MCFU-S 2/35))
OC BIS (Annex A82)	equivalent to OC-elements with thicker wall on mid height for resisting the concrete pressure without additional support,
OC 0.2/1 (Annex A83)	for closing off the narrow sides of the shuttering elements of the "Universal Plus" system, concrete core 200mm
OC 0.2/2 (Annex A84)	equivalent to OC 0.2/1 with thicker wall for resisting the concrete pressure without additional support
OC 0.25/1(Annex A85)	for closing off the narrow sides of the shuttering elements of the "Universal Plus Plus" system, concrete core 250mm
OC 0.25/2 (Annex A86)	equivalent to OC 0.25/1 with thicker wall for resisting the concrete pressure without additional support
OC 0.4/2 (Annex A87)	to close the narrow sides of the shuttering elements of the "UNIVERSAL" system with 400 mm thickness of concrete core (MCFU x/50 and MCFU-S x/50).

3.6 Corner reinforcing element (Annex A93)

Insert element used for 90degree corner blocks to strengthen the corner.

3.7 Ties

In Tables 3a and 3b an overview is given which ties are used for which shuttering elements:

Table 3a: Correlation between ties and shuttering elements

Tie in Annex	IZOBasic	IZOStandard	IZOEnergy	IZOPassive	IZOPassive Plus	UNIVERSAL
A94 MCFU	25 E90 LA/RI 25 E90 RA/LI	30 E90 LA 30 E90 RA 30 E90 LI 30 E90 RI	35 E45 LA 35 E45 RA 35 E45 LI 35 E45 RI 35 E90 LA 35 E90 RA 35 E90 LI 35 E90 RI	45 E90 LA 45 E90 RA 45 E90 LI 45 E90 RI		2/25 2/30 2/35 2/45

Tie in Annex	IZOBasic	IZOStandard	IZOEnergy	IZOPassive	IZOPassive Plus	UNIVERSAL
A95 MCFU						2/50
A96 MCF	1/15					
A97 MCF	0,7/25					
A98 MCF					1/30+ 1/50+	
A99 MCFU-S						2/25 2/30 2/35 2/45
A100 MCFU- S						2/50

Table 3b: Correlation between ties and shuttering elements

Tie in Annex	UNIVERSAL PLUS	UNIVERSAL PLUS PLUS
A101 MCFU	2/30+ 2/35+ 2/40+ 2/50+	
A102 MCFU	30+ E90 RA/LI 30+ E45 LA/RI 35+ E90 LA 35+ E90 RA 35+ E90 RI 35+ E90 LI 40+ E90 LA 40+ E90 RA 40+ E90 RI 40+ E90 LI 50+ E90 LA 50+ E90 RA 50+ E90 RI 50+ E90 LI	
A103 MCFU		2/35++ 2/40++ 2/45++ 2/55++

4 Material

4.1 Standard shuttering elements and special shuttering elements

The standard shuttering elements and special shuttering elements correspond to the information and drawings given in the Annexes (see Table 1).

For the shuttering leaves, expanded polystyrene made of polystyrene particle foam EPS-EN 13163-T(2)-L(3)-W(2)-S(2)-P(5)-DS(70,-)3-BS200-DS(N)5-TR100 according to EN 13163 is used.

More information to the material characteristics, dimensions and tolerances of the shuttering elements are given in the technical documentation[1] of the ETA.

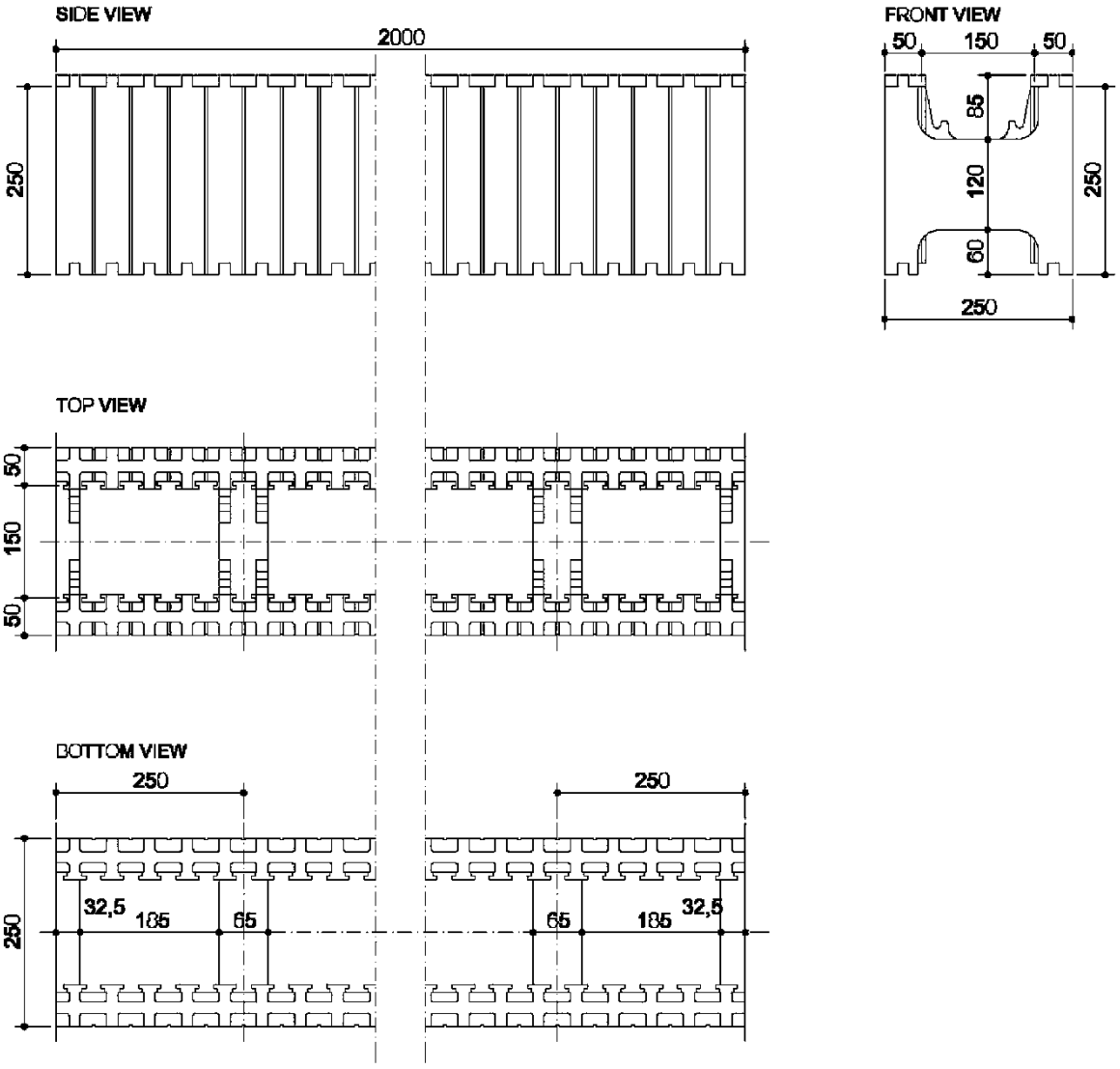
4.2 Accessory parts

Auxiliary elements, height adjuster elements, trimming strips, plugs and closing elements correspond to the drawings given in the Annexes (see sections 3.1 to 3.6). They are made of the same material as the shuttering leaves of the shuttering elements.

The ties correspond to the drawings given in the Annexes (see Tables 3a and 3b).

More information to the material characteristics, dimensions and tolerances of the accessory parts are given in the technical documentation of the ETA.

[1] The technical documentation of the ETA is deposited at DIBt and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure, is handed over to the approved bodies.



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A2
System: IZOBasic — Primary Block MC 2/25 l x t x h = 200cm x 25cm x 25cm	

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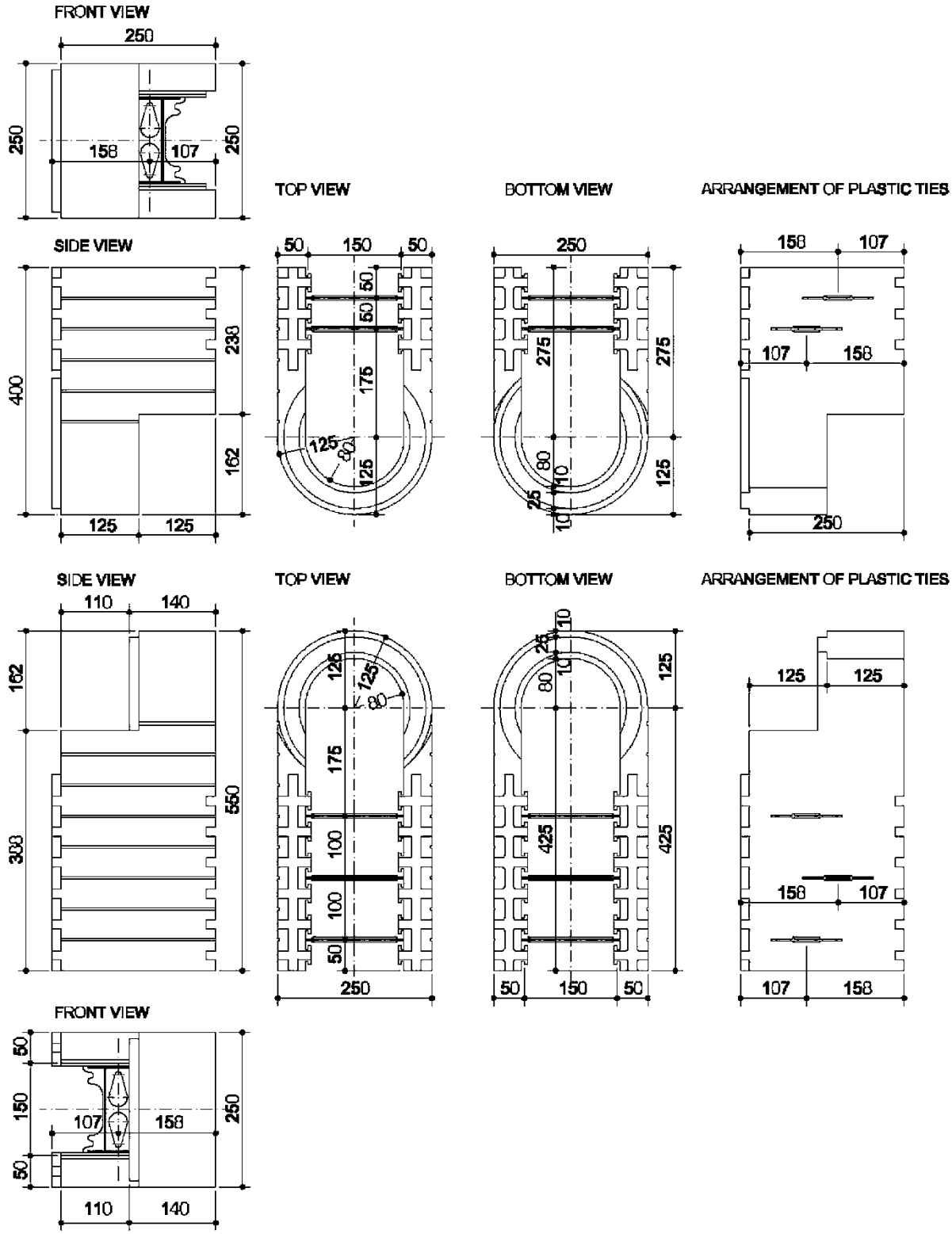

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A3
System: IZOBasic — Hinge element MCF 0,7/25 l x t x h = 70cm x 25cm x 25cm	

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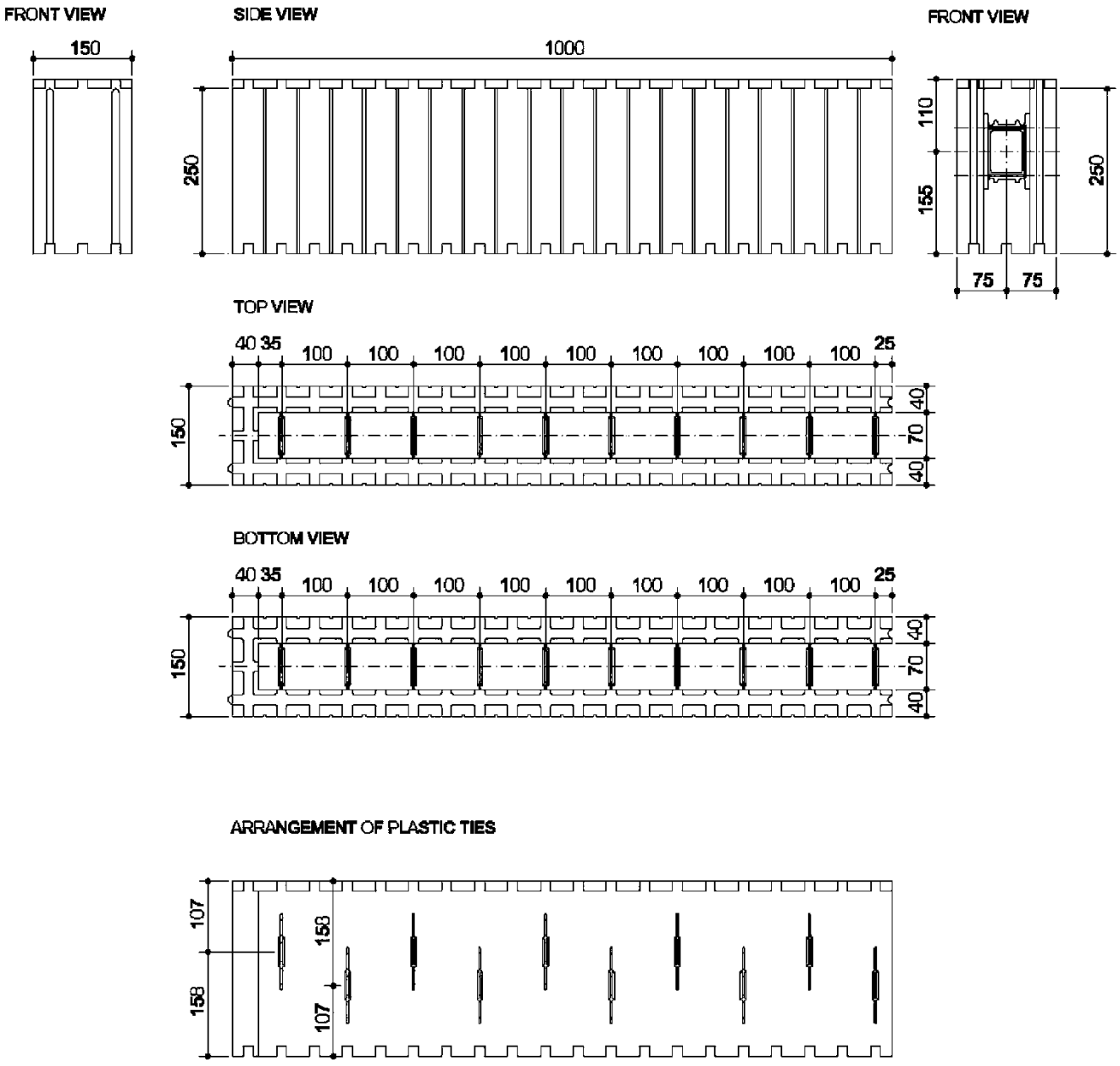
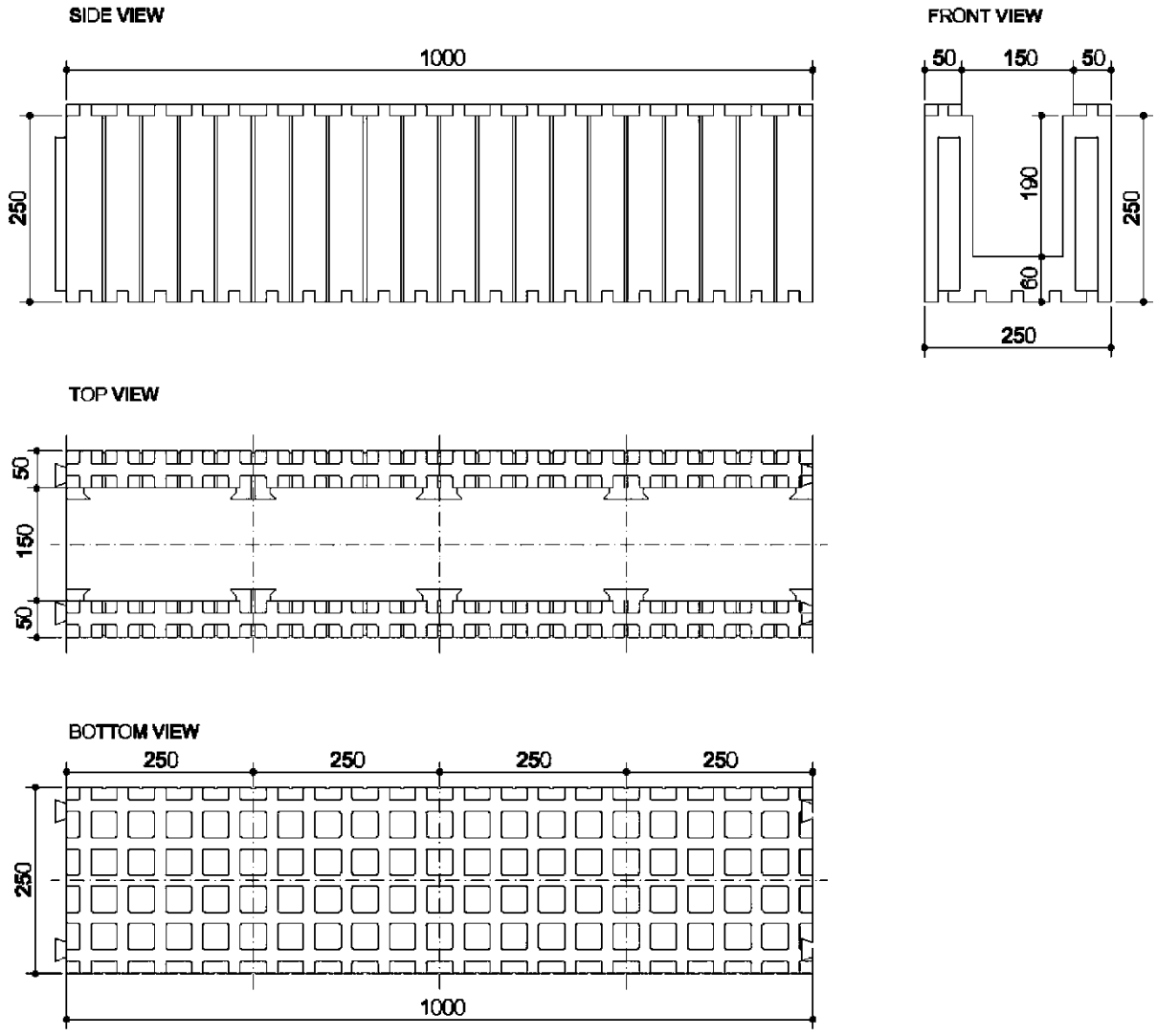


Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A4
System: IZOBasic — Partition Wall Element MCF 1/15 l x t x h = 100cm x 15cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A5
System: IZOBasic — Header Block (lintel) ML 1/25 l x t x h = 100cm x 25cm x 25cm	

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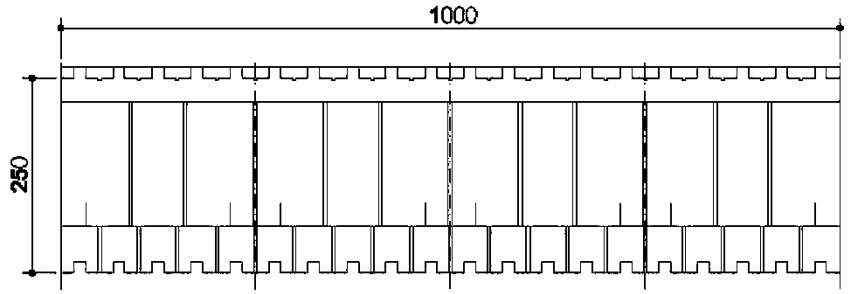
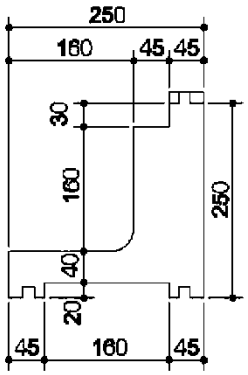
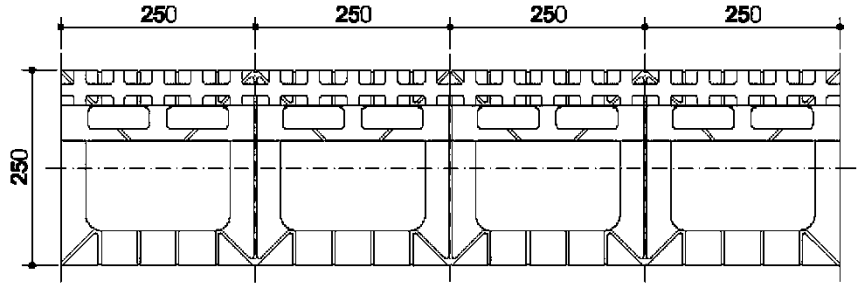
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A6
System: IZOBasic — slab support element MP 1/25 l x t x h = 100cm x 25cm x 25cm	

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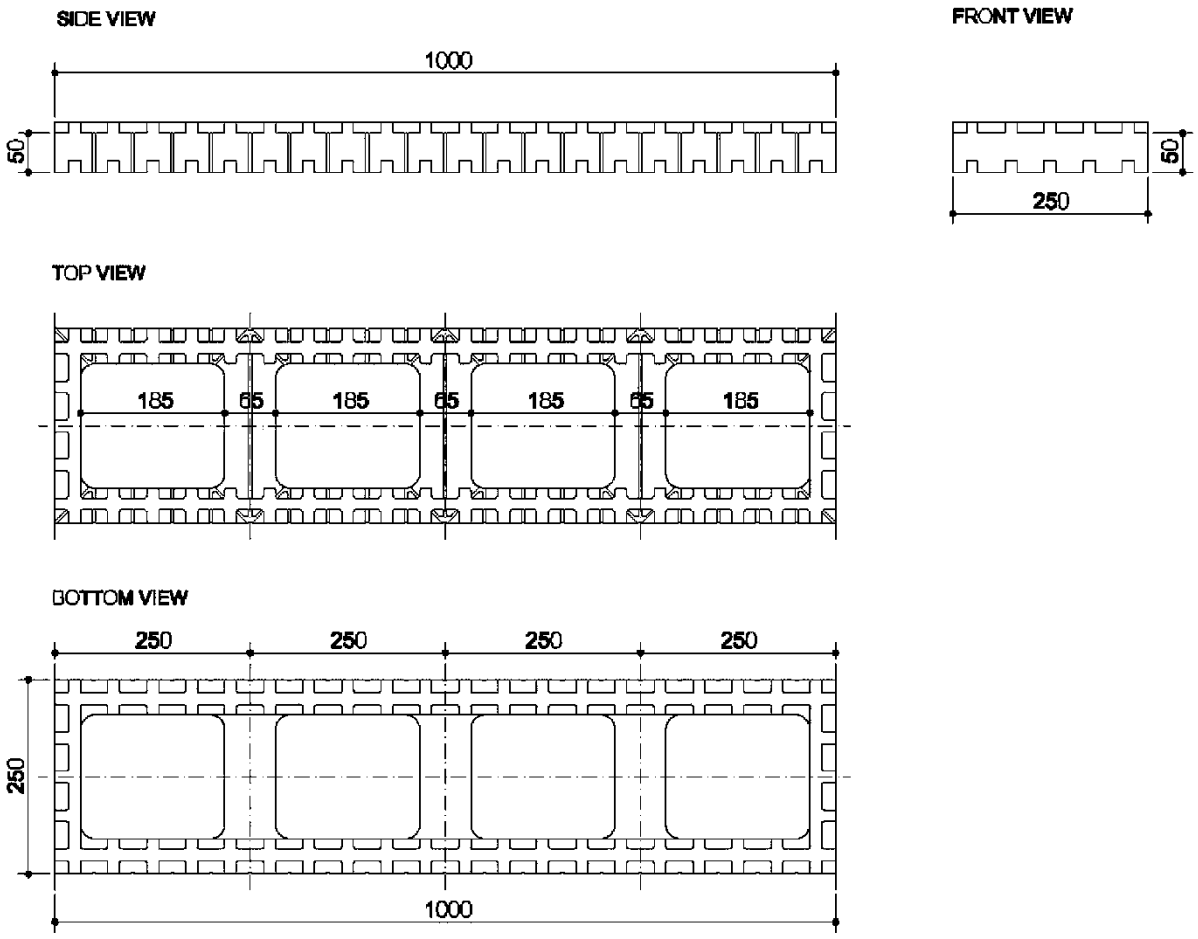

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A7
System: IZOBasic — height adjuster MH 1/25 l x t x h = 100cm x 25cm x 5cm	

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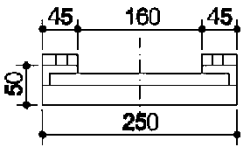
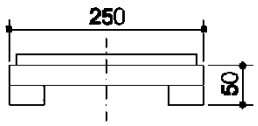
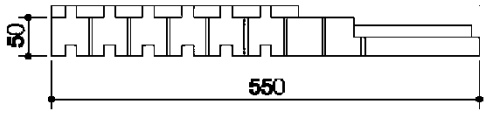
FRONT VIEW



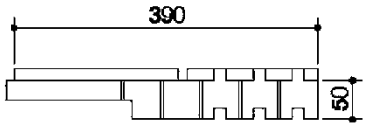
FRONT VIEW



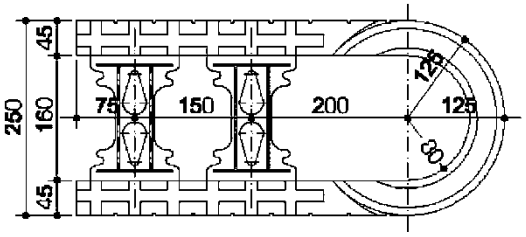
SIDE VIEW



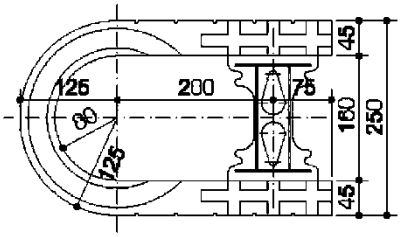
SIDE VIEW



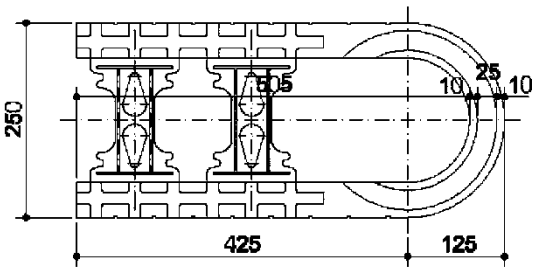
TOP VIEW



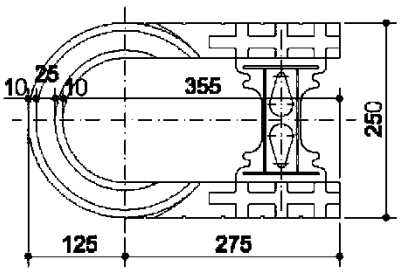
TOP VIEW



BOTTOM VIEW



BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A8
System: IZOBasic — Height adjuster MHF 0,7/25 for hinge block element l x t x h = 70cm x 25cm x 25cm	

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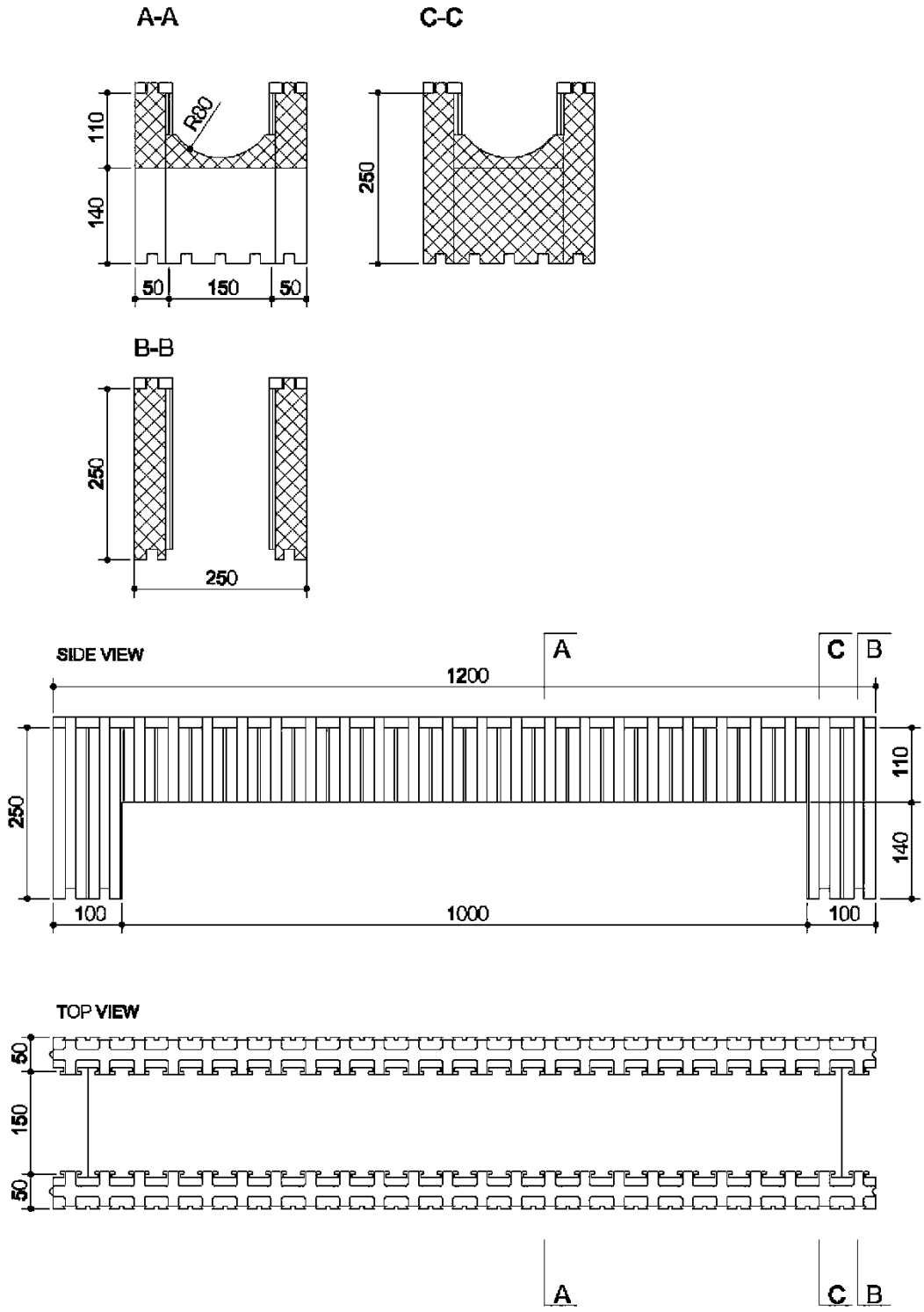

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A9
System: IZOBasic — door head element (lintel) MLA 1,2/25 l x t x h = 120cm x 25cm x 25cm	

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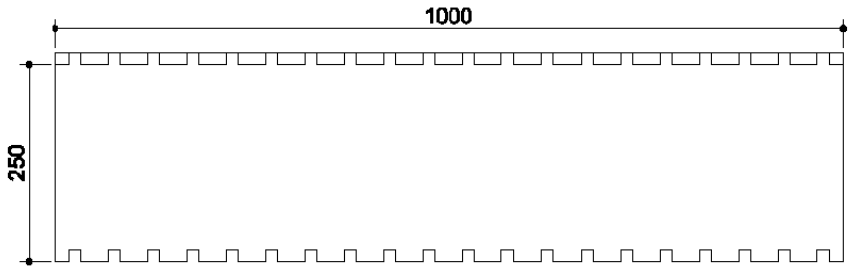
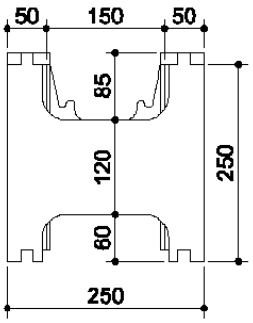
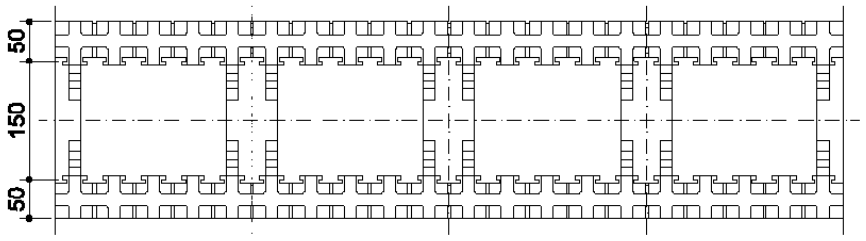
SIDE VIEW



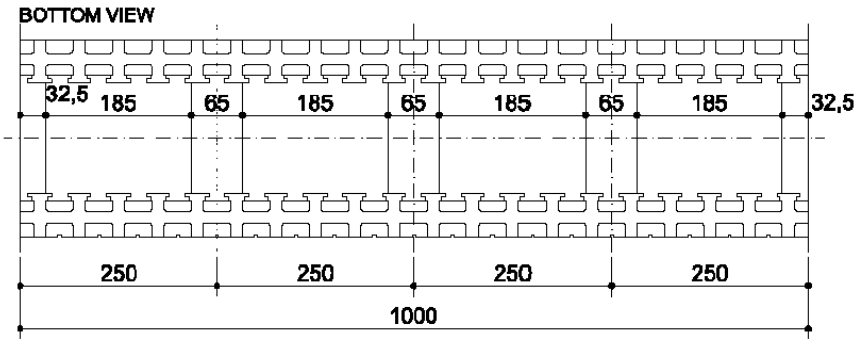
FRONT VIEW



TOP VIEW



BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A10
System: IZOBasic — BLOCK for swimming pools MCB 1/25 l x t x h = 100cm x 25cm x 25cm	

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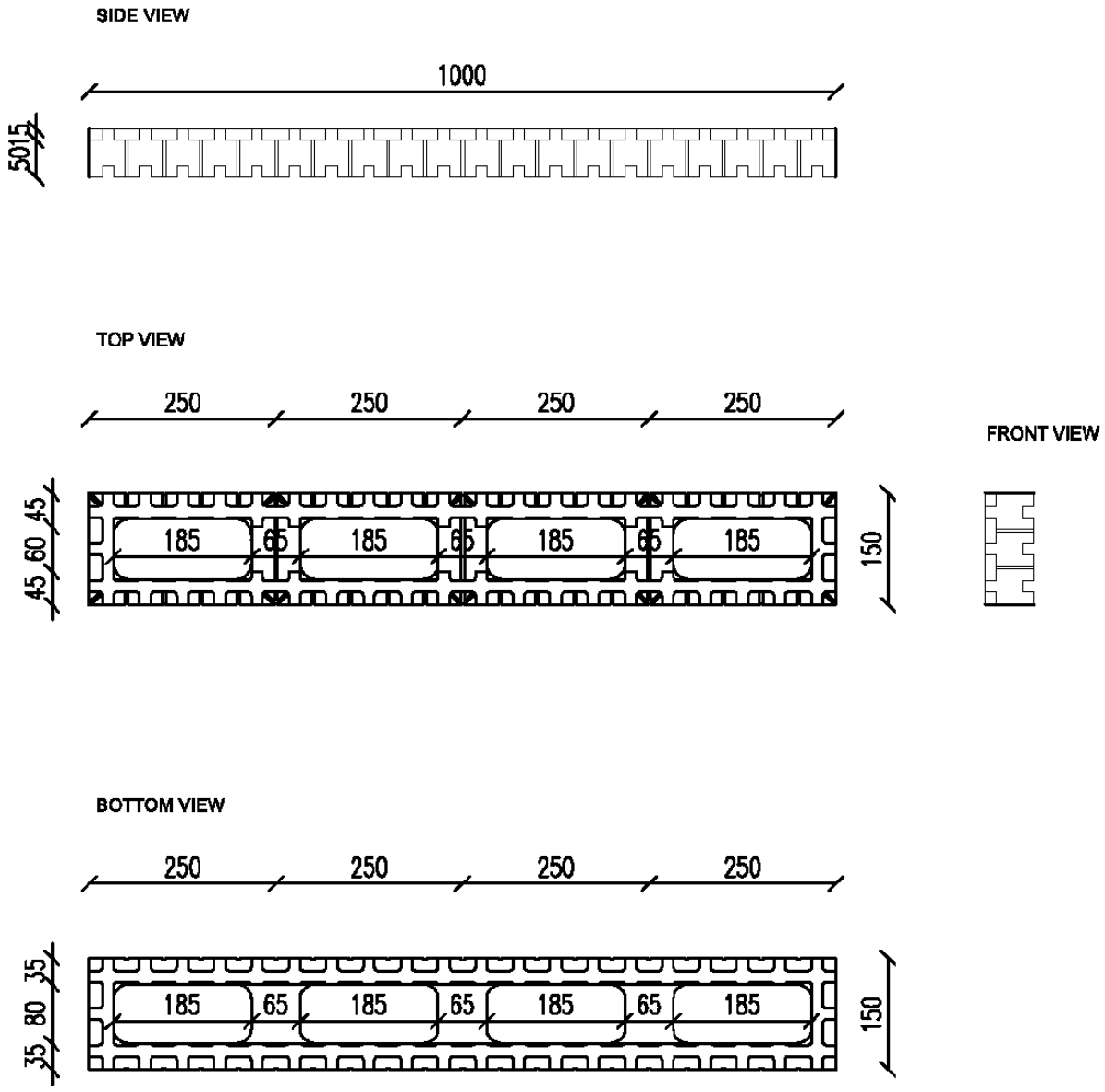

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A11
System: IZOBasic — Height Adjuster for partition wall MH 1/15 l x t x h = 100cm x 5cm x 15cm	

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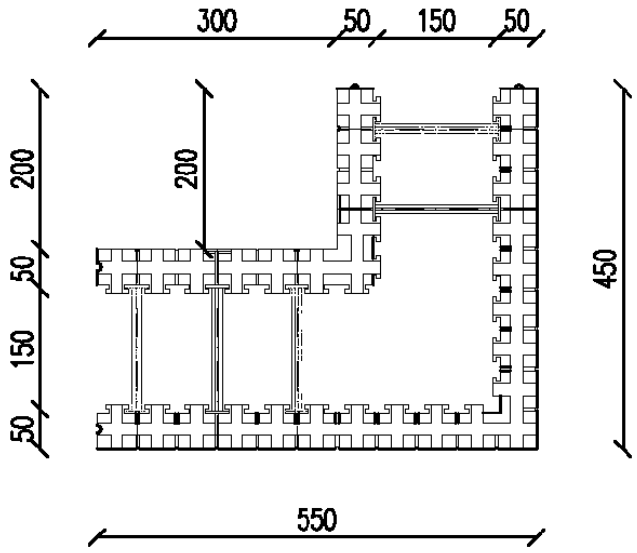
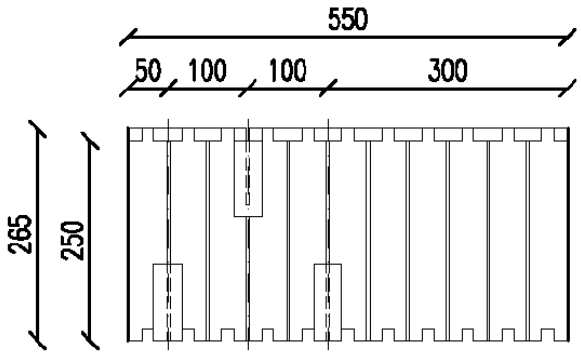
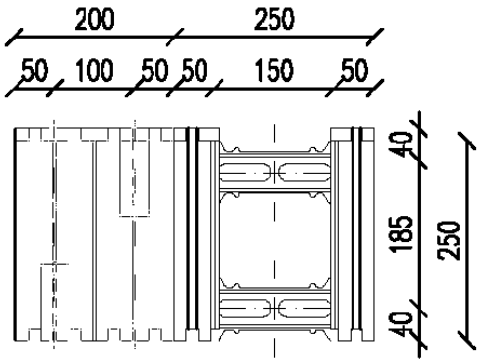
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A12
System: IZOBasic	90° corner MCFU25 E90 RA / LI l x t x h = 100(50)cm x 25cm x 25cm (external right / internal left)	

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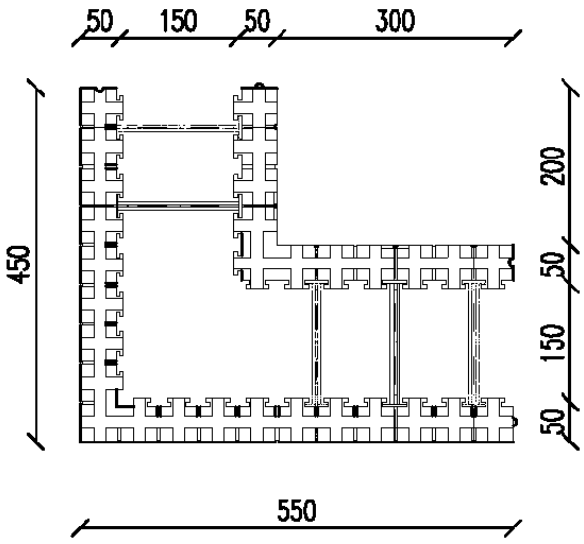
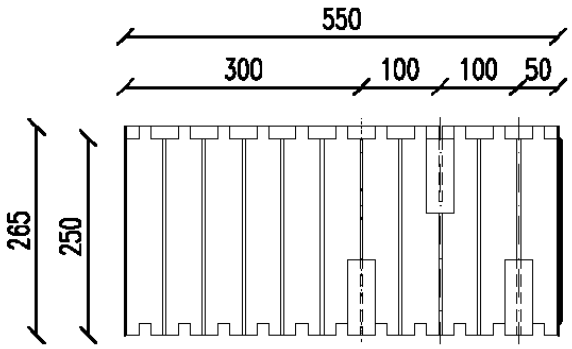
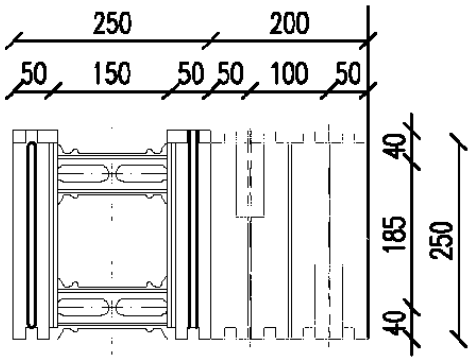
TOP VIEW



SIDE VIEW

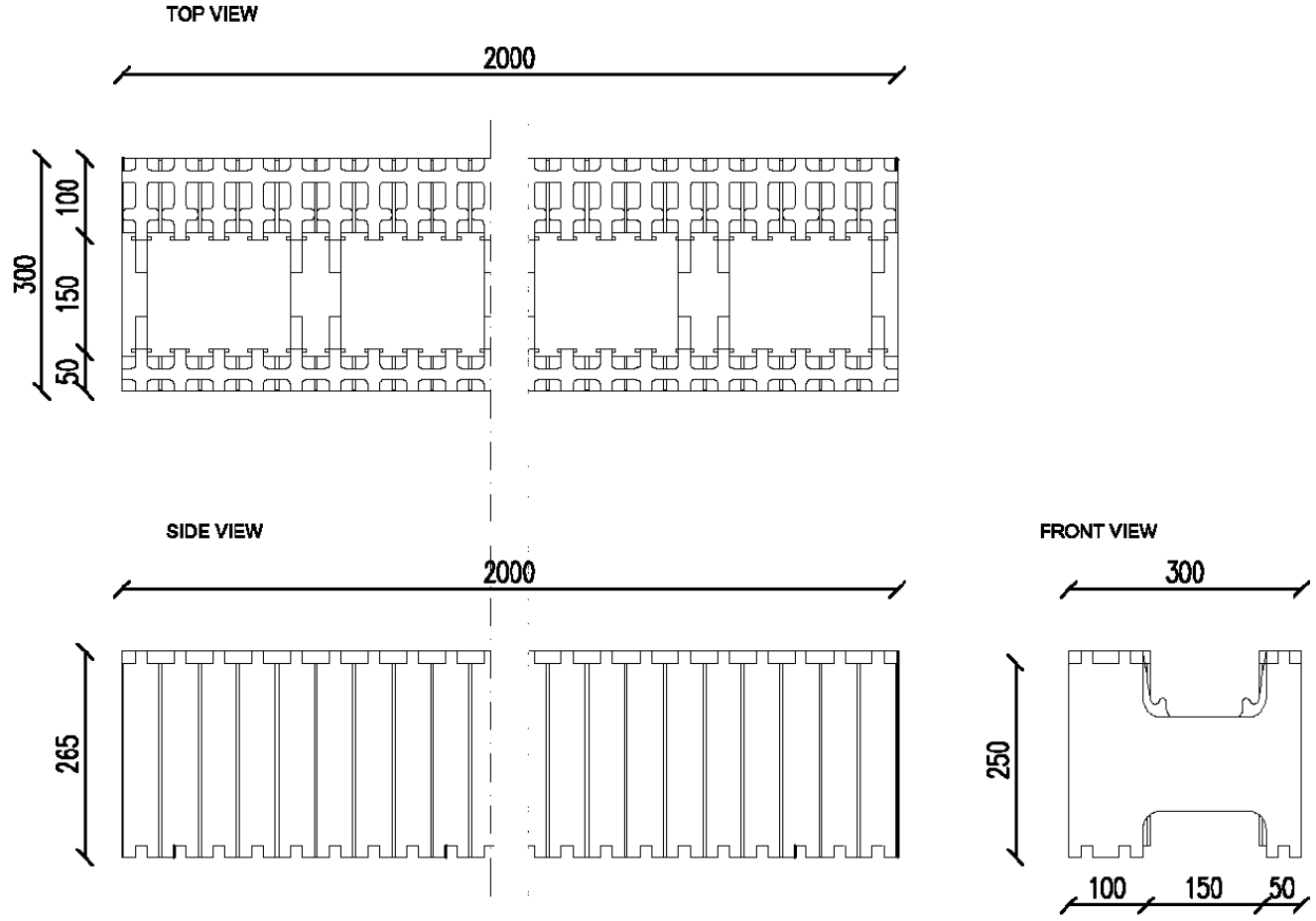


FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A13
System: IZOBasic	90° corner MCFU25 E90 LA / RI l x t x h = 100(50)cm x 25cm x 25cm (external left / internal right)	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A14
System: IZOStandard — Basic Element MC 2/30 l x t x h = 200cm x 30cm x 25cm	

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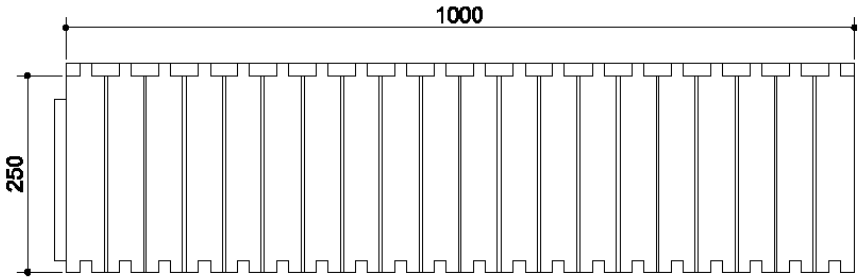
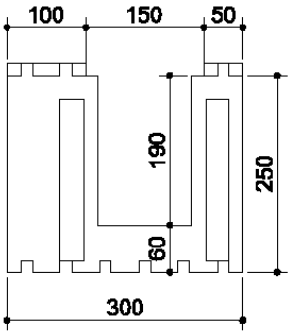
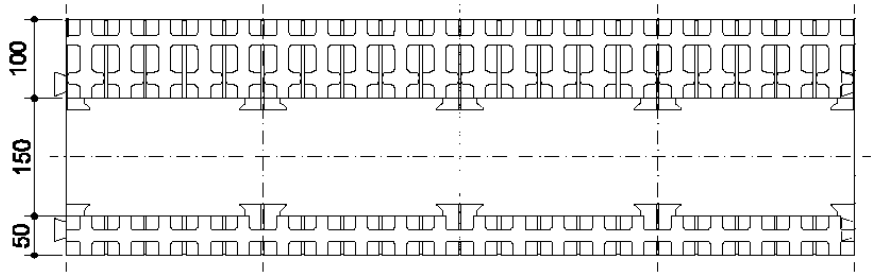
SIDE VIEW



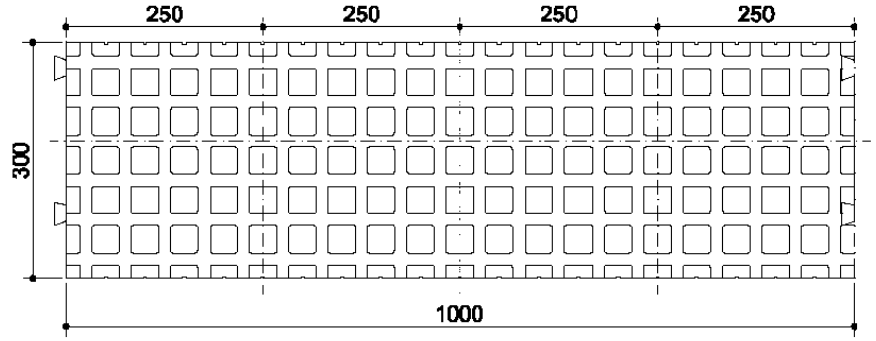
FRONT VIEW



TOP VIEW



BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A15
System: IZOStandard — Header Block (Lintel) ML 1/30 l x t x h = 100cm x 30cm x 25cm	

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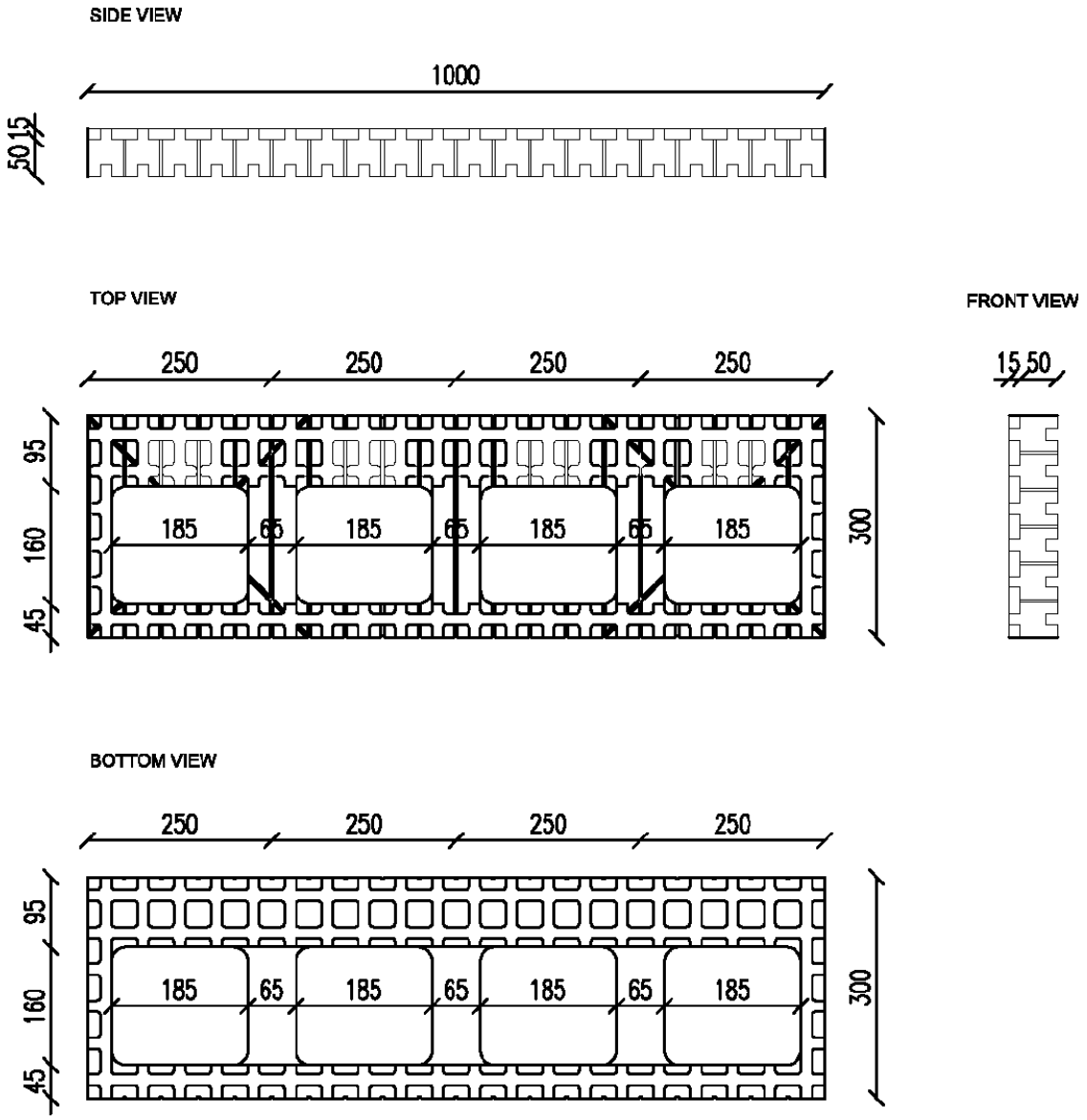
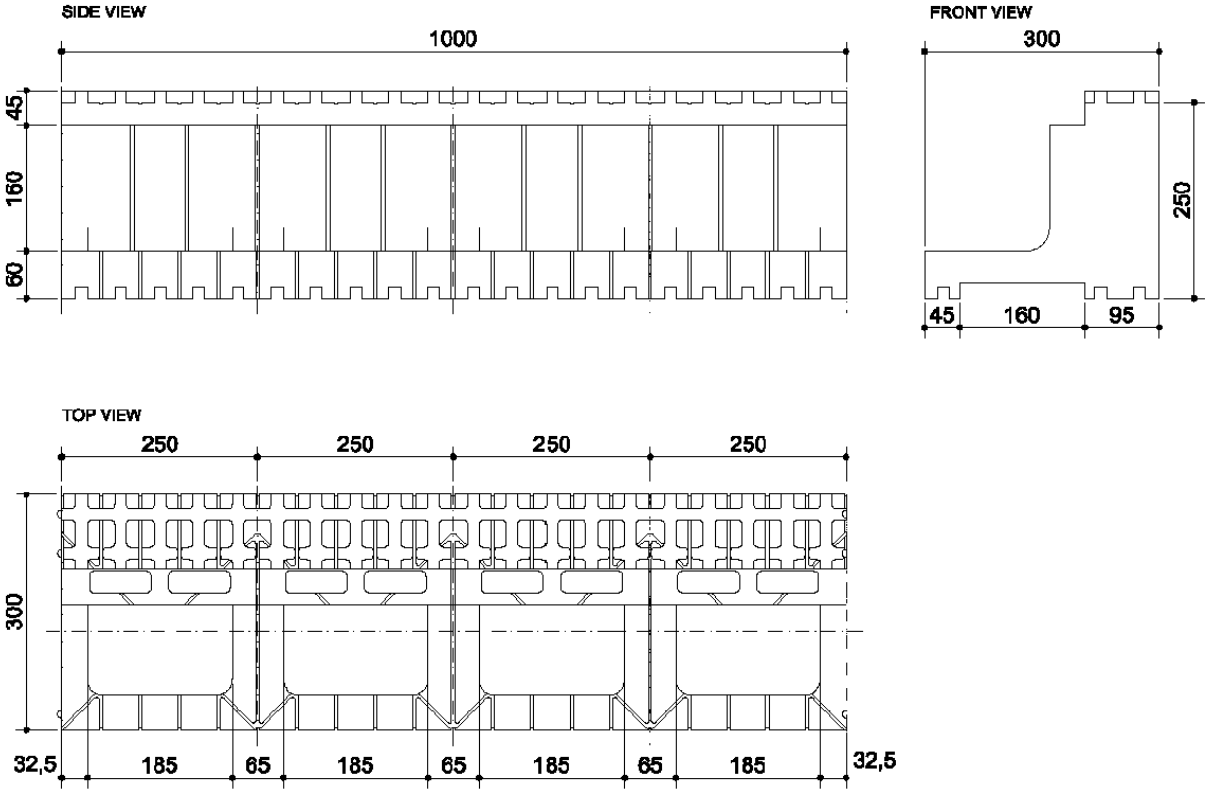


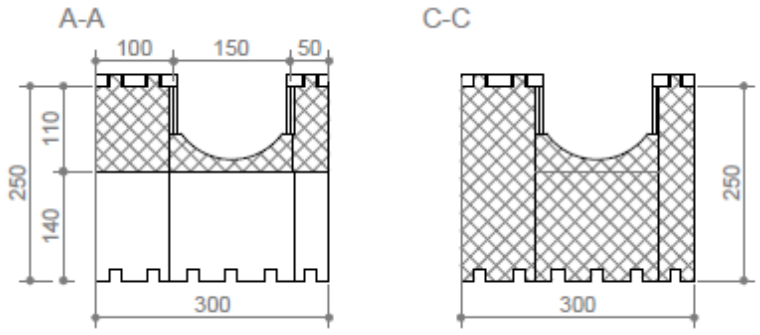
Sketches not to scale
All dimensions in mm

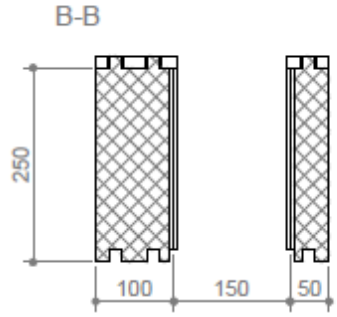
Permanent shuttering kit "IZODOM"	Annex A16
System: IZOStandard — Height adapter MH 1/30 l x t x h = 100cm x 5cm x 30cm	

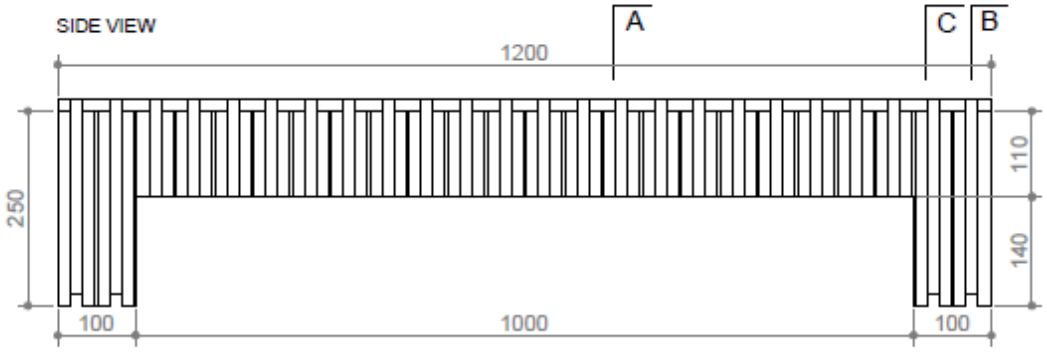


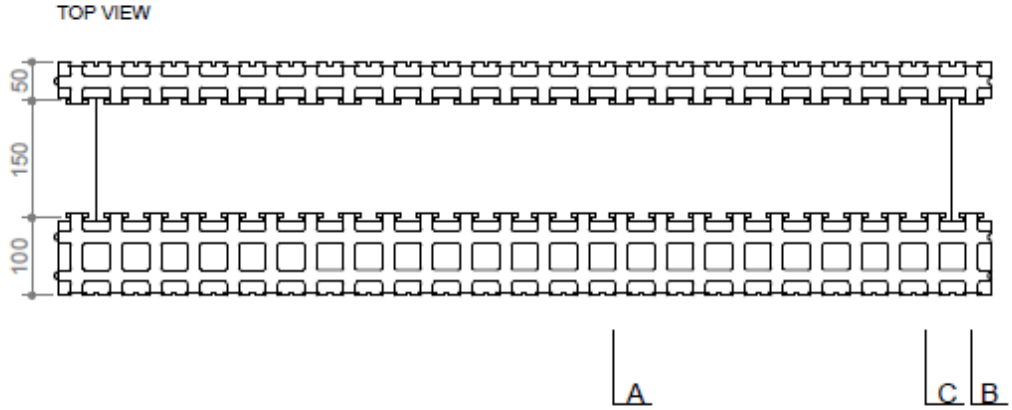
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A17
System: IZOStandard — Ceiling support element MP 1/30 l x t x h = 100cm x 30cm x 25cm	









Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex 18
System: IZOStandard — Door header element MLA 1,2/30 120cm x 30cm x 25cm	

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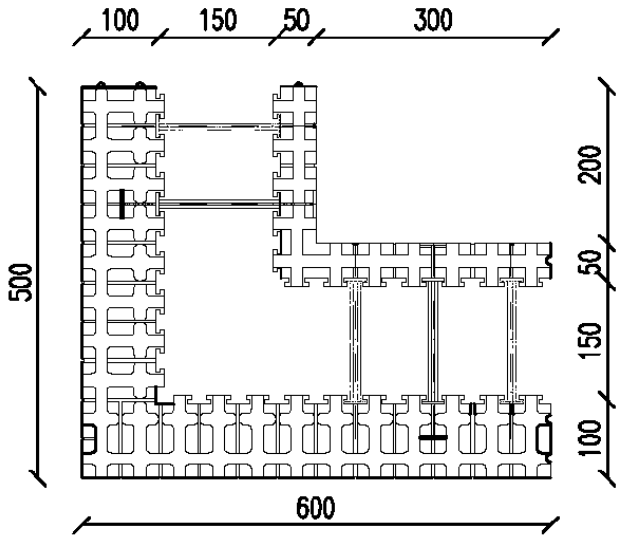
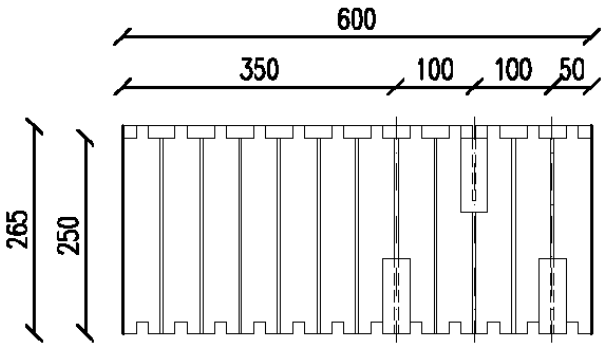
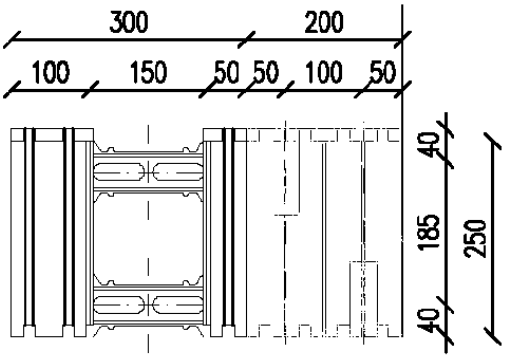
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A19
System: IZOStandard — 90° corner (external / left) MCFU30 E90 LA l x t x h = 110cm x 30cm x 25cm	

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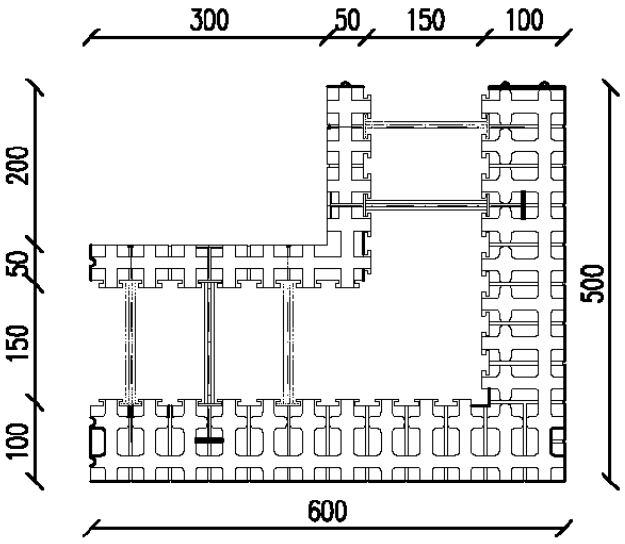
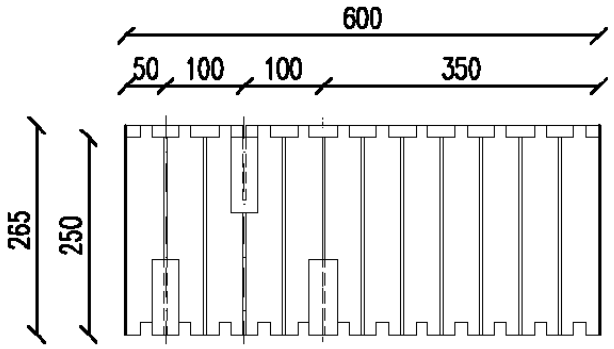
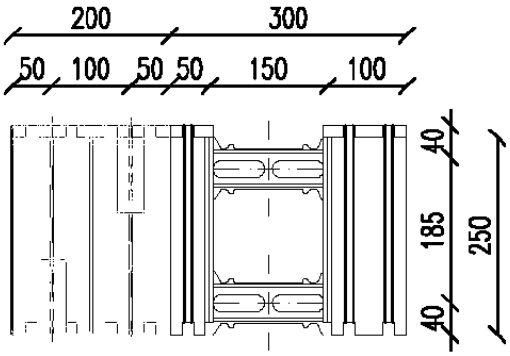
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A20
System: IZOStandard — 90° corner (external / right), MCFU30 E90 RA, l x t x h = 110cm x 30cm x 25cm	

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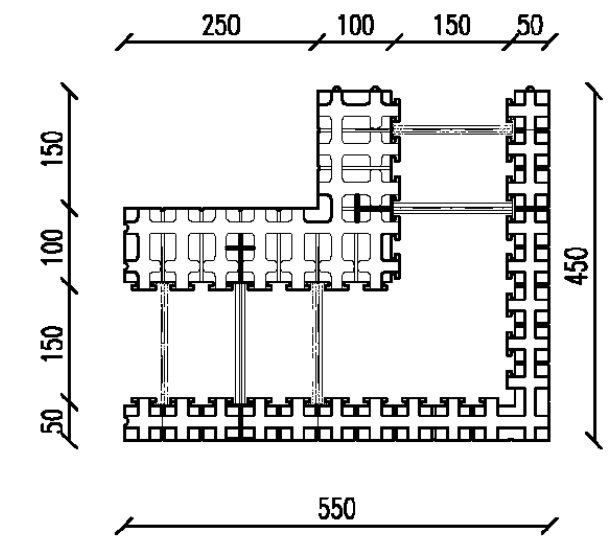
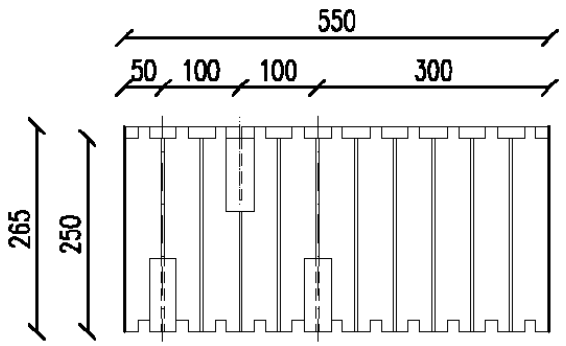
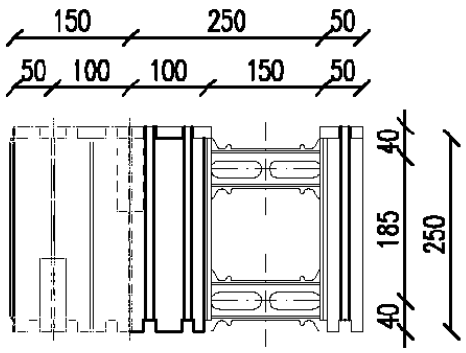
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A21
System: IZOStandard 90° corner (internal / left) MCFU30 E90 LI l x t x h = 110cm x 30cm x 25cm	

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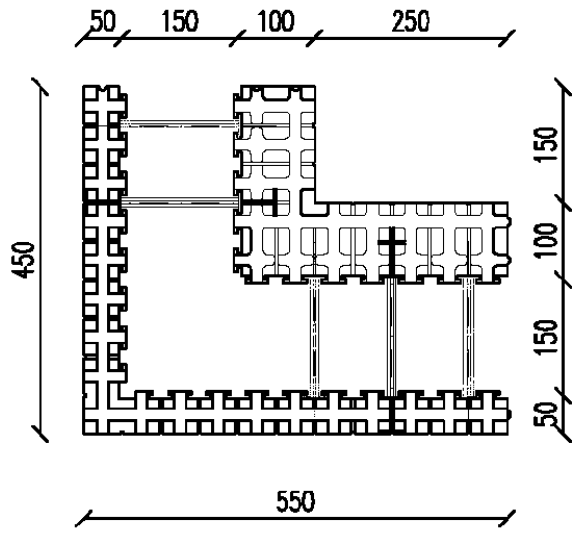
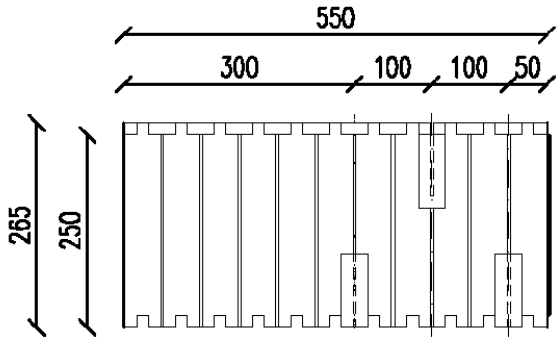
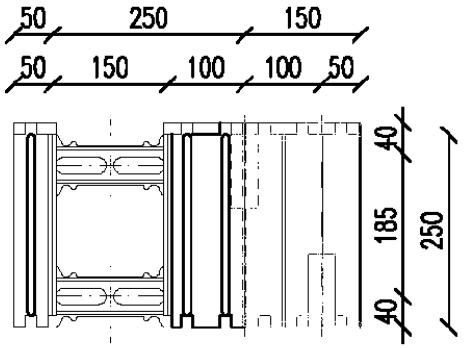
TOP VIEW



SIDE VIEW

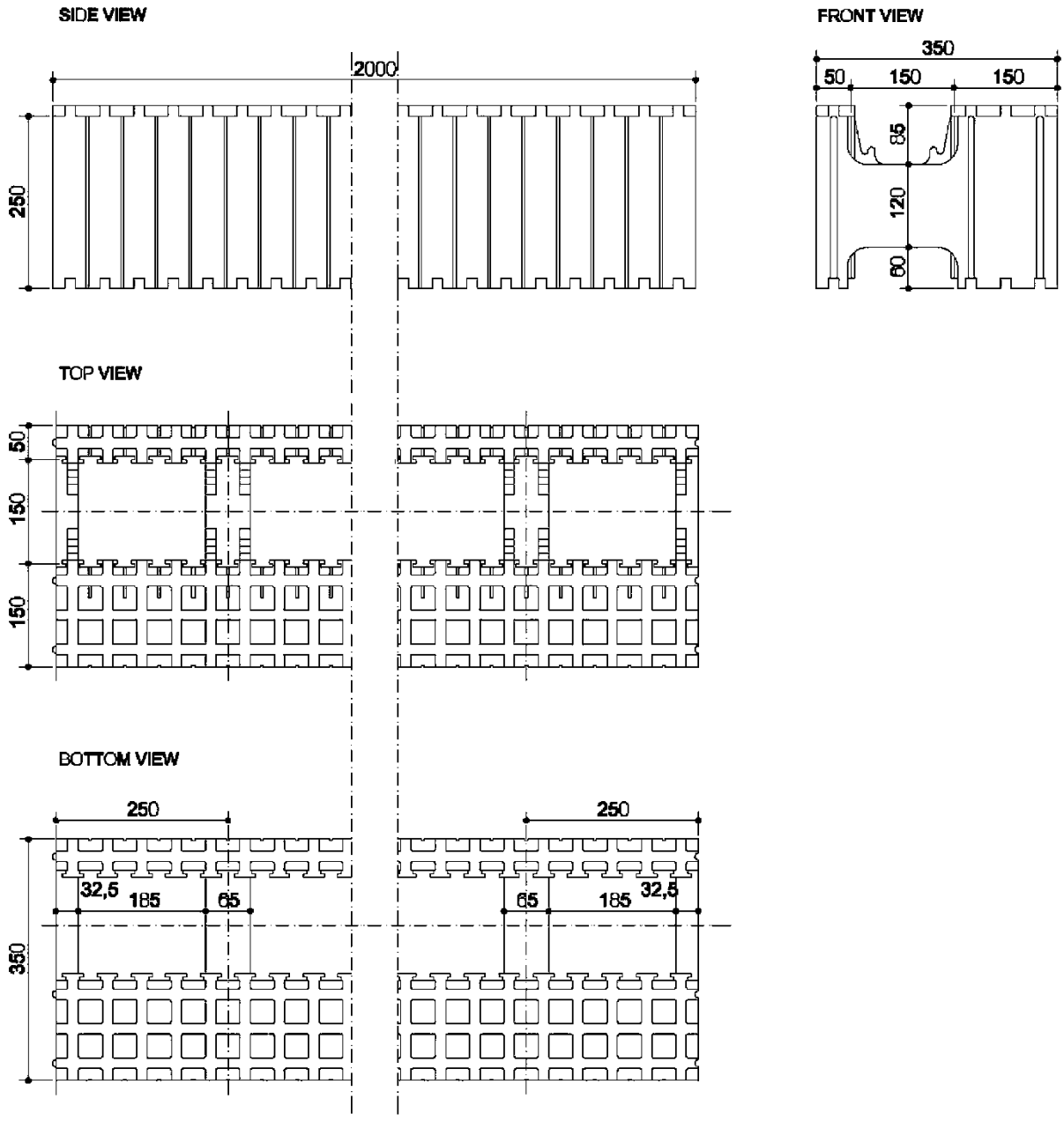


FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A22
System: IZOStandard — 90° corner (internal / right) MCFU30 E90 RI l x t x h = 110cm x 30cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A23
System: IZOEnergy — Primary Block MC 2/35 l x t x h = 200cm x 35cm x 25cm	

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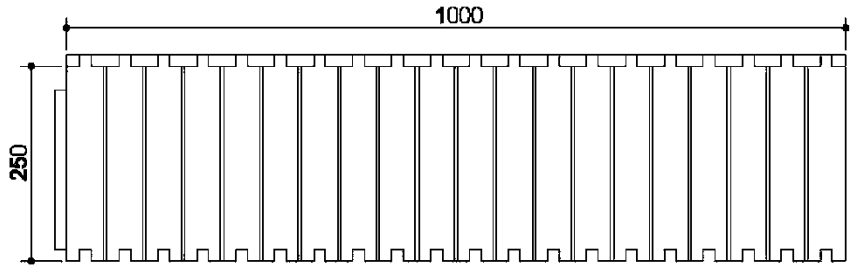
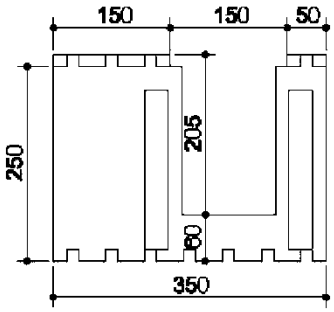
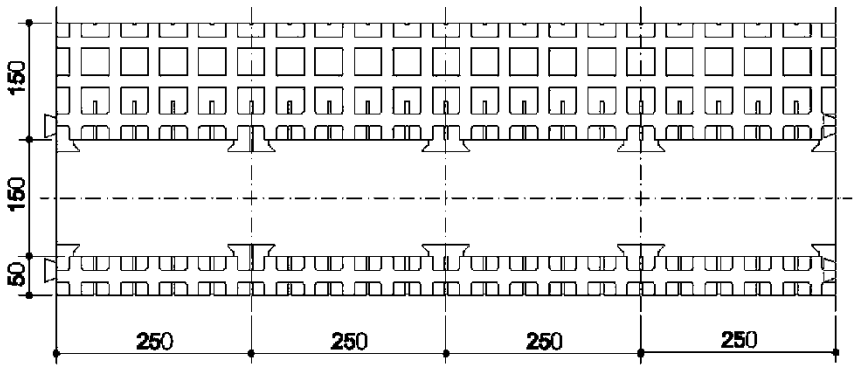
SIDE VIEW



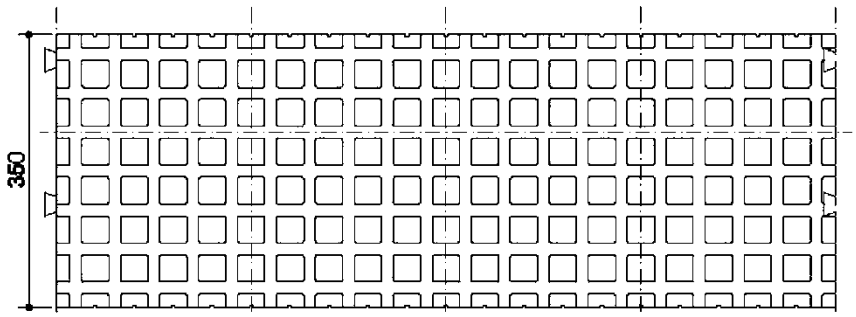
FRONT VIEW



TOP VIEW

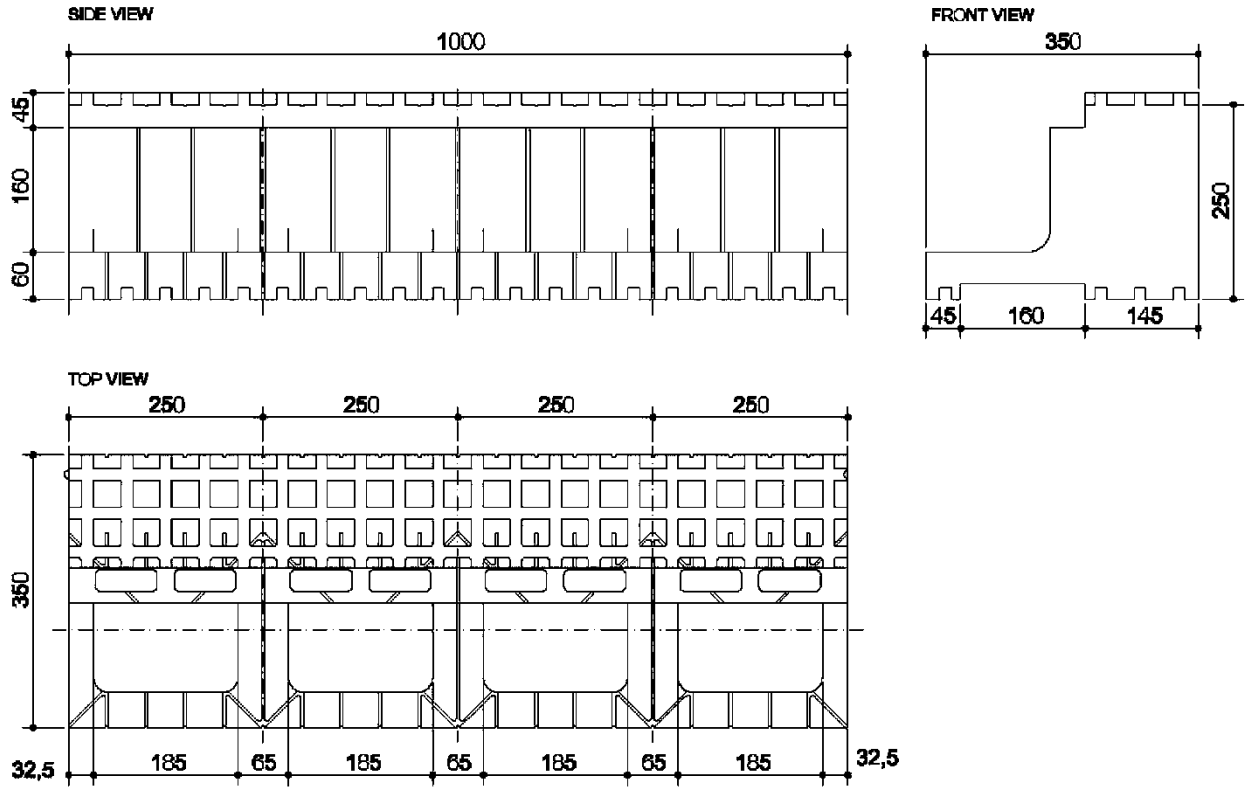


BOTTOM VIEW



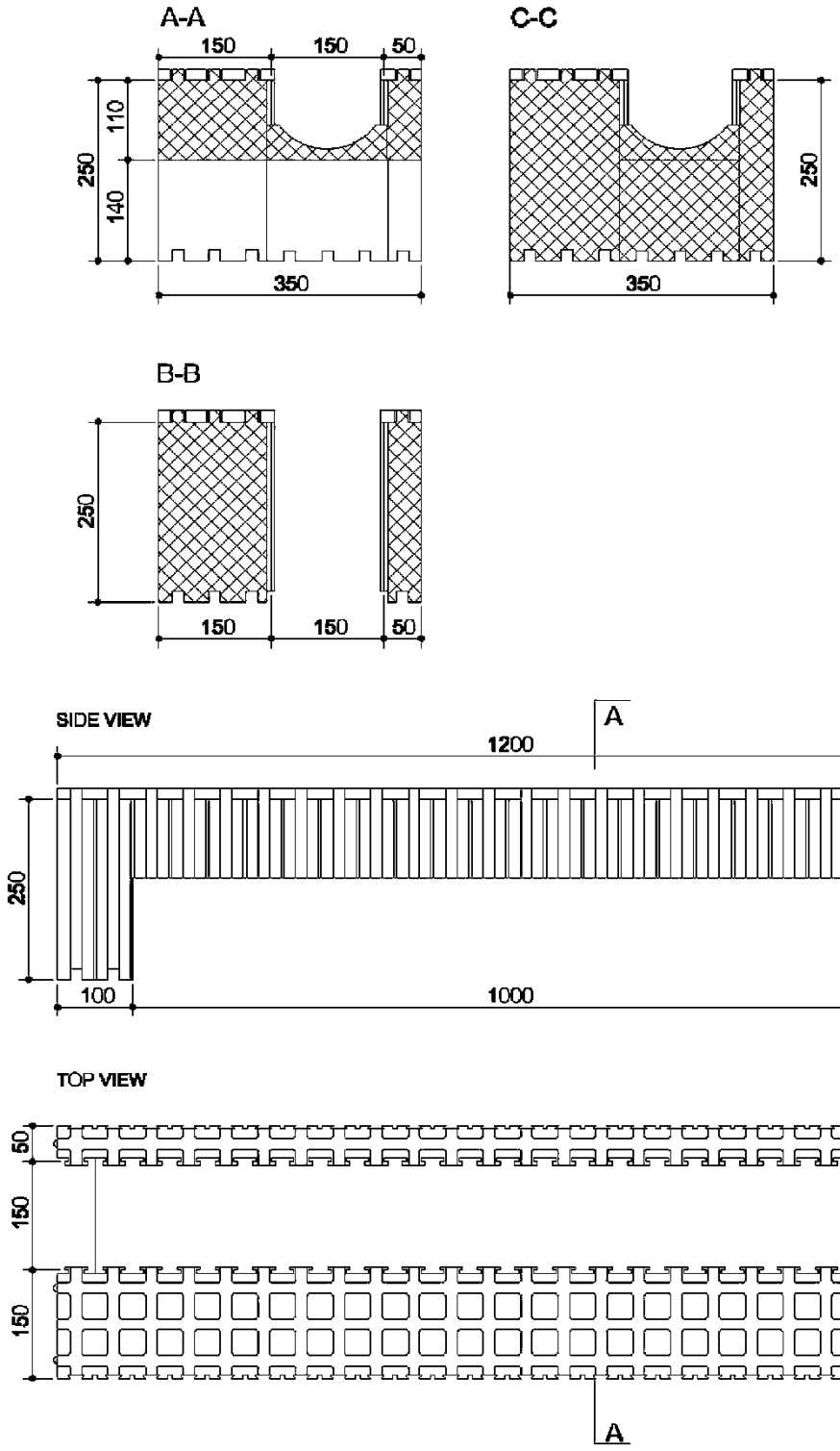
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A24
System: IZOEnergy — Header Block (lintel) ML 1/35 l x t x h = 200cm x 35cm x 25cm	



Sketches not to scale
All dimensions in mm

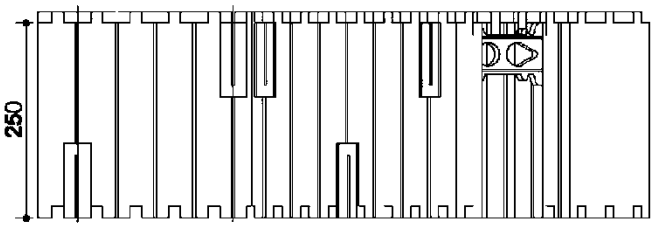
Permanent shuttering kit "IZODOM"	Annex A25
System: IZOEnergy — Slab support element MP 1/35 l x t x h = 100cm x 35cm x 25cm	



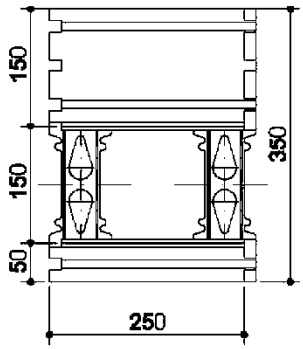
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A26
System: IZOEnergy — Door Head Element (Lintel) MLA 1,2/35 l x t x h = 100cm x 35cm x 25cm	

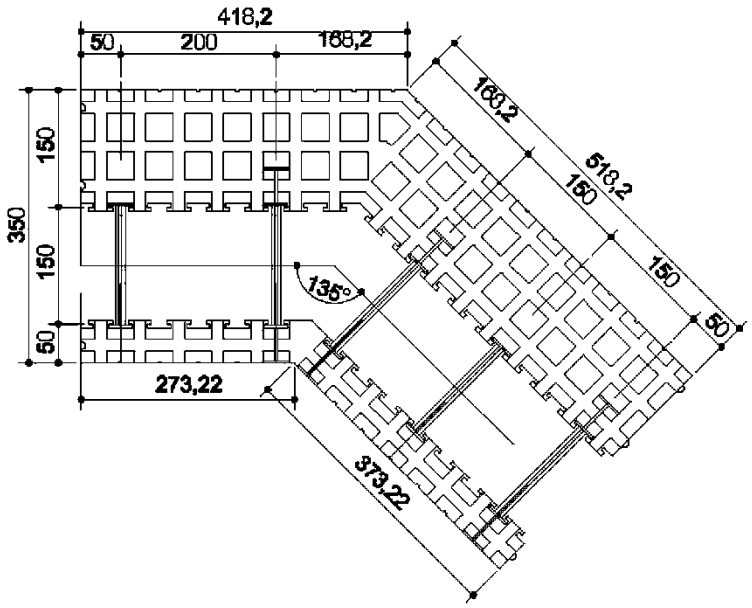
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A27
System: IZOEnergy	Outer angle joint element - right MCFU35 E45 RA (41,8cm + 51,8cm) x 35cm x 25cm	

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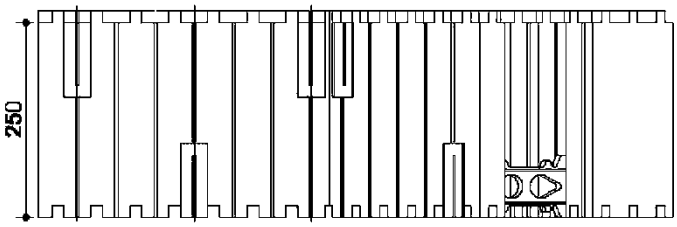
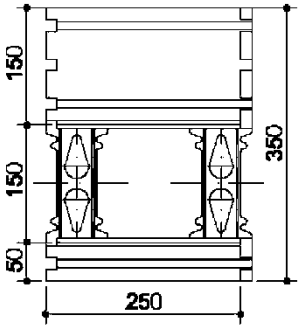
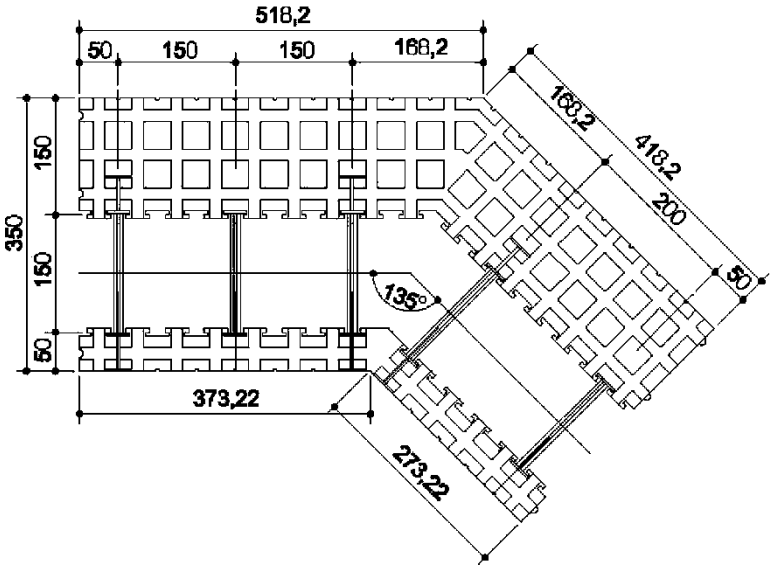
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A28
System: IZOEnergy	Outer angle joint element - left MCFU35 E45 LA (51,8cm + 41,8cm) x 35cm x 25cm	

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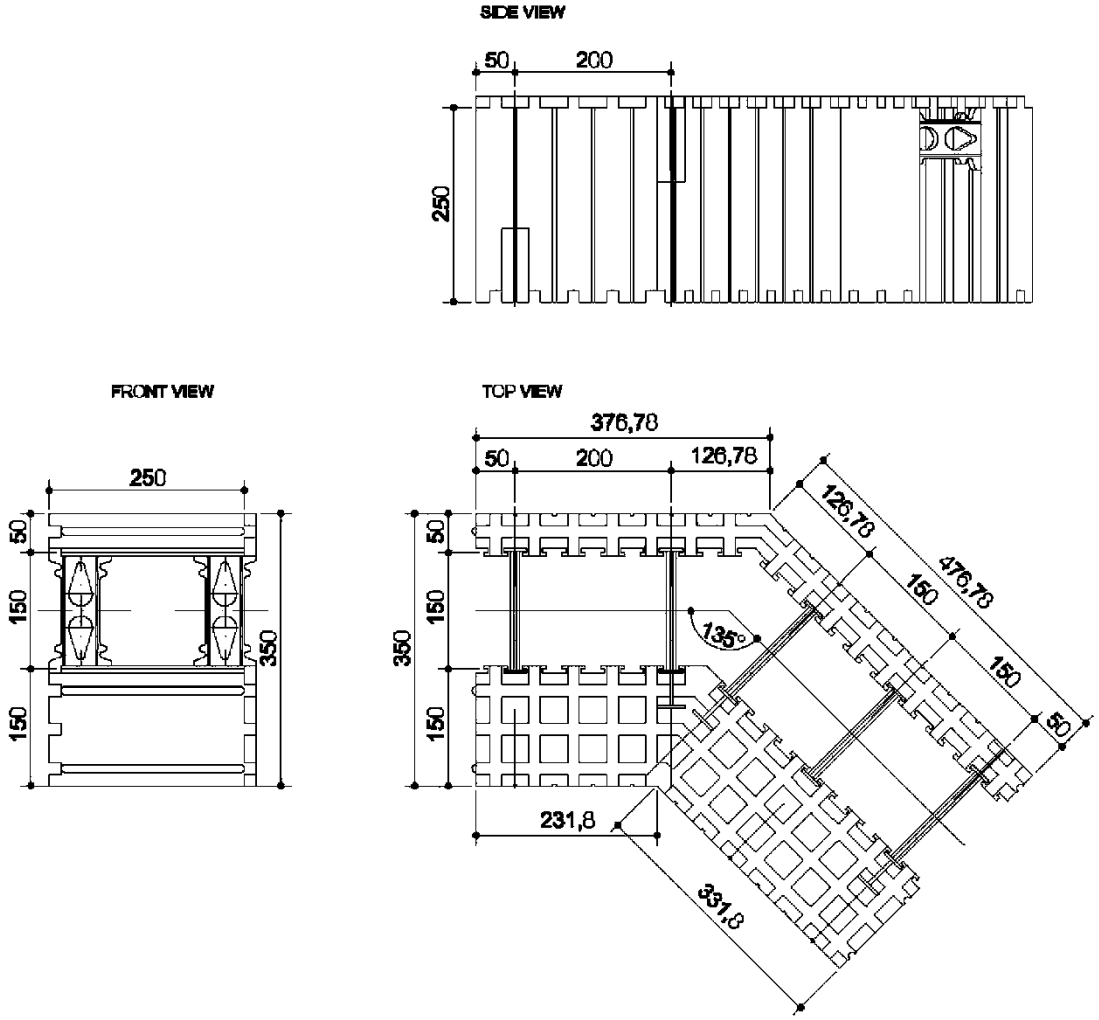

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A29
System: IZOEnergy — Outer angle joint element - left MCFU35 E45 LI (23,2cm + 33,2cm) x 35cm x 25cm	

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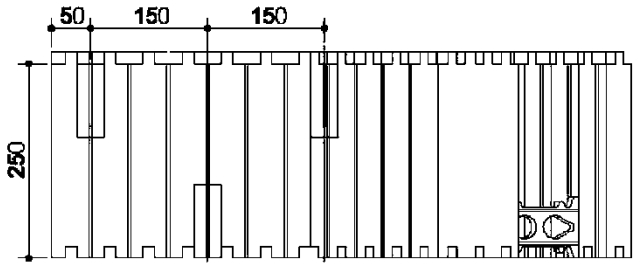
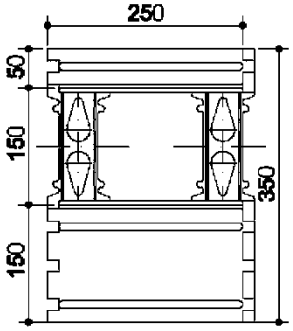
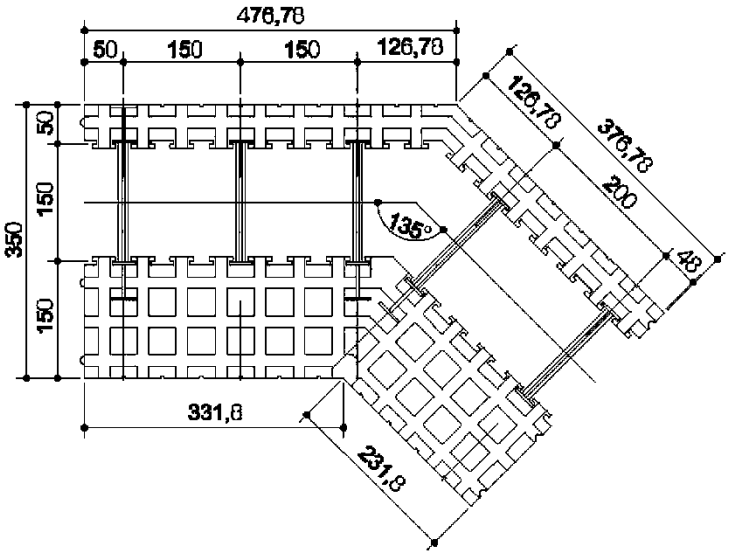
SIDE VIEW



FRONT VIEW

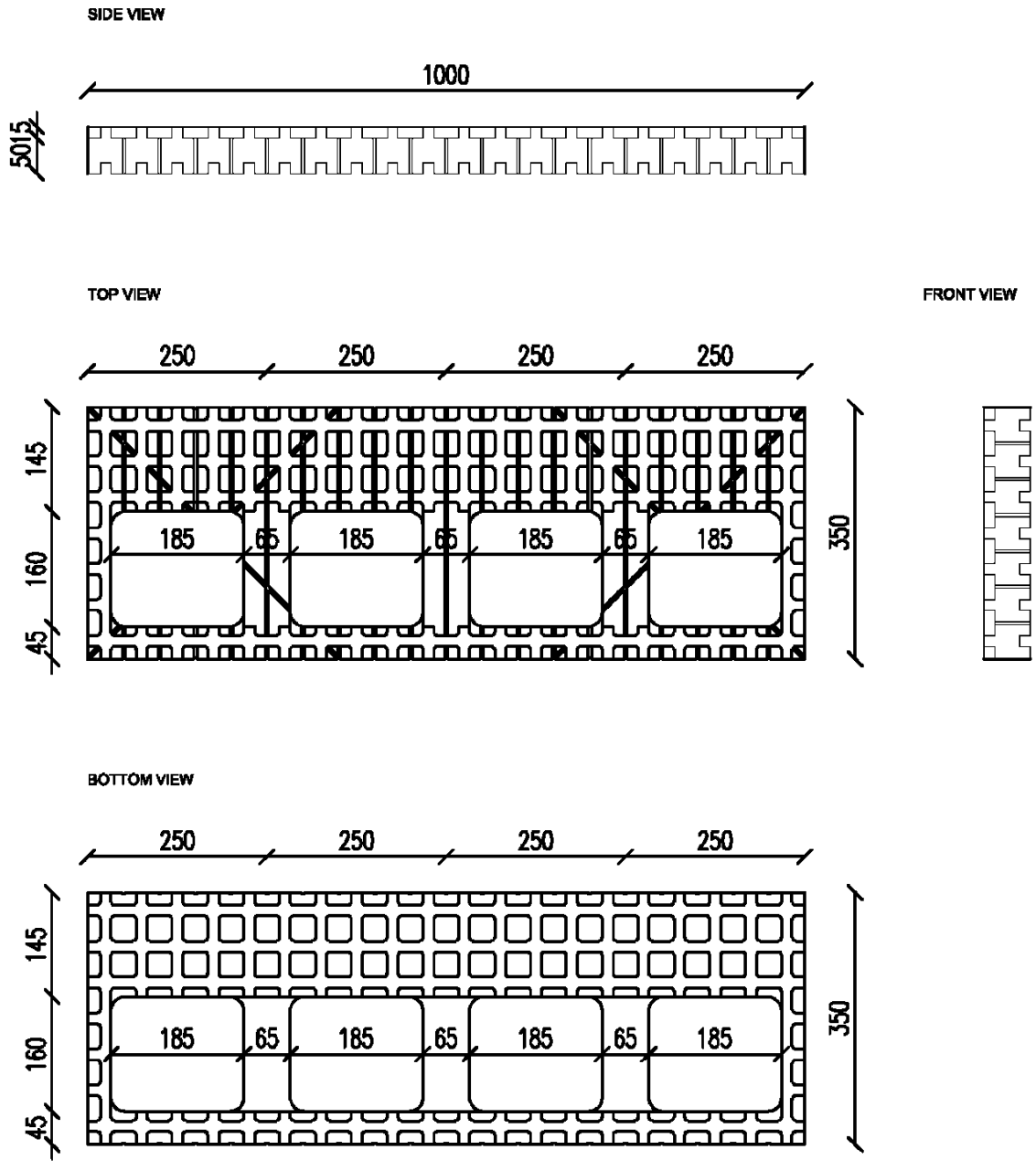


TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A30
System: IZOEnergy	Outer angle joint element - right MCFU35 E45 RI (33,2cm + 23,2cm) x 35cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A31
System: IZOEnergy — Height Adapter MH 1/35 l x t x h = 100cm x 35cm x 5cm	

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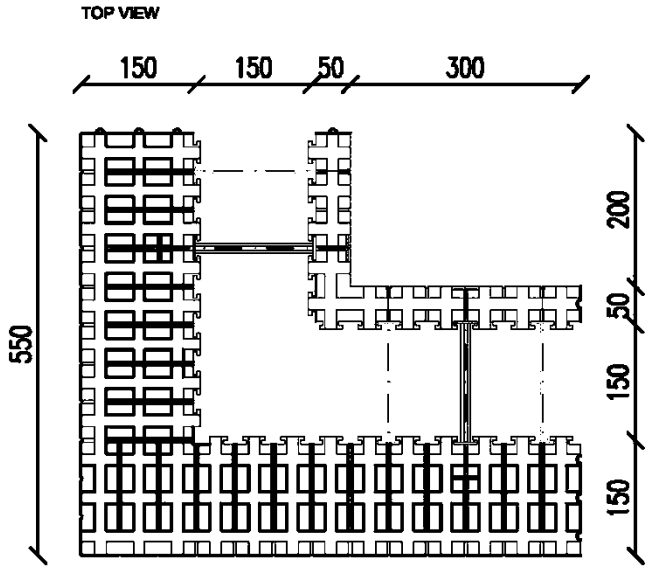

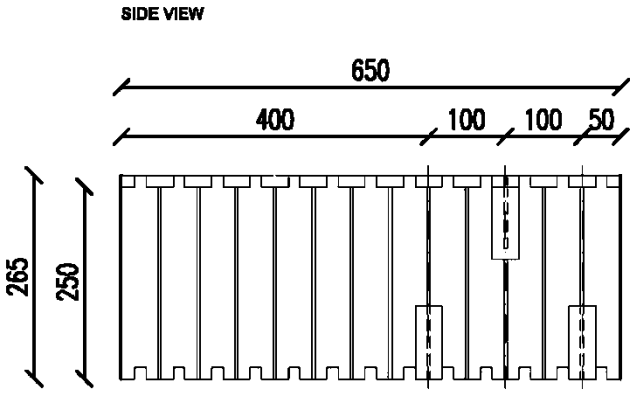

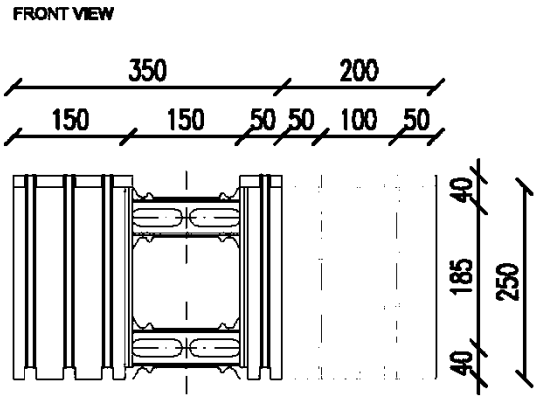

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A32
System: IZOEnergy	90° corner (external / left) MCFU35 E90 LA l x t x h = 120cm x 35cm x 25cm

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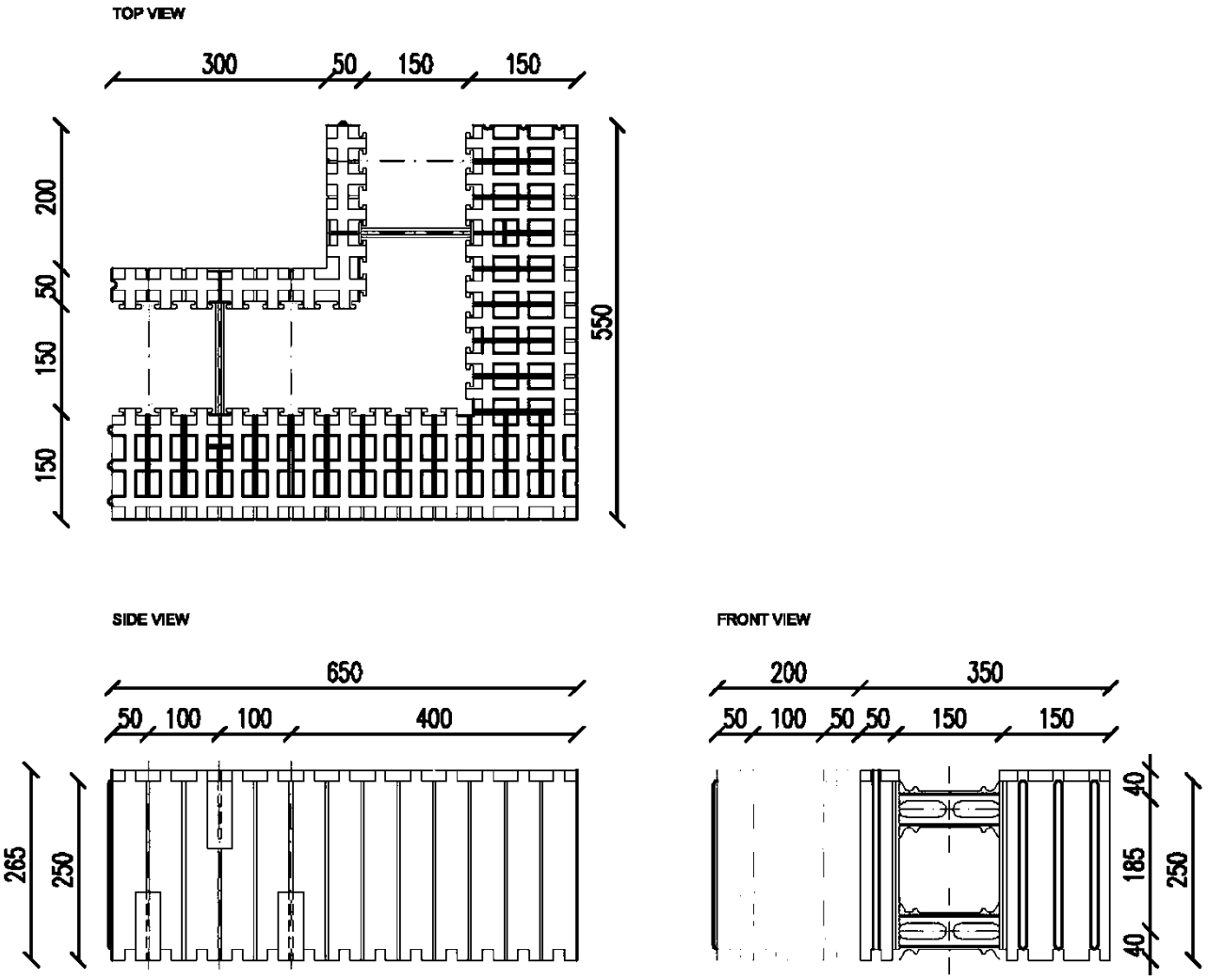

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A33
System: IZOEnergy	90° corner (external / right) MCFU35 E90 RA l x t x h = 120cm x 35cm x 25cm

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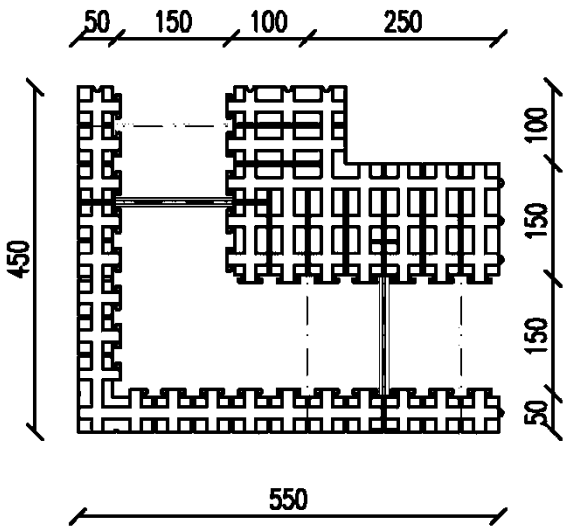
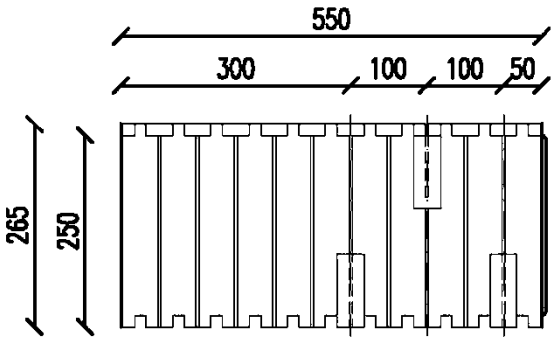
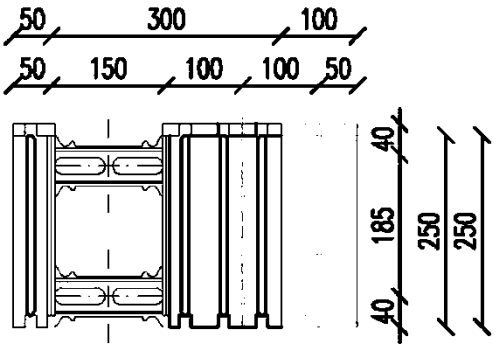
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A34
System: IZOEnergy	90° corner (internal / right) MCFU35 E90 RI l x t x h = 120cm x 35cm x 25cm	

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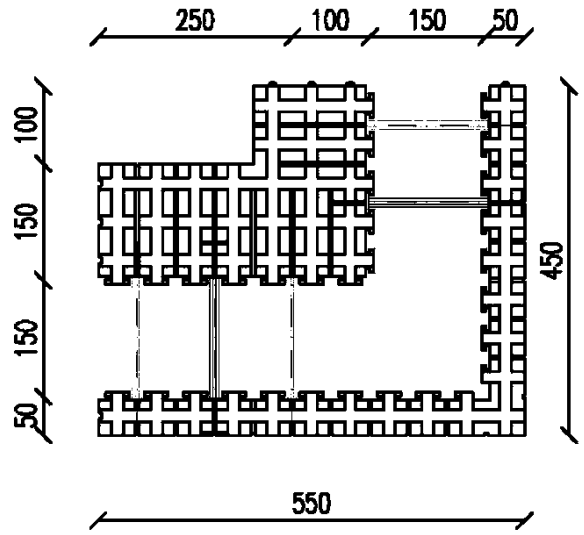
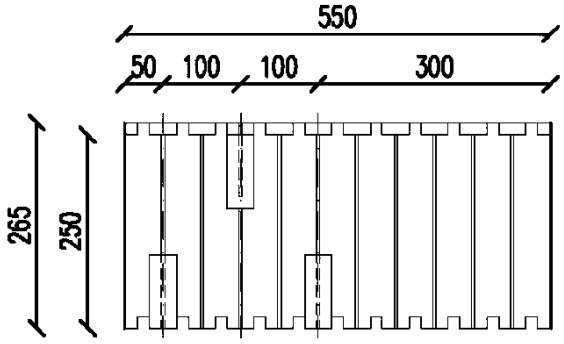
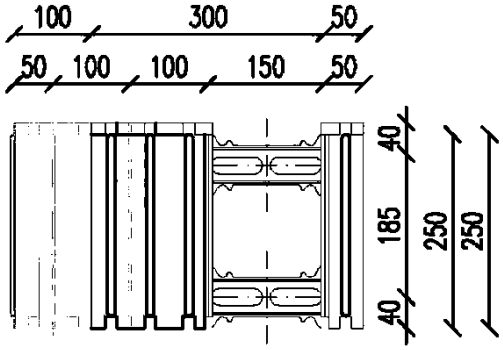
TOP VIEW



SIDE VIEW

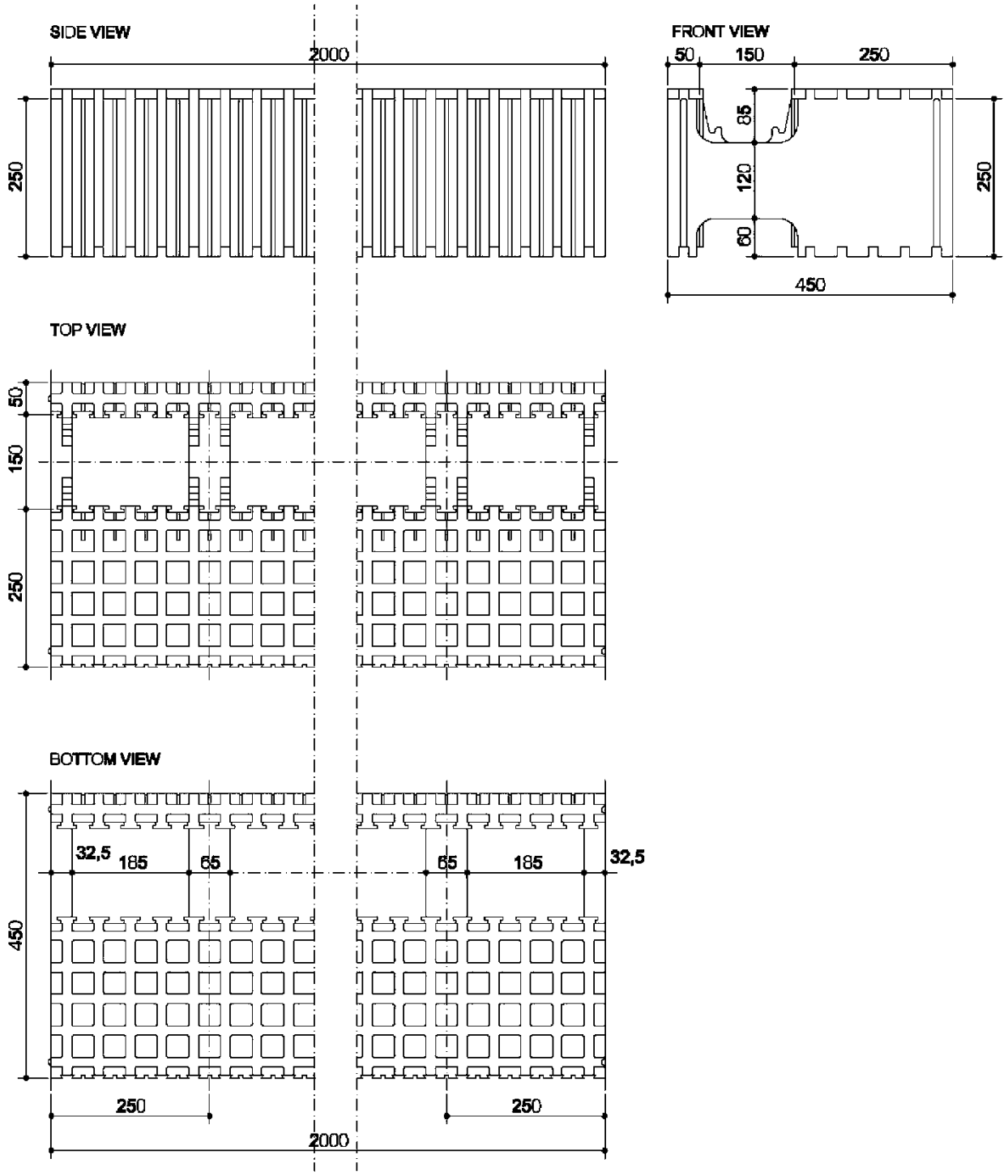


FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A35
System: IZOEnergy — 90° corner (internal / left) MCFU35 E90 LI l x t x h = 120cm x 35cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A36
System: IZOPassive — Primary Block MC 2/45 l x t x h = 200cm x 45cm x 25cm	

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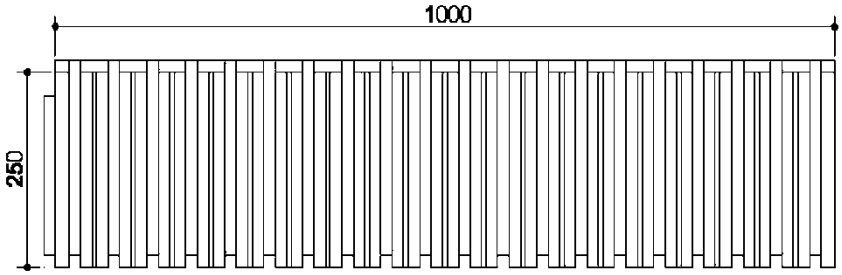
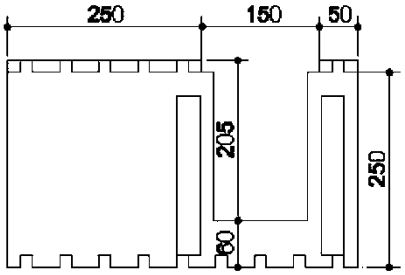
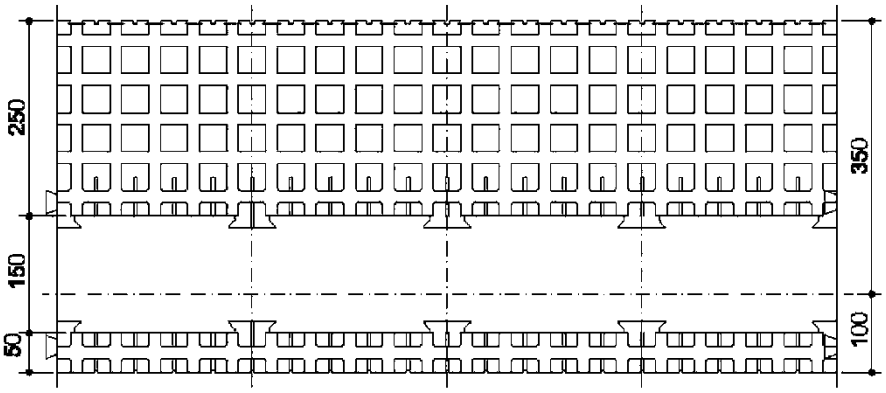
SIDE VIEW



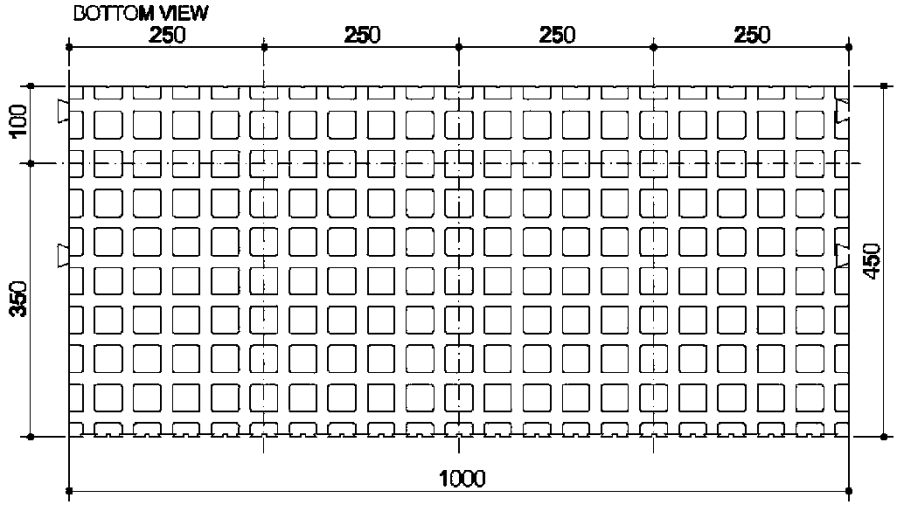
FRONT VIEW



TOP VIEW

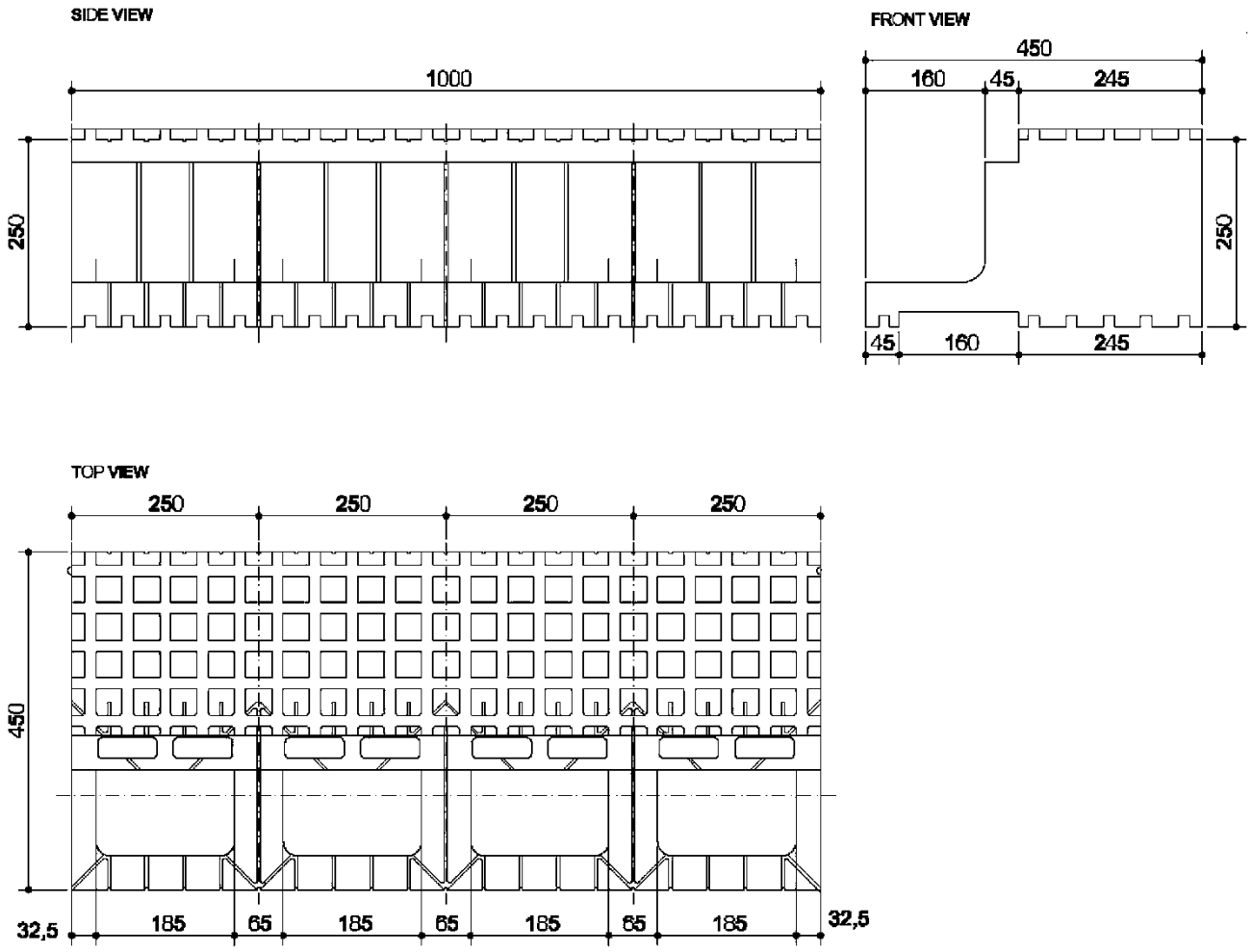


BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A37
System: IZOPassive — Header Block (lintel) ML 1/45 l x t x h = 100cm x 45cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A38
System: IZOPassive — Slab support element MP 1/45 l x t x h = 100cm x 45cm x 25cm	

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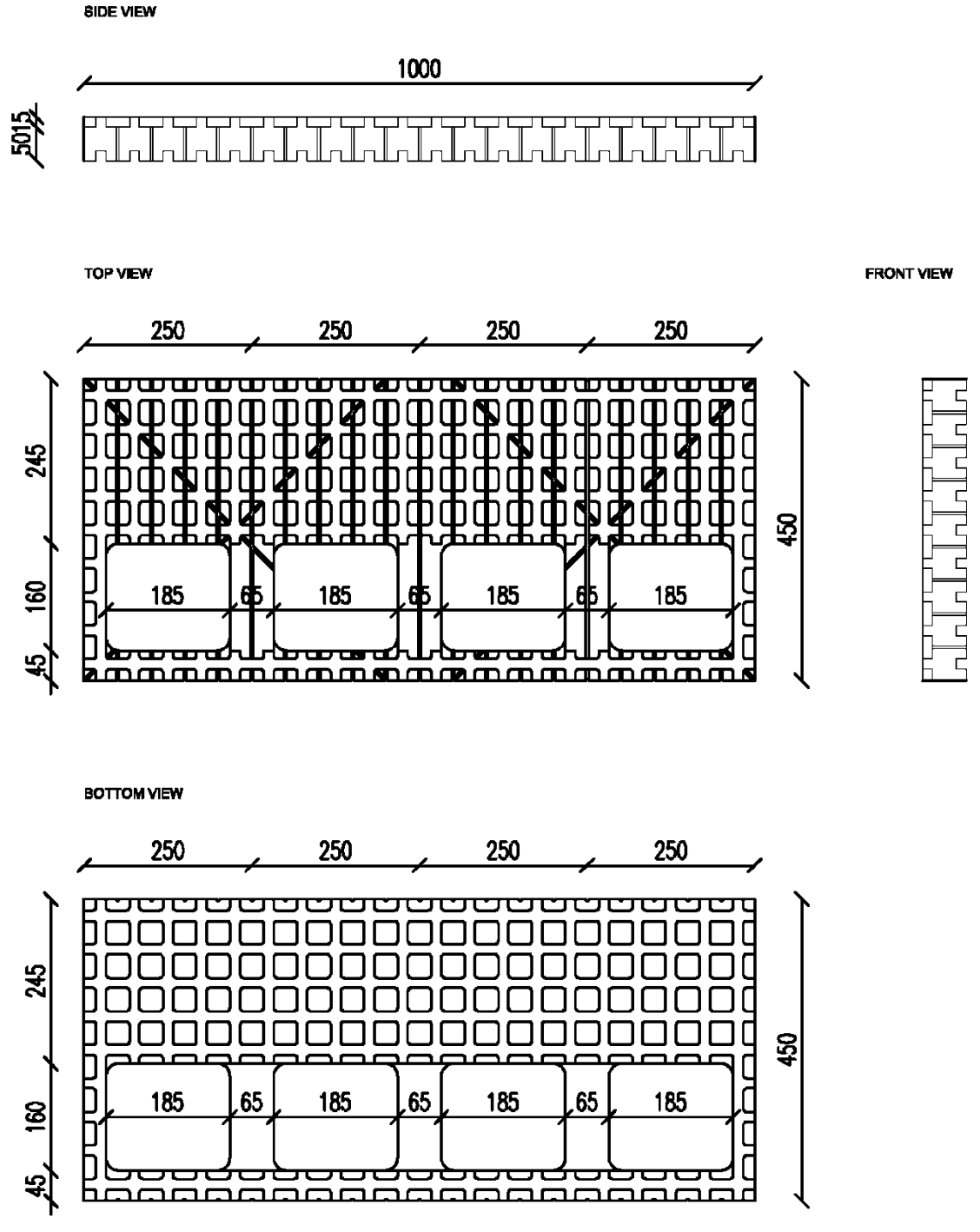
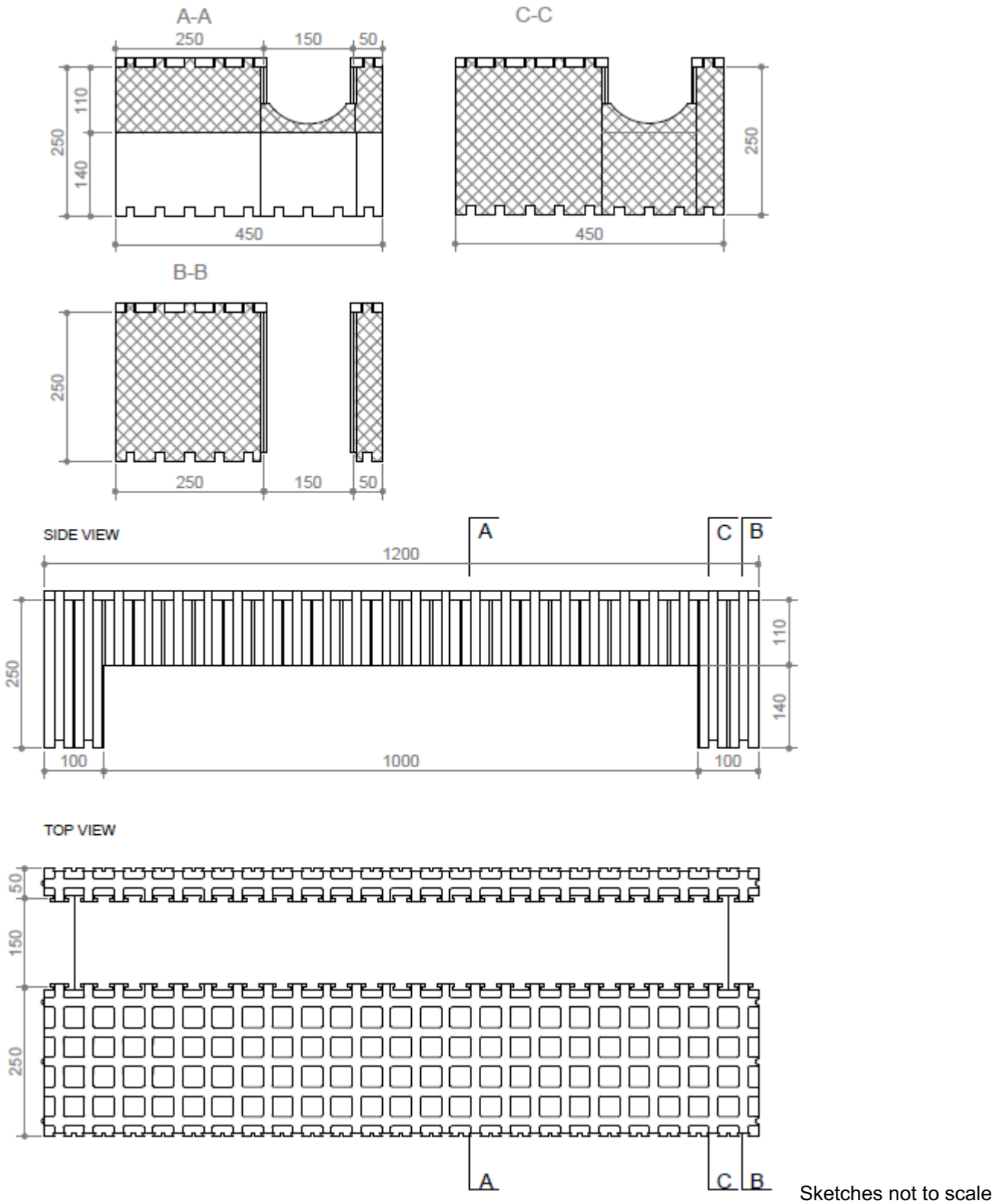


Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A39
System: IZOPassive — height adapter MH 1/45 l x t x h = 100cm x 45cm x 5cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A40
System: IZOPassive — Door header element MLA 1,2/45 l x t x h = 120cm x 45cm x 25cm	

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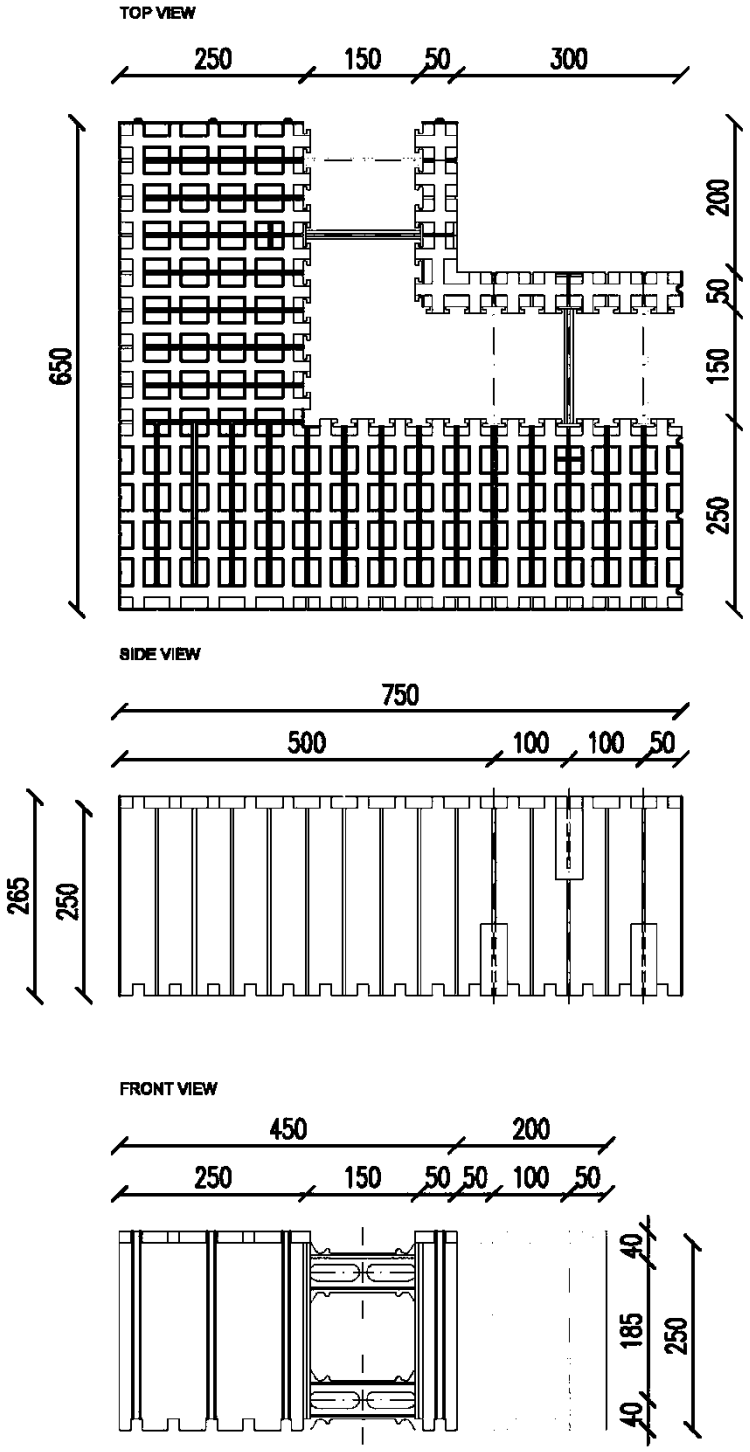

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A41
System: IZOPassive	90° corner (external / left) MCFU 45 E90 LA l x t x h = 140cm x 45cm x 25cm	

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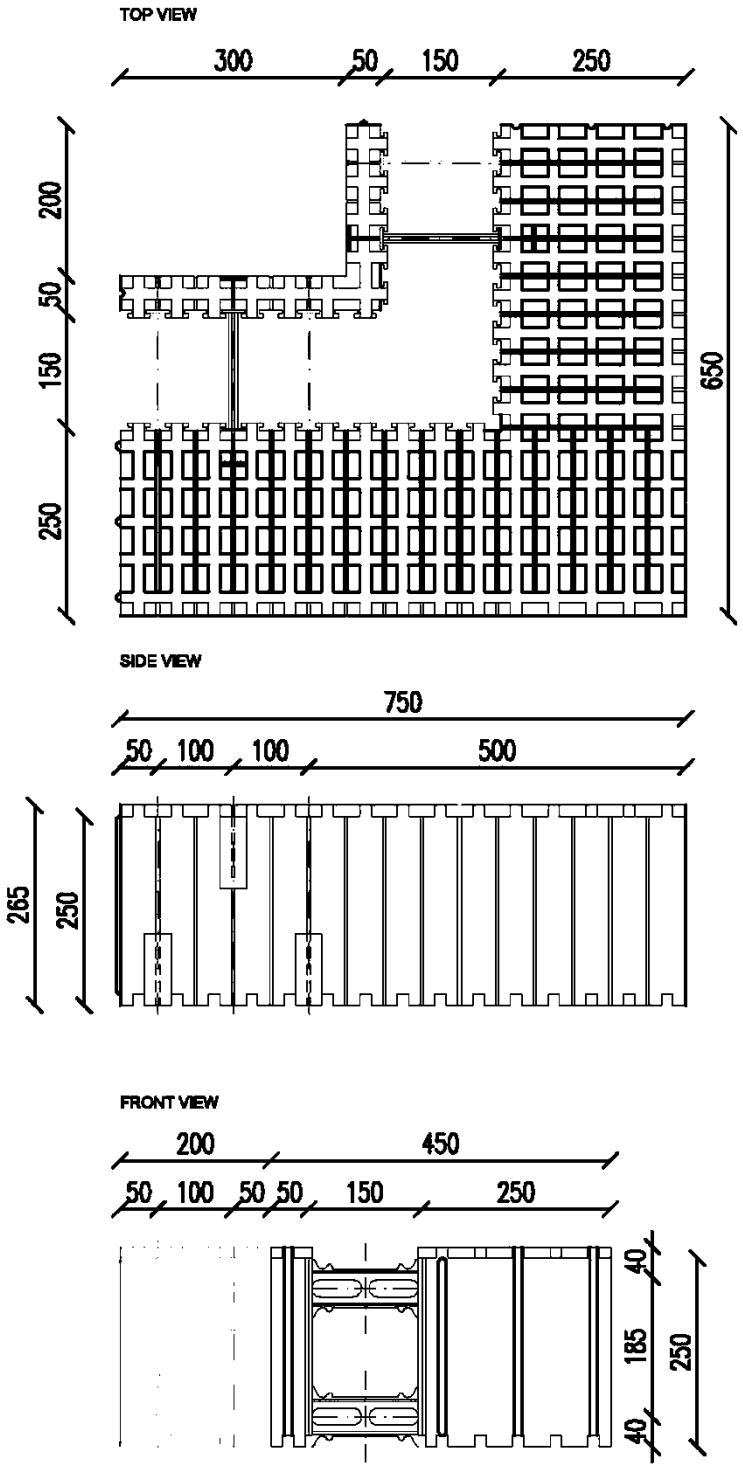

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A42
System: IZOPassive	90° corner (external / right) MCFU 45 E90 RA l x t x h = 140cm x 45cm x 25cm	

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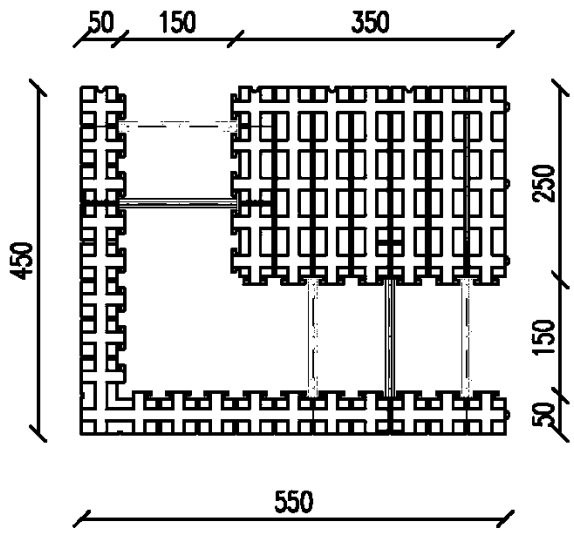
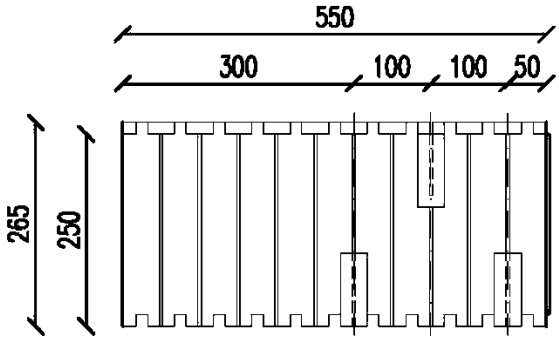
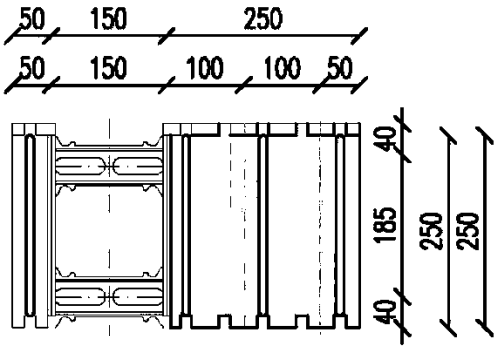
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A43
System: IZOPassive	90° corner (internal / right) MCFU 45 E90 RI l x t x h = 55cm x 45cm x 25cm	

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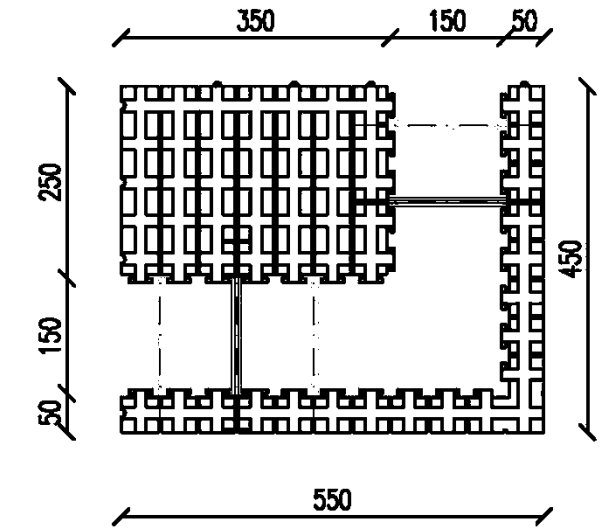
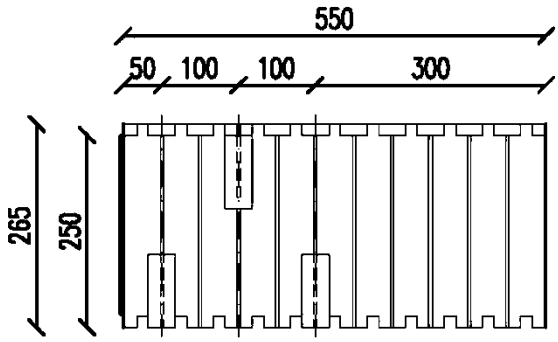
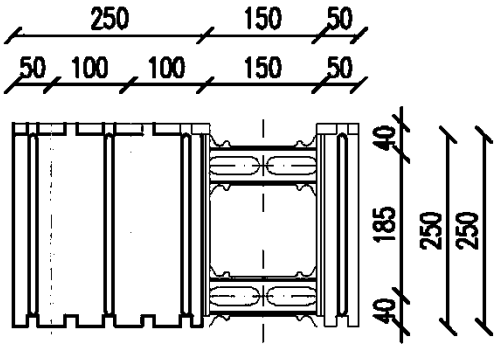
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A44
System: IZOPassive	90° corner (internal / left) MCFU 45 E90 LI l x t x h = 55cm x 45cm x 25cm	

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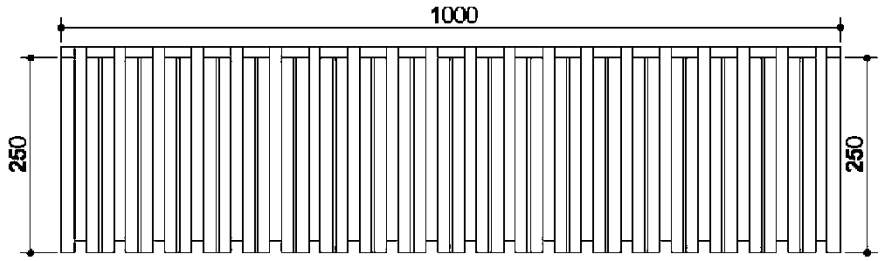
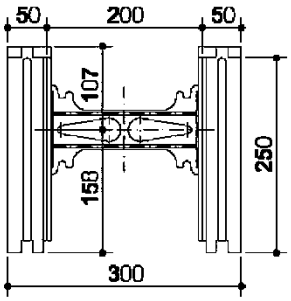
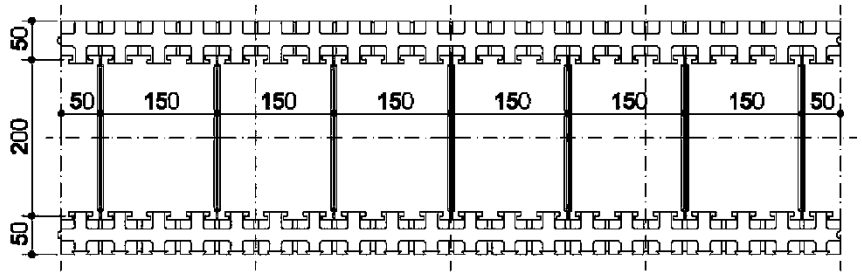
SIDE VIEW



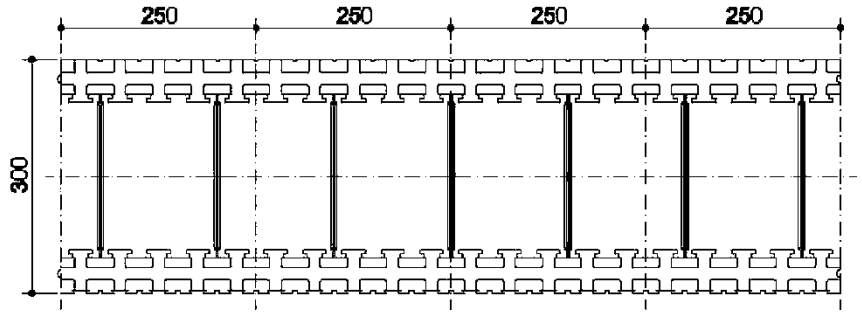
FRONT VIEW



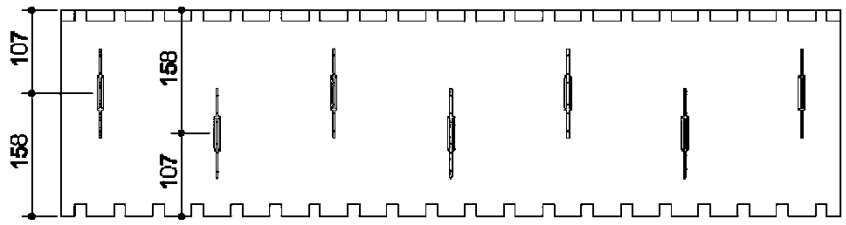
TOP VIEW



BOTTOM VIEW

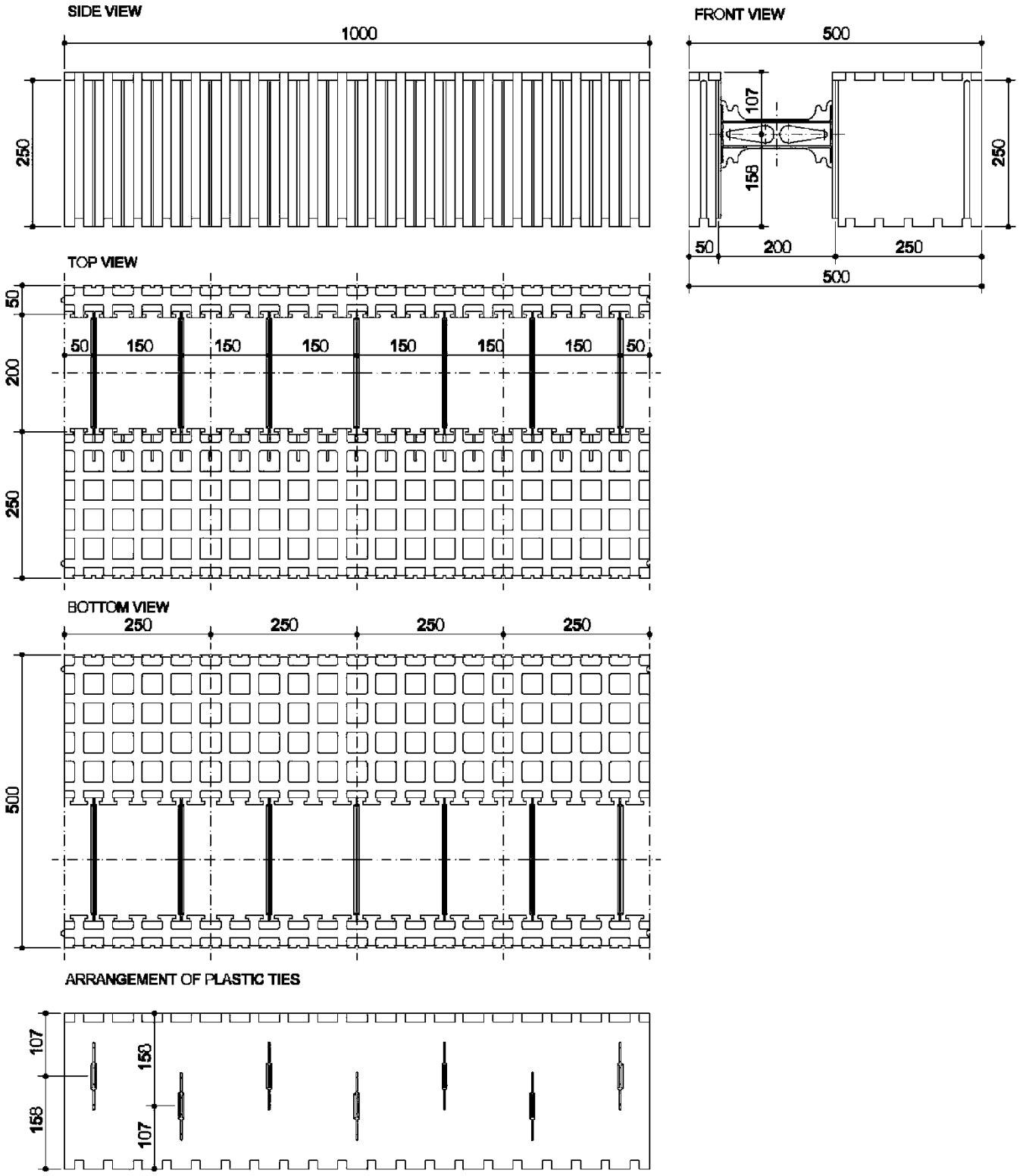


ARRANGEMENT OF PLASTIC TIES



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A45
System: IZOPassive Plus — Basic Element MC 1/30+ l x t x h = 100cm x 30cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A46
System: IZOPassive Plus — Basic Element MC 1/50+ l x t x h = 100cm x 50cm x 25cm	

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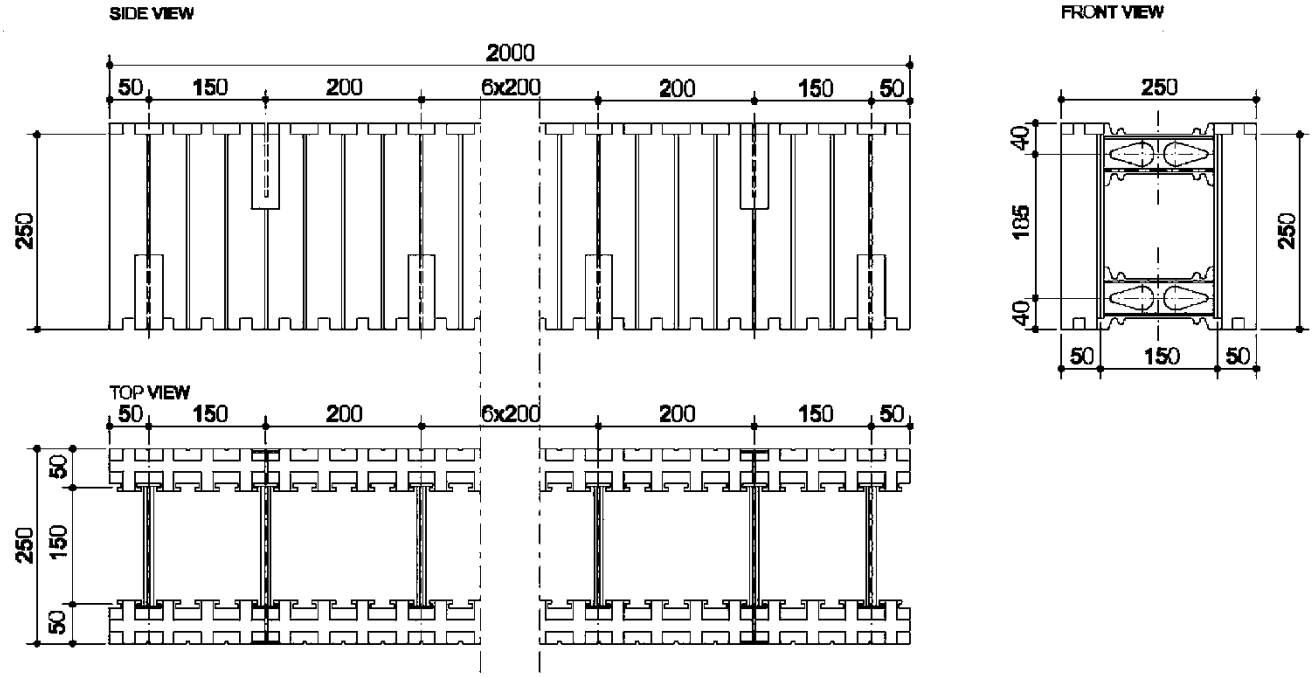

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A47
System: Universal, IZOBasic (dismountable elements)	Block with plastic tie MCFU 2/25 l x t x h = 200cm x 25cm x 25cm

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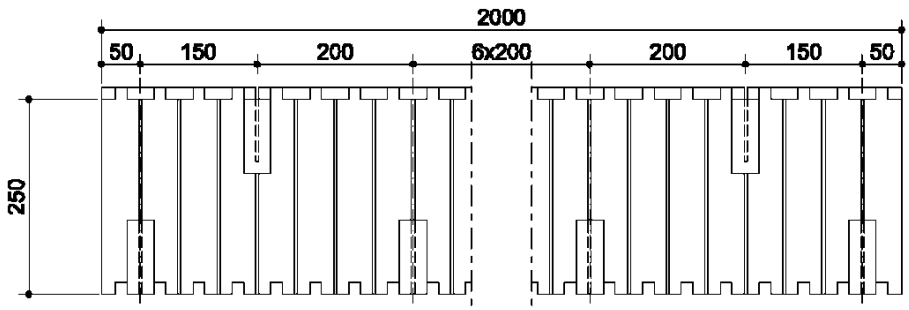
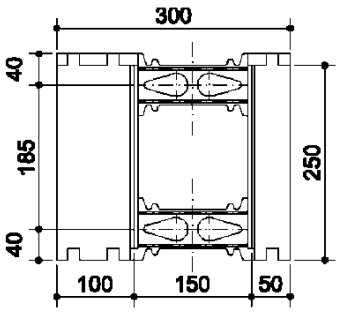
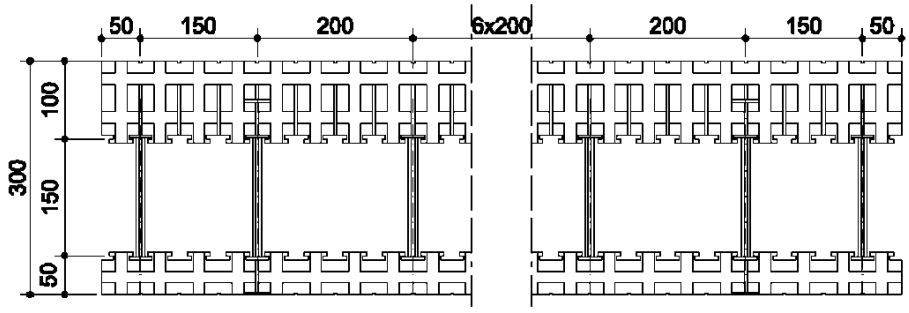
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A48
System: Universal, IZOStandard (Dismountable elements)	Block with plastic tie MCFU 2/30 l x t x h = 200cm x 30cm x 25cm

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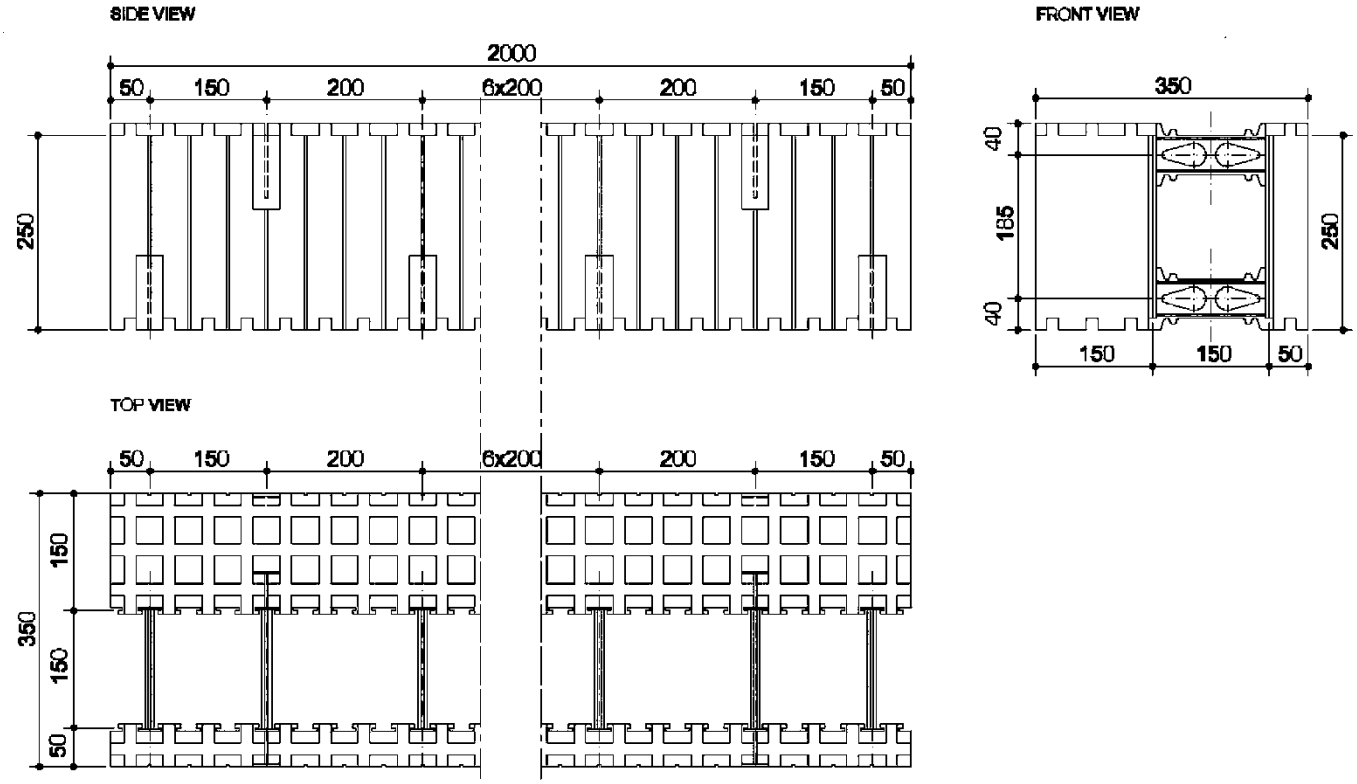

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A49
System: Universal, IZOEnergy (dismountable elements)	Block with plastic tie MCFU 2/35 l x t x h = 200cm x 35cm x 25cm

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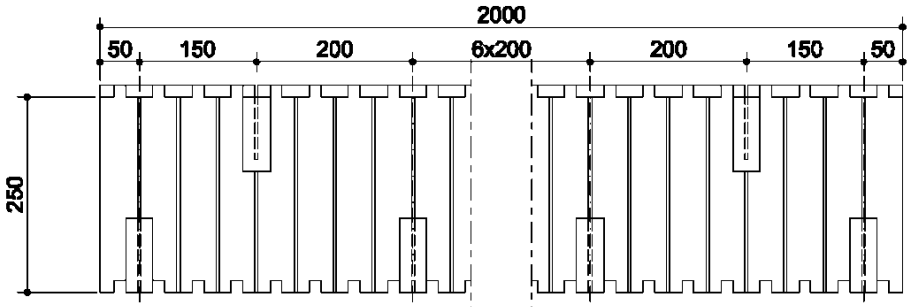
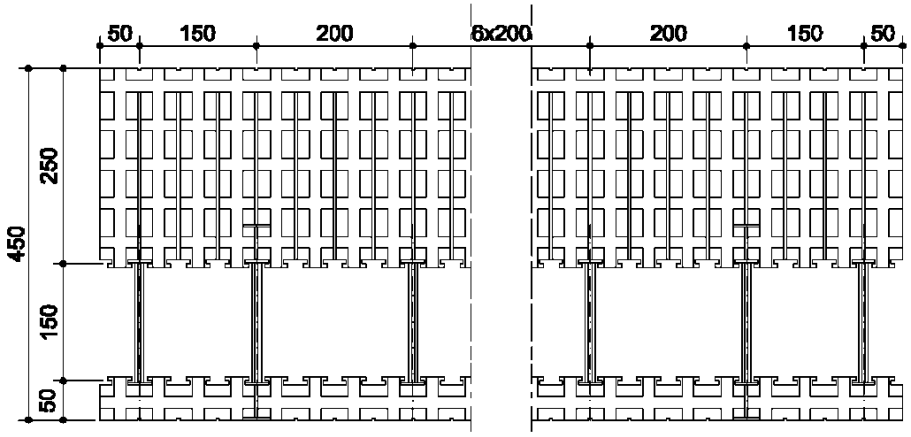
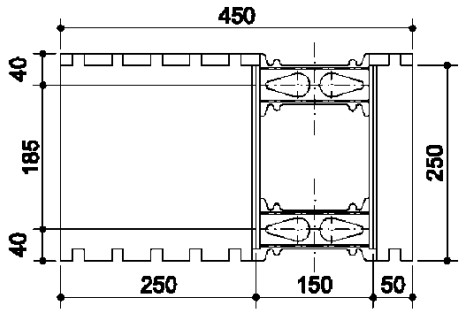
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A50
System: Universal, IZOPassive (dismountable elements)	Block with plastic tie MCFU 2/45 l x t x h = 200cm x 45cm x 25cm

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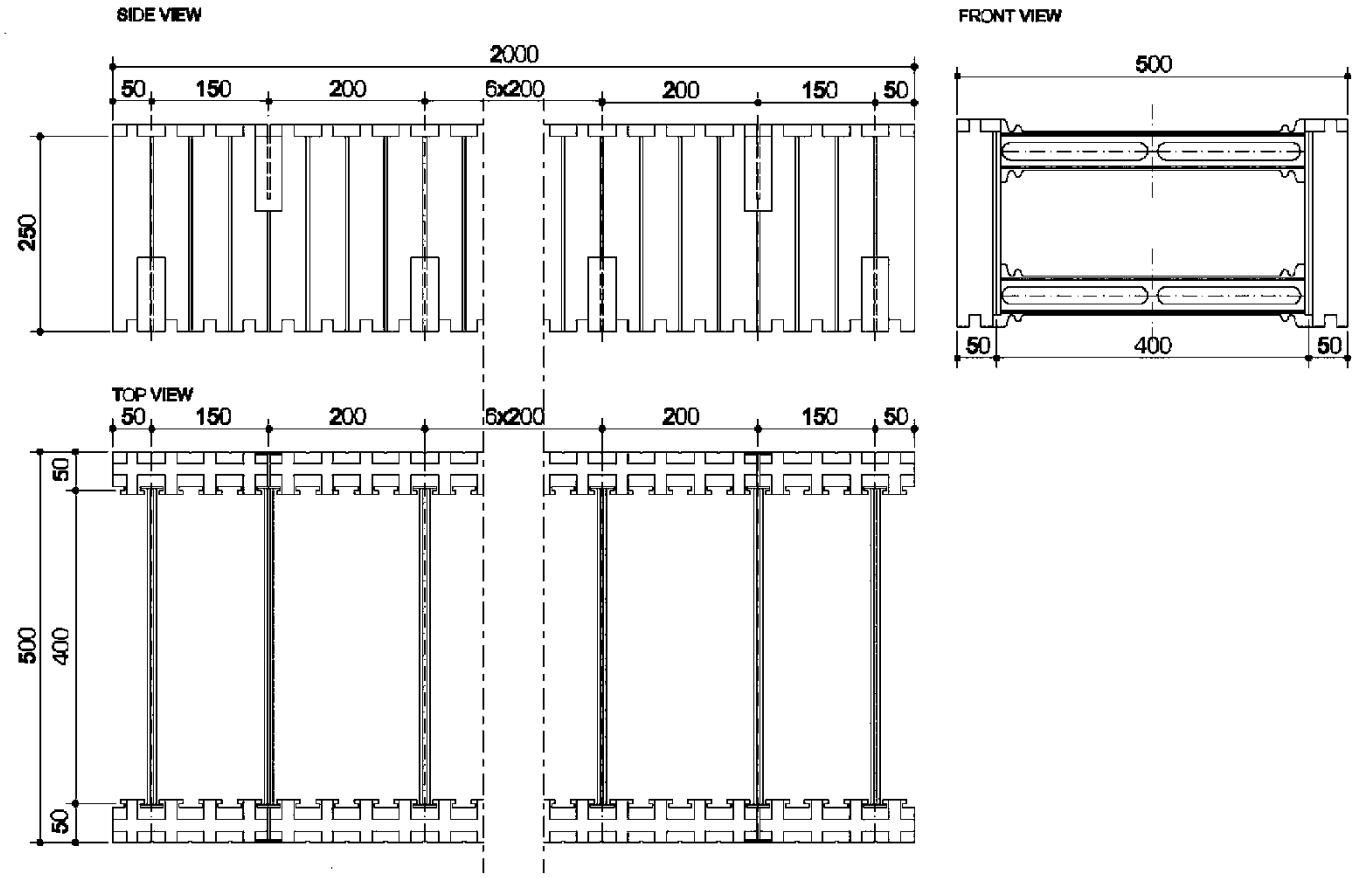
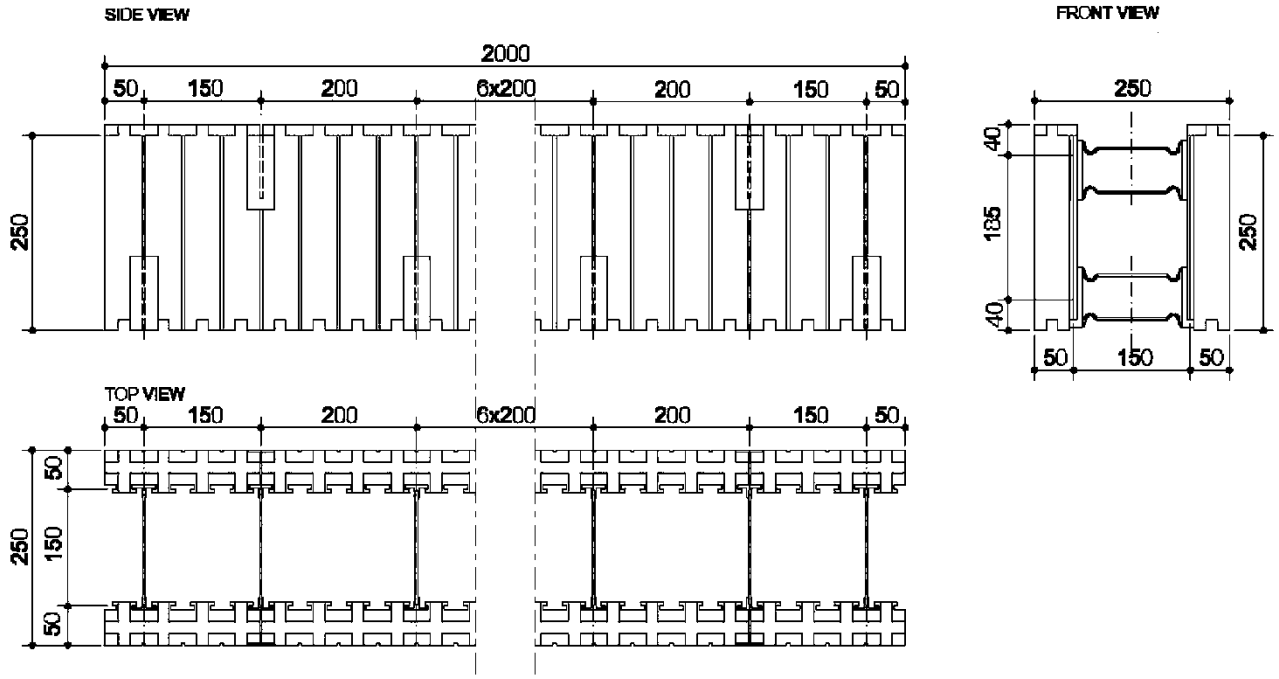


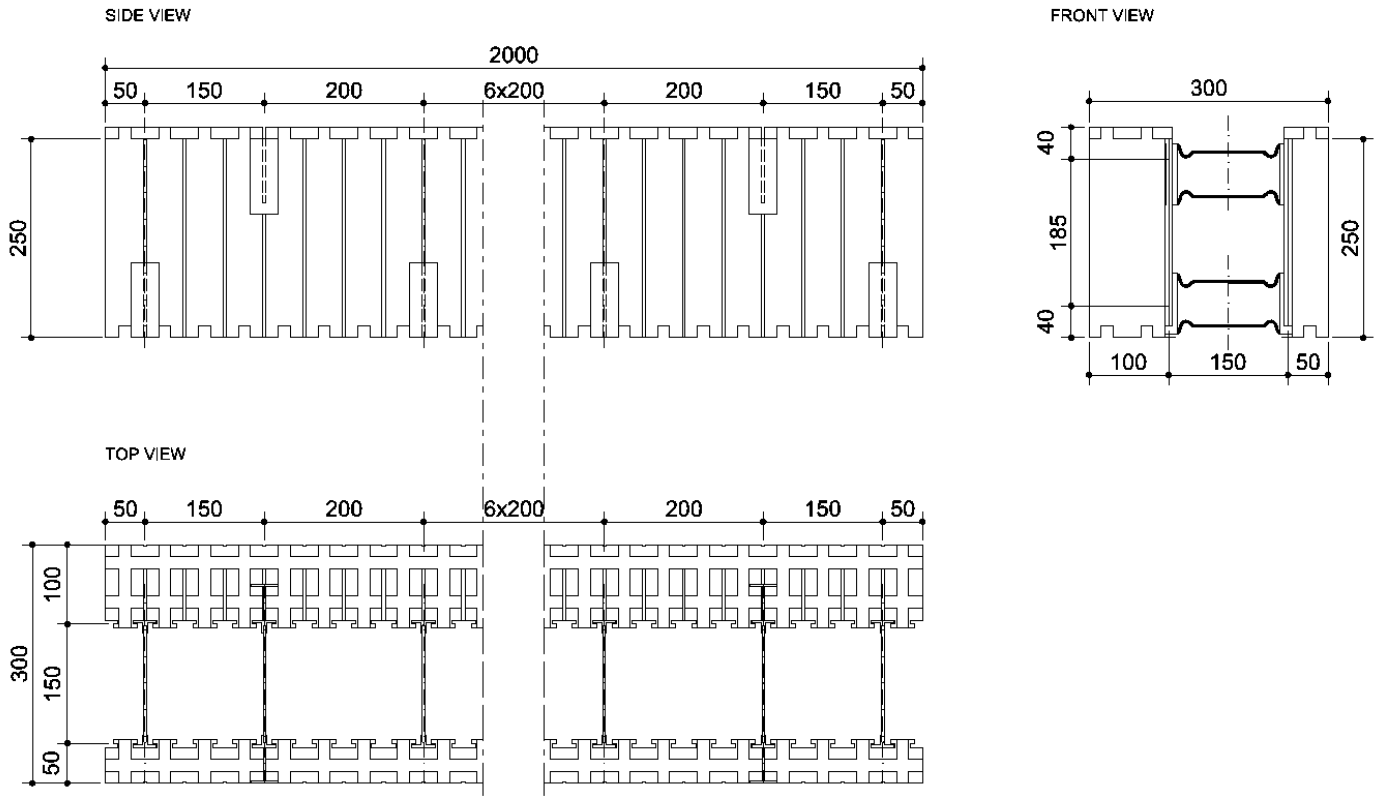
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A51
System: Universal, IZOPassive (dismountable elements)	Block with plastic tie MCFU 2/50 l x t x h = 200cm x 50cm x 25cm



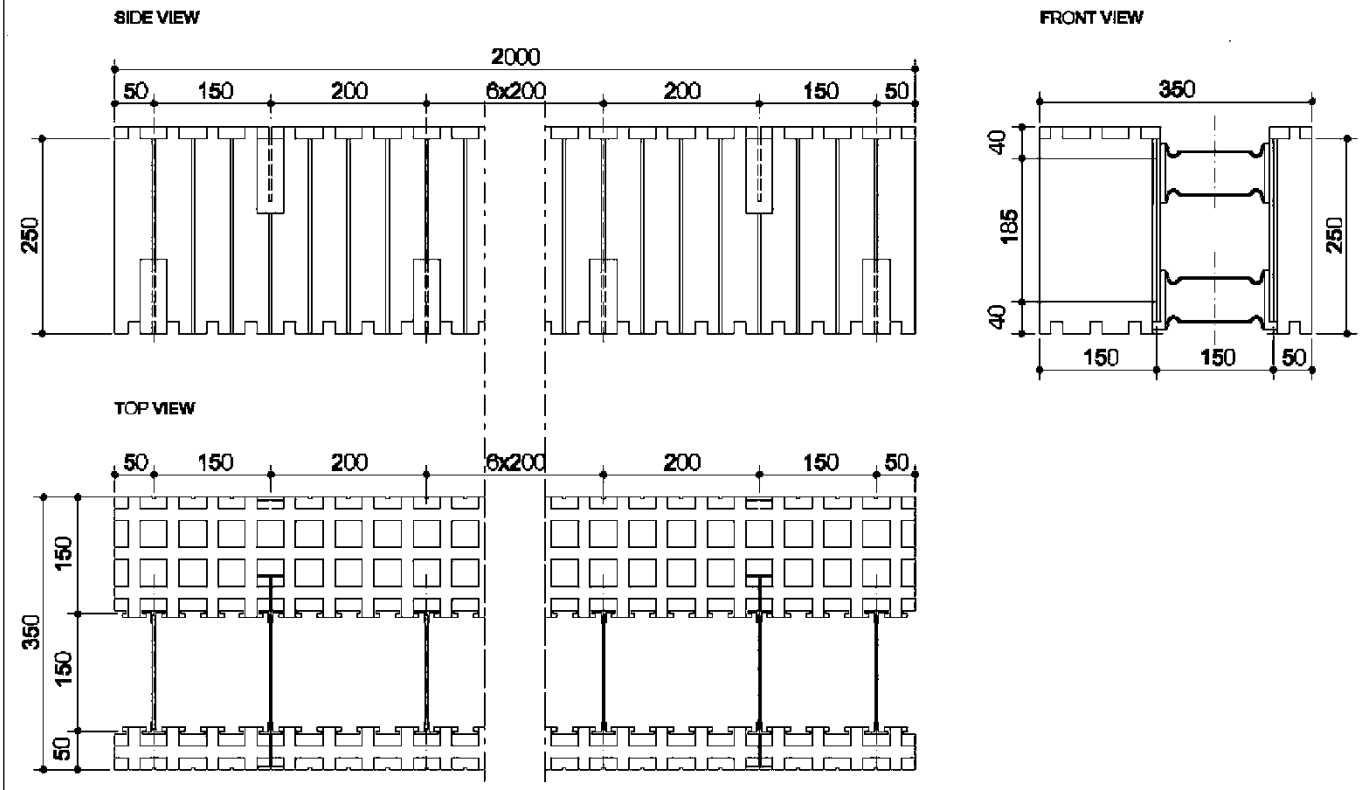
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A52
System: Universal, IZOBasic (dismountable elements)	Block with plastic-steel tie MCFU-S 2/25 l x t x h = 200cm x 25cm x 25cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A53
System: Universal, IZOStandard (dismountable elements)	Block with plastic-steel tie MCFU-S 2/30 l x t x h = 200cm x 30cm x 25cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A54
System: Universal, IZOEnergy (dismountable elements)	Block with plastic-steel tie MCFU-S 2/35 l x t x h = 200cm x 35cm x 25cm

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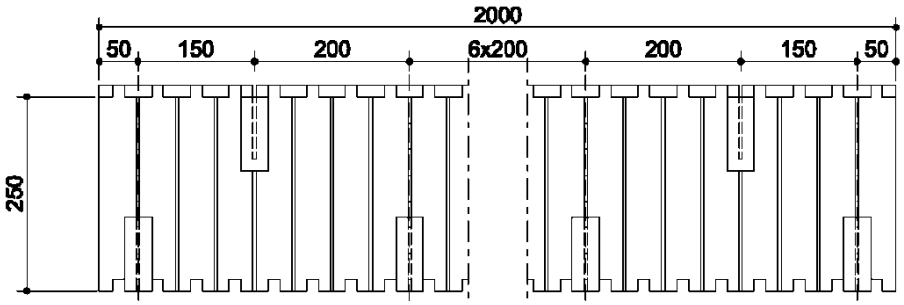
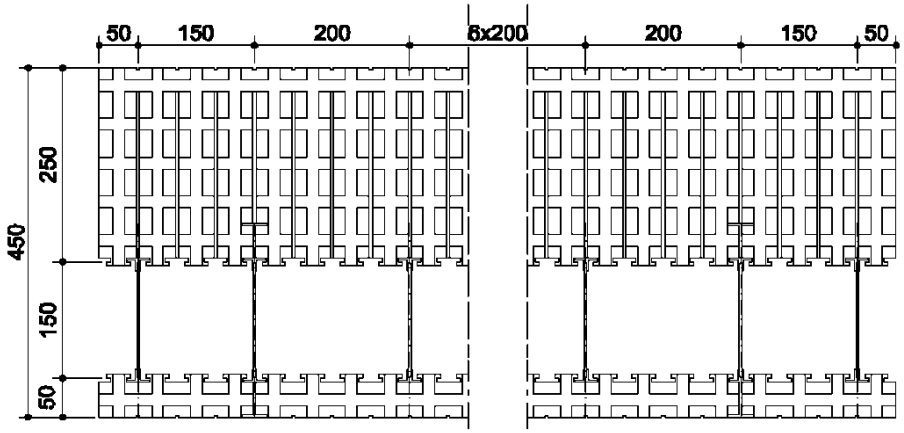
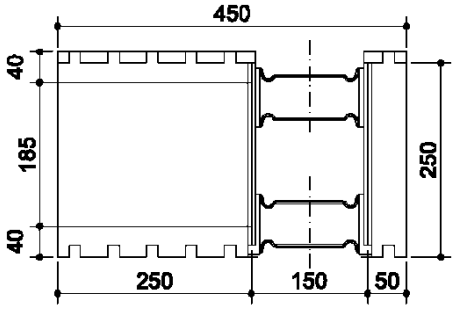
SIDE VIEW



TOP VIEW

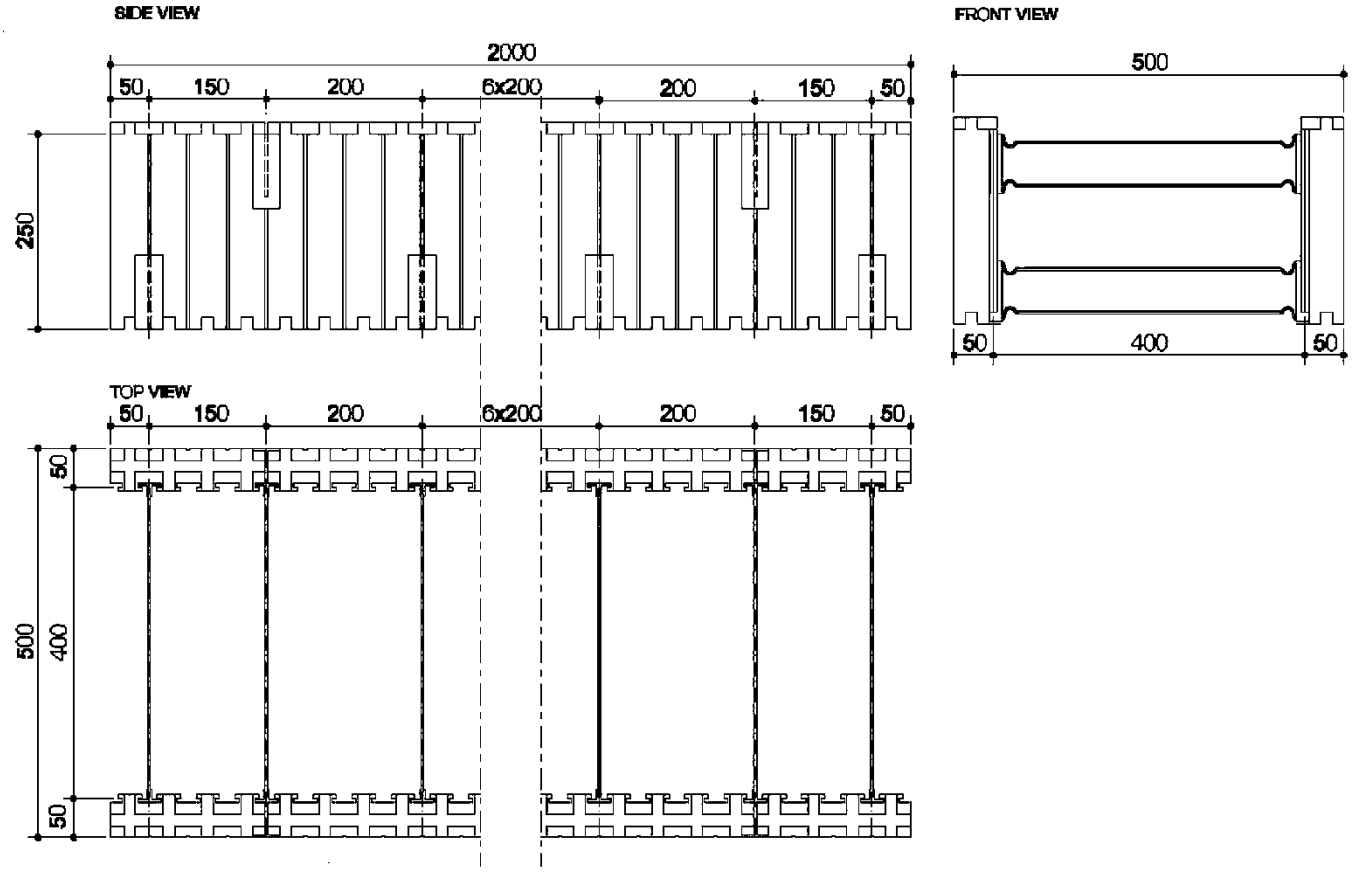


FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A55
System: Universal, IZOPassive (dismountable elements)	Block with plastic-steel tie MCFU-S 2/45 l x t x h = 200cm x 45cm x 25cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A56
System: Universal, IZOPassive (dismountable elements)	Block with plastic-steel tie MCFU-S 2/50 l x t x h = 200cm x 50cm x 25cm

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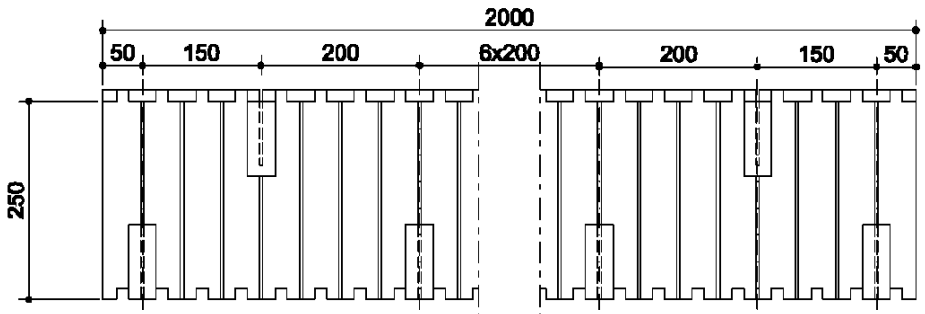
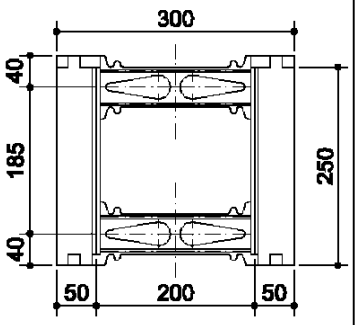
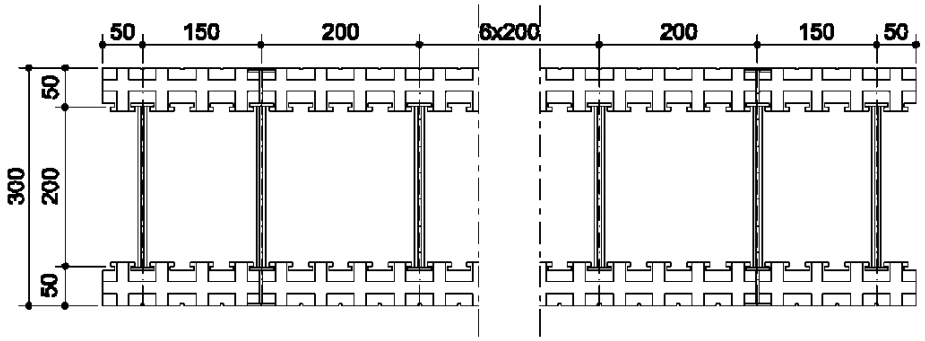
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A57
System: Universal Plus (dismountable elements)	Block with plastic tie MCFU 2/30+ l x t x h = 200cm x 30cm x 25cm

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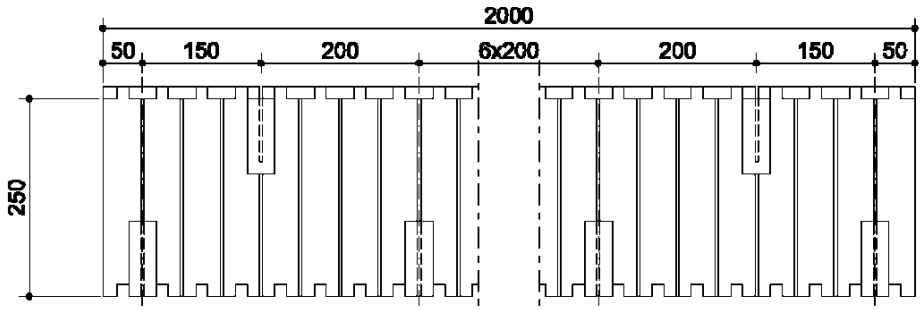
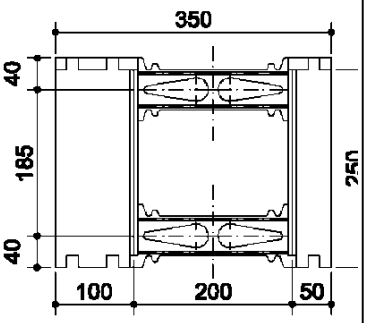
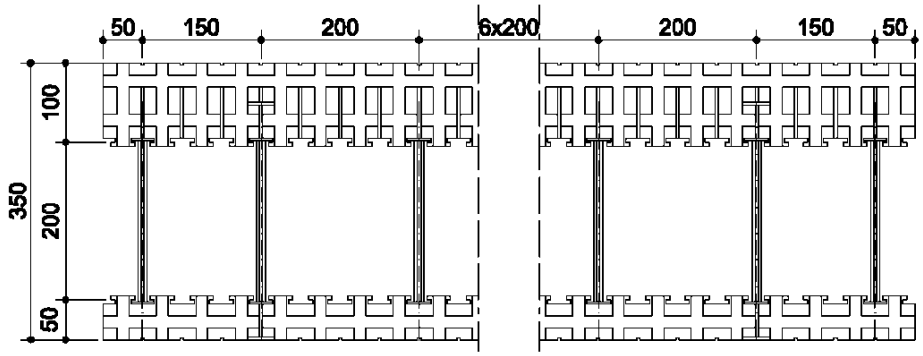
SIDE VIEW



FRONT VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A58
System: Universal Plus (dismountable elements)	Block with plastic tie MCFU 2/35+ l x t x h = 200cm x 35cm x 25cm

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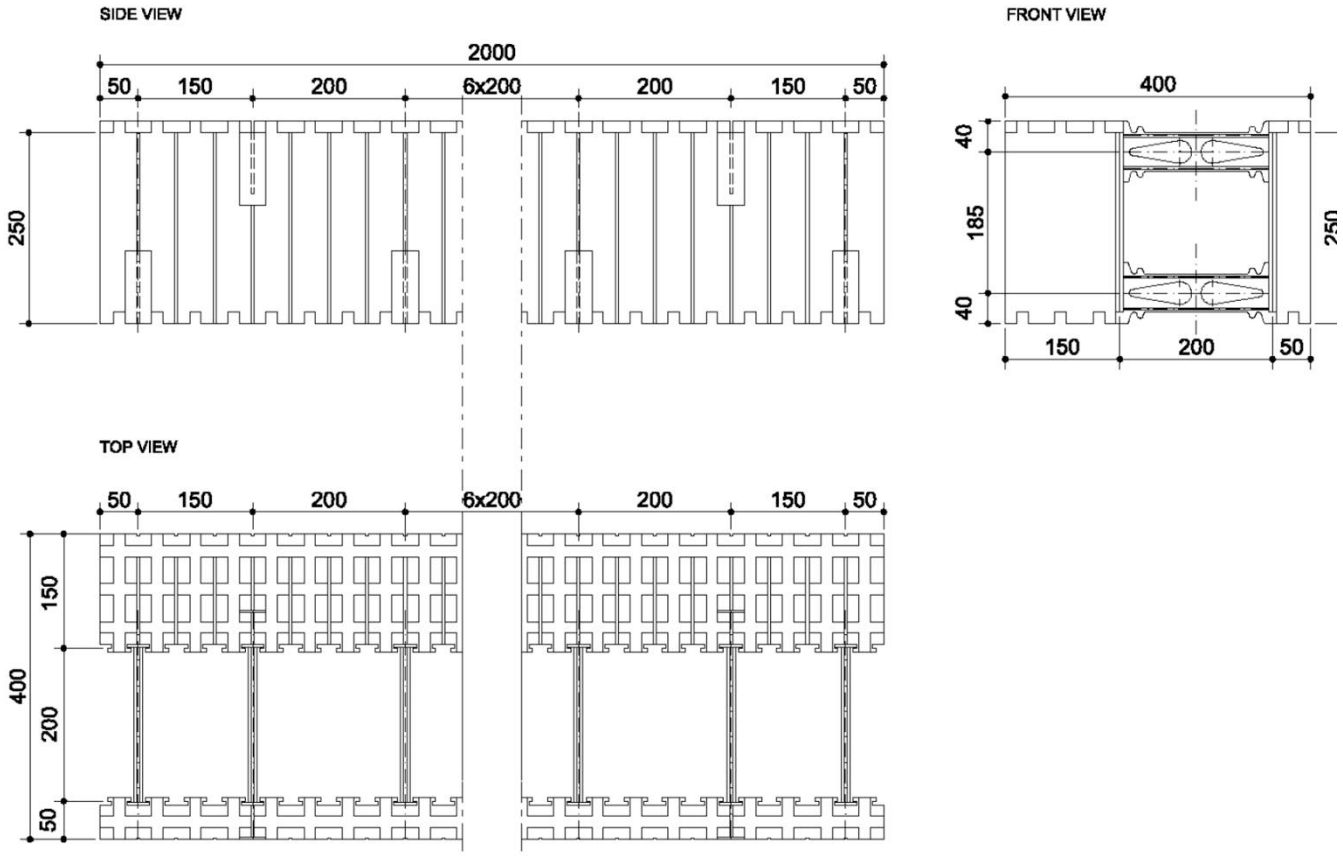

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A59
System: Universal Plus (dismountable elements)	Block with plastic tie MCFU 2/40+ l x t x h = 200cm x 40cm x 25cm

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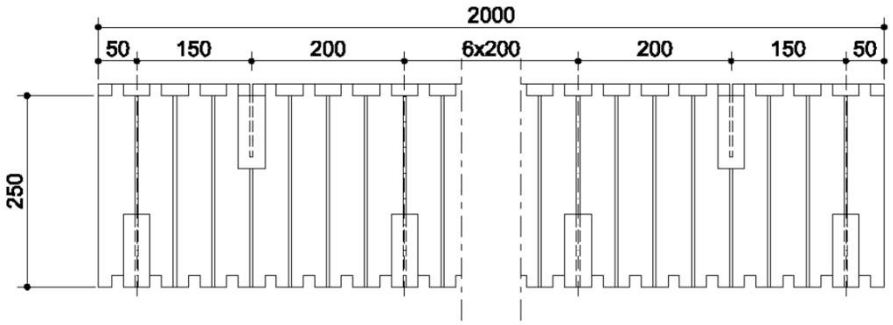
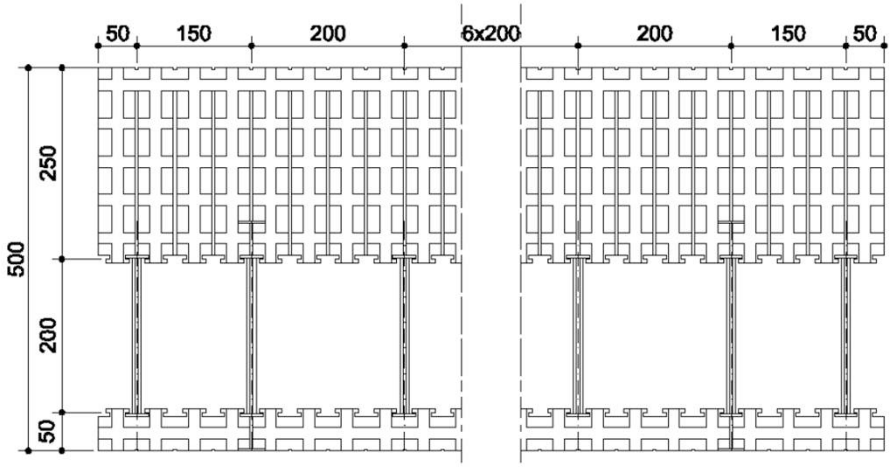
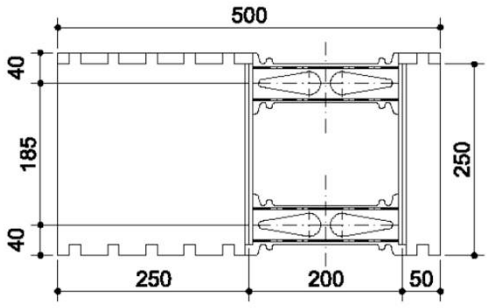
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A60
System: Universal Plus (dismountable elements)	Block with plastic tie MCFU 2/50+ l x t x h = 200cm x 50cm x 25cm

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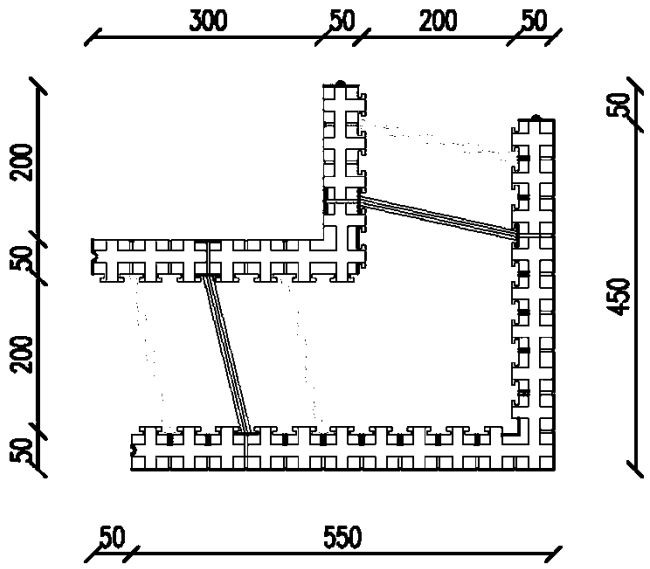
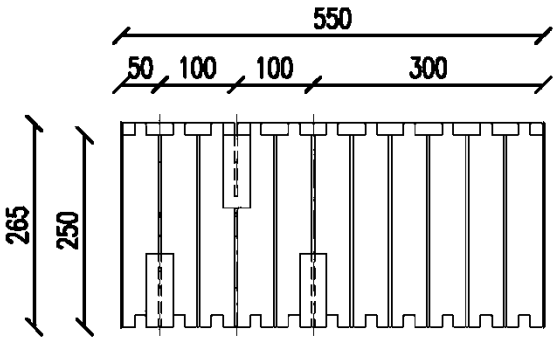
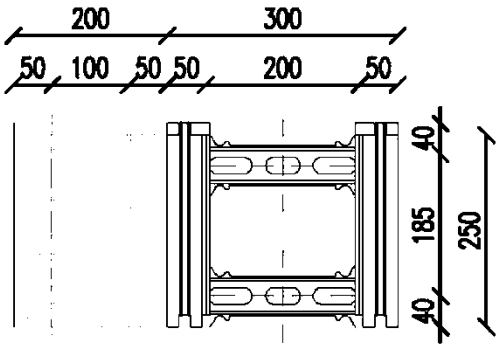
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A61
System: Universal Plus (dismountable elements) — 90° corner MCFU 30+ E90 RA / LI 100(50)cm x 25cm x 30cm (external right / internal left)	

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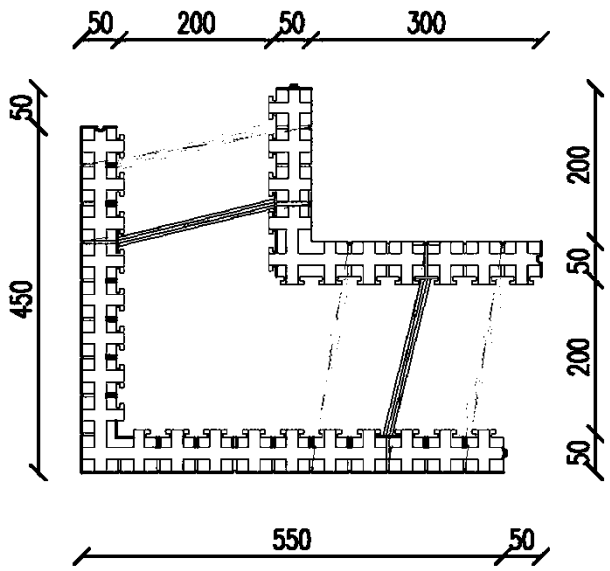
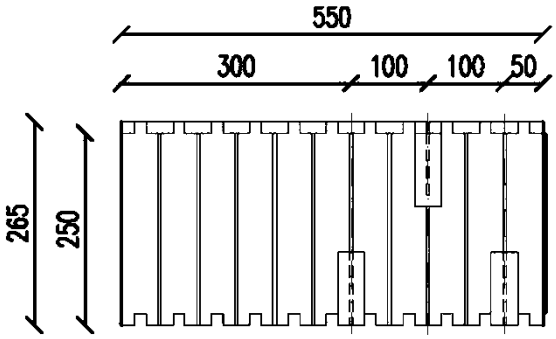
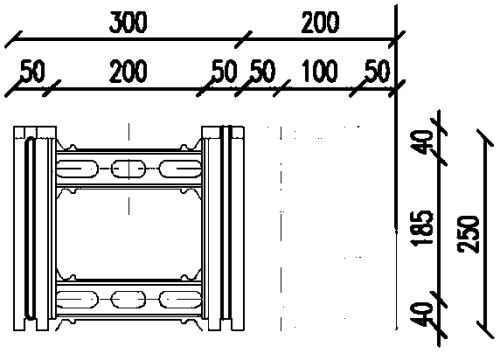
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A62
System: Universal Plus (dismountable elements) — 90° corner MCFU 30+ E90 LA / RI; 100(50)cm x 25cm x 30cm (internal right / external left)	

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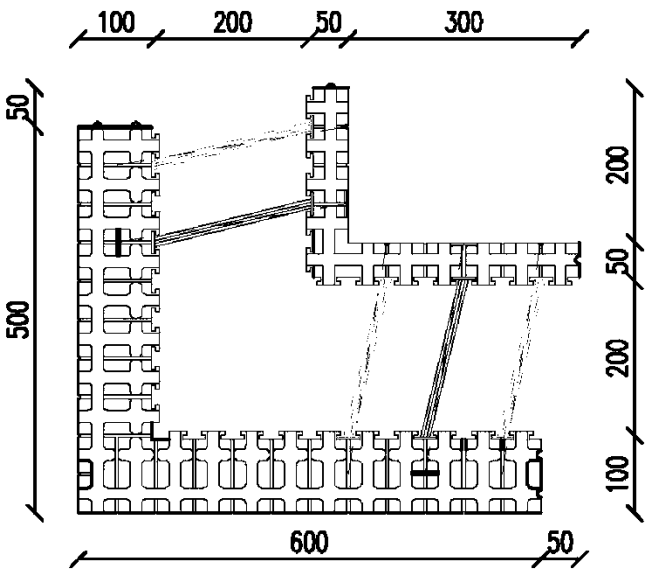
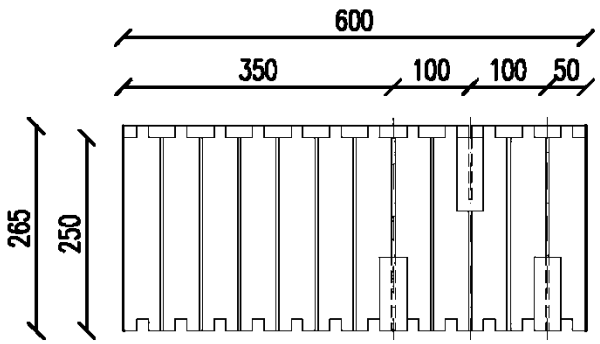
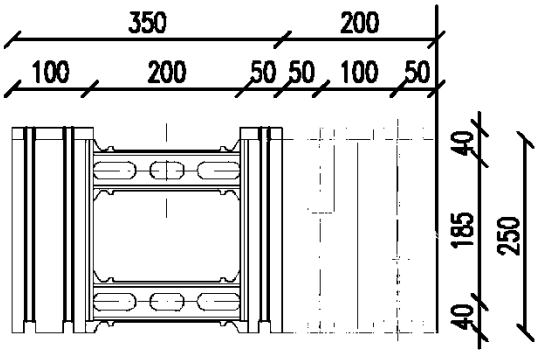
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A63
System: Universal Plus (dismountable elements)	90° corner MCFU 35+ E90 LA 110cm x 35cm x 25cm (external left)

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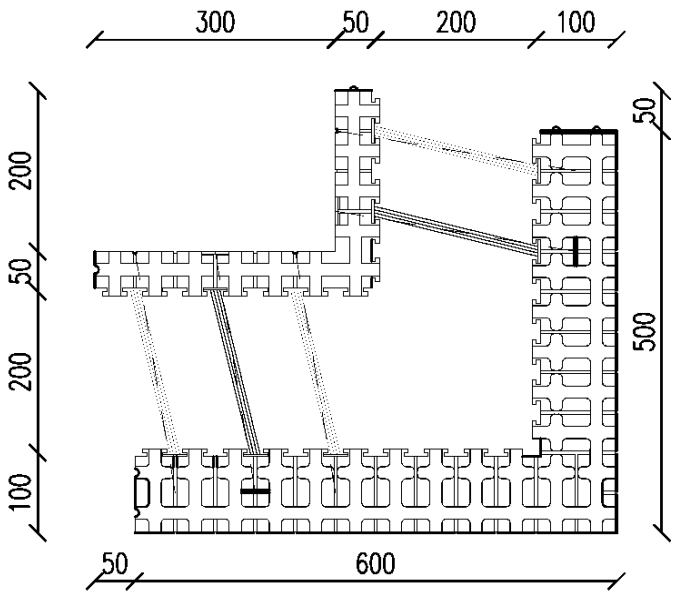
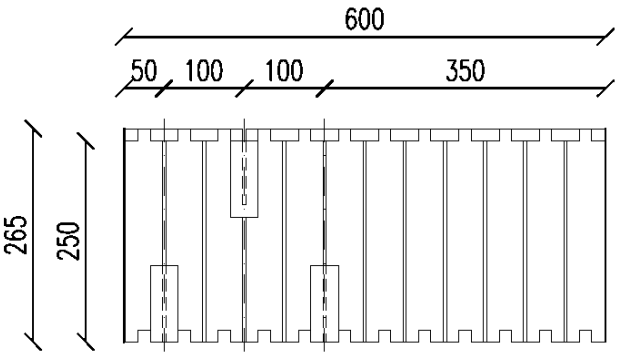
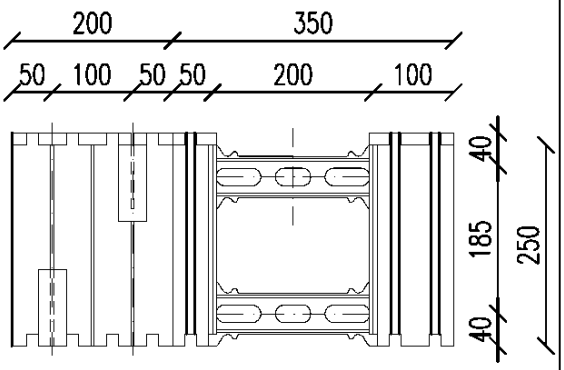
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A64
System: Universal Plus (dismountable elements)	90° corner MCFU 35+ E90 RA 110cm x 35cm x 25cm (external right)

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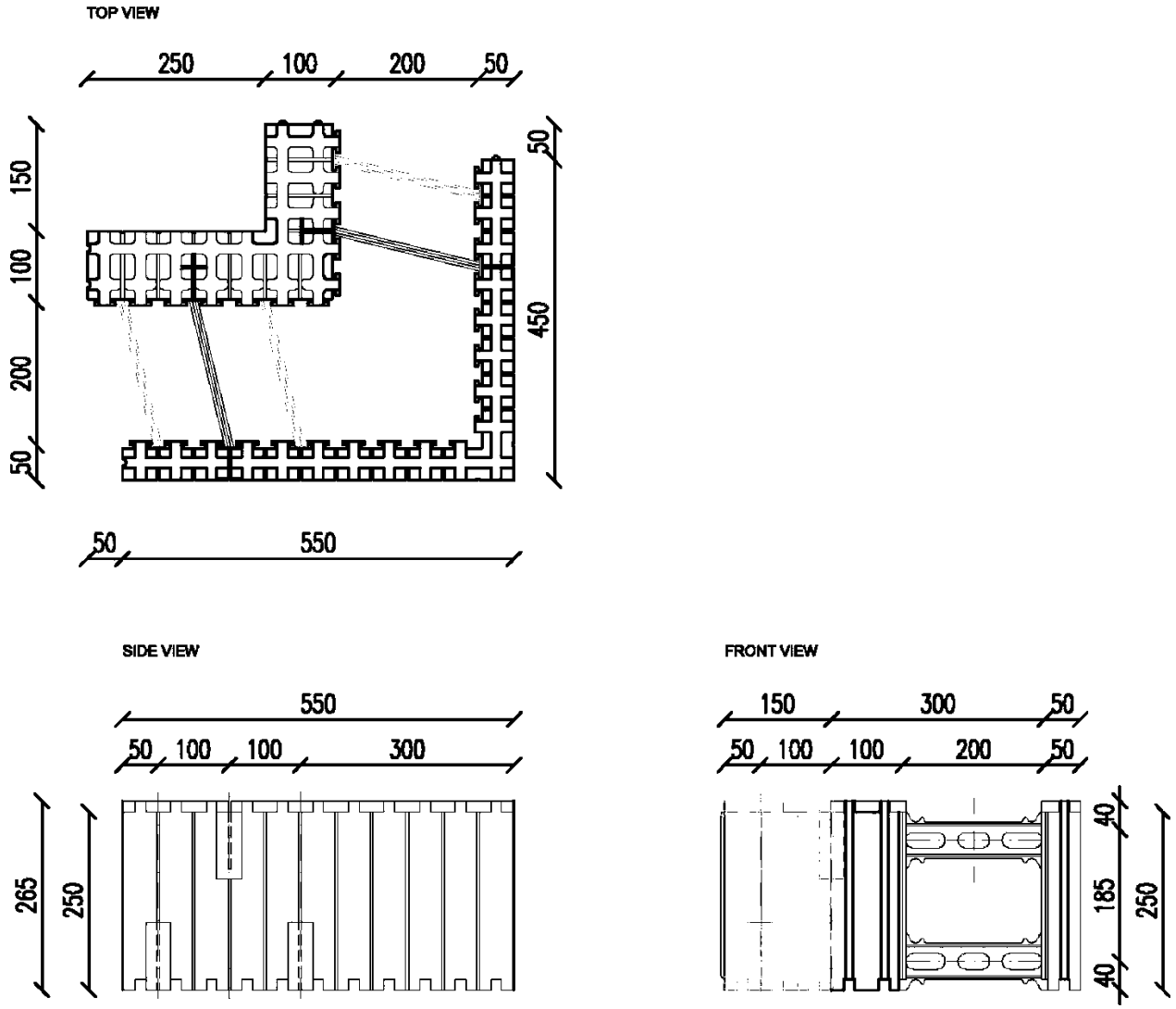

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A65
System: Universal Plus (dismountable elements)	90° corner MCFU 35+ E90 LI 40cm x 35cm x 25cm (internal left)

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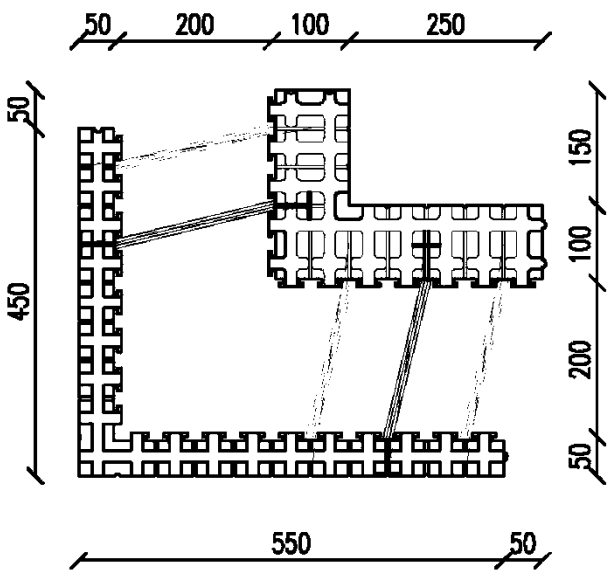
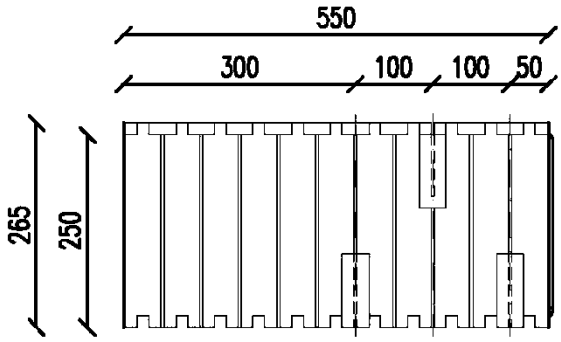
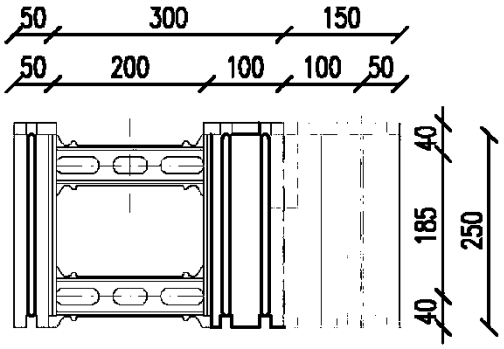
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A66
System: Universal Plus (dismountable elements)	90° corner MCFU 35+ E90 RI 40cm x 35cm x 25cm (internal right)

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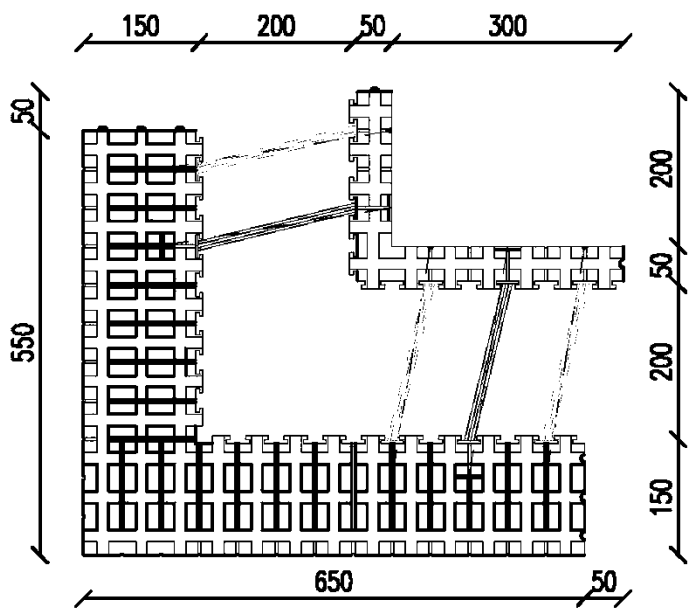
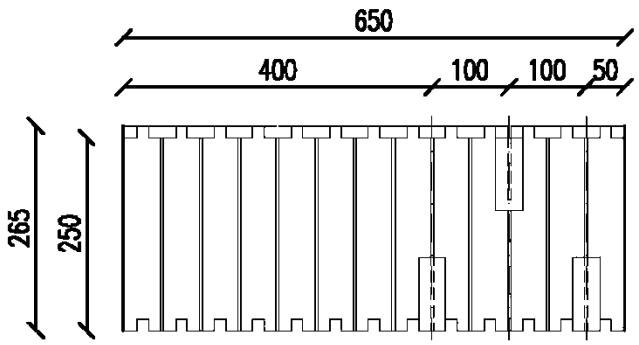
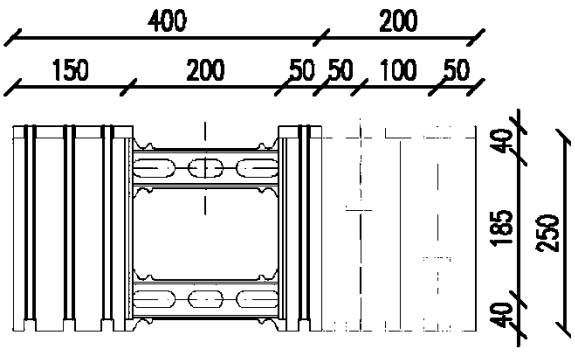
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A67
System: Universal Plus (dismountable elements)	90° corner MCFU 40+ E90 LA 120cm x 40cm x 25cm (external left)

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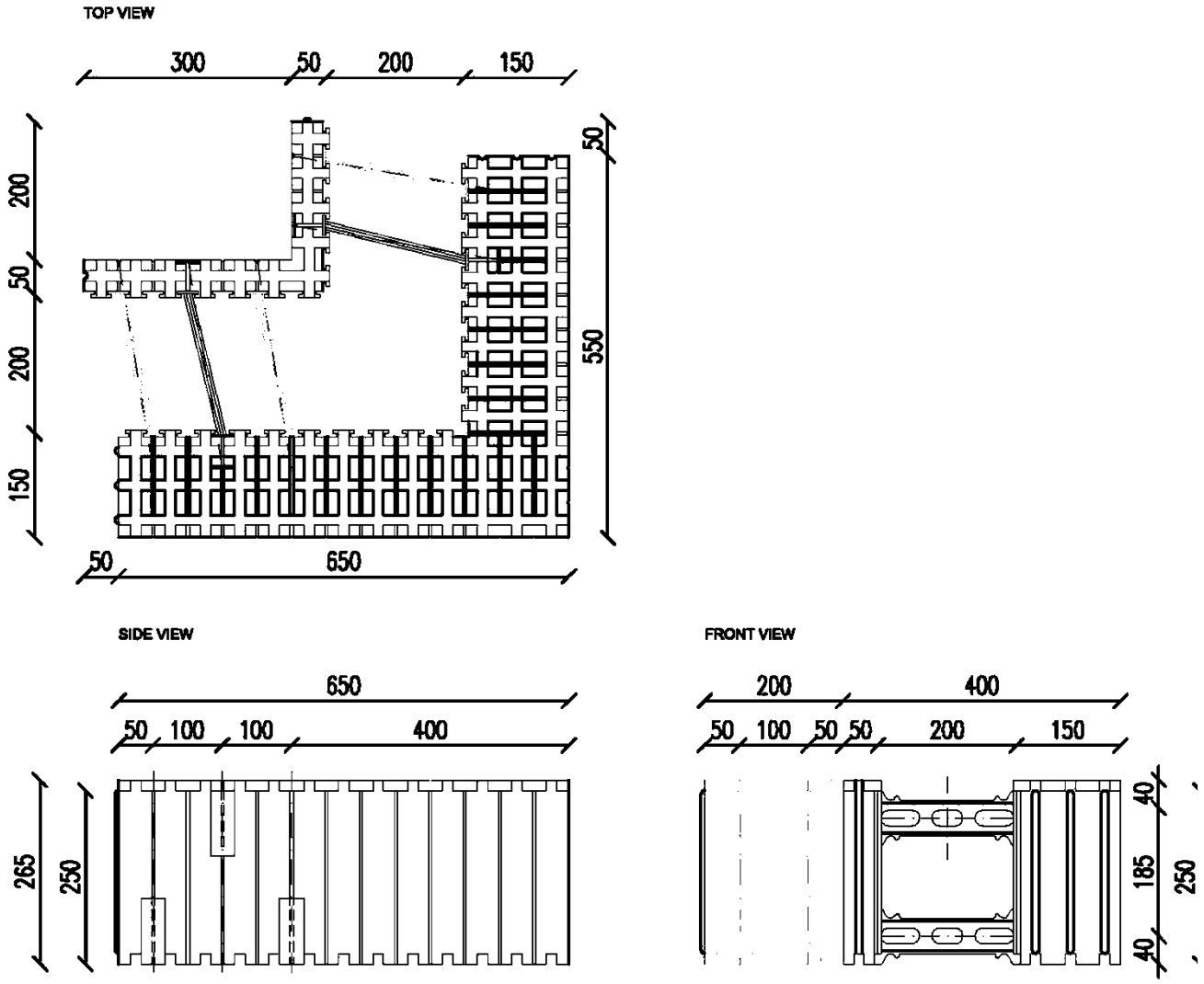

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A68
System: Universal Plus (dismountable elements)	90° corner MCFU 40+ E90 RA 120cm x 40cm x 25cm (external right)

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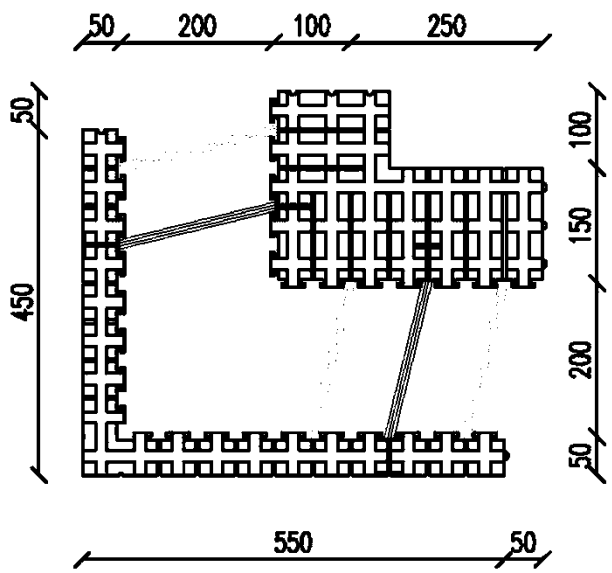
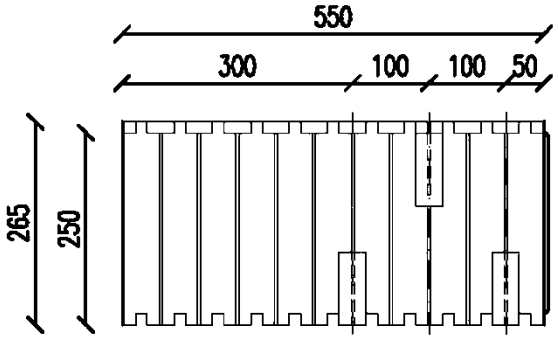
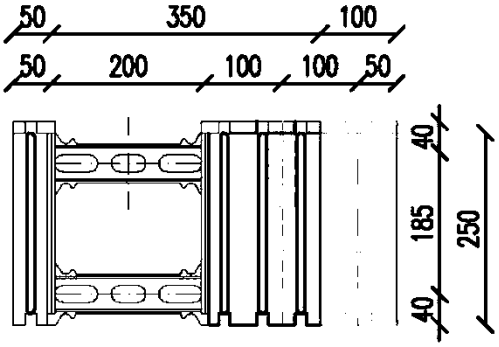
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A69
System: Universal Plus (dismountable elements)	90° corner MCFU 40+ E90 RI 30cm x 40cm x 25cm (internal right)

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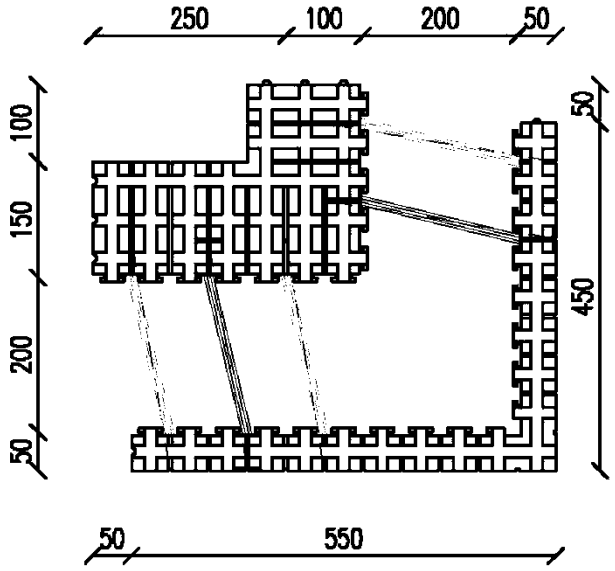
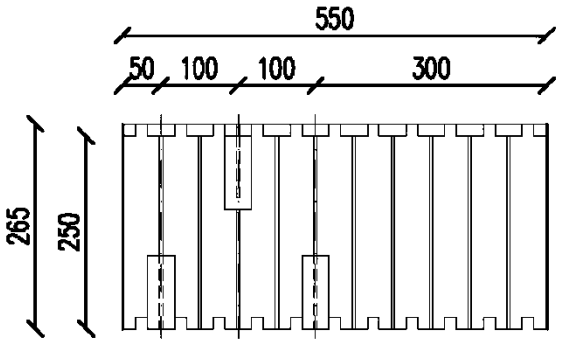
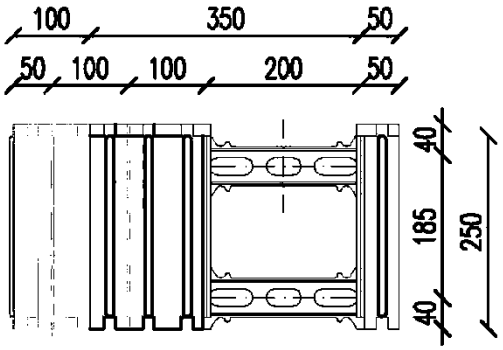
TOP VIEW



SIDE VIEW

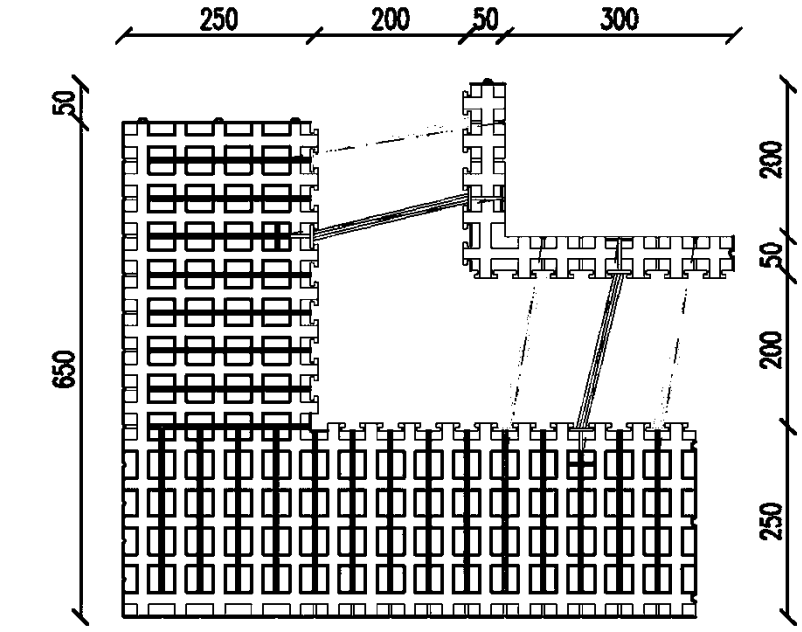


FRONT VIEW

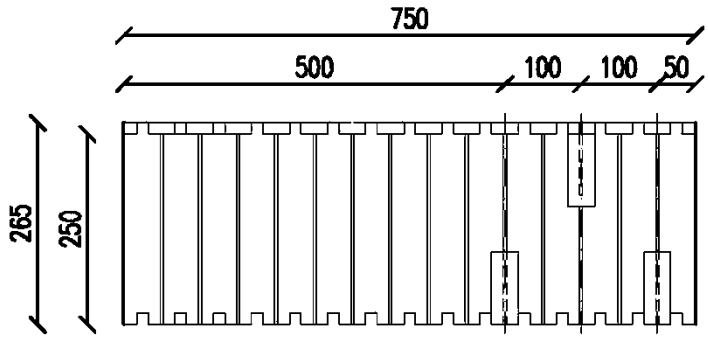


Sketches not to scale
All dimensions in mm

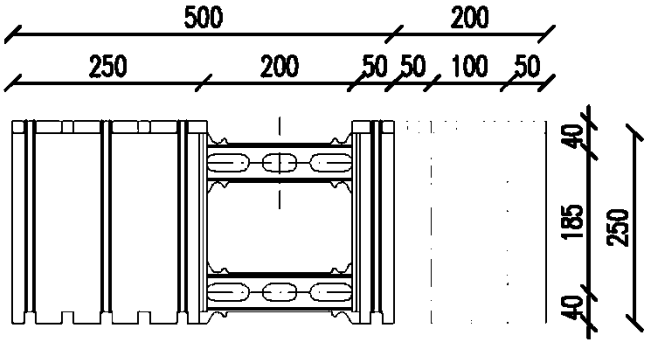
Permanent shuttering kit "IZODOM"	Annex A70
System: Universal Plus (dismountable elements)	90° corner MCFU 40+ E90 LI 30cm x 40cm x 25cm (internal left)



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A71
System: Universal Plus (dismountable elements) — 90° corner MCFU 50+ E90 LA, 140cm x 25cm x 50cm (external left)	

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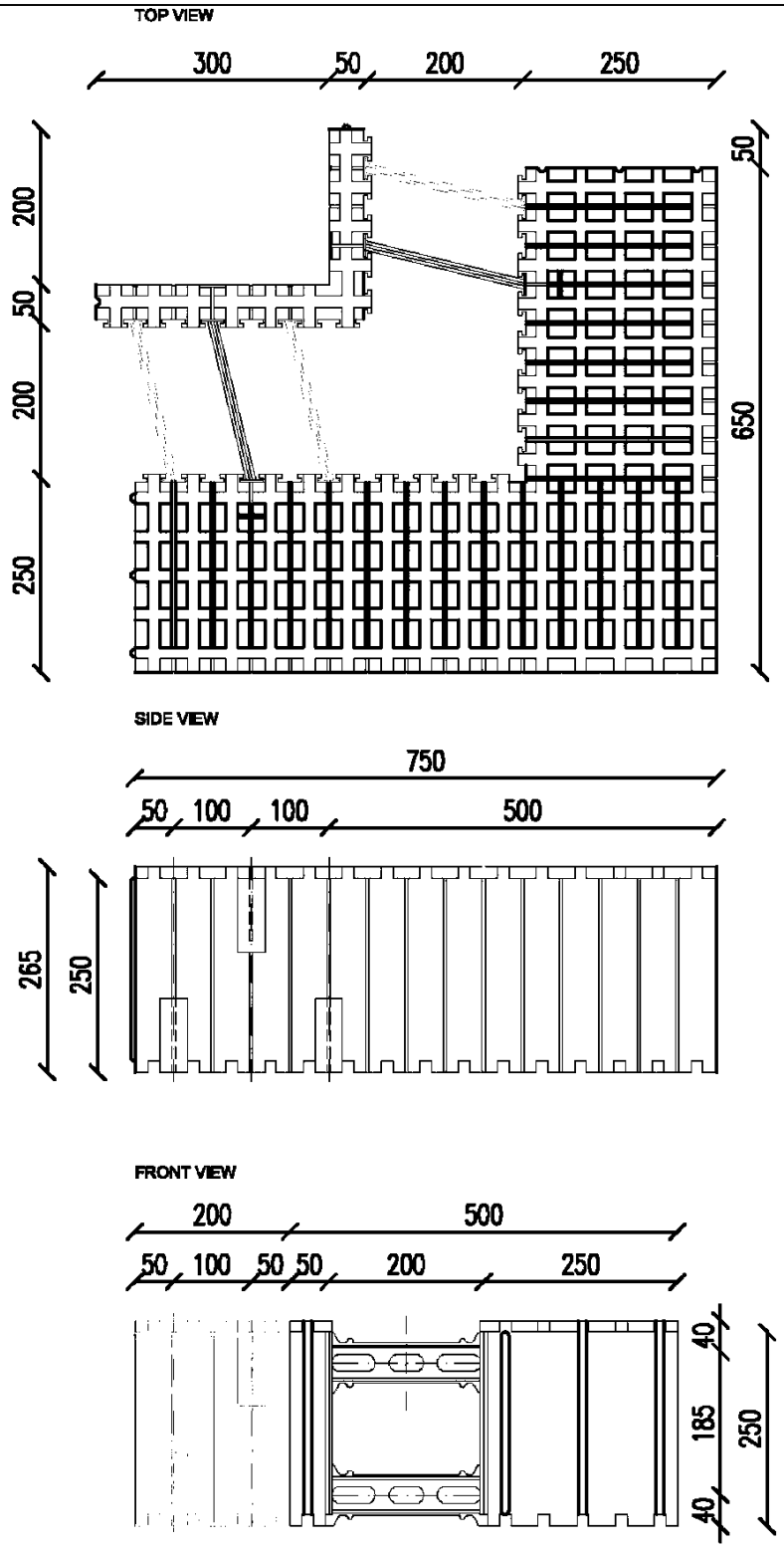

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A72
System: Universal Plus (dismountable elements)	90° corner MCFU 50+ E90 RA 140cm x 25cm x 50cm (external right)

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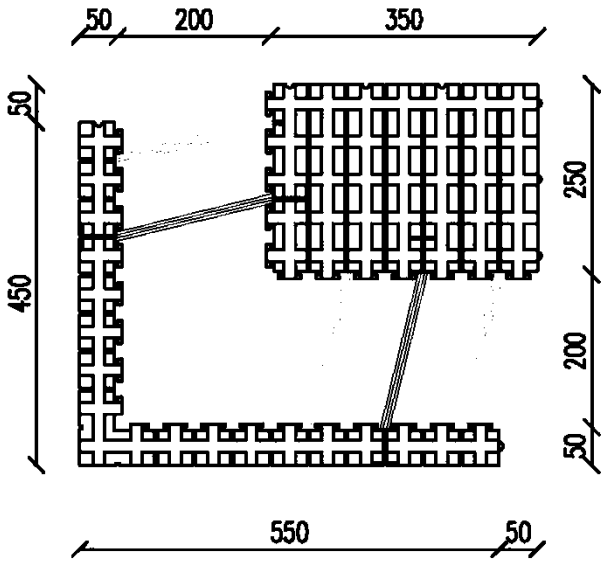
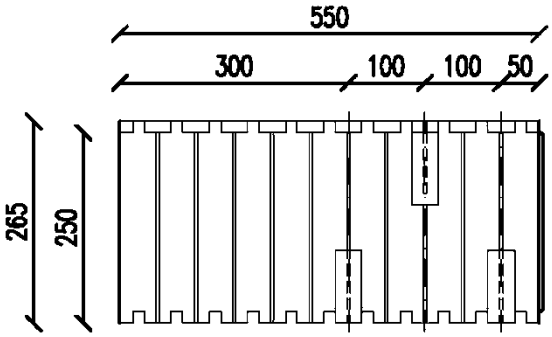
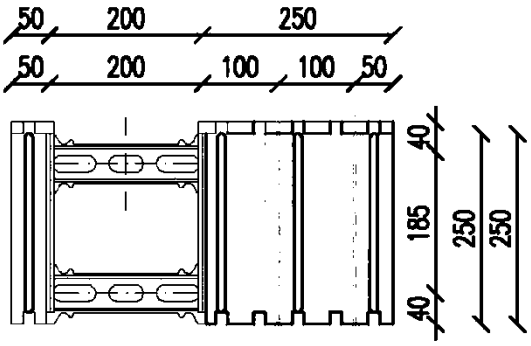
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A73
System: Universal Plus (dismountable elements)	90° corner MCFU 50+ E90 RI 35cm x 50cm x 25cm (internal right)

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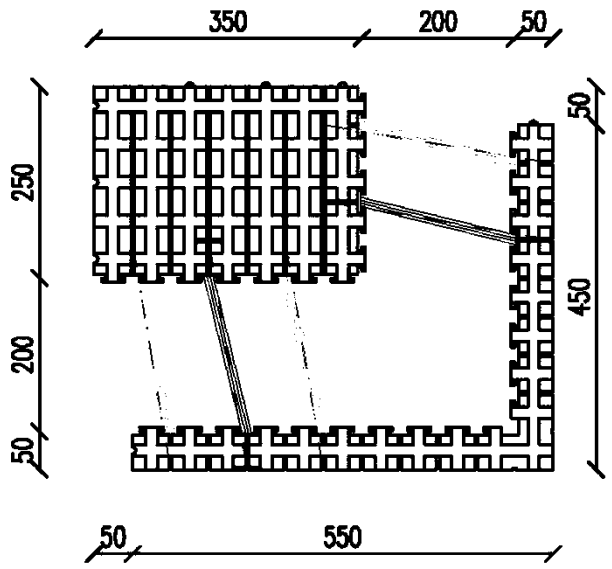
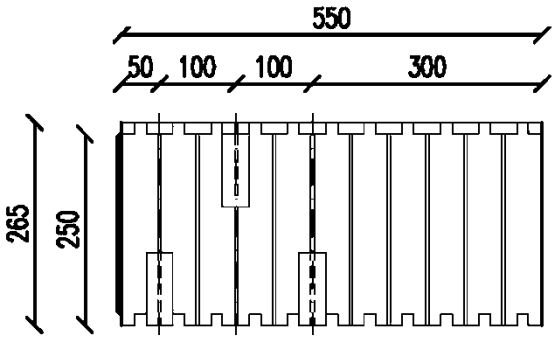
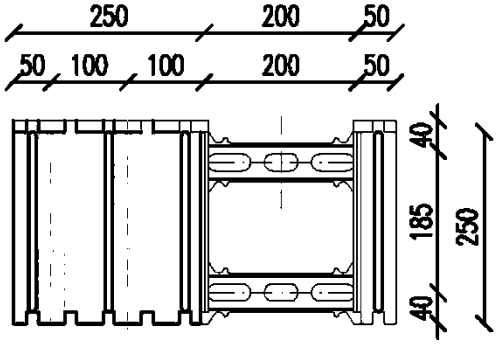
TOP VIEW



SIDE VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A74
System: Universal Plus (dismountable elements)	90° corner MCFU 50+ E90 LI 35cm x 50cm x 25cm (internal left)

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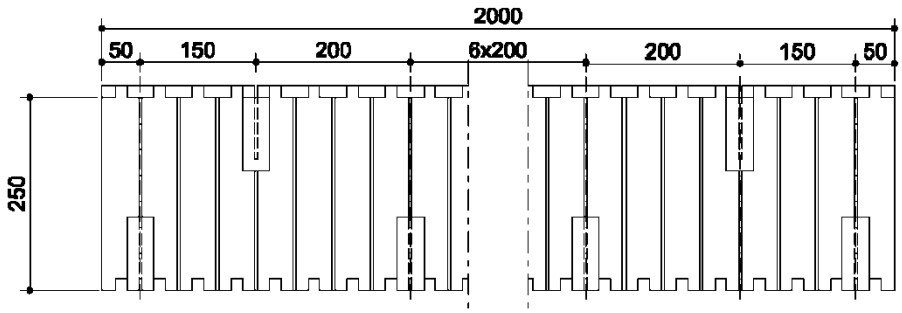
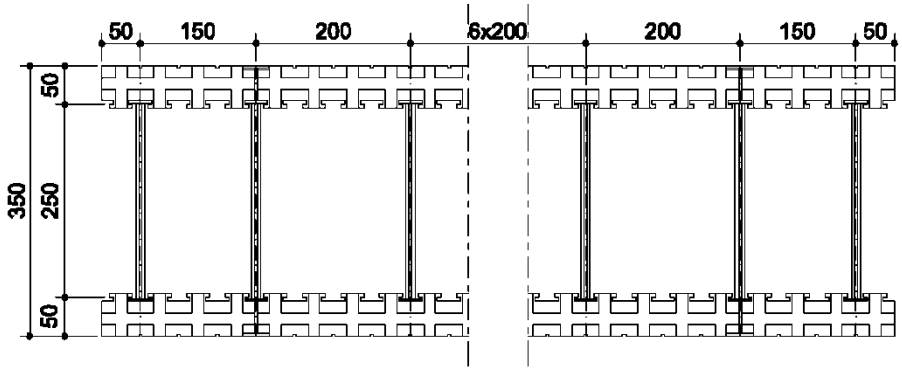
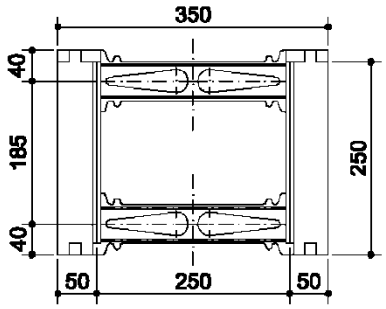
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A75
System: Universal Plus Plus (dismountable elements)	Block with plastic tie MCFU 2/35++ l x t x h = 200cm x 35cm x 25cm

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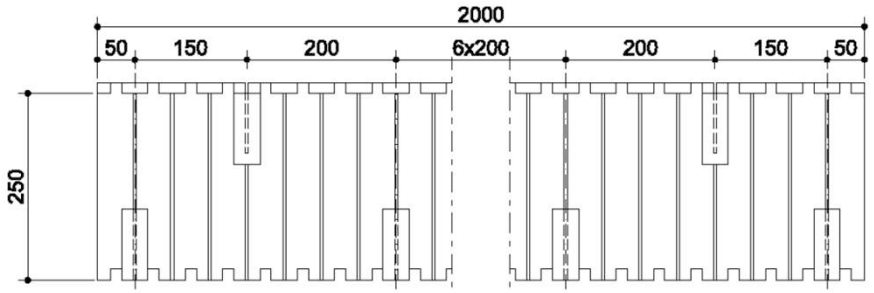
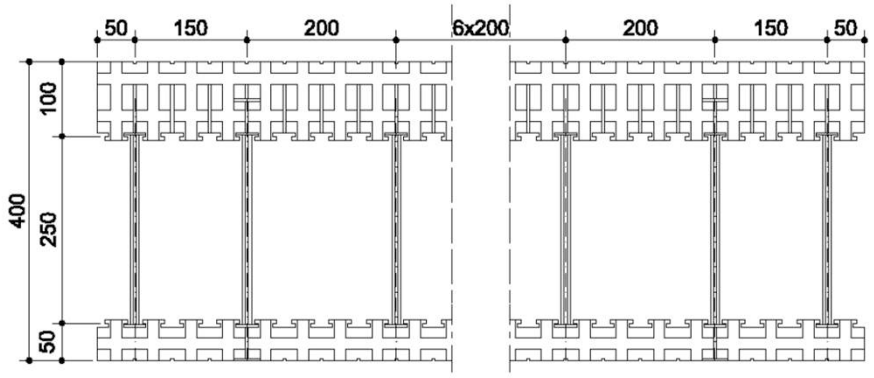
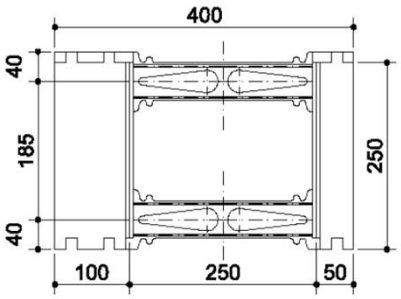
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A76
System: Universal Plus Plus (dismountable elements)	Block with plastic tie MCF 2/40++ l x t x h = 200cm x 40cm x 25cm

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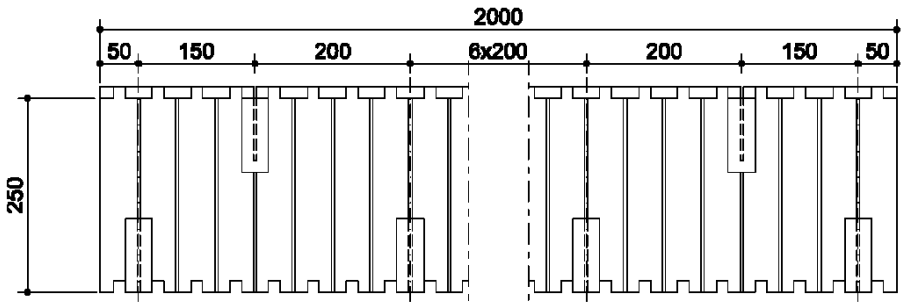
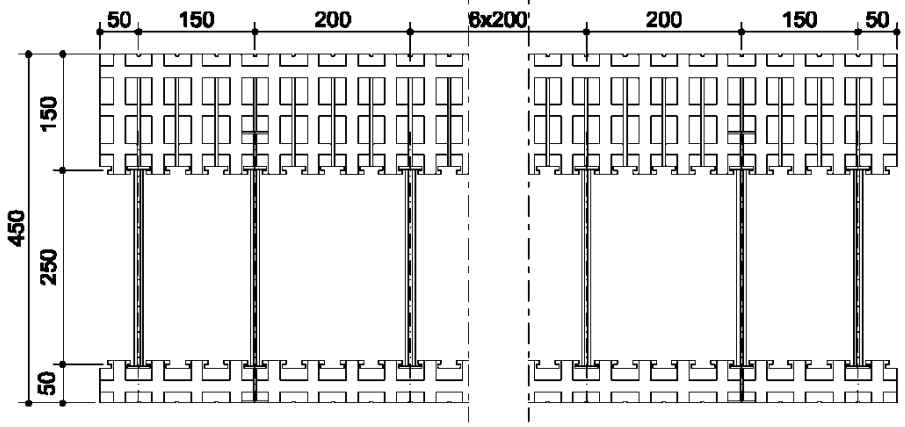
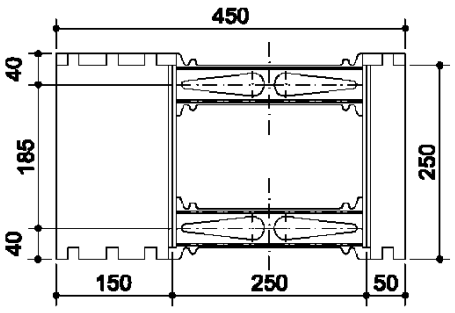
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A77
System: Universal Plus Plus (dismountable elements)	Block with plastic tie MCFU 2/45++ l x t x h = 200cm x 45cm x 25cm

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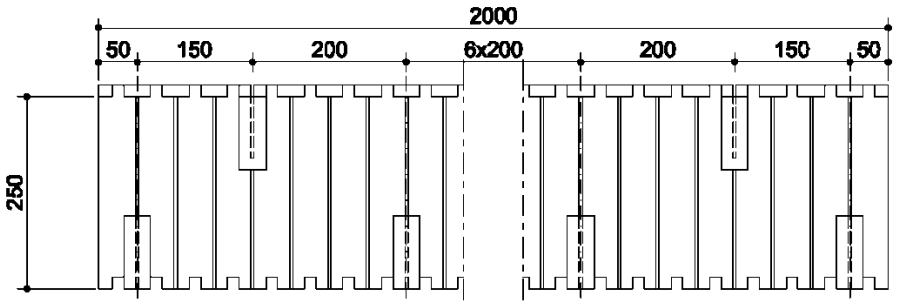
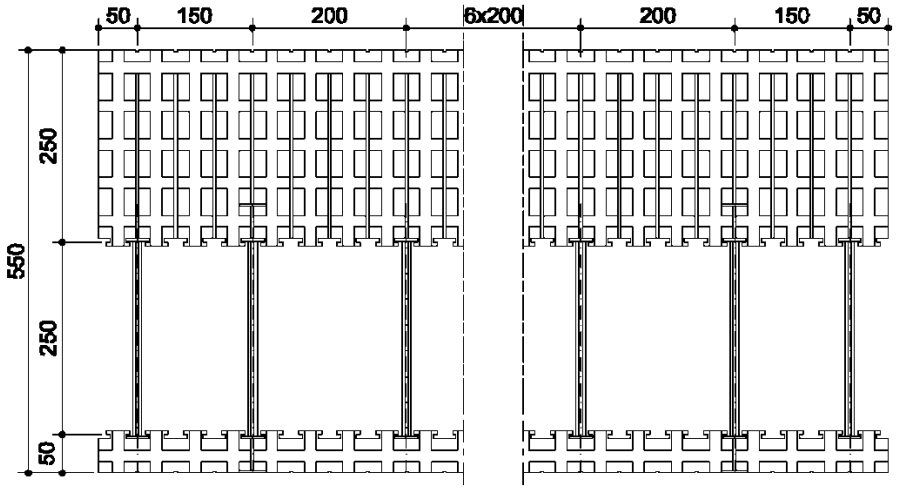
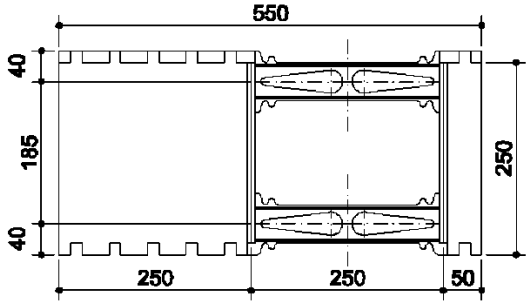
SIDE VIEW



TOP VIEW



FRONT VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A78
System: Universal Plus Plus (dismountable elements)	Block with plastic tie MCFU 2/55++ l x t x h = 200cm x 55cm x 25cm

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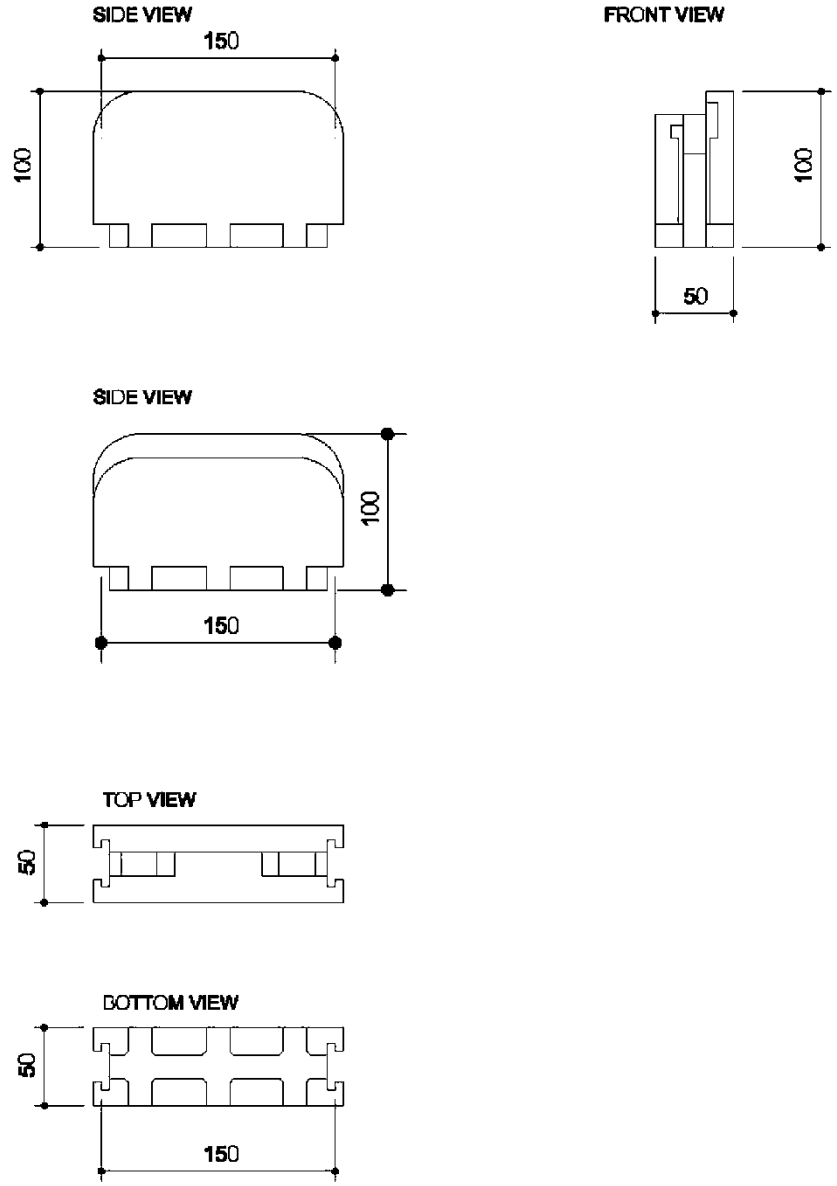

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A79
Accessory parts — Top Plug OH l x t x h = 15cm x 5cm x 8cm	

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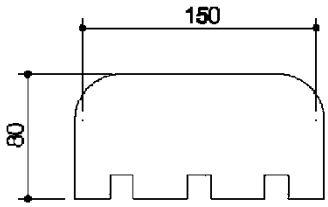
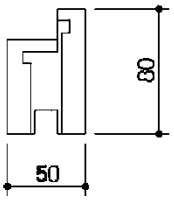
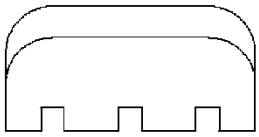
SIDE VIEW



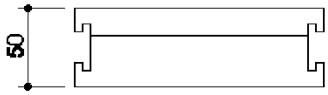
SIDE VIEW



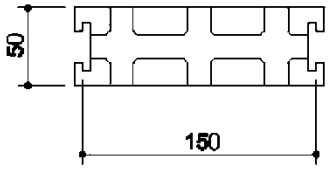
SIDE VIEW



TOP VIEW

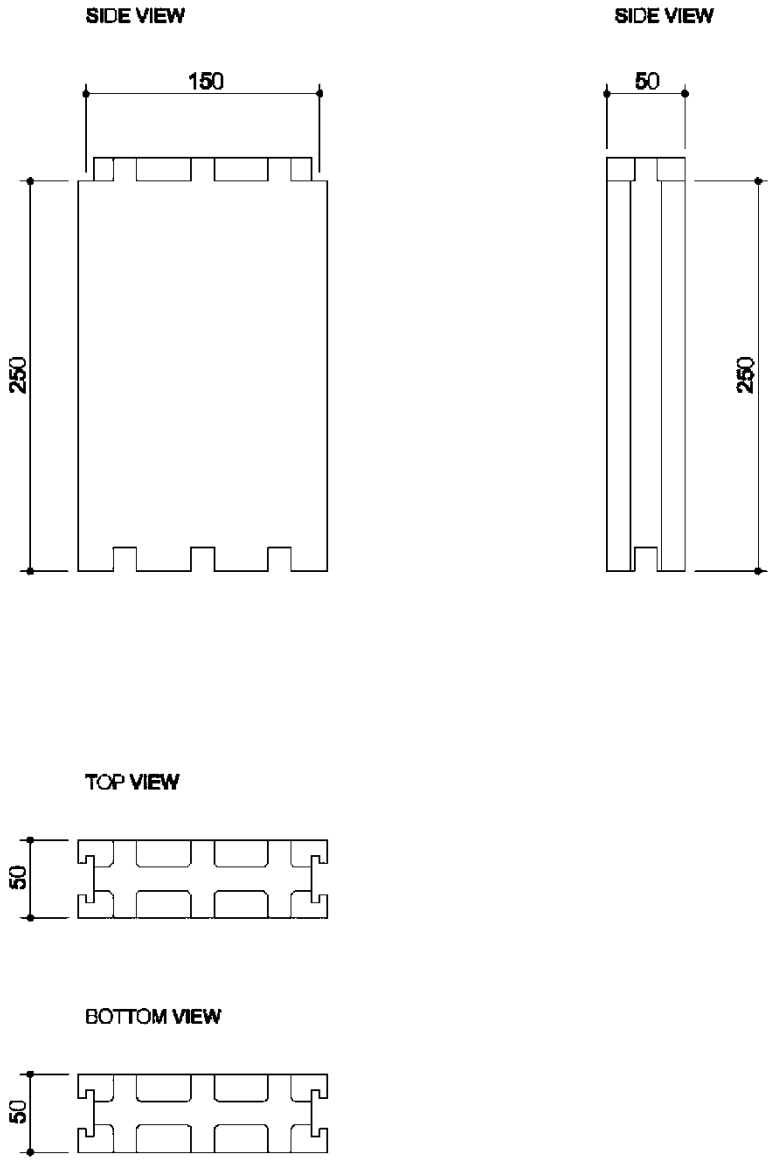


BOTTOM VIEW



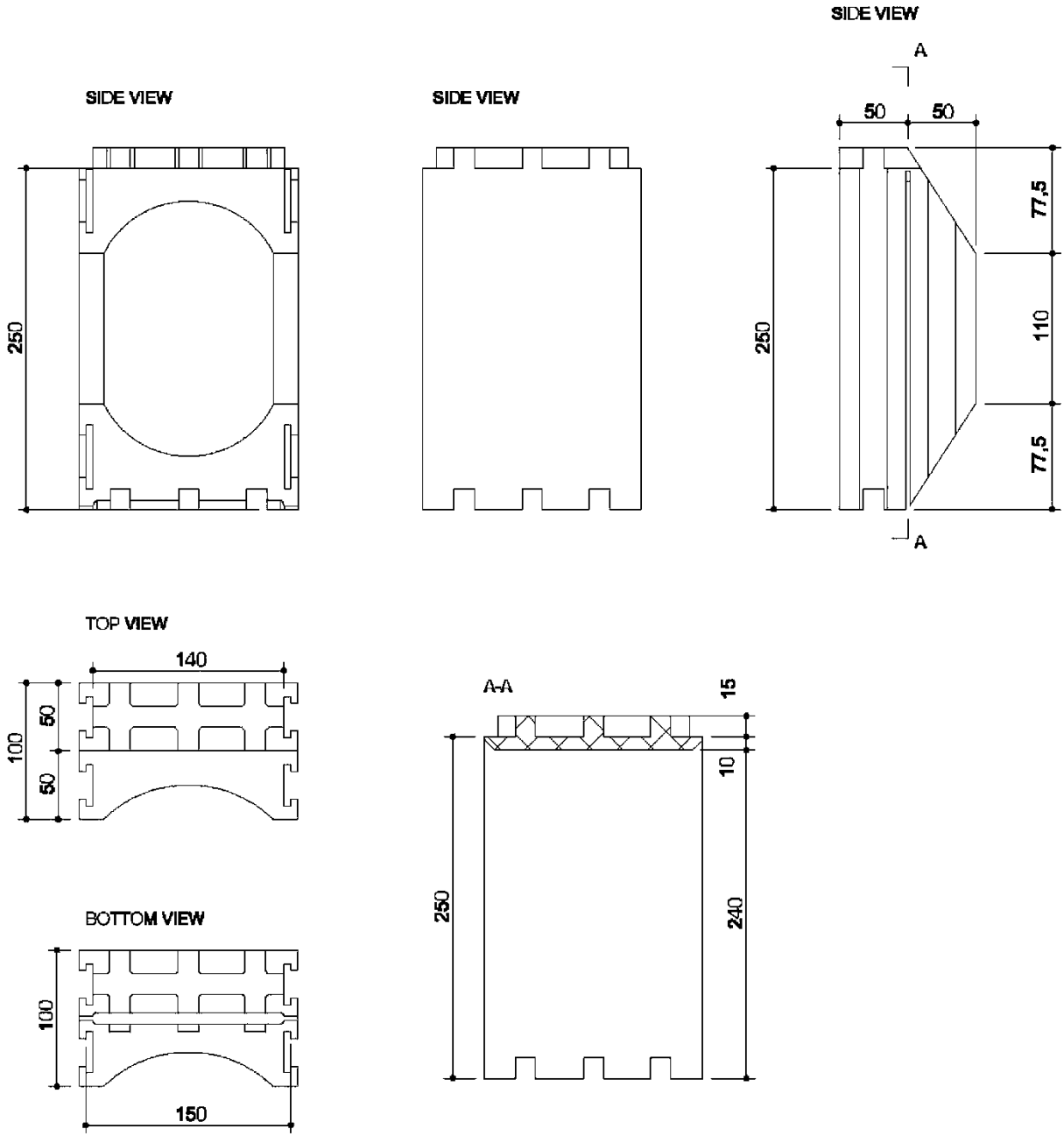
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A80
Accessory parts — Bottom Plug OB l x t x h = 15cm x 5cm x 8cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A81
Accessory parts — Double insert element OC l x t x h = 15cm x 5cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A82
Accessory parts	OC BIS Double insert element l x t x h = 15cm x 10cm x 25cm	

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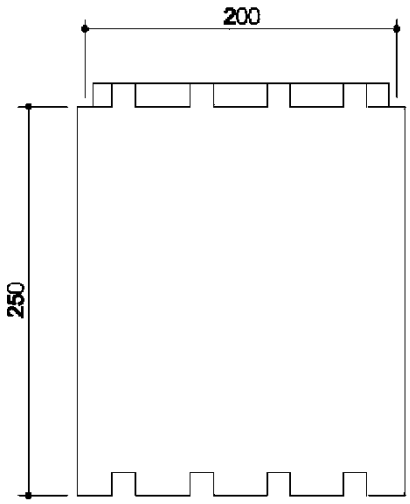
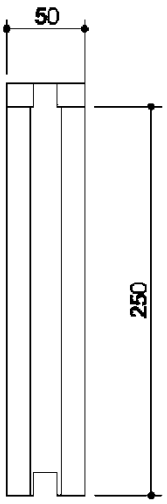
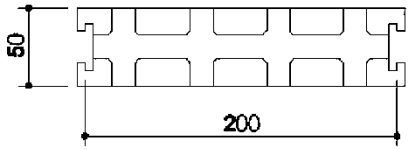
SIDE VIEW



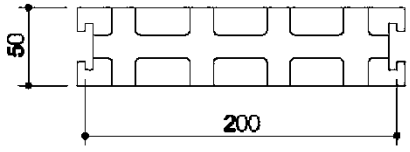
SIDE VIEW



TOP VIEW



BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A83
Accessory parts *System: Universal Plus*	OC 0,2/1 insert element, core 20cm l x t x h = 20cm x 5cm x 25cm

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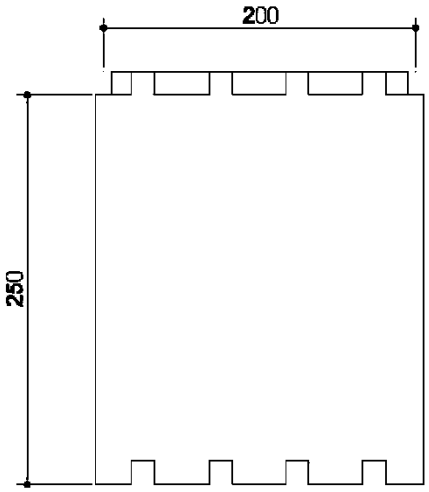
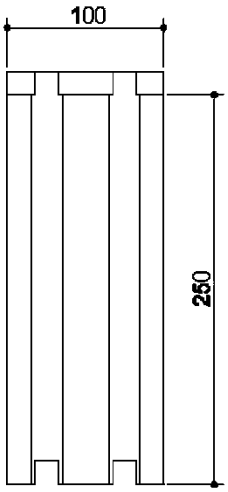
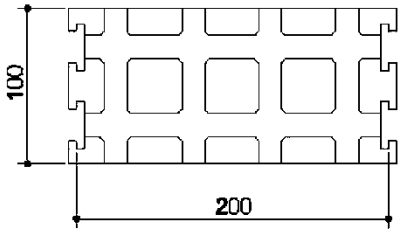
SIDE VIEW



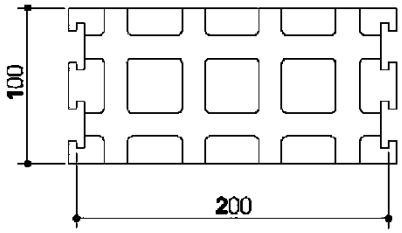
SIDE VIEW



TOP VIEW



BOTTOM VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A84
Accessory parts *System: Universal Plus*	OC 0,2/2 Double insert element, core 20cm l x t x h = 20cm x 10cm x 25cm

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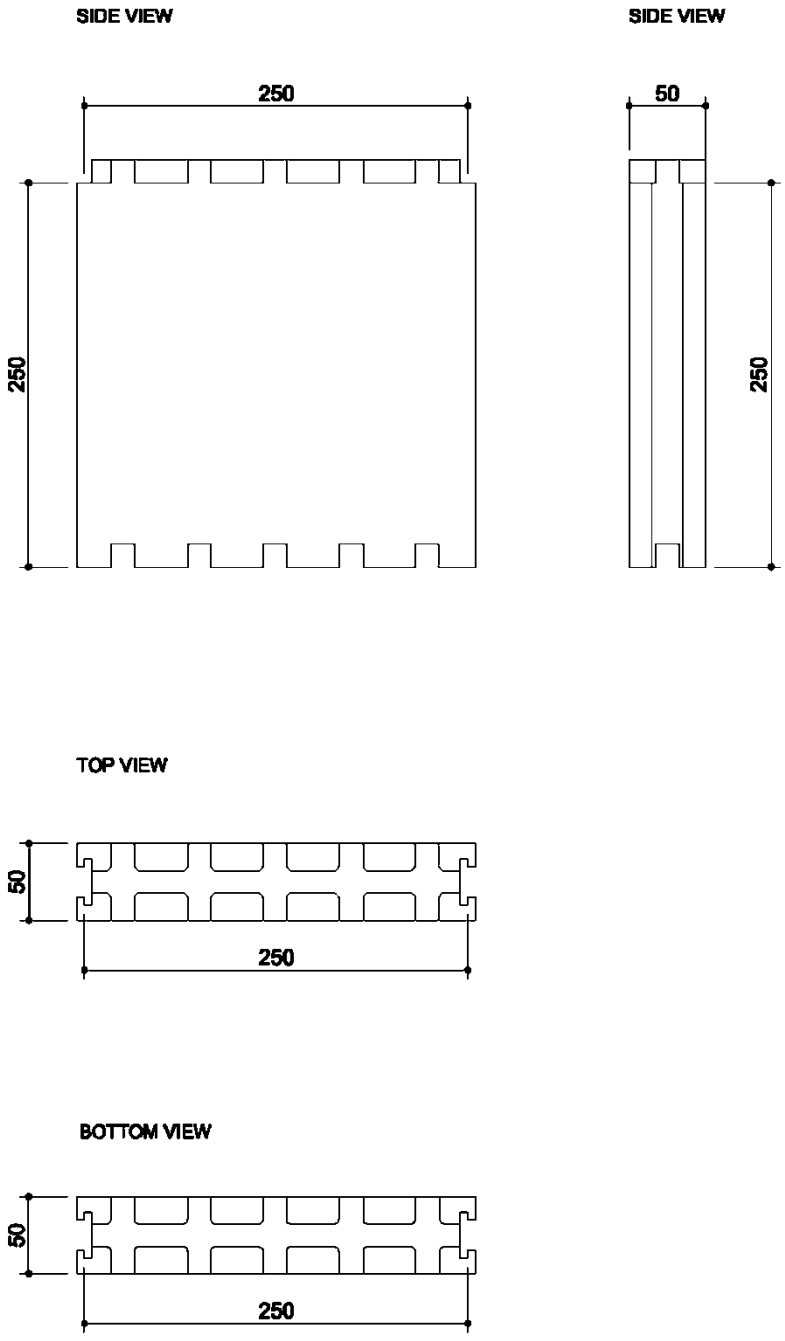

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A85
Accessory parts *System: Universal Plus Plus*	OC 0,25/1 insert element, core 25cm l x t x h = 20cm x 5cm x 25cm

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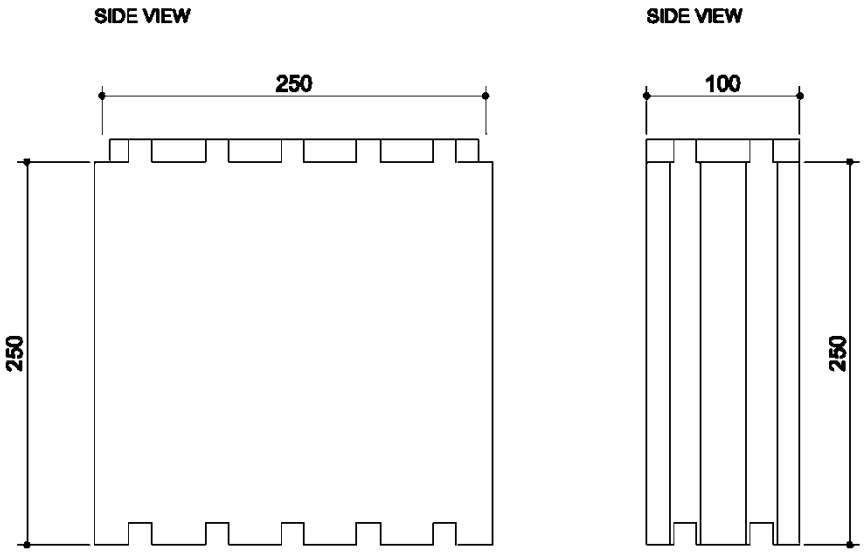

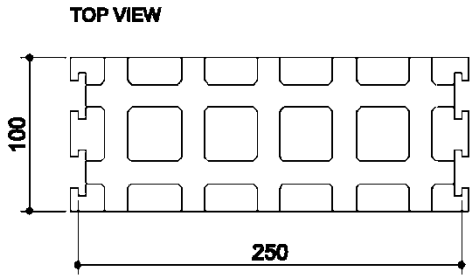

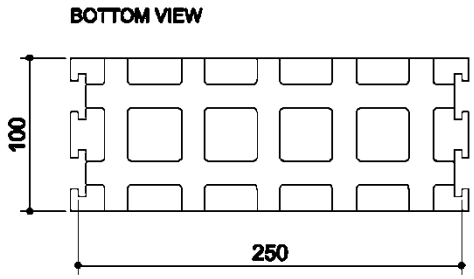

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A86
Accessory parts *System: Universal Plus* Plus	OC 0,25/2 double insert element, core 25cm l x t x h = 20cm x 10cm x 25cm

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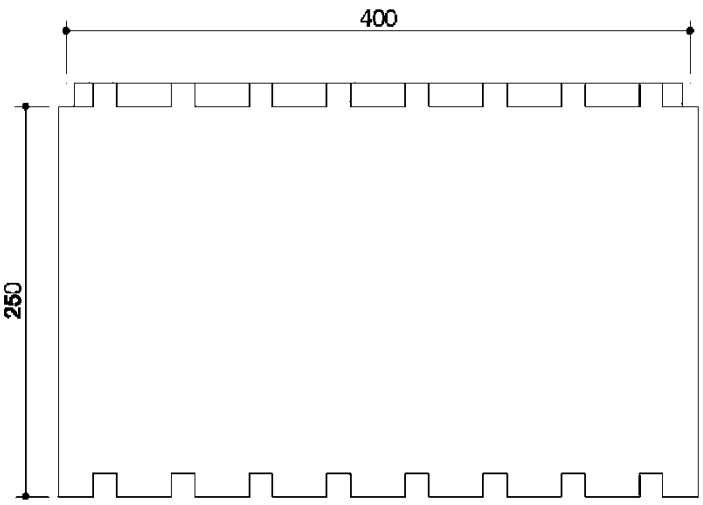
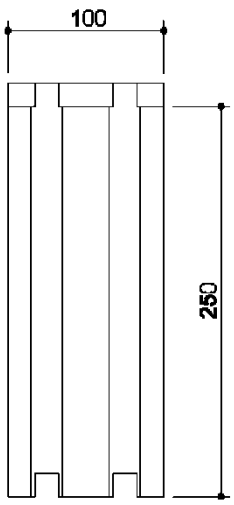
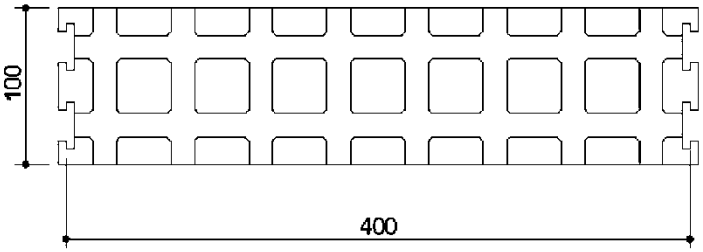
SIDE VIEW



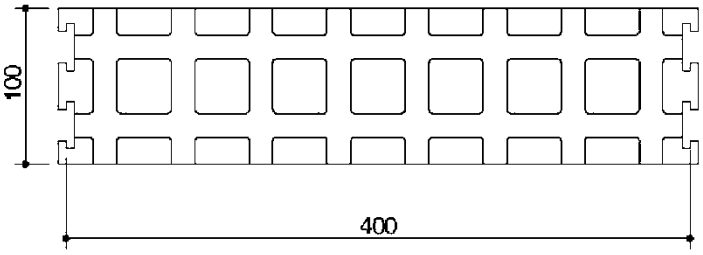
SIDE VIEW



TOP VIEW

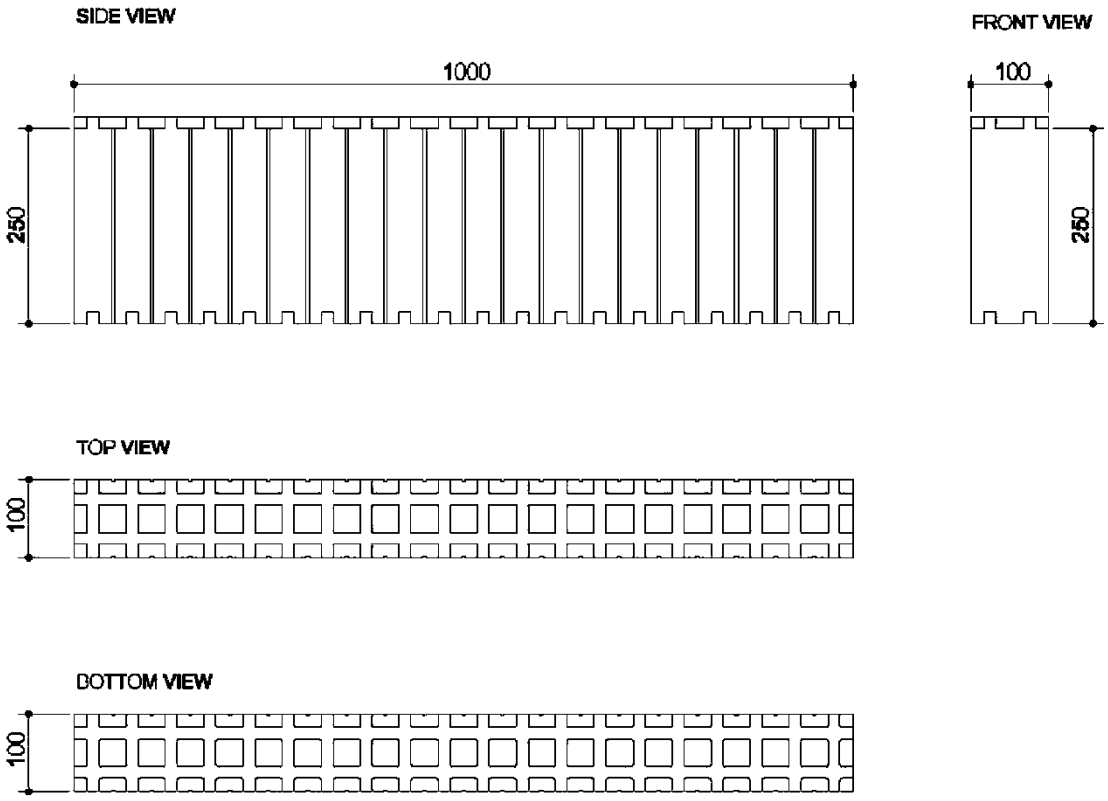


BOTTOM VIEW



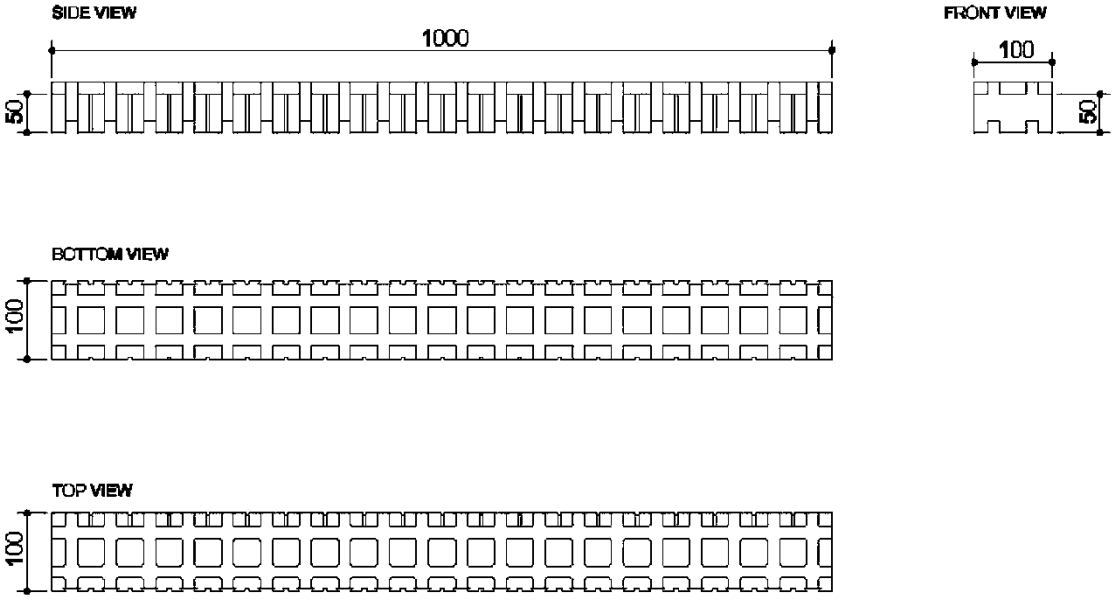
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A87
Accessory parts *System: Universal*	OC 0,4/2 double insert element, core 40cm l x t x h = 40cm x 10cm x 25cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A88
Accessory parts — MD 1/10 l x t x h = 100cm x 10cm x 25cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A89
Accessory parts	MHD 1/10 height adapter l x t x h = 100cm x 10cm x 5cm	

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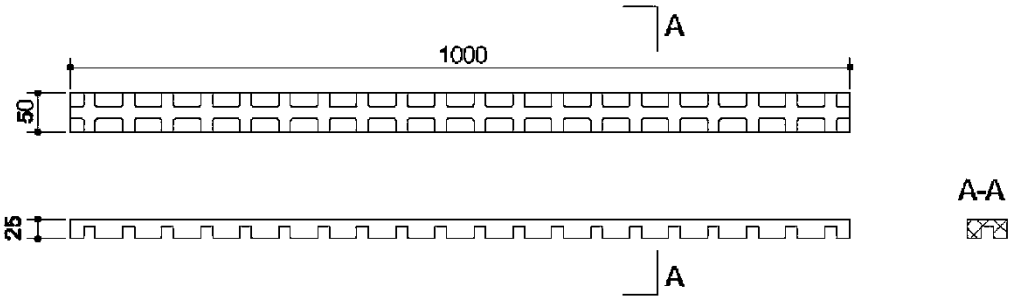
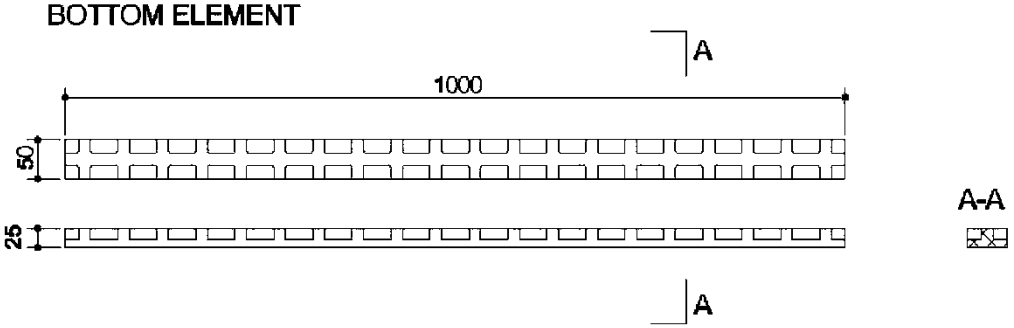
TOP ELEMENT

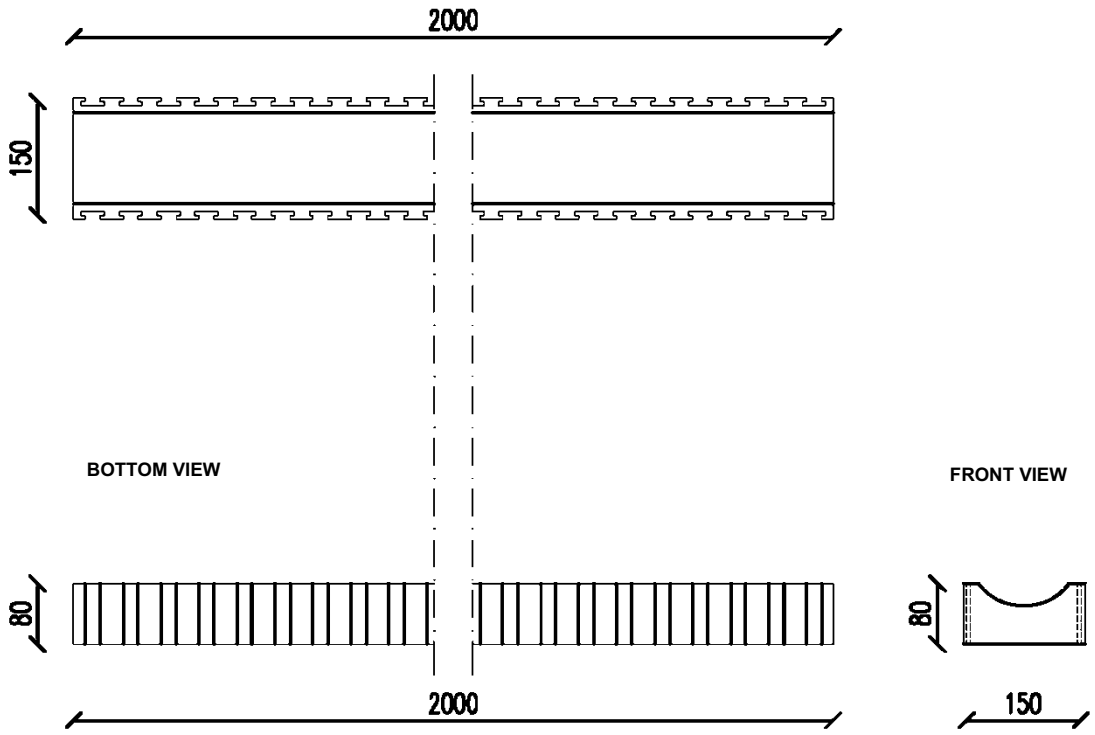


BOTTOM ELEMENT



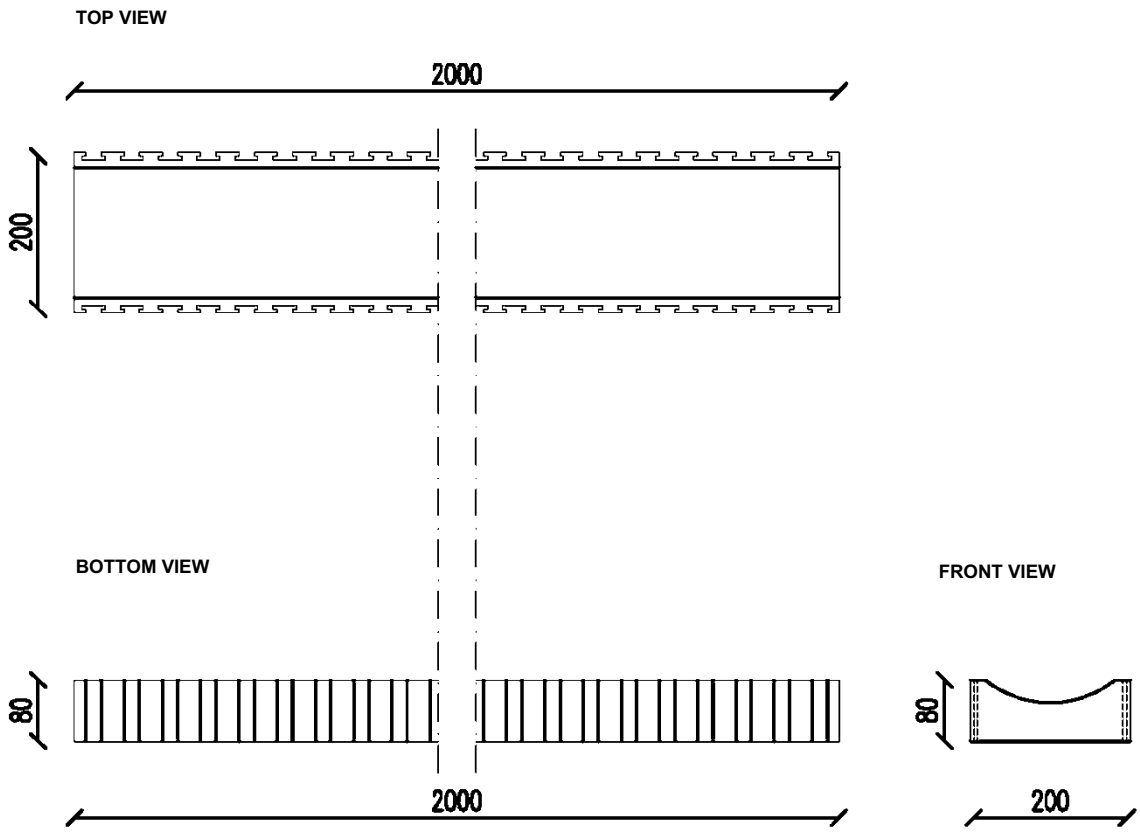
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		AnnexA90
Accessory parts	LWG, LWD Upper and bottom trimming strip l x t x h = 100cm x 5cm x 2,5cm	



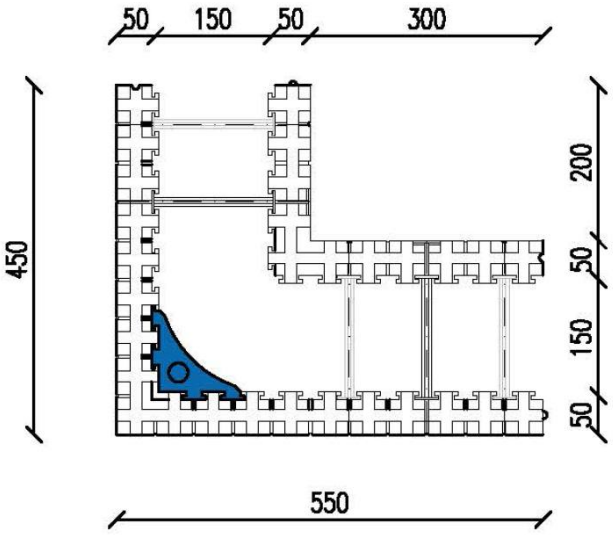
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A91
Accessory parts	Bottom of the header element MLI P 15 l x t x h = 200cm x 15cm x 8cm	

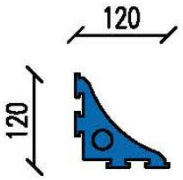


Sketches not to scale
All dimensions in mm

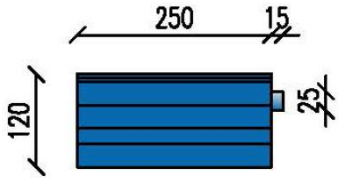
Permanent shuttering kit "IZODOM"		Annex A92
Accessory parts	Bottom of the header element MLI P 20 l x t x h = 200cm x 20cm x 8cm	

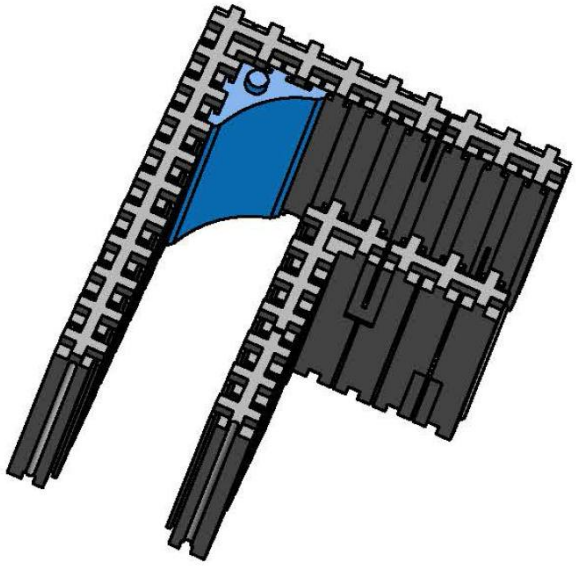


TOP VIEW



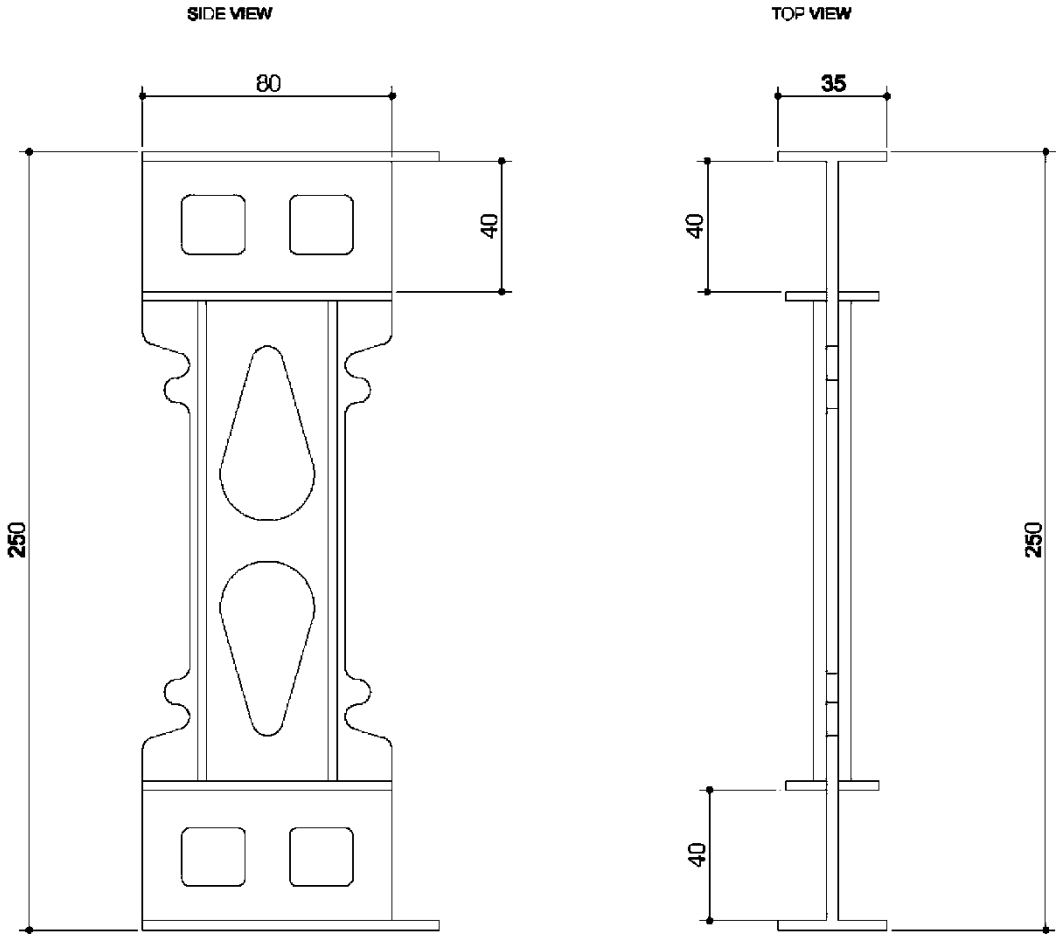
FRONT VIEW





Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A93
Accessory parts	EC 90 90° corner reinforcing element l x t x h = 12cm x 12cm x 25cm	



IZOBasic:	25 E90 L/R & A/I	A13, A14
IZOStandard	30 E90 L/R & A/I	A19 to A22
IZOEnergy	35 E45 L/R & A/I	A27 to A30
	35 E90 L/R & A/I	A32 to A35
IZOPassive	45 E90 L/R & A/I	A41 to A44
IZOPassive Plus	N/A	
UNIVERSAL	2/25, 2/30, 2/35, 2/45	A47 to A50

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A94
additional element MCFU	System: IZOBasic, Standard, Energy, Passive (Plus), UNIVERSAL Tie for elements on Annex A13, A14, A19 to A22, A27 to A30, A32 to A35, A41 to A44, A47 to A50	

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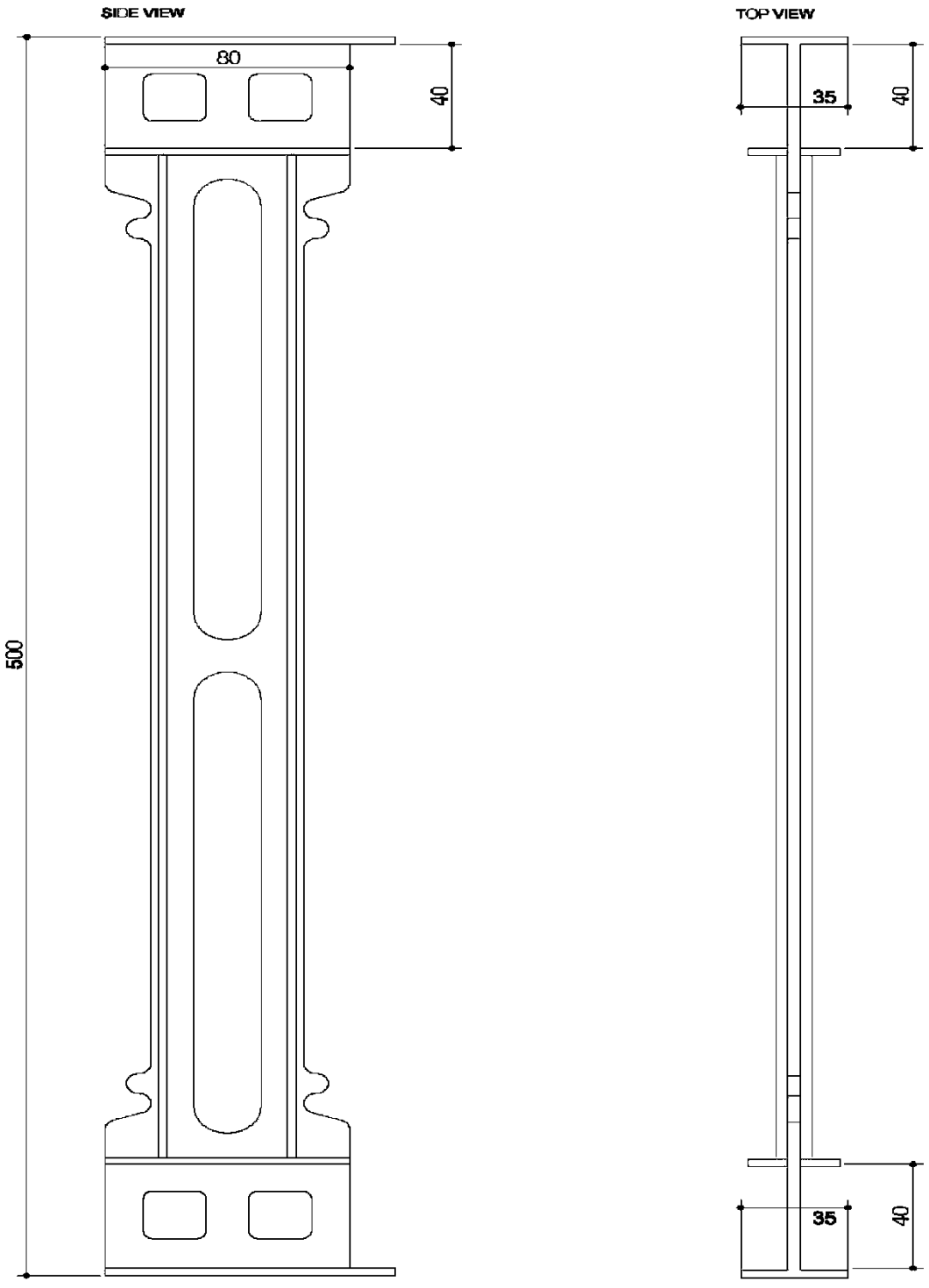
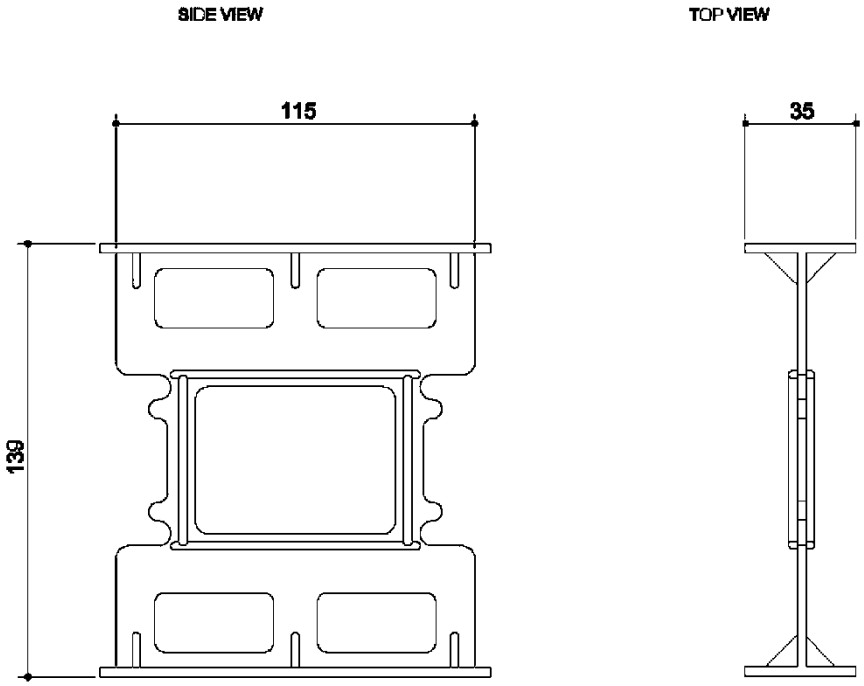


Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A95
additional element MCFU	System: Universal Tie for elements on Annex A51 50 cm x 8 cm x 3.5 cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A96
additional element MCF	System: IZOBasic" Tie for elements on Annex A4 13.9 cm x 11.5 cm x 3.5 cm

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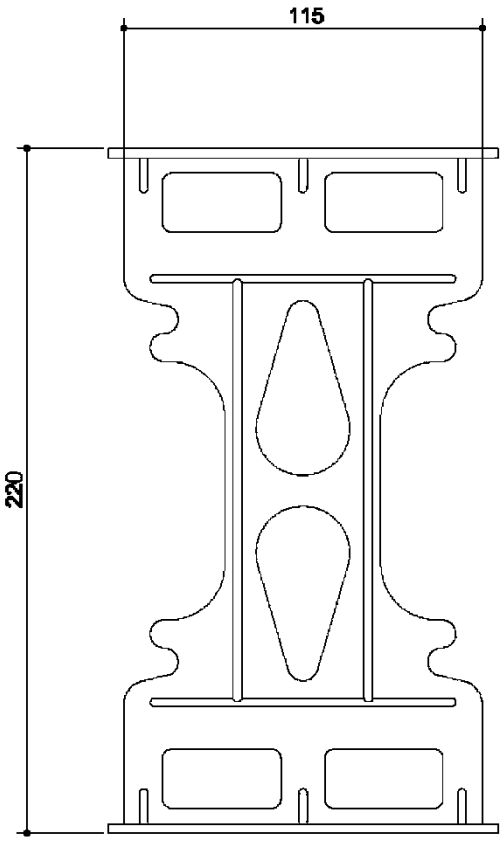
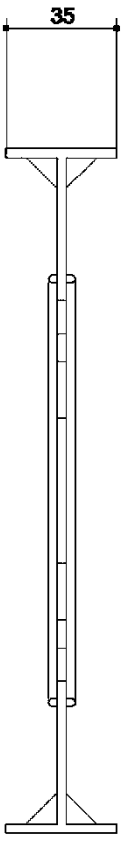
SIDE VIEW

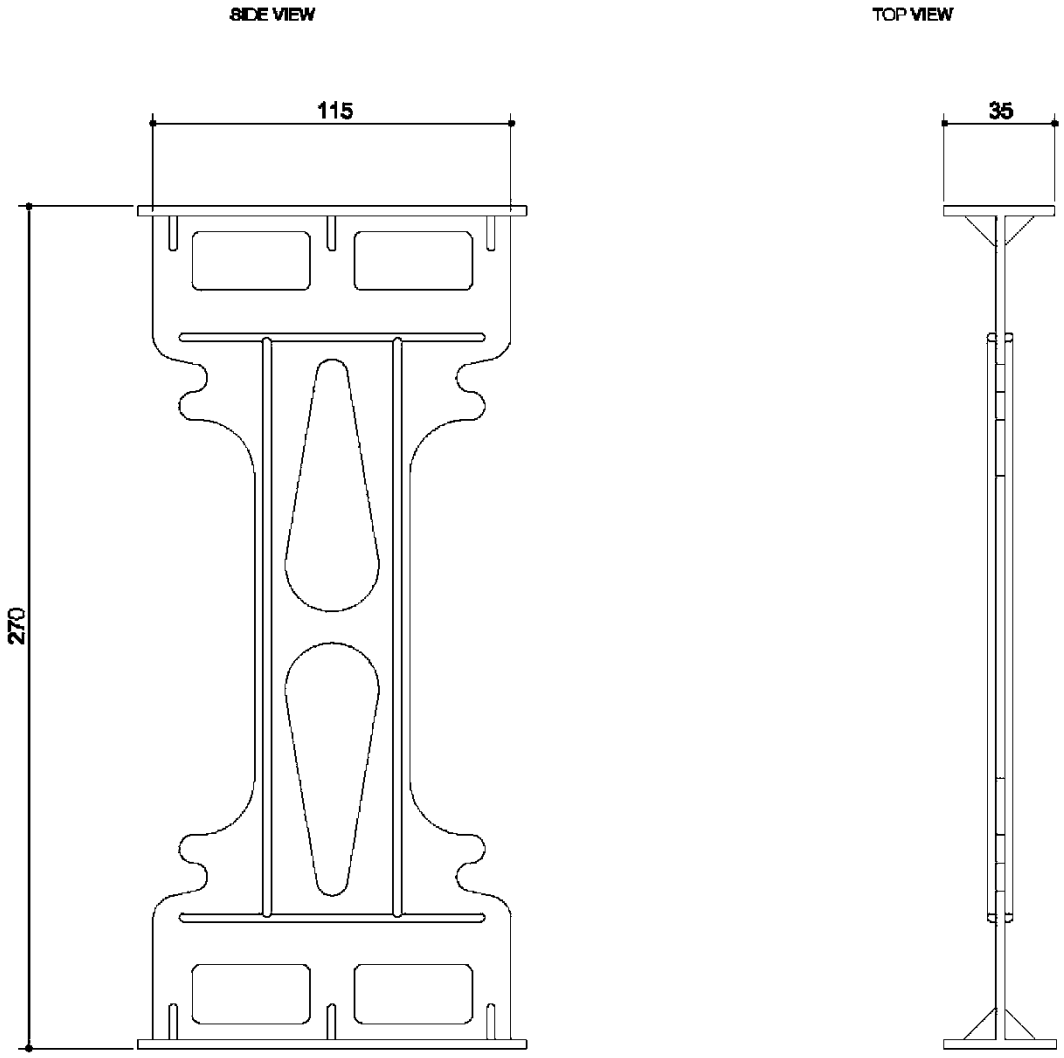


TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A97
additional element MCF	System: IZOBasic" Tie for elements on Annex A3 22 cm x 11.5 cm x 3.5 cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A98
additional element MCF	System: IZOPassive Plus Tie for elements on Annex A45 and A46 27 cm x 11.5 cm x 3.5 cm	

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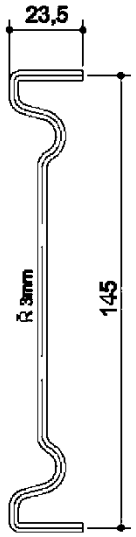
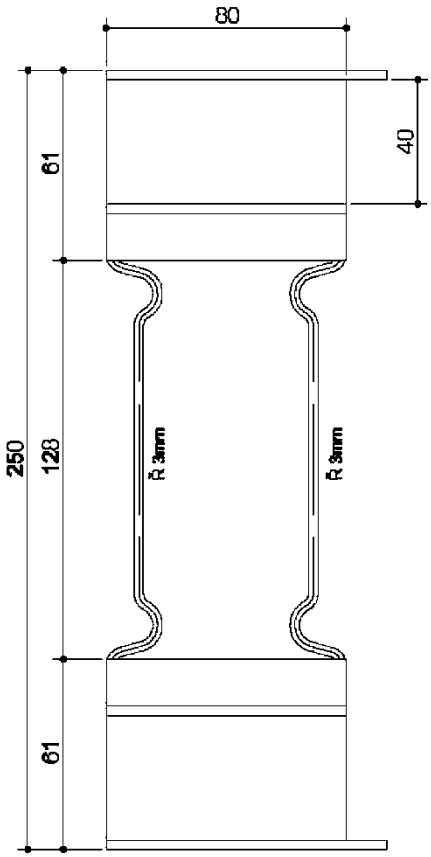
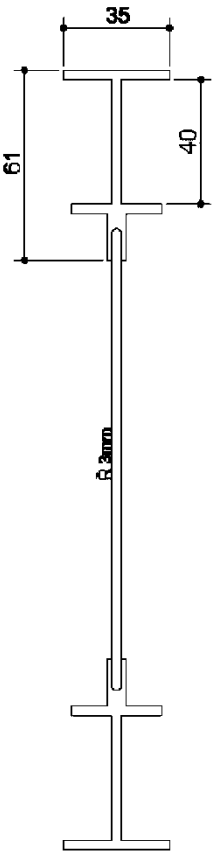
REBAR



SIDE VIEW



TOP VIEW



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A99
additional element MCFU-S	System: Universal Tie for elements on Annex A52 to A55 25 cm x 8 cm x 3.5 cm

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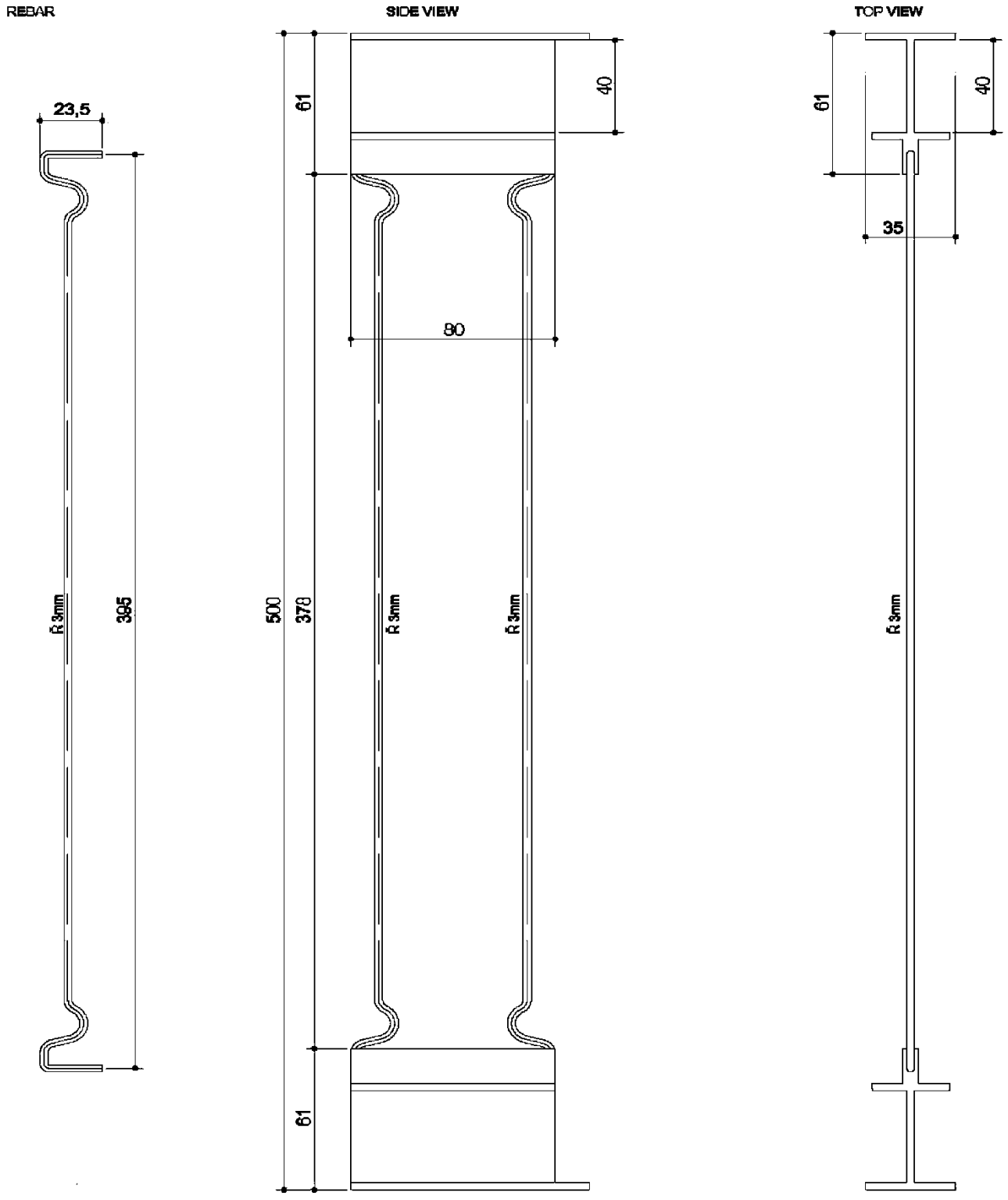
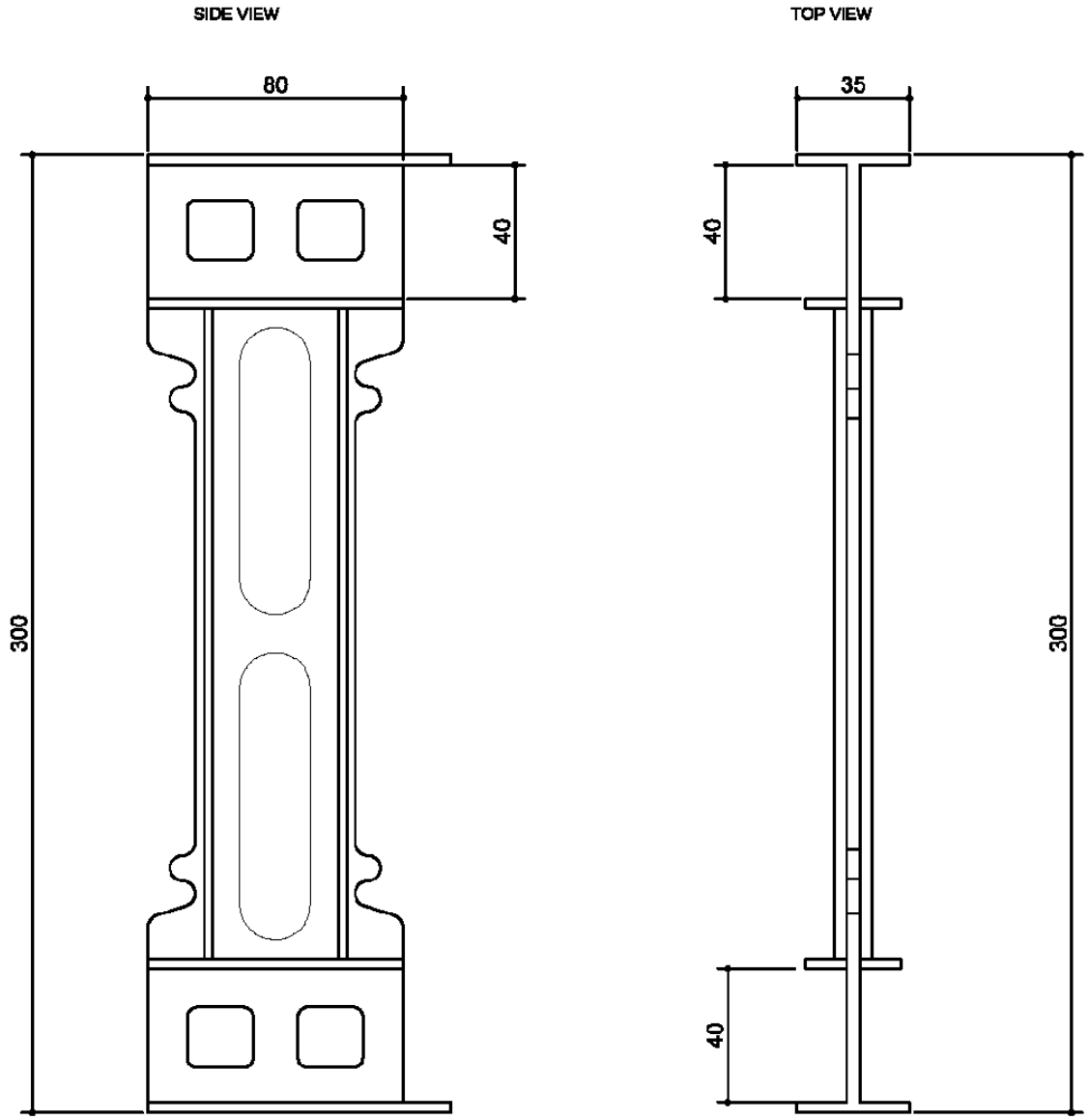


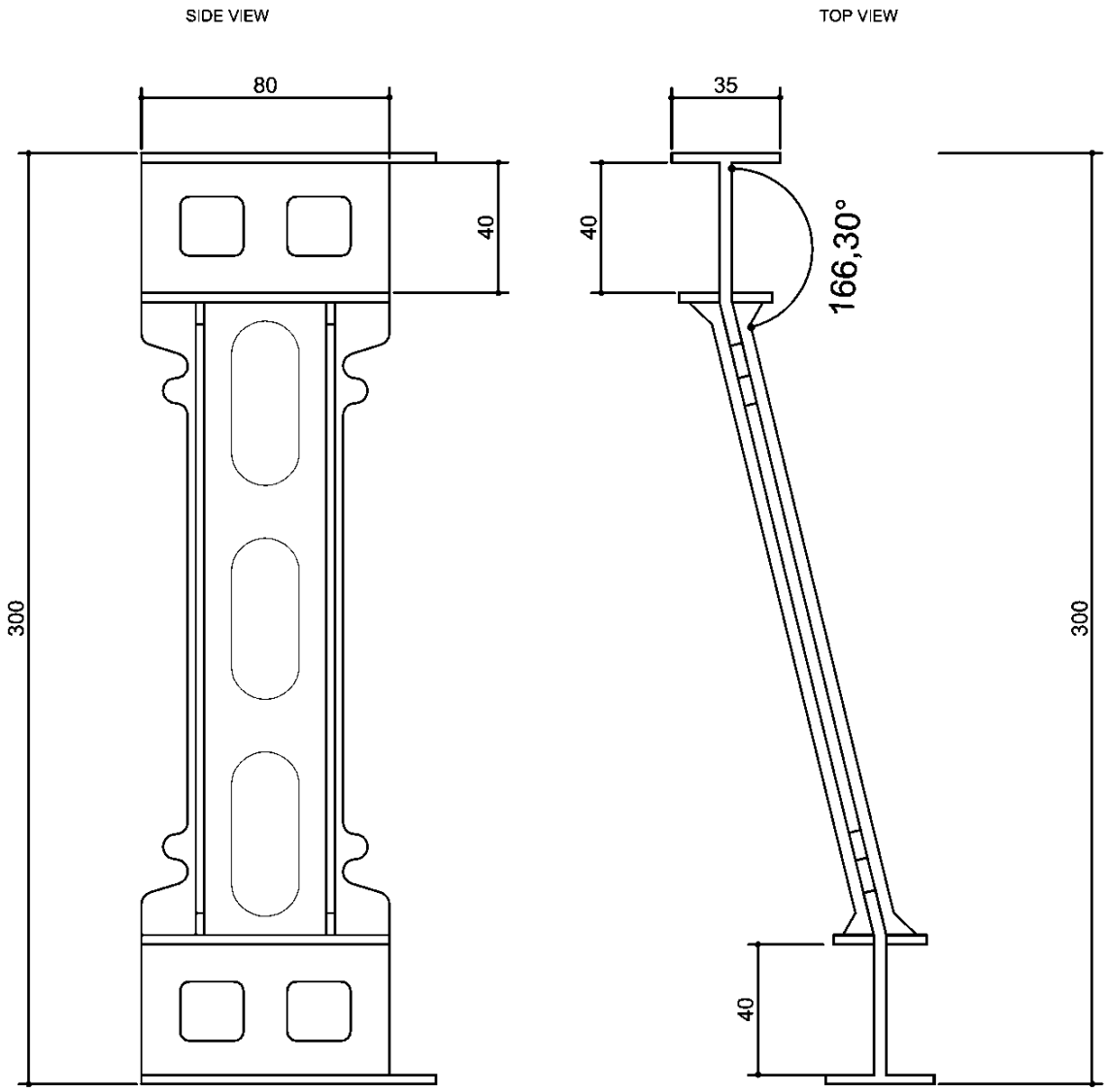
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A100
additional element MCFU-S	System: Universal Tie for element on Annex A56 50cm x 8cm x 3,4cm



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A101
additional element MCFU	System: Universal plus Tie for elements on Annex A57 to A60 30cm x 8,5cm x 3,5cm	



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"		Annex A102
additional element MCFU	System: Universal plus, corner elements Tie for elements on Annex A61 to A74 30cm x 8cm x 3,5cm	

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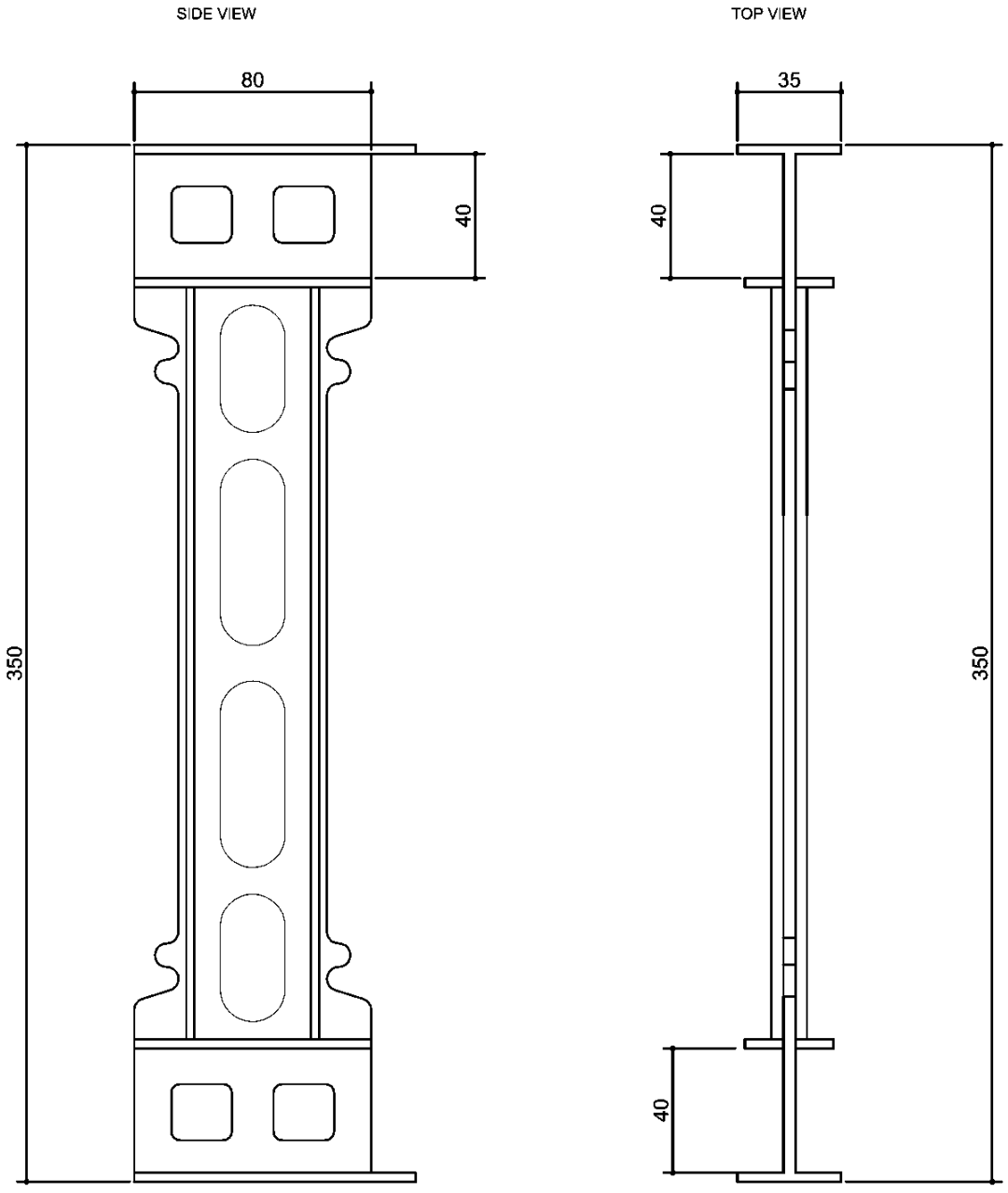

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex A103
additional element MCFU	System: Universal plus plus Tie for elements on Annex A75 to A78 35cm x 8cm x 3,5cm

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Installation

1 General

The manufacturer shall ensure that the requirements in accordance with sections 1, 2, and 4 are made known to those involved in planning and execution. The installation guide shall be present at every construction site. If the manufacturer's instructions contain provisions which differ from those stated here, the specifications of the ETA shall apply.

After installation of the shuttering elements (see 2) the site-mixed or ready mixed concrete is brought in and compacted.

In end use conditions concrete walls of grid (MC) and continuous type[1] (MCF, MCFU and MCFU-S) of plain or reinforced concrete according to EN 1992-1-1 or corresponding national rules will be formed.

In end use conditions the EPS-shuttering leaves are the main part of the thermal insulation of the walls.

2 Installation of the shuttering elements

The shuttering elements are put together on site in layers without mortar or adhesive. To receive stable floor high formworks the vertical joints between two elements of one layer have to be shifted of at least a quarter of the element length to the vertical joints of the previous layer.

At first two layers of the entire floor plan are to be interlocked according to the installation guide of the manufacturer.

Afterwards leveling to the subsoil is performed (foundation, ground slab, ceiling). Voids between the shuttering leaves and the uneven subsoil are to be sealed with PU foam before concreting.

Subsequently, according to the installation guide of the manufacturer, the walls are to be interlocked to floor height, leveled and fastened to the scaffolding supports.

The scaffolding supports are to be arranged at a distance of 0,5 m to 1.00 m maximum, to be connected over the entire wall height with the shuttering elements and to be fastened to the floor.

The required reinforcement according to structural design is to be installed. Rectangular corners are to be formed according to Annex B16 to B19. Further information is given in the installation guide.

3 Concreting

For the production of normal concrete EN 206 shall apply. The consistency of concrete on compacting by shaking shall be within the lower consistency range F3 and on compacting by poking within the upper consistency range F3. The maximum aggregate size shall be at least 8 mm and shall not exceed 16 mm. The concrete shall have rapid or middle strength development according to EN 206-1, Table 16.

Placing the concrete shall be performed only by persons who were instructed in the works and in the proper handling of the shuttering system.

The maximum filling height amounts to 0.6 m at a concreting velocity of 1 m/h.

If equivalent national rules are not available the following instructions shall be considered:

Horizontal day joints are to be arranged preferably at the height of the floor. If day joints cannot be avoided before reaching the floor height vertical composite reinforcement bars have to be installed.

The reinforcement shall comply with the following requirements:

- two adjacent reinforcement bars shall not be situated in the same plane parallel to the surface of the wall,
- the distance between two reinforcement bars in wall direction shall be at least 10 cm and not larger than 50 cm,
- the total section area of the reinforcement bars shall not be smaller than 1/2000 of the section area of the concrete,
- anchorage length of the reinforcement bars on each side of the day joint shall be at least 20 cm

[1] see EAD 340309-00-0305 chapter 1.3.3

Permanent shuttering kit "IZODOM"	Annex B1 page 1/2
Installation	

Before the further placing of concrete, cement laitance and detached / loose concrete shall be removed and the day joints shall be sufficiently pre-wetted. At the time of concreting the surface of the older concrete shall be slightly moist, so that the cement paste of the newly brought in concrete can combine well with the older concrete.

If no day joint is planned, placing of concrete in layers may only be interrupted if the concrete layer brought in last has not yet solidified allowing for a good and even bond between the two concrete layers. When using internal vibrators the vibrating cylinder shall still penetrate into the already compacted lower concrete layer.

The concrete may fall freely only up to a height of 2 m, beyond that the concrete shall be cohered by discharge pipes or concreting tubes with a diameter of 100 mm at the most and shall be led shortly before the place of installation.

Cones from pouring are to be avoided by short distances of the places of fill in.

Planning shall allow for sufficient spaces in the reinforcement for discharge pipes or concreting tubes.

After concreting the walls shall not deviate from the plumb line more than 5 mm per running meter wall height.

Ceiling elements shall only be placed on walls made of shuttering elements if a sufficient strength of the concrete core exists.

4 Ducts crossing and situated inside the wall

Horizontally passing ducts are to be installed according to the installation guide of the ETA applicant and are to be taken into account when designing the wall.

Horizontal ducts situated inside the wall cores and running parallel to the wall surfaces are to be avoided. If absolutely necessary, these are to be taken into account when designing the wall.

Also vertical ducts in the concrete core shall be considered, if their diameter exceeds 1/6 of the thickness of the concrete core and the distance of the pipes is less than 2 m.

5 Reworking and finishes

Walls of the type "IZODOM" are to be protected by finishes. Finishes are not part of the kit and therefore not considered in this ETA. Preferably for external surfaces the used rendering systems should meet the requirement of EAD 040083-00-0404. Execution of the rendering shall be performed according to applicable national rules.

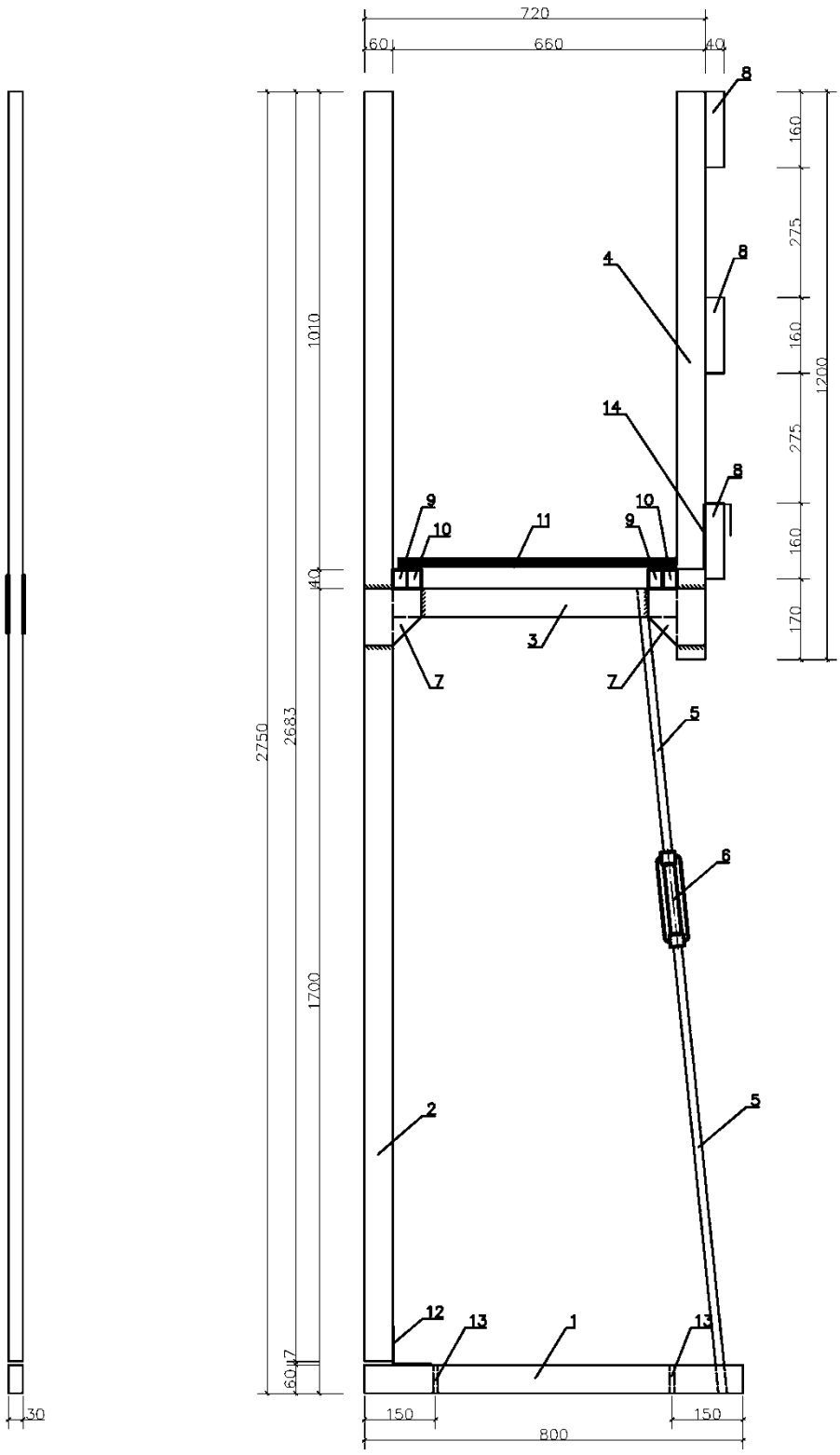
6 Fixing of objects

Fixing of objects in the shuttering leaves is not possible, the part of fixings which is significant for the mechanical resistance shall be in the concrete. The influence of the fixing to the reduction of the thermal resistance has to be considered according to EN ISO 6946.

Permanent shuttering kit "IZODOM"	Annex B1 page 2/2
Installation	

standards and guidelines		issue	title
EN	206	2013+A1:2016	Concrete – Specification, performance, production and conformity
EN	1992-1-1	2011-01 +A1:2015-03	Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings;
EN	13163	2012 + A2:2016	Thermal insulation products for buildings – Factory made expanded polystyrene (EPS) products – Specification
EN	13501-1	2007 +A1:2009	Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests;
EN	13501-2	2016	Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services;
EN ISO	6946	2018	Building components and building elements – Thermal resistance and thermal transmittance – Calculation methods (ISO 6946:2017);
EN ISO	10456	2010	Building materials and products - Hygrothermal properties - Tabulated design values and procedures for determining declared and design thermal values (ISO 10456:2007 + Cor. 1:2009)
EN ISO	13788	2013	Hygrothermal performance of building components and building elements - Internal surface temperature to avoid critical surface humidity and interstitial condensation - Calculation methods (ISO 13788:2012)
EAD	040083-00-0404	2019-01	External thermal insulation composite systems (ETICS) with renderings
EAD	340309-00-0305	2019-01	Non load-bearing permanent shuttering kits/systems based on hollow blocks or panels of insulating materials and sometimes concrete

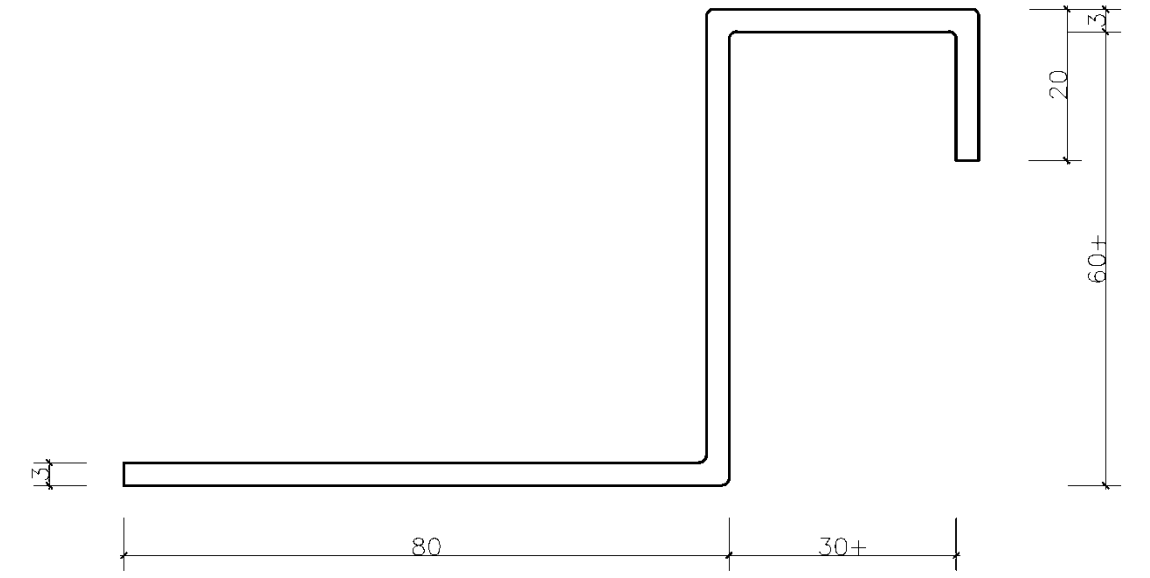
back view section front view

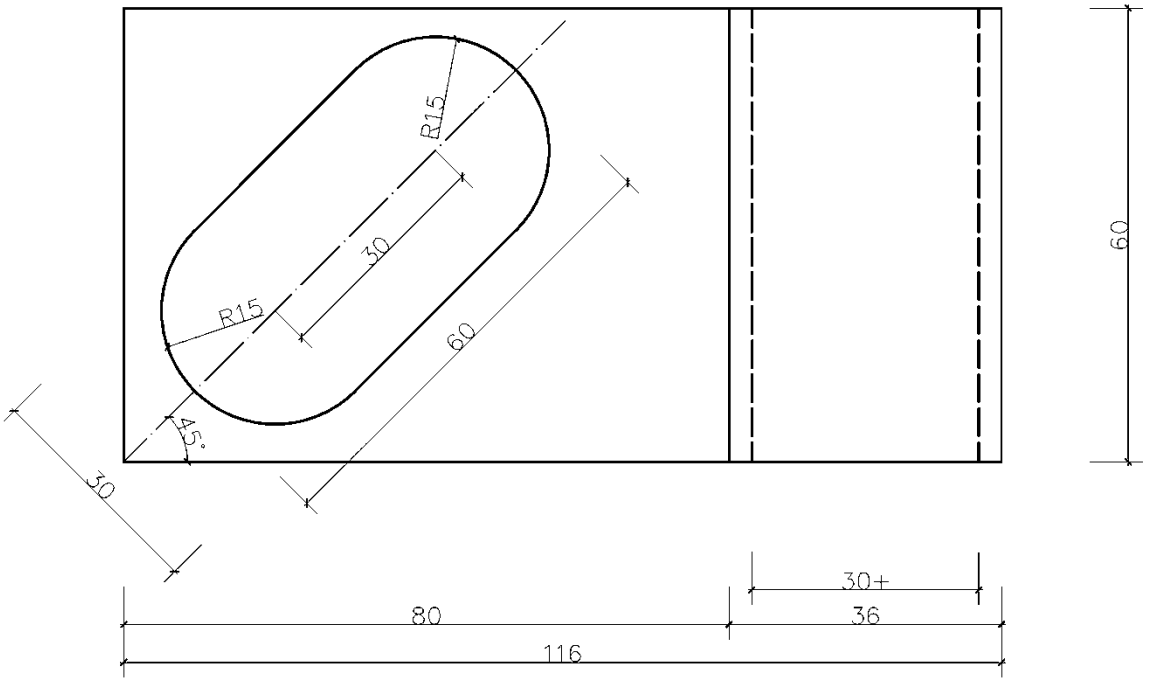


Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B3
AUXILIARY STRUCTURES wall support element for placing the concrete	

upper clamp for steel support





Sketches not to scale
All dimensions in mm

UPPER CLAMP FOR STEEL SUPPORTS

Permanent shuttering kit "IZODOM"	Annex B4
AUXILIARY STRUCTURES Clamp for steel support	

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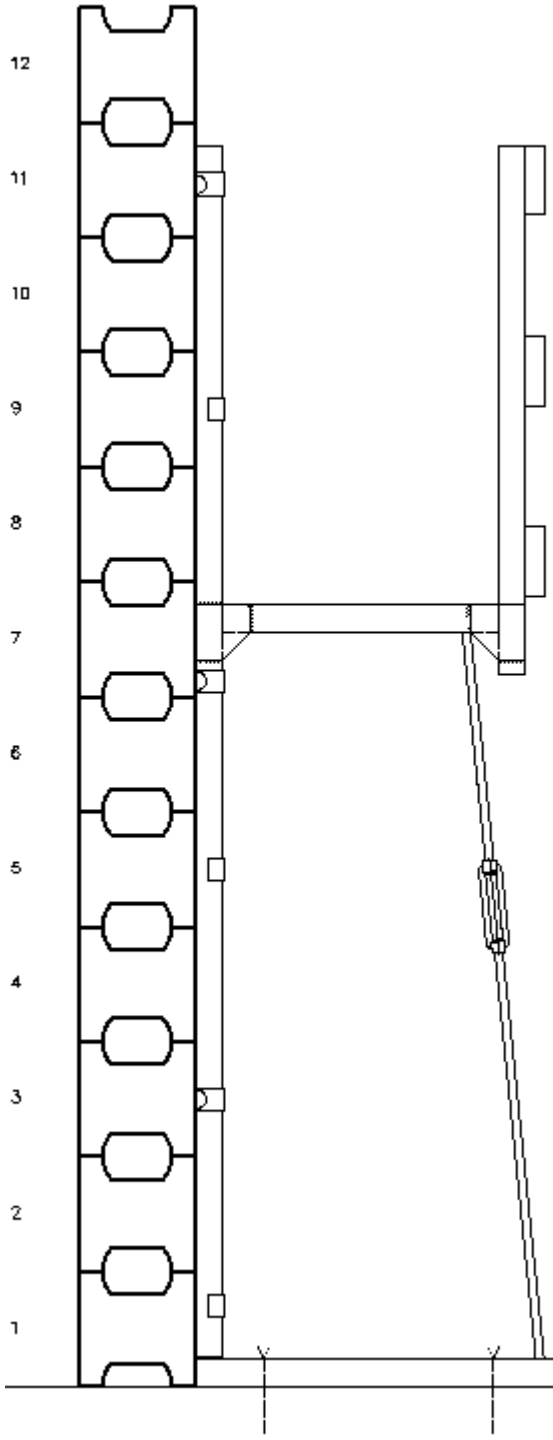
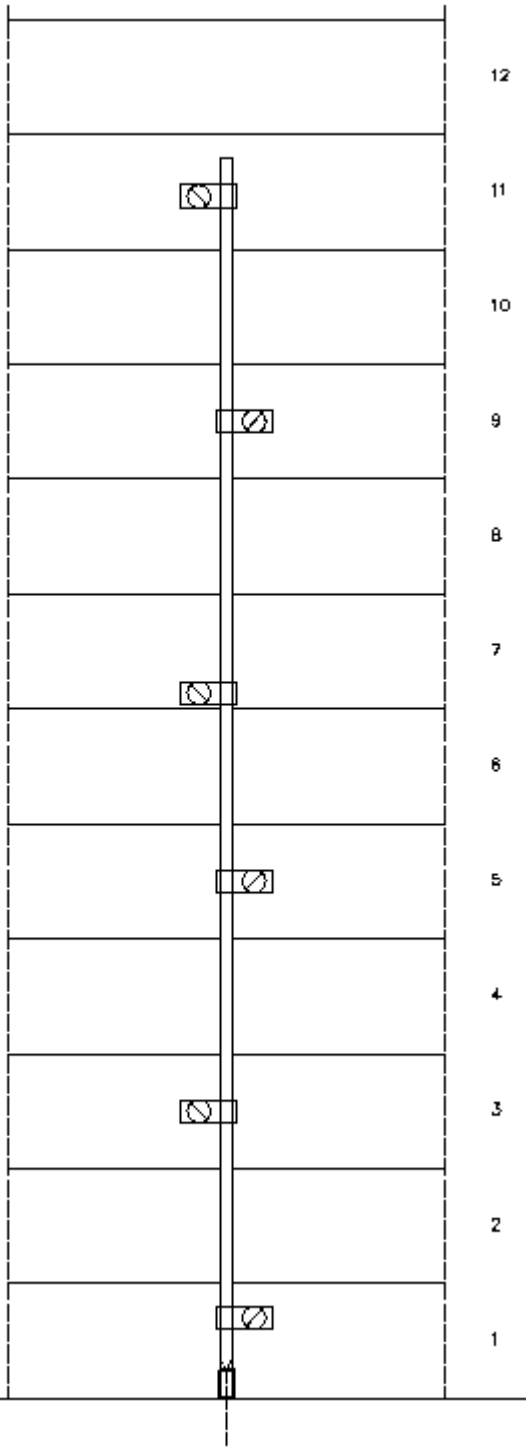
section

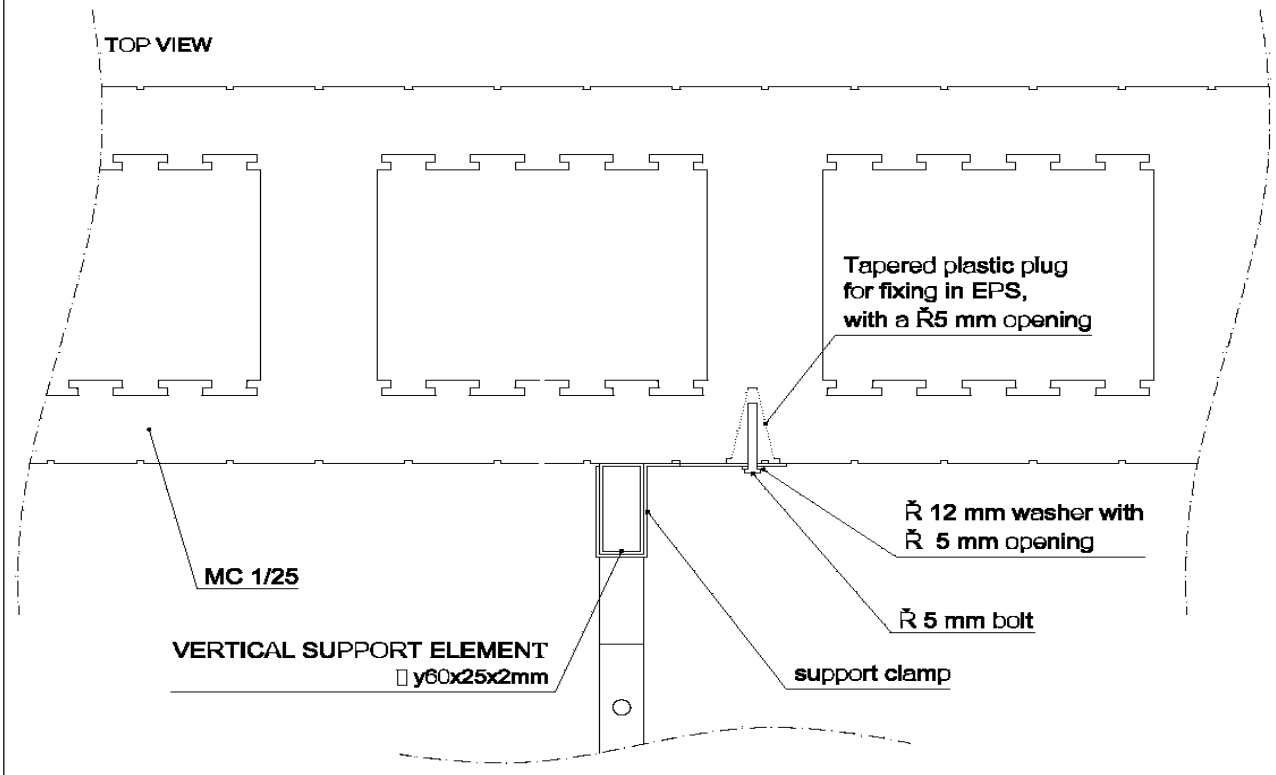


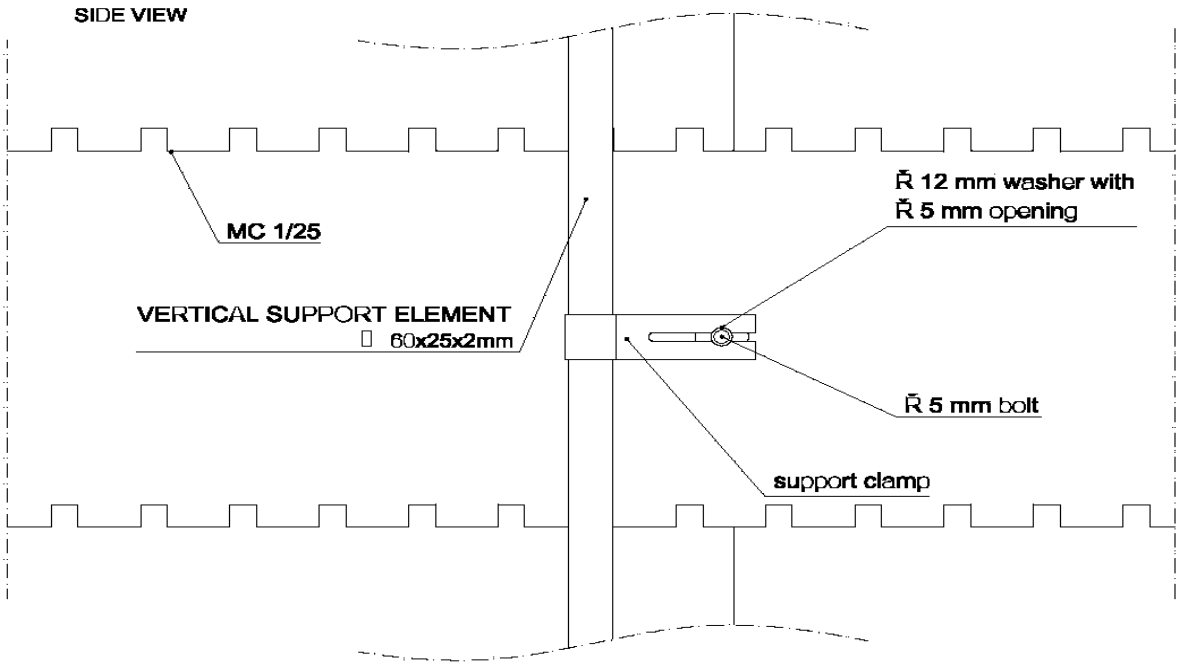
fixing method to IZODOM wall



Sketches not to scale
All dimensions in mm

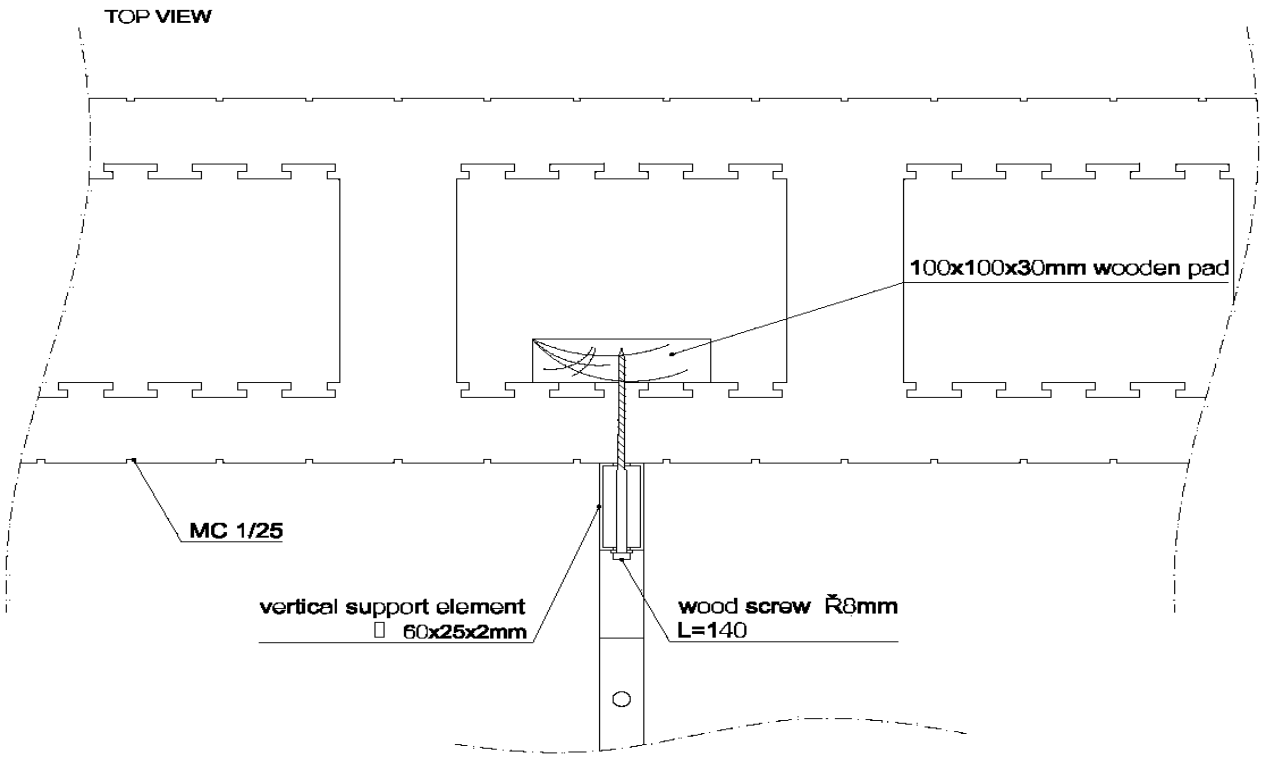
Permanent shuttering kit "IZODOM"	Annex B5
AUXILIARY STRUCTURES Installation of steel support for concrete pump	

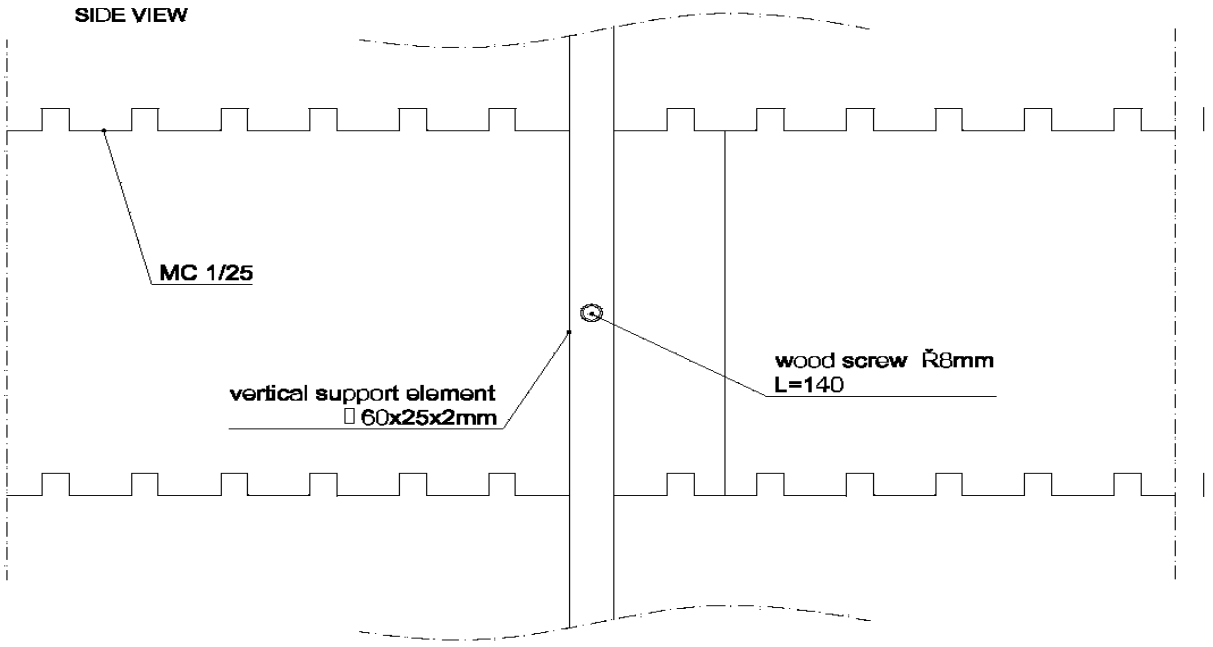




Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B6
AUXILIARY STRUCTURES Shuttering wall fixing to steel support – version I	





Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B7
AUXILIARY STRUCTURES Shuttering wall fixing to steel support – version II	

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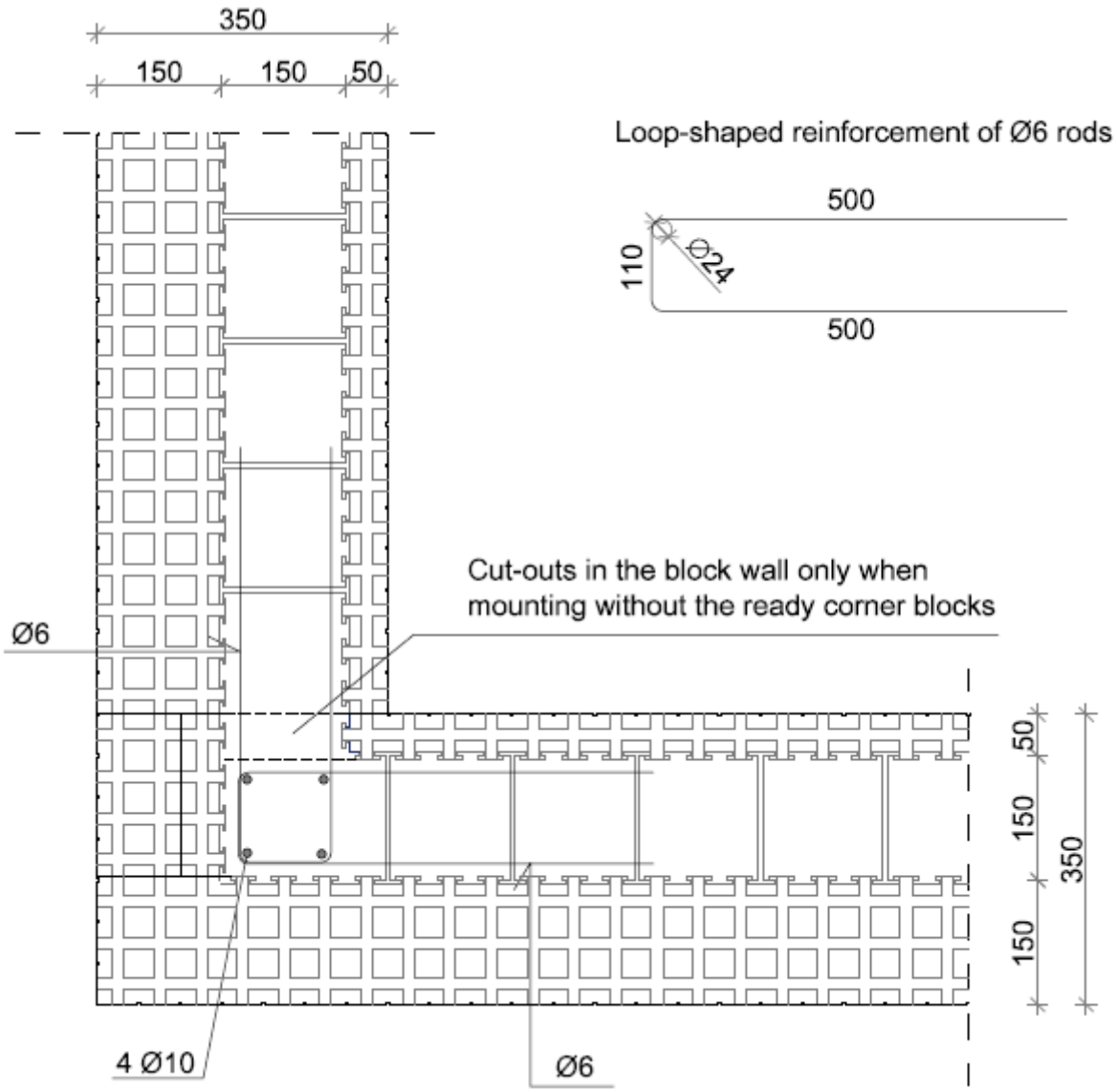
Corner connection between MCFU external walls with a 150mm concrete core



NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.
Assembly of reinforcement for ready-made and "assembled on site" corners is identical.

Permanent shuttering kit "IZODOM"	Annex B8 page 1/4
Detail: MCFU elements Joint at corners of external walls, 150mm concrete core	

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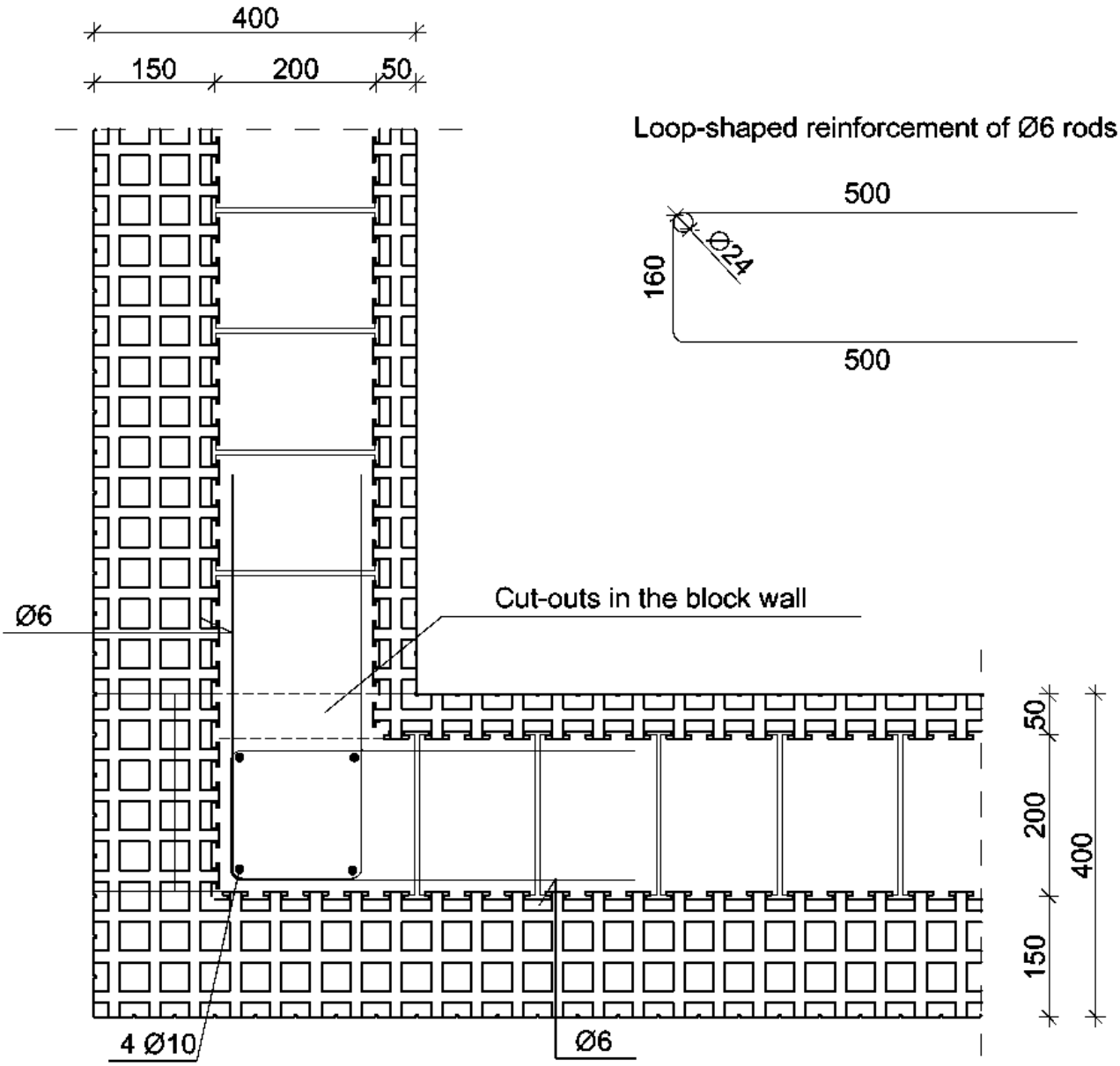
Corner connection between MCFU external walls with a 200mm concrete core



NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	
Detail: MCFU elements Joint at corners of external walls, 200mm concrete core	Annex B8 page 2/4

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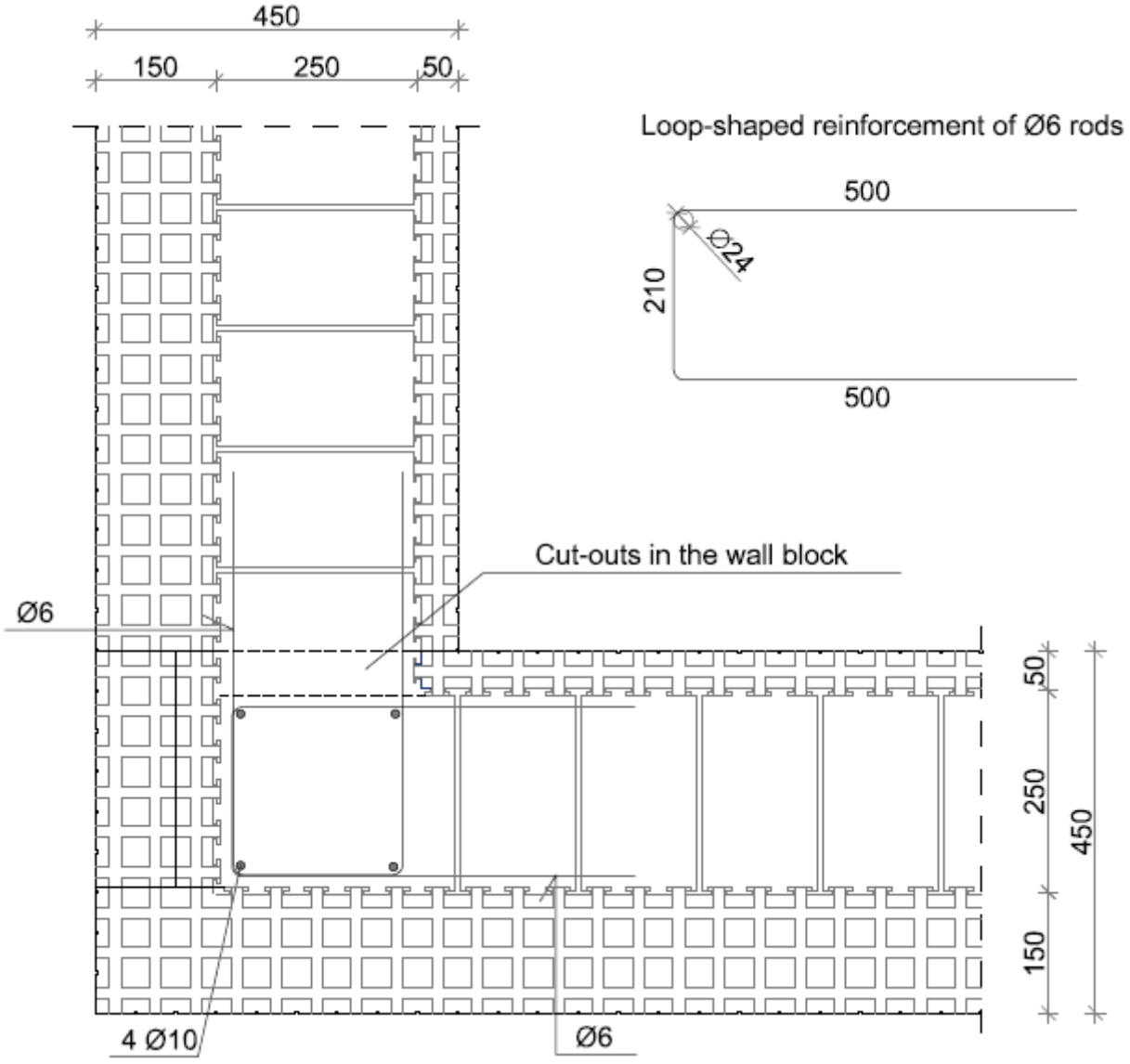
Corner connection between MCFU external walls with a 250mm concrete core



NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B8 page 3/4
Detail: MCFU elements Joint at corners of external walls, 250mm concrete core	

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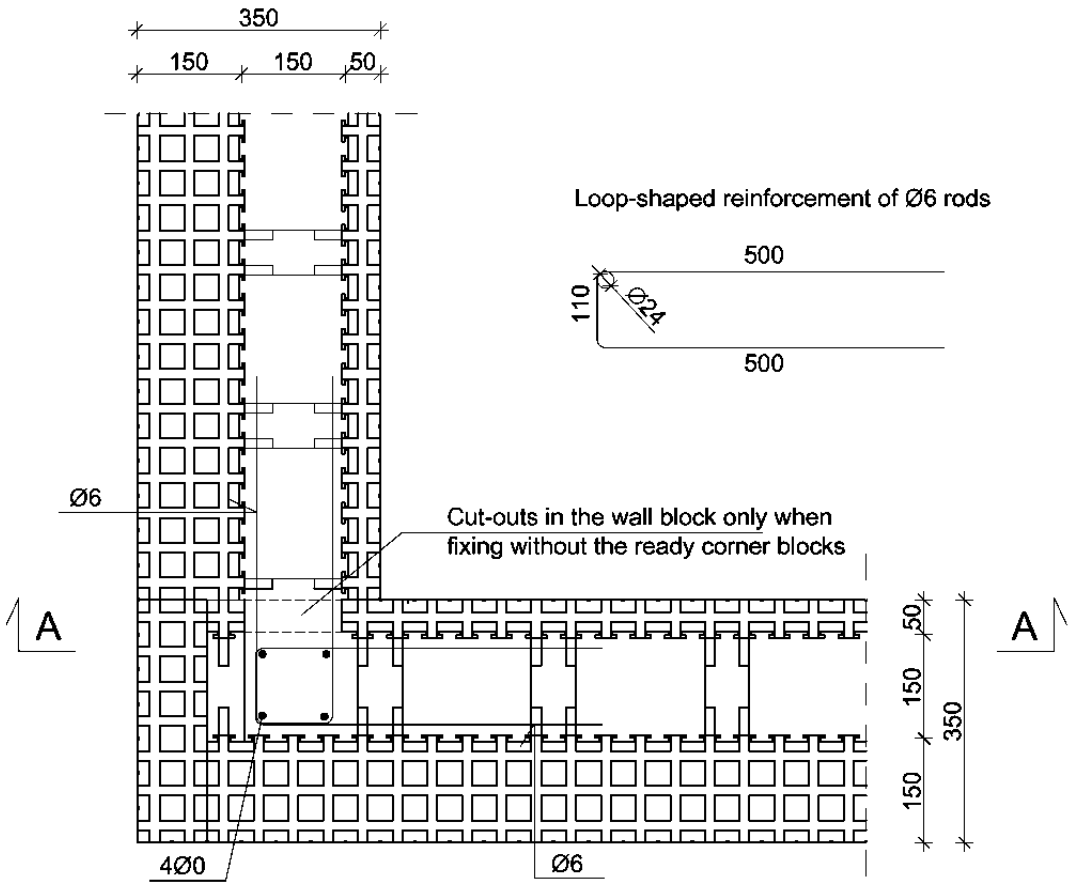
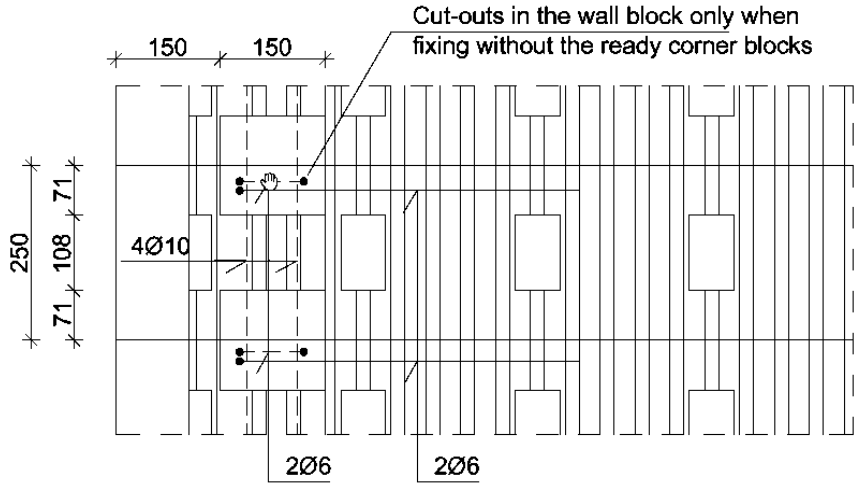
Corner connection between MC external walls with a 150mm concrete core



SECTION A-A

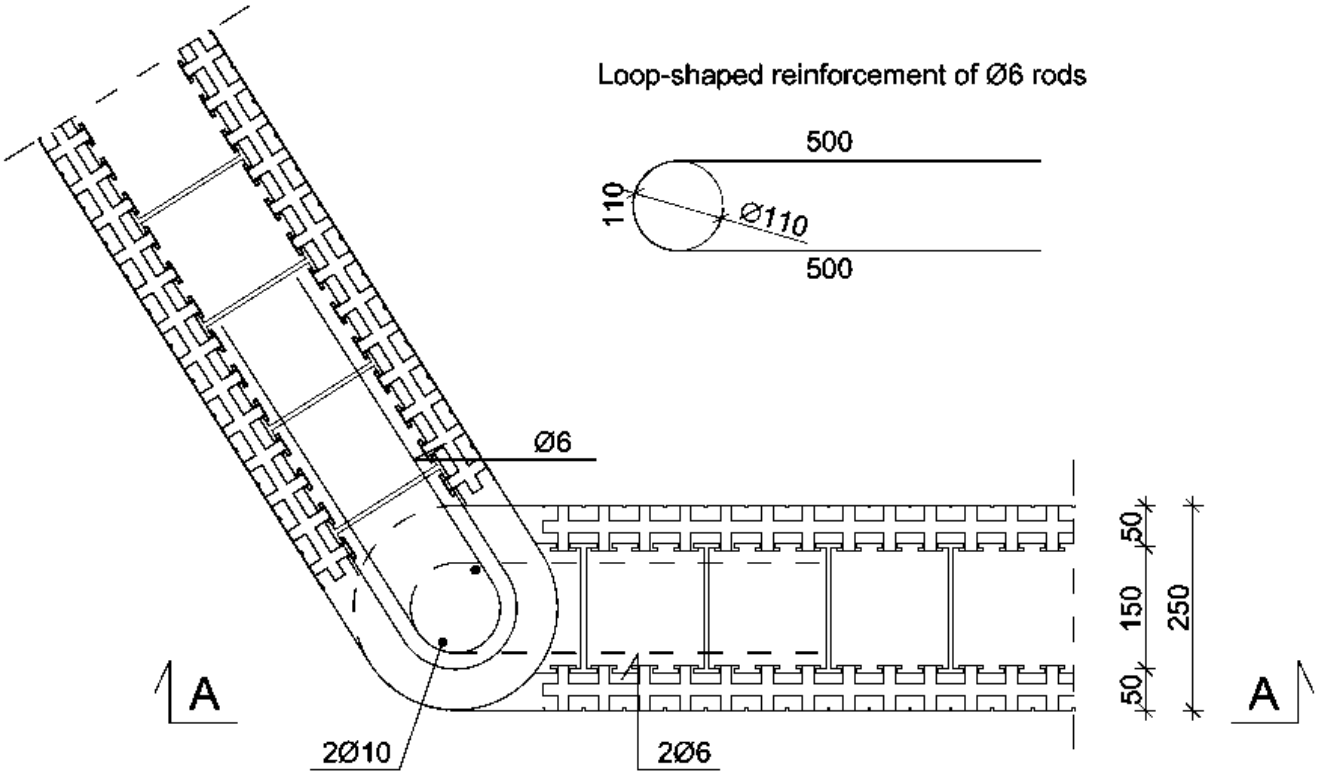


Sketches not to scale
All dimensions in mm

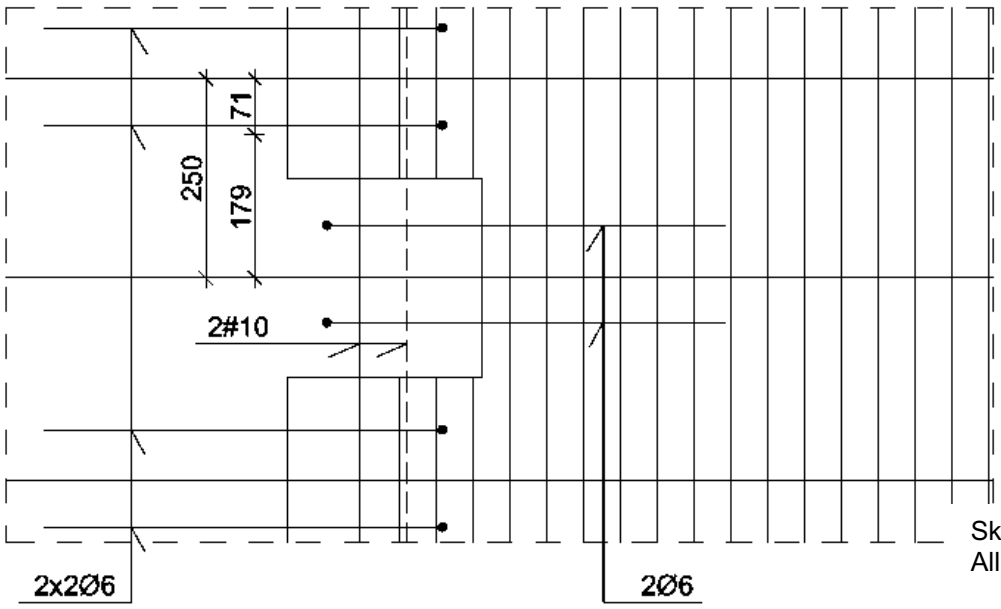
NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.
Assembly of reinforcement for ready-made and "assembled on site" corners is identical.

Permanent shuttering kit "IZODOM"	Annex B8 page 4/4
Detail: MC Elements' Joint at corners of external walls, 150mm concrete core	

Corner connection between external walls at any angle



SECTION A-A



Sketches not to scale
All dimensions in mm

NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.

Permanent shuttering kit "IZODOM"	Annex B9
Detail: System 'IZOBasic' External Walls: Joint at corners of any angle	

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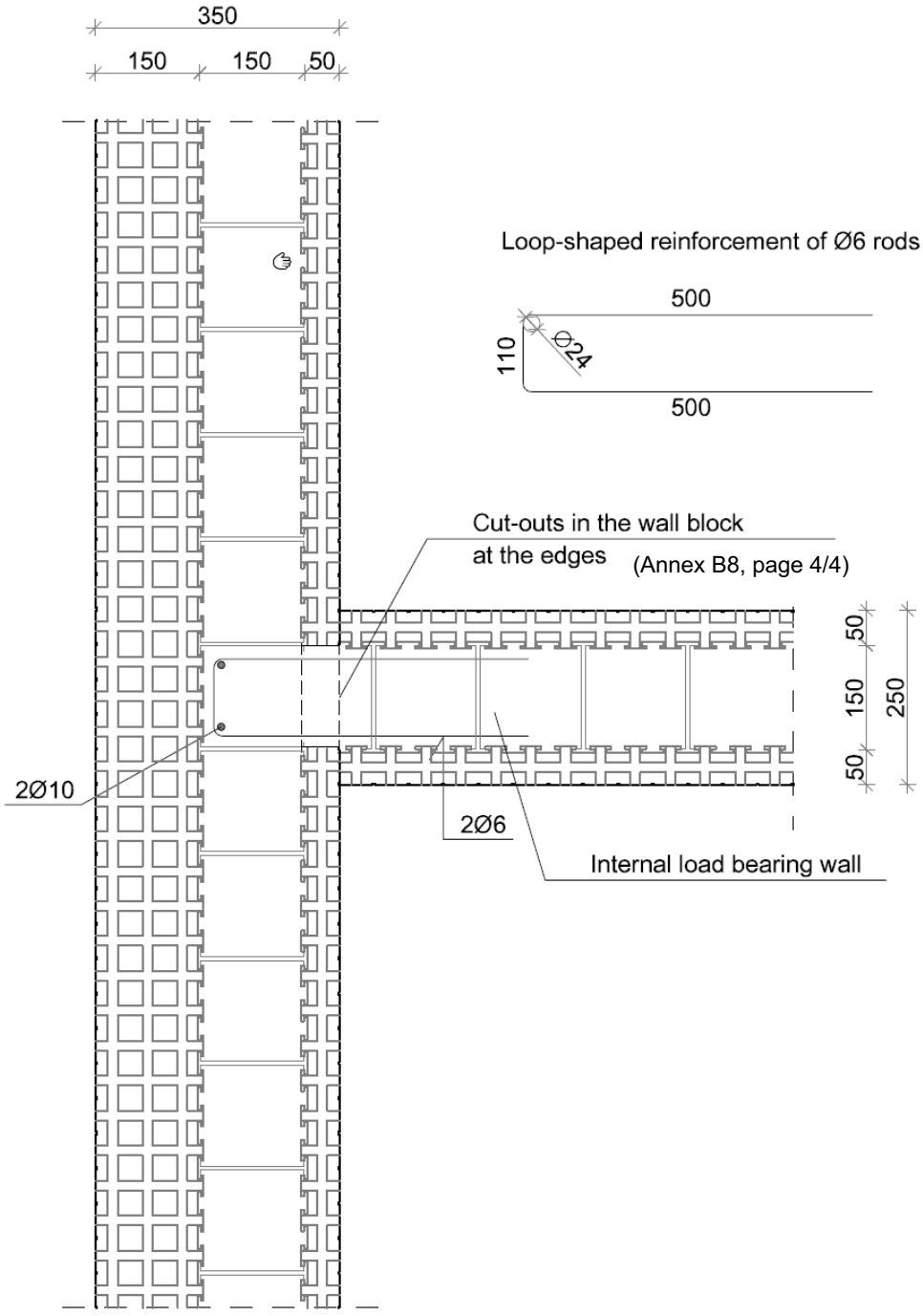
Connection of the MCFU external (150mm concrete core) to an internal load-bearing wall



NOTICE: loop-shaped reinforcement bars of ⌀6mm shall be placed at each EPS layer.

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B10 page 1/2
Detail: MCFU Elements Joint of external wall with internal load-bearing wall	

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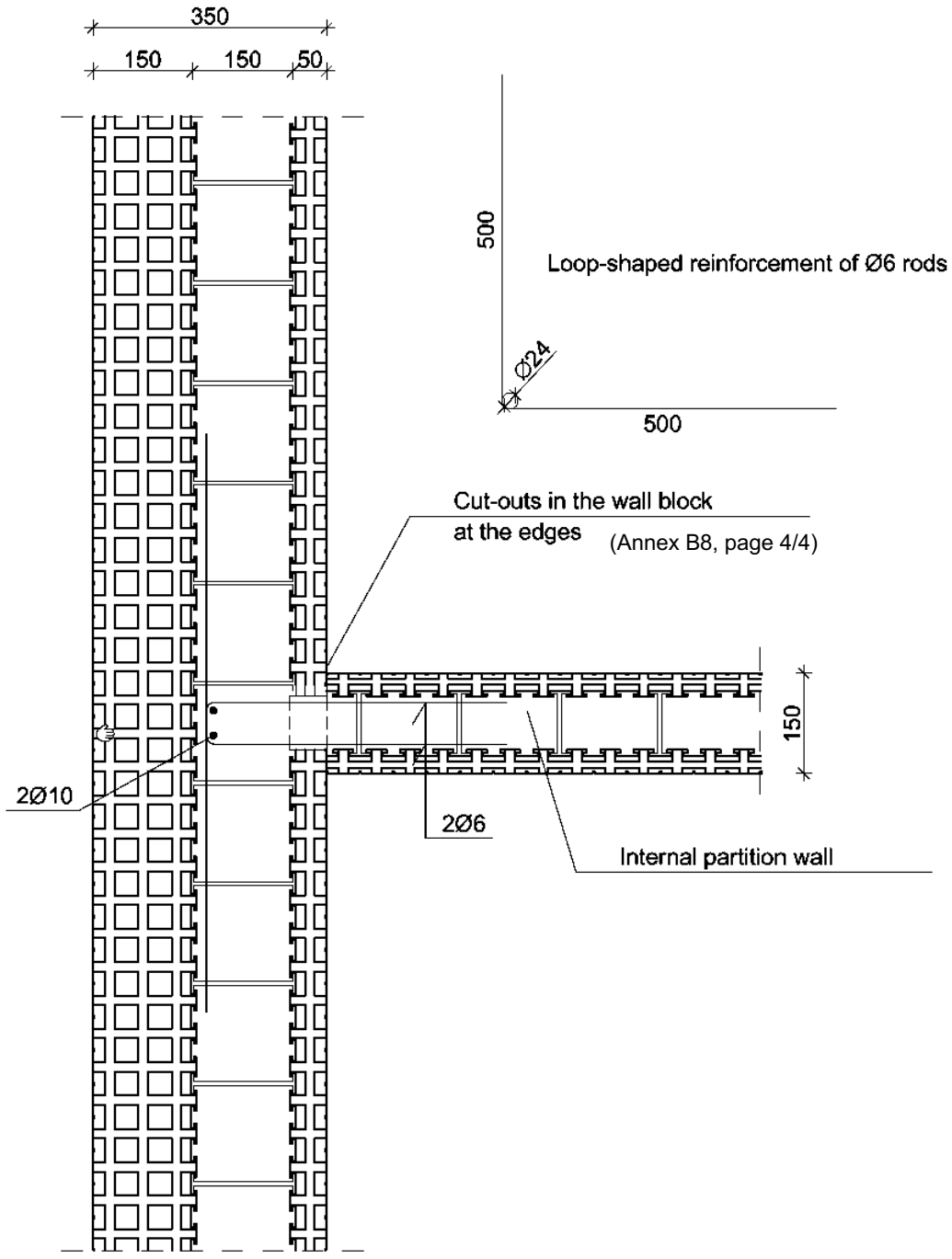
Connection of the MCFU external (150mm concrete core) to an internal partition wall

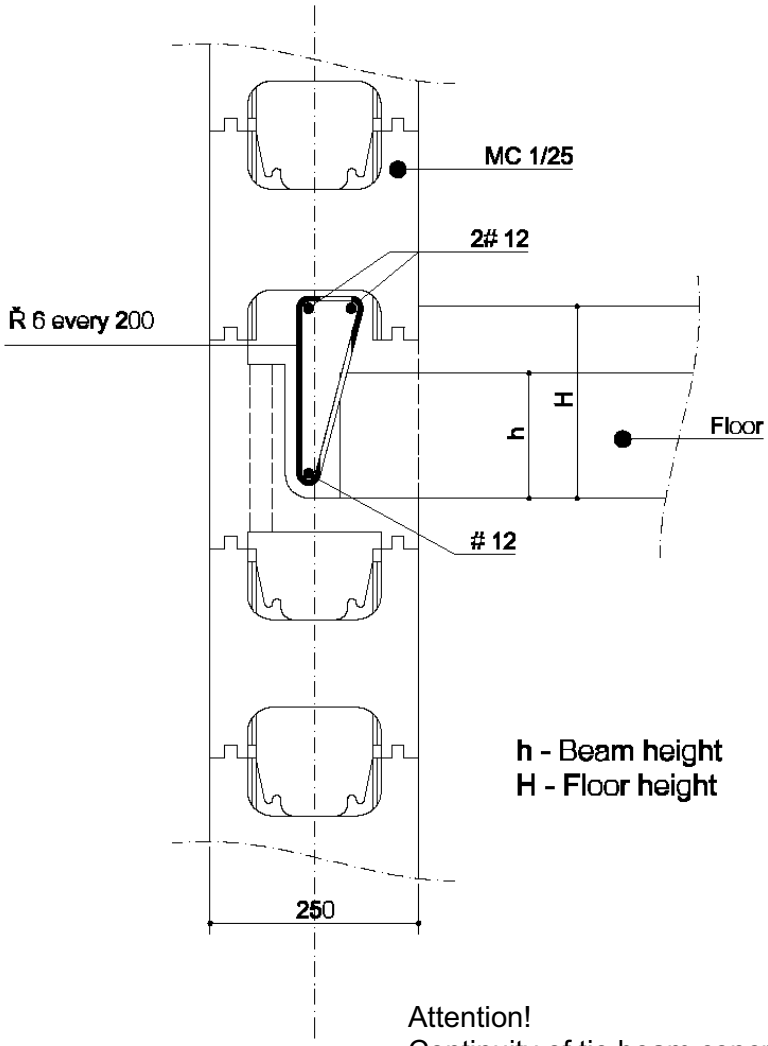


NOTICE: reinforcement bars of ⌀6mm shall be placed at each EPS layer.

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B10 page 2/2
Detail: MCFU Elements Joint of external wall with internal partition wall	

Example: Tie Beam reinforcement



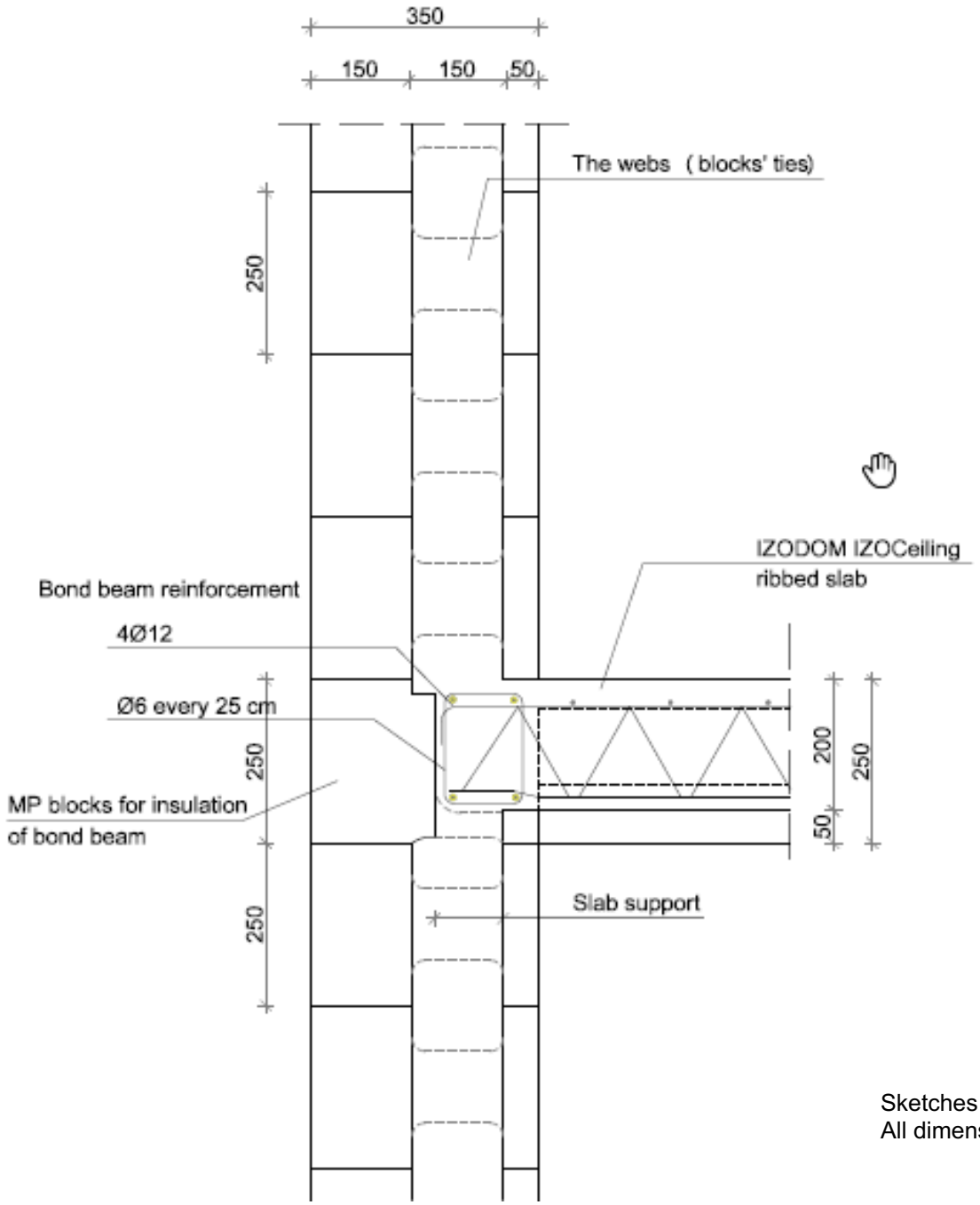
Attention!
Continuity of tie beam concrete and
longitudinal reinforcement must be ensured

Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B11 page 1/5
tie beam detail: System 'IZOBasic' reinforcement	

Example: Tie Beam reinforcement

MC concrete wall, 150mm concrete core
with *MP insulation block* at ceiling height (example IZOCeiling IZODOM)



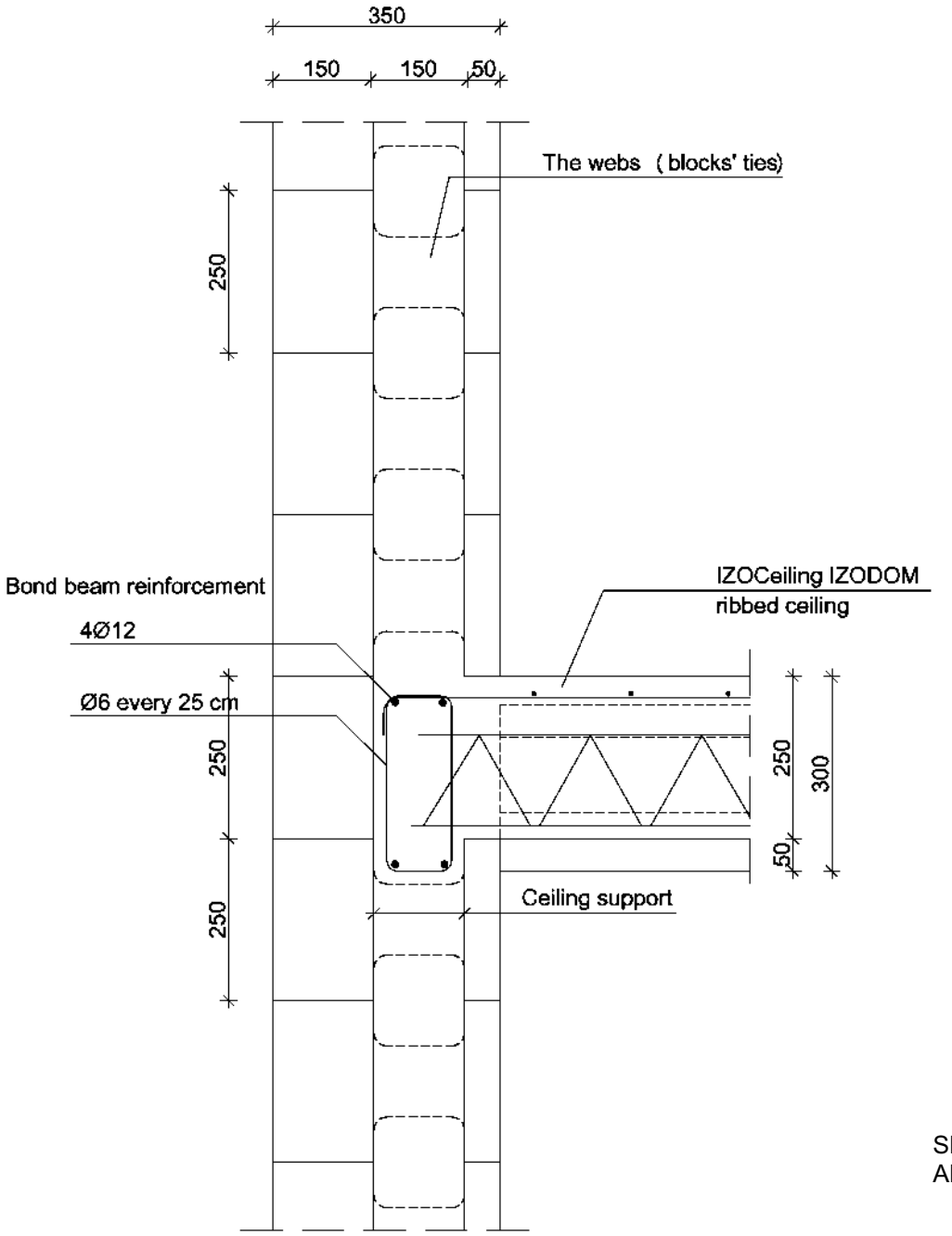
Sketches not to scale
All dimensions in mm

NOTICE: The continuity of the longitudinal reinforcement of the tie beam (bond beam) 4⌀12 must be maintained. Depth of slab support in accordance with the manufacture's recommendations. The eccentricity caused by incomplete support of the floor has to be taken account for when designing. Also, support for a monolithic ceiling should be implemented. In the case of partial restraint of the slab top reinforcement shall be used.

Permanent shuttering kit "IZODOM"		Annex B11 page 2/5
tie beam detail	MC wall, 150mm concrete core insulation with MP insulation block	

Example: Tie Beam reinforcement

MC concrete wall, 150mm concrete core
with *external insulation* of the beam at ceiling height (example IZOCeiling IZODOM)



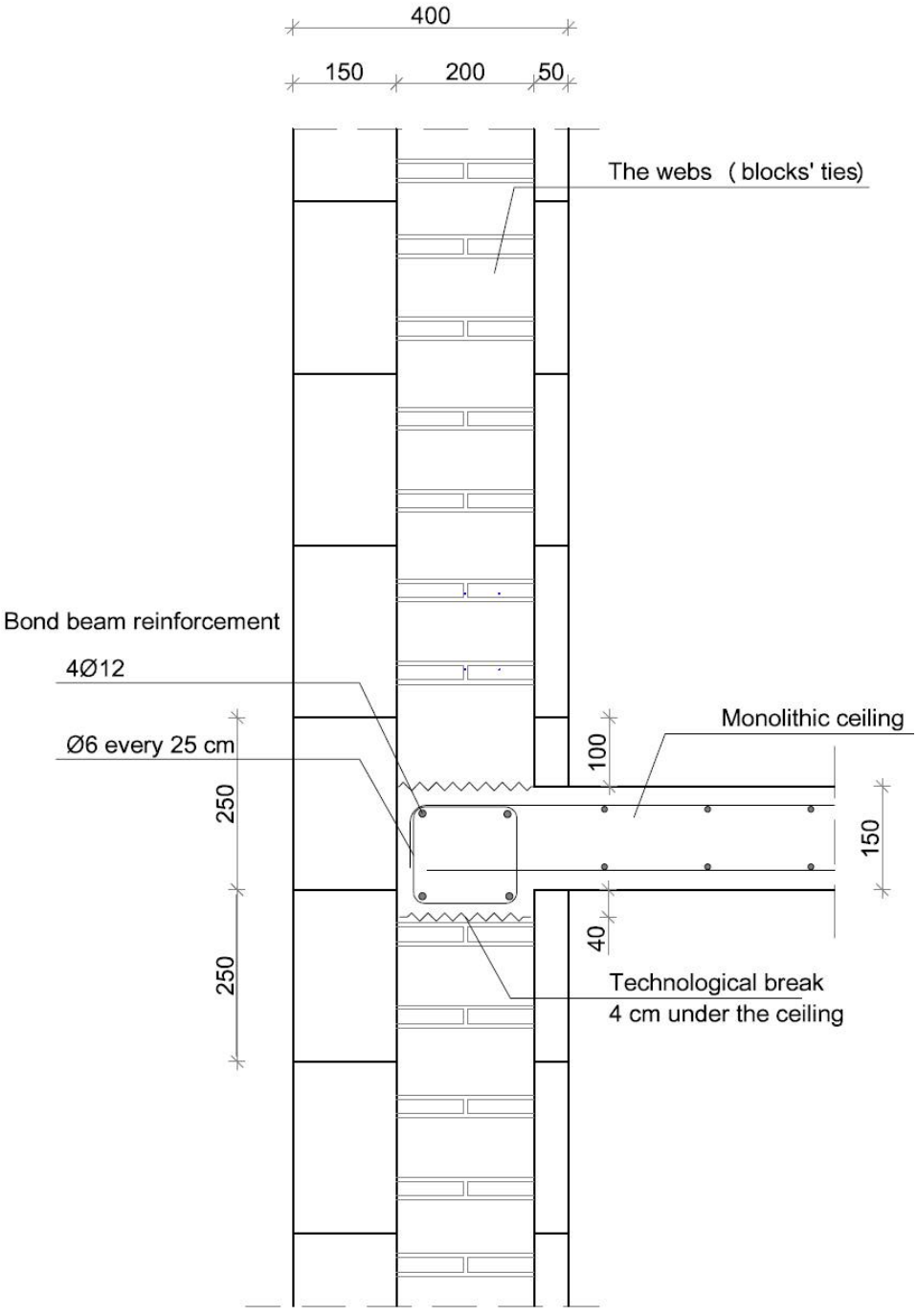
Sketches not to scale
All dimensions in mm

NOTICE: The continuity of the longitudinal reinforcement of the tie beam (bond beam) 4⌀12 must be maintained.
Depth of slab support in accordance with the manufacture's recommendations.
Also, support for a monolithic ceiling should be implemented.
In the case of partial restraint of the slab top reinforcement shall be used.

Permanent shuttering kit "IZODOM"	Annex B11 page 3/5
tie beam detail — MC wall, 150cm concrete core external insulation	

Example: Tie Beam reinforcement

MCFU concrete wall, 200mm concrete core
monolithic ceiling (example)



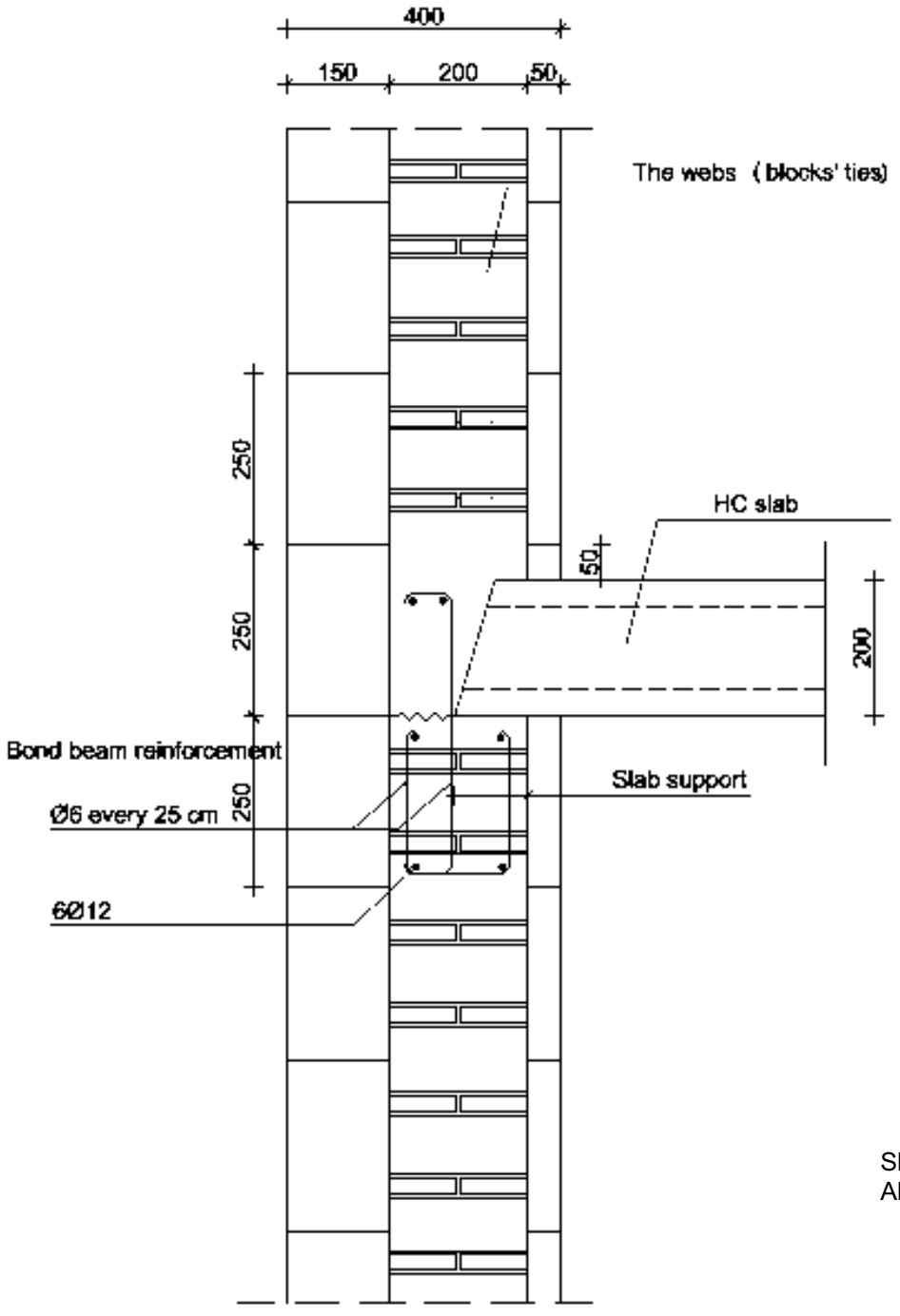
Sketches not to scale
All dimensions in mm

NOTICE: The continuity of the longitudinal reinforcement of the tie beam (bond beam) 4ᘐ12 must be maintained.

Permanent shuttering kit "IZODOM"	Annex B11 page 4/5
tie beam detail — MCFU wall, 200cm concrete core monolithic ceiling	

Example: Tie Beam reinforcement

MCFU concrete wall, 200mm concrete core
HC slab (example)



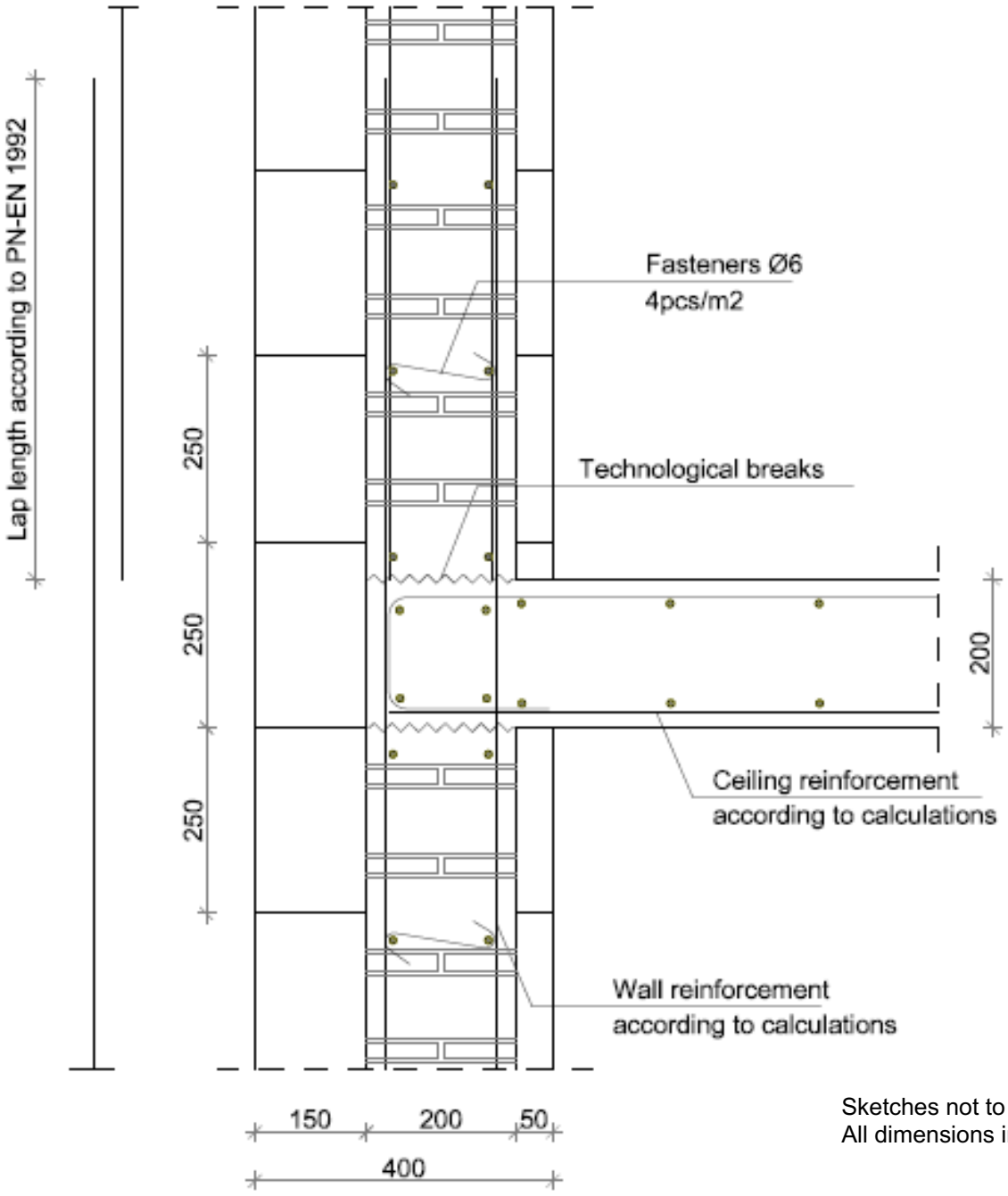
Sketches not to scale
All dimensions in mm

NOTICE: The continuity of the longitudinal reinforcement of the tie beam (bond beam) 6⌀12 must be maintained.
Depth of slab support according to structural design and the manufacture's recommendations .
Ceiling Reinforcement in according to structural design and the recommendations of the ceiling manufacturer.

Permanent shuttering kit "IZODOM"		Annex B11 page 5/5
tie beam detail	MCFU wall, 200cm concrete core HC slab	

monolithic ceiling support

MCFU concrete wall, 200mm concrete core
monolithic concrete slab



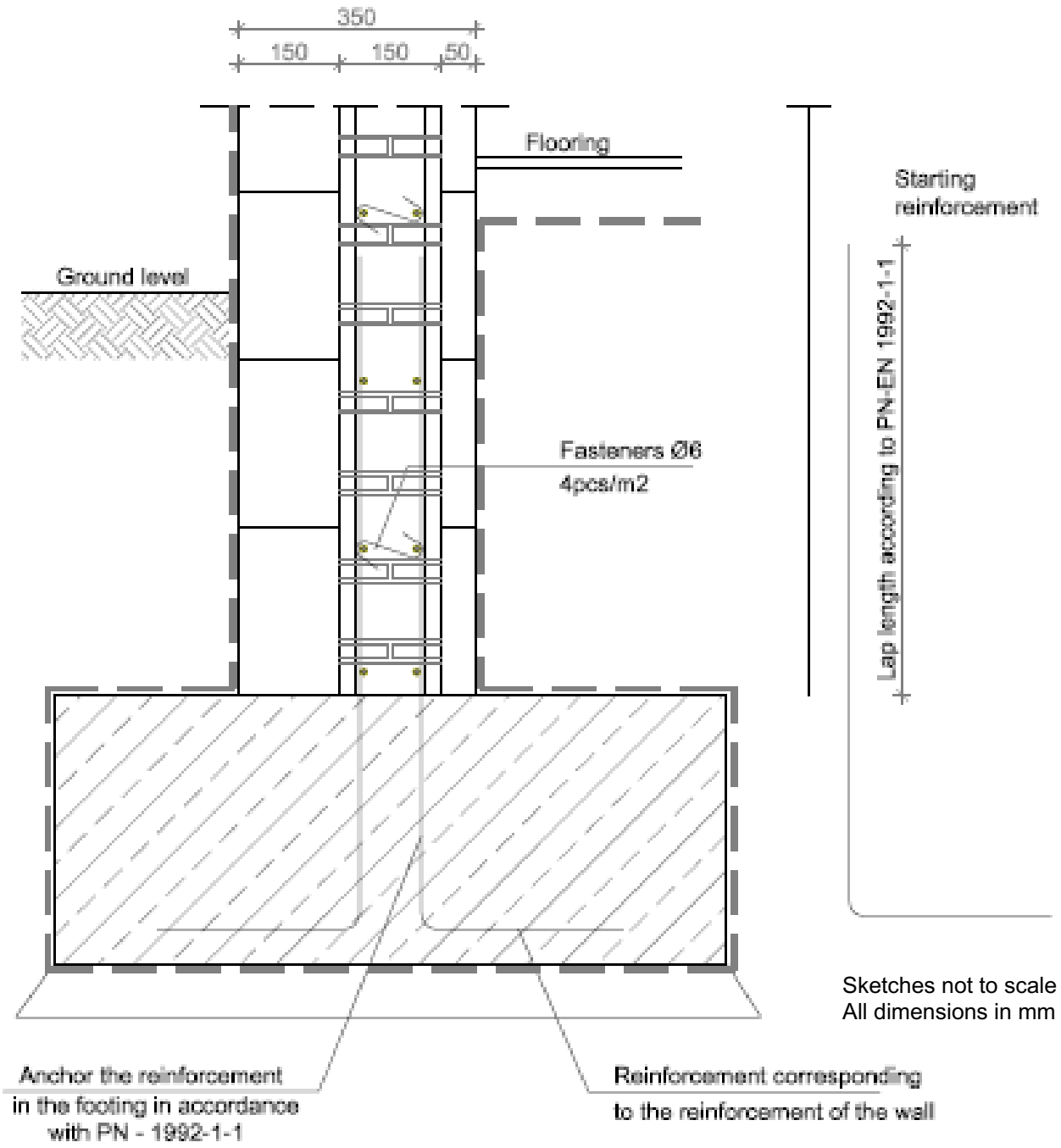
Sketches not to scale
All dimensions in mm

NOTICE: Vertical reinforcement bars of the reinforced concrete wall and ceiling according to structural design. In the case of MC walls the connection of the walls shall be done accordingly, adjusting the location of the horizontal bars to the location of the block webs..

Permanent shuttering kit "IZODOM"	Annex B12
monolithic ceiling support	

Example: connection to strip foundation

MCFU concrete wall, 150mm concrete core

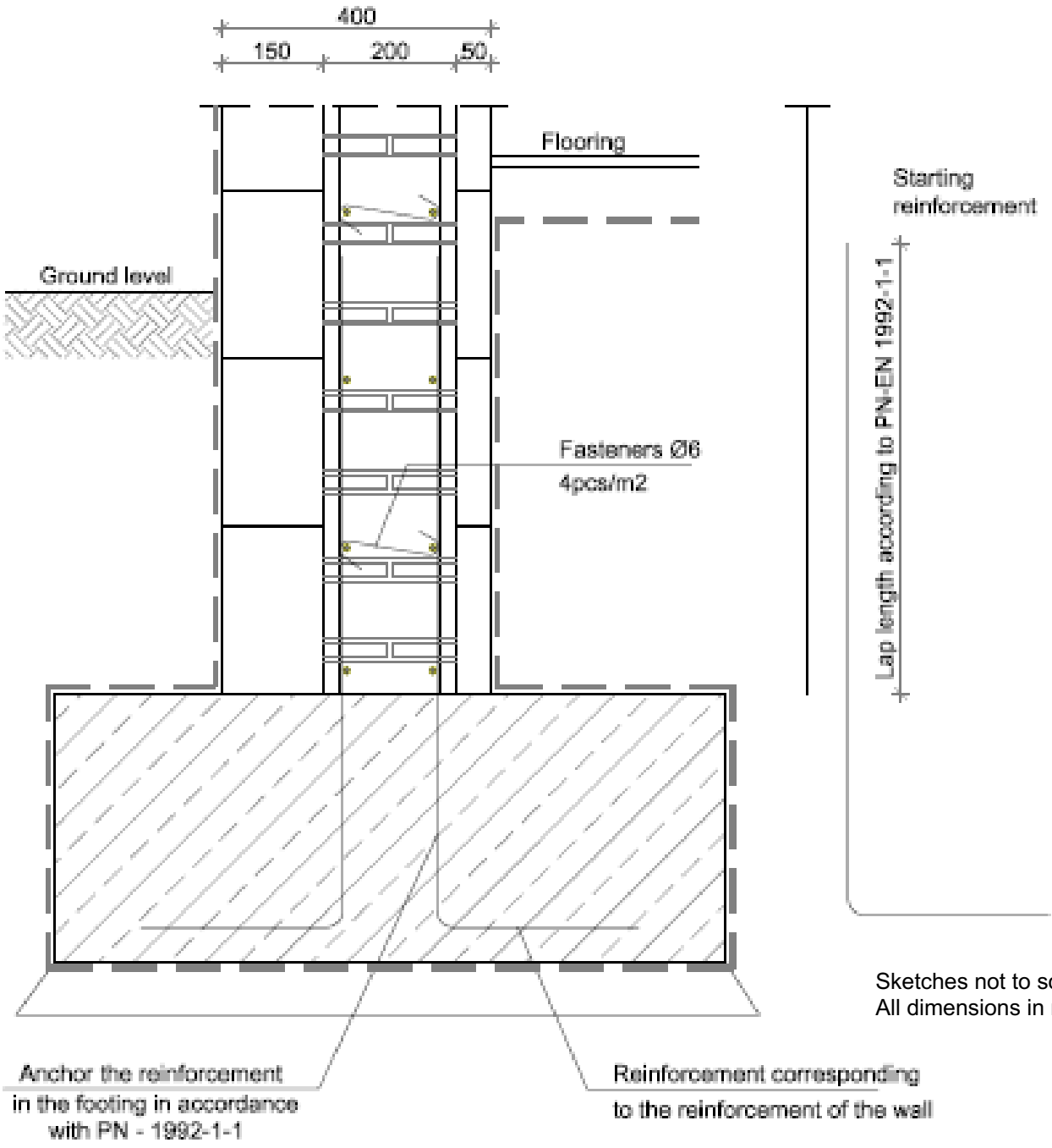


NOTICE: Vertical reinforcement of the reinforced concrete wall according to structural design.
In the case of MC walls, the connection of the walls shall be done in a similar way, adjusting the location of the horizontal bars to the positioning of the block ties.
The footing width should be chosen taking into account the partial restraint of the wall.

Permanent shuttering kit "IZODOM"	Annex B13 page 1/2
example strip foundation, MCFU wall, concrete core 150mm	

Example: connection to strip foundation

MCFU concrete wall, 200mm concrete core

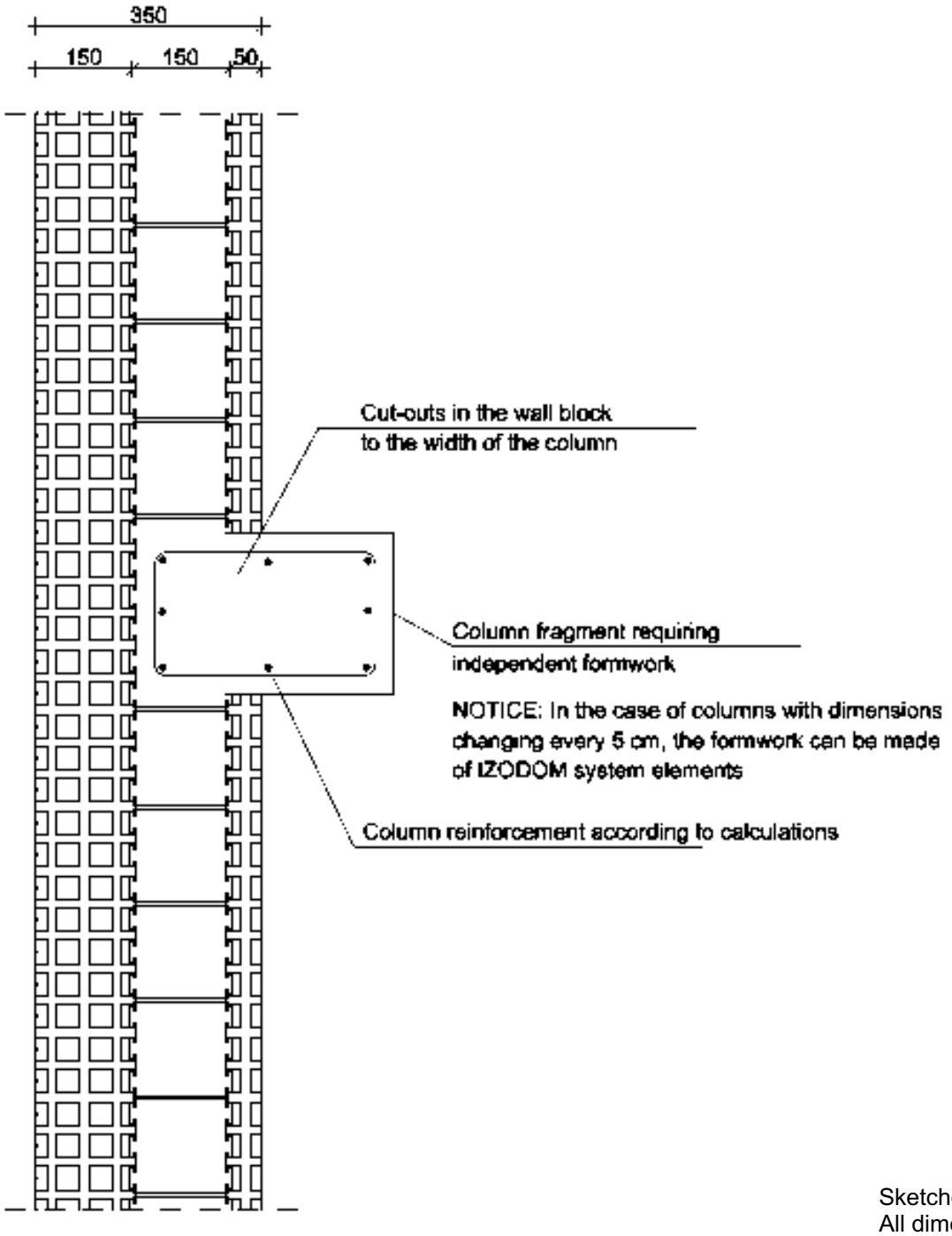


NOTICE: Vertical reinforcement of the reinforced concrete wall according to structural design.
In the case of MC walls, the connection of the walls shall be done in a similar way, adjusting the location of the horizontal bars to the positioning of the block ties.
The footing width should be chosen taking into account the partial restraint of the wall.

Permanent shuttering kit "IZODOM"	Annex B13 page 2/2
example strip foundation, MCFU wall, concrete core 200mm	

Example: reinforced concrete column, buttress

MCFU concrete wall, 150mm concrete core



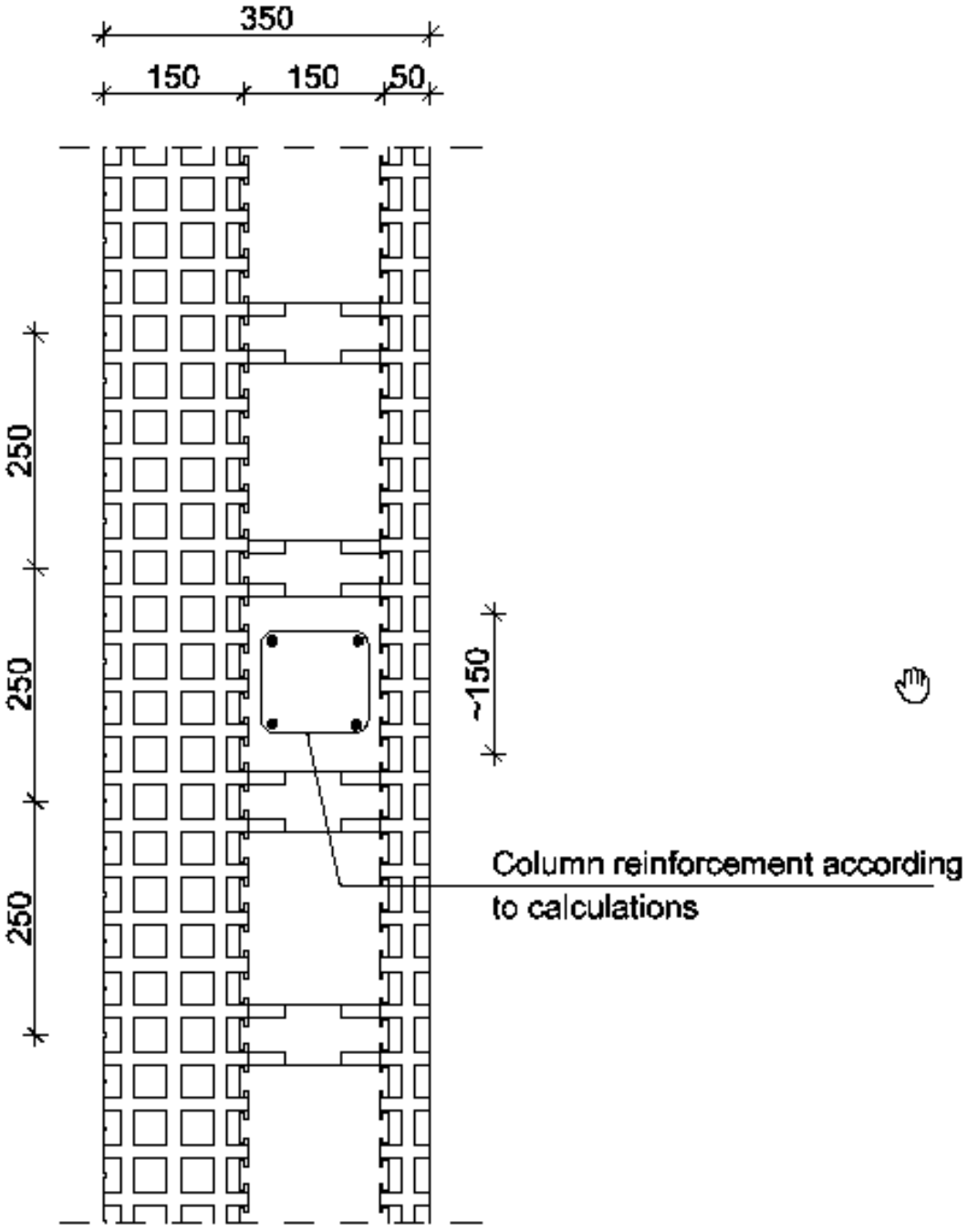
Sketches not to scale
All dimensions in mm

NOTICE: Starter bars of column reinforcement shall be anchored in foundations.

Permanent shuttering kit "IZODOM"	Annex B14 page 1/3
example reinforced concrete column (buttress)	MFCU concrete wall 150mm concrete core

Example: reinforced concrete column

MC external concrete wall, 150mm concrete core



Sketches not to scale
All dimensions in mm

NOTICE: Starter bars of column reinforcement shall be anchored in foundations.
Column design according to local design codes.

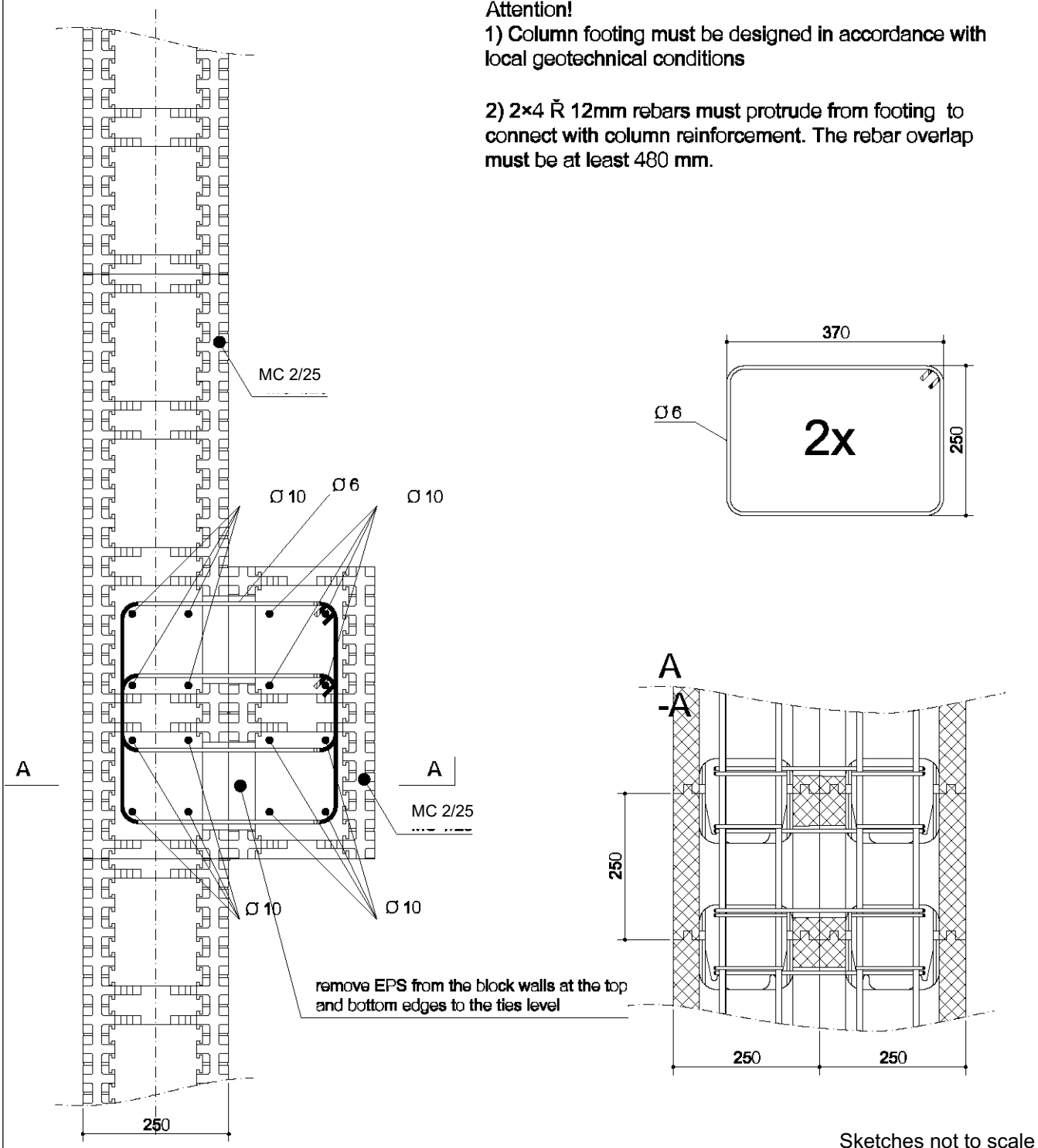
Permanent shuttering kit "IZODOM"	Annex B14 page 2/3
example reinforced concrete column MC concrete wall 150mm concrete core	

Example: reinforced concrete column

MC external concrete wall, 150mm concrete core

Attention!
1) Column footing must be designed in accordance with local geotechnical conditions

2) 2×4 Ř 12mm rebars must protrude from footing to connect with column reinforcement. The rebar overlap must be at least 480 mm.

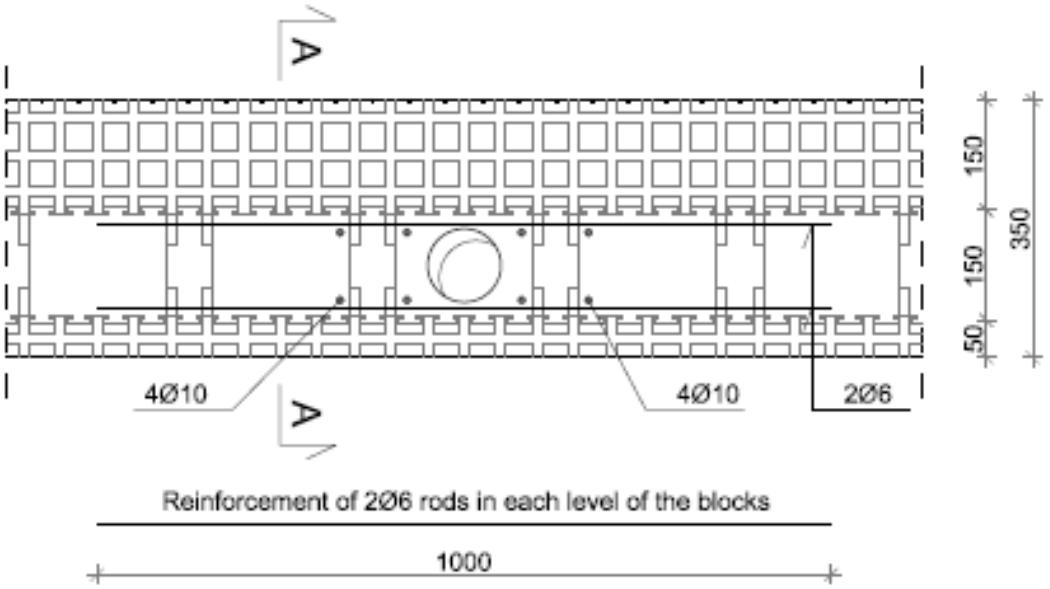


Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	
Detail: System 'IZOBasic' Reinforcement of a pilaster	Annex B14 page 3/3

Example: Reinforcement layout at installations risers

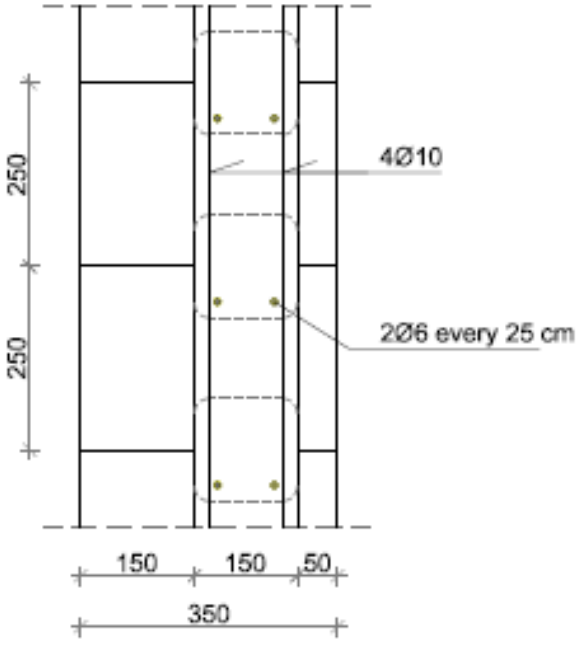
MC concrete wall, 150mm concrete core



Reinforcement of 2Ø6 rods in each level of the blocks

1000

A-A Cross-section

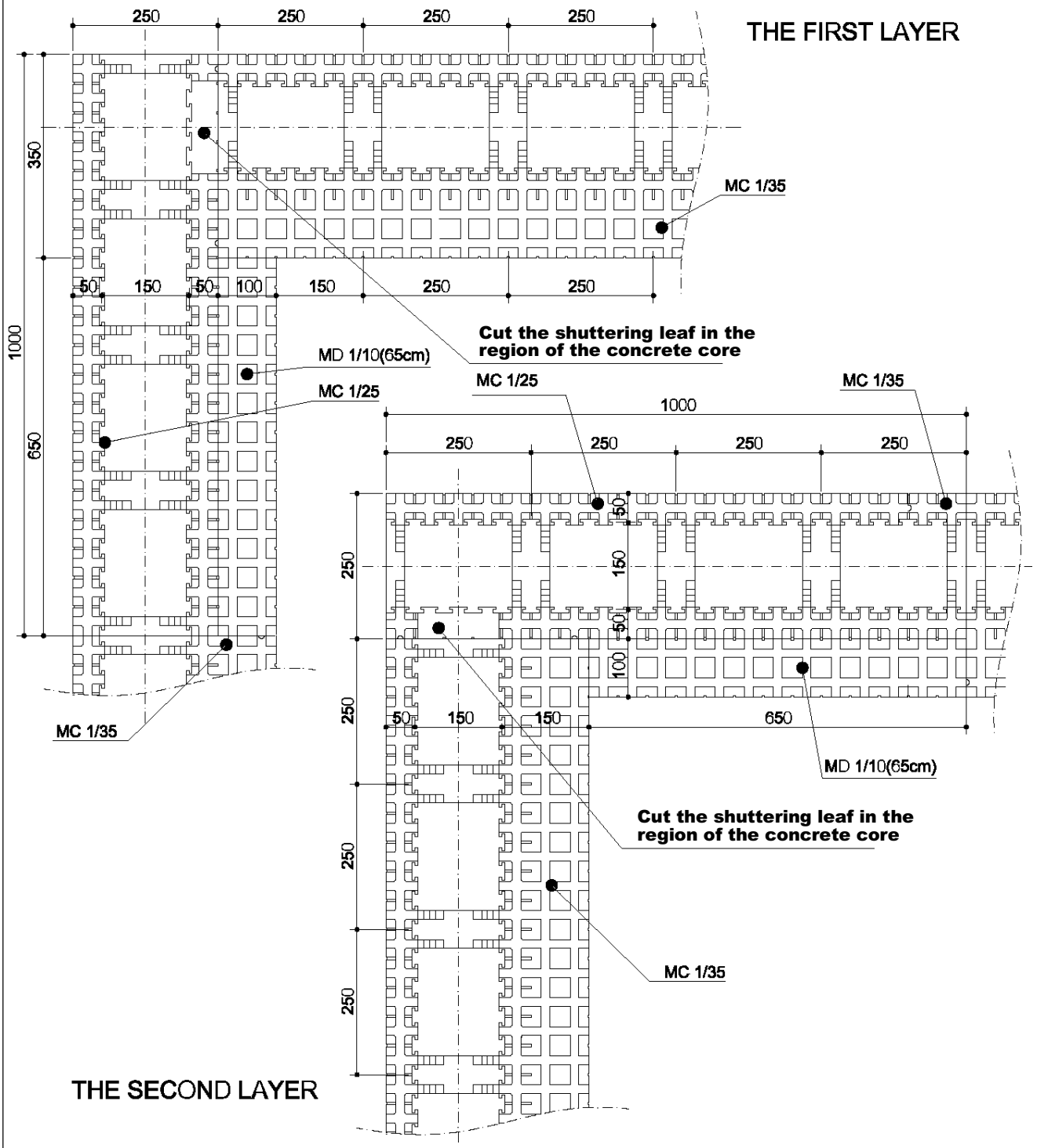


Sketches not to scale
All dimensions in mm

NOTICE: Longitudinal reinforcement bars 2⌀6 shall be placed at each element layer. When using MCFU Elements this shall be done accordingly.

Permanent shuttering kit "IZODOM"	Annex B15
Detail: System 'IZOBasic' Reinforcement at installation conduit	

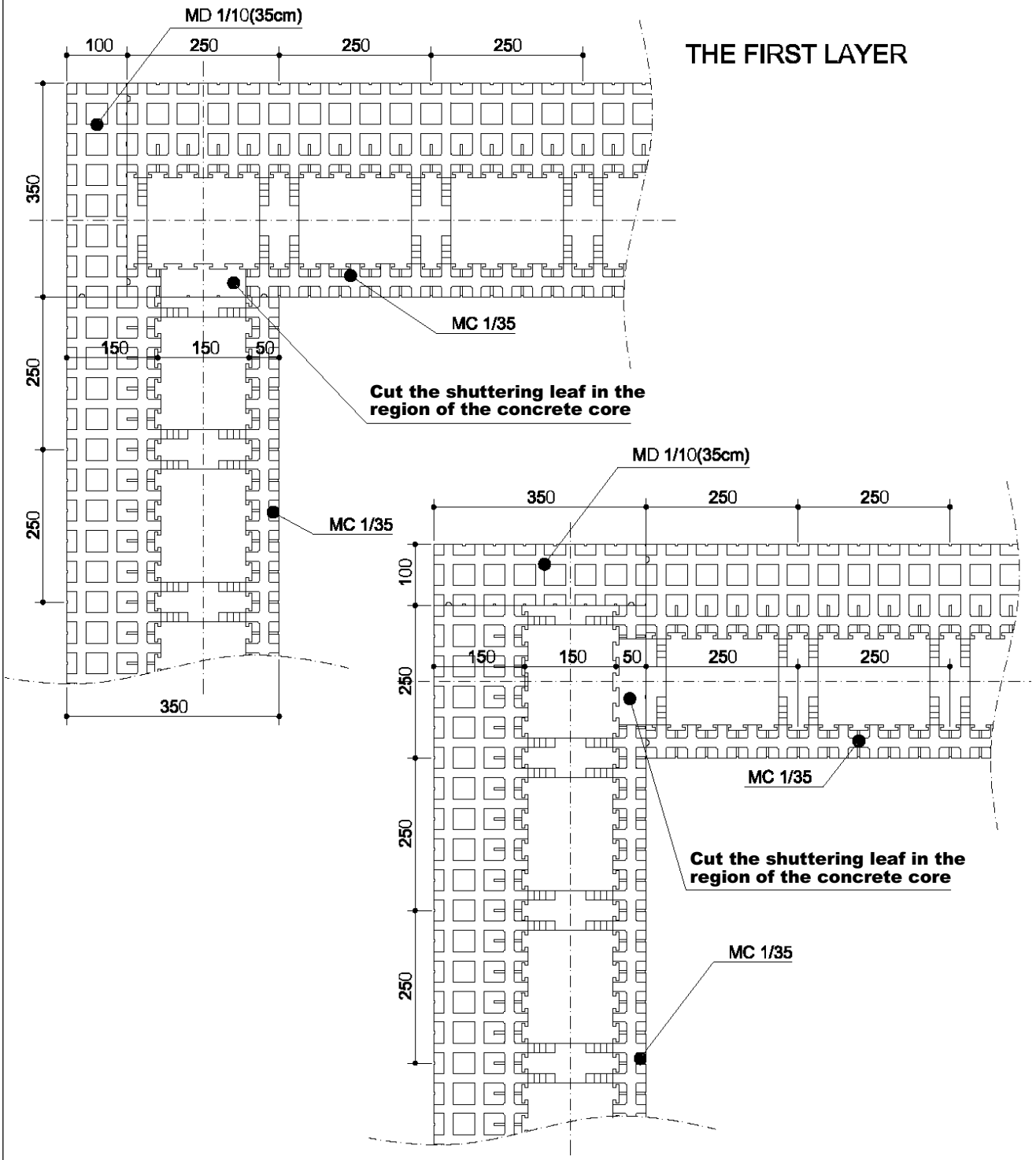
Example: IZOEnergy – 35cm wall, insulation inside



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B16
DETAIL: System 'IZOEnergy' Inside corner for a wall with 35cm thickness	

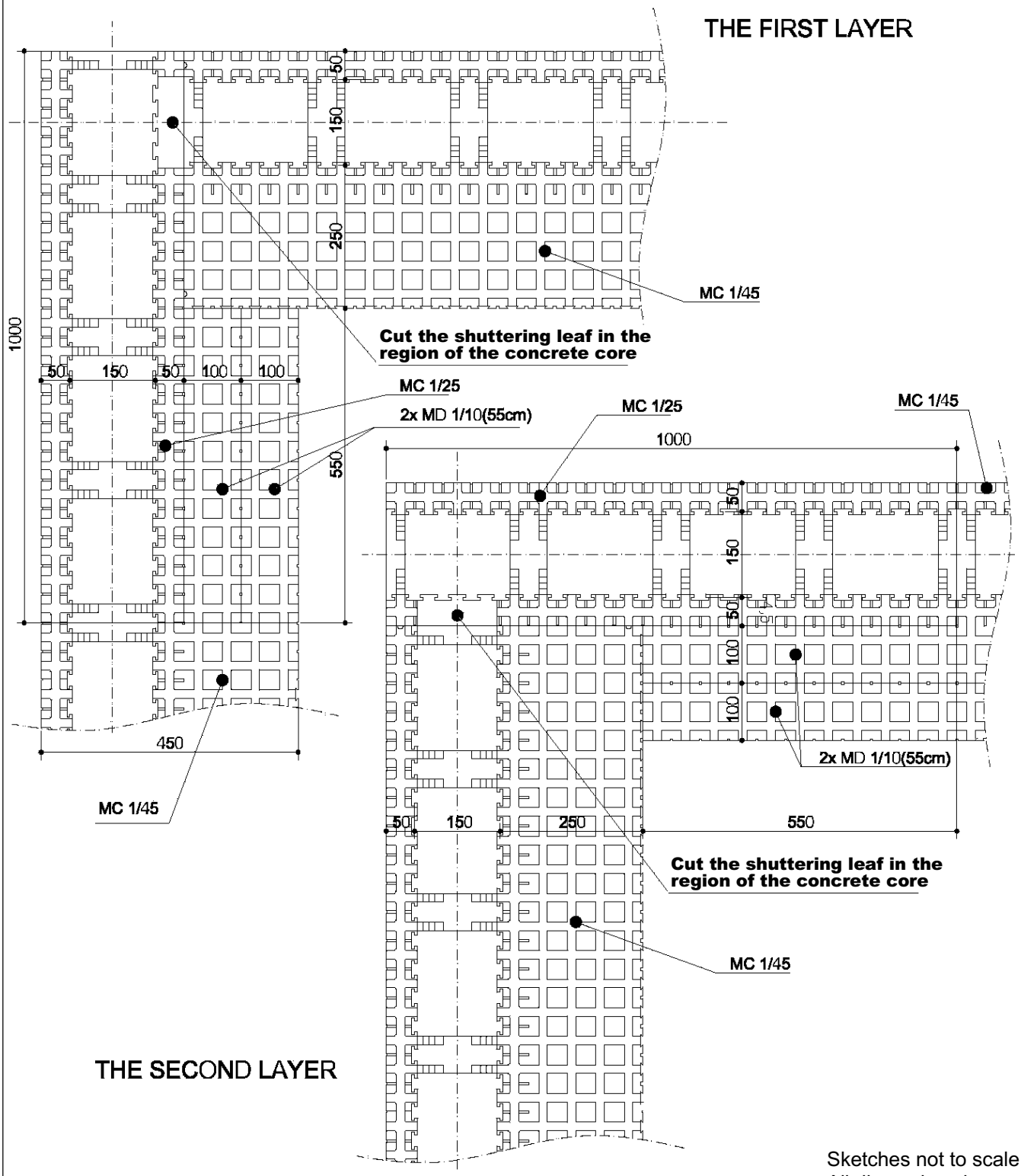
Example: IZOEnergy – 35cm wall, insulation outside



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B17
DETAIL: System 'IZOEnergy' outside corner for a wall with 35cm thickness	

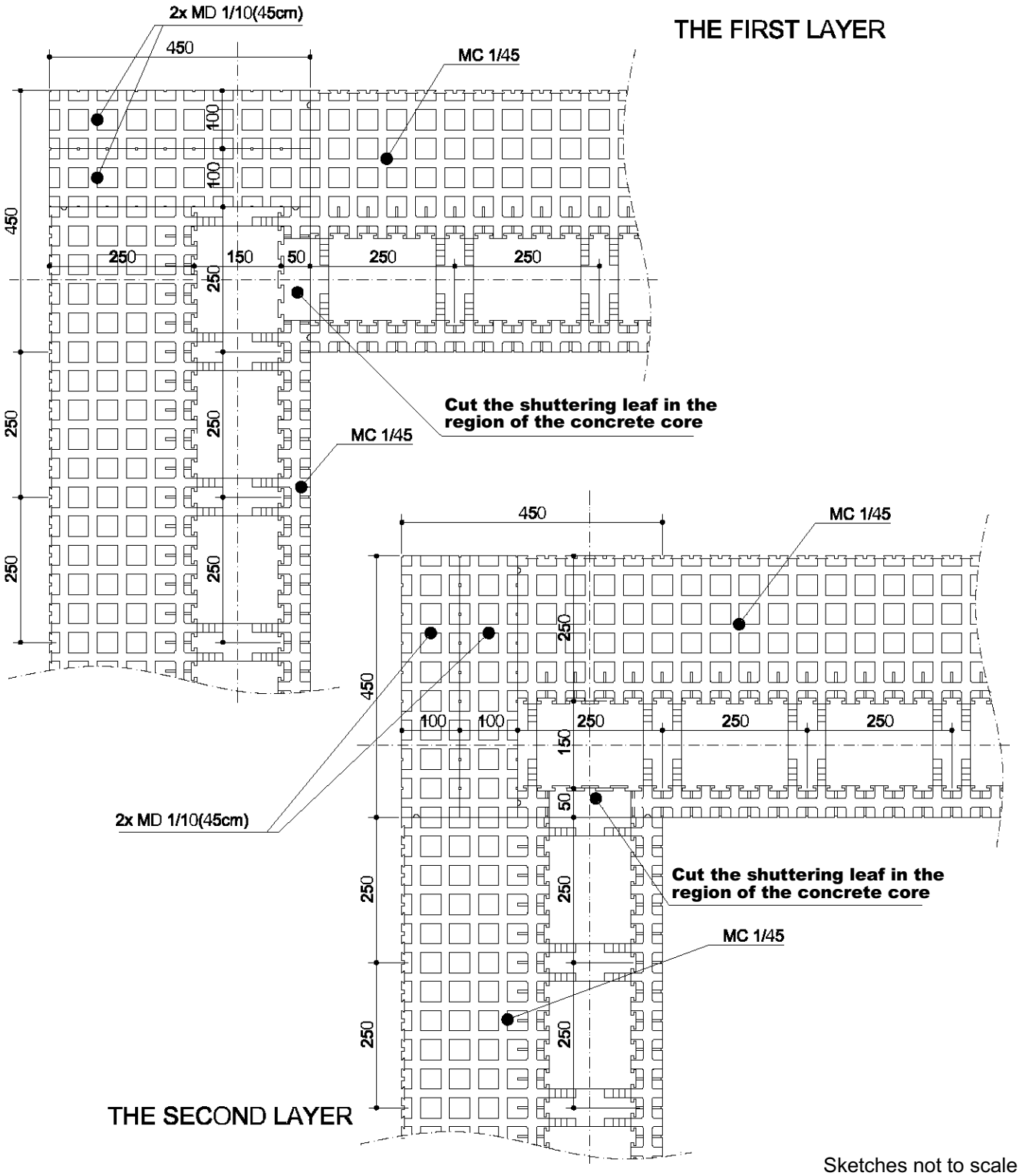
Example: IZOPassive – 45cm wall, insulation inside



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B18
DETAIL: System 'IZOPassive' Inside corner for a wall with 45cm thickness	

Example: IZOPassive – 45cm wall, insulation outside

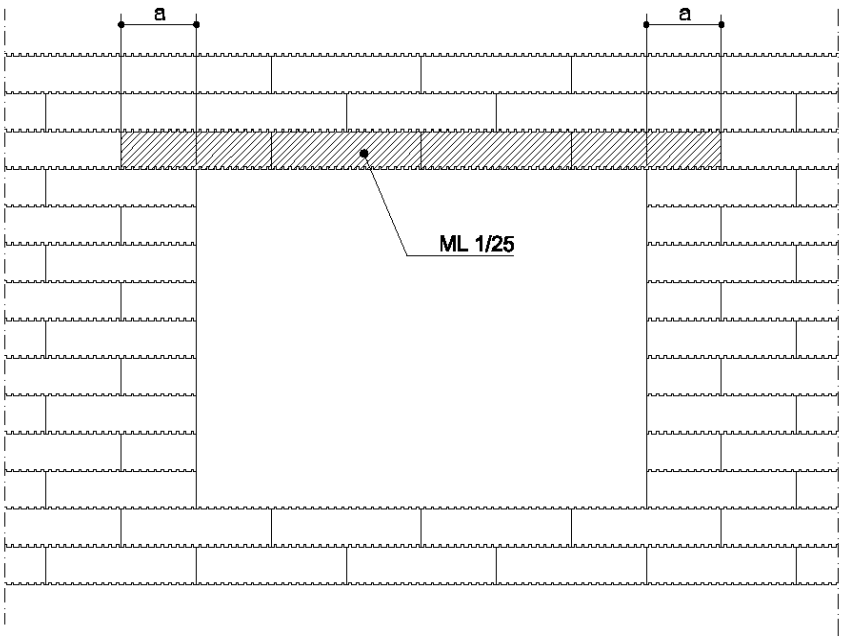


Sketches not to scale
All dimensions in mm

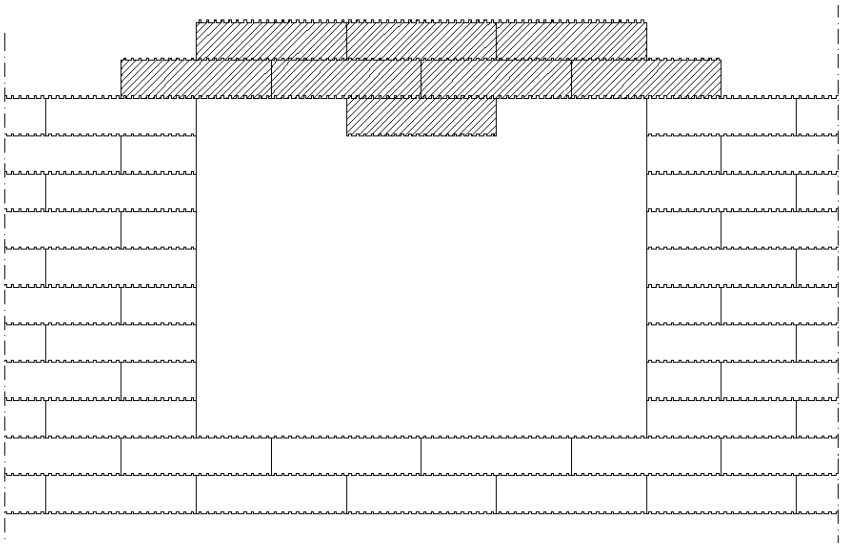
Permanent shuttering kit "IZODOM"	Annex B19
DETAIL: System 'IZOPassive' Outside corner for a wall with 45cm thickness	

Example: method of making door and window openings

HEADER BLOCK LOCATION DIAGRAM ML 1/25



TEMPORARY (PROVISIONAL) PLACEMENT OF THE BLOCKS
FOR THE SAKE OF DIMENSIONAL ACCURACY IN THE WINDOWS WITHOUT HEADERS



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B20
Detail: Diagram of placing blocks in the wall and method of making door and window openings	

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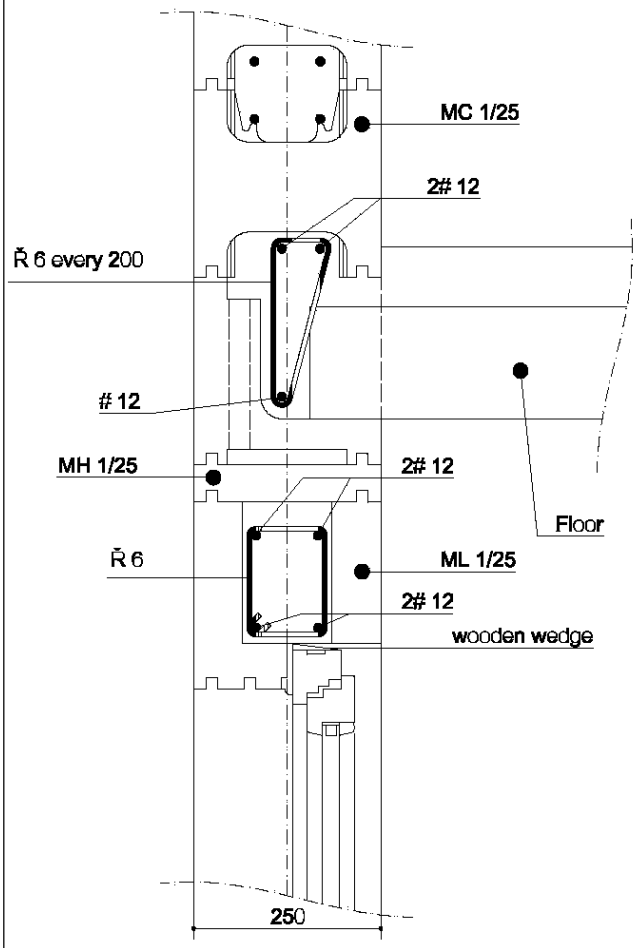
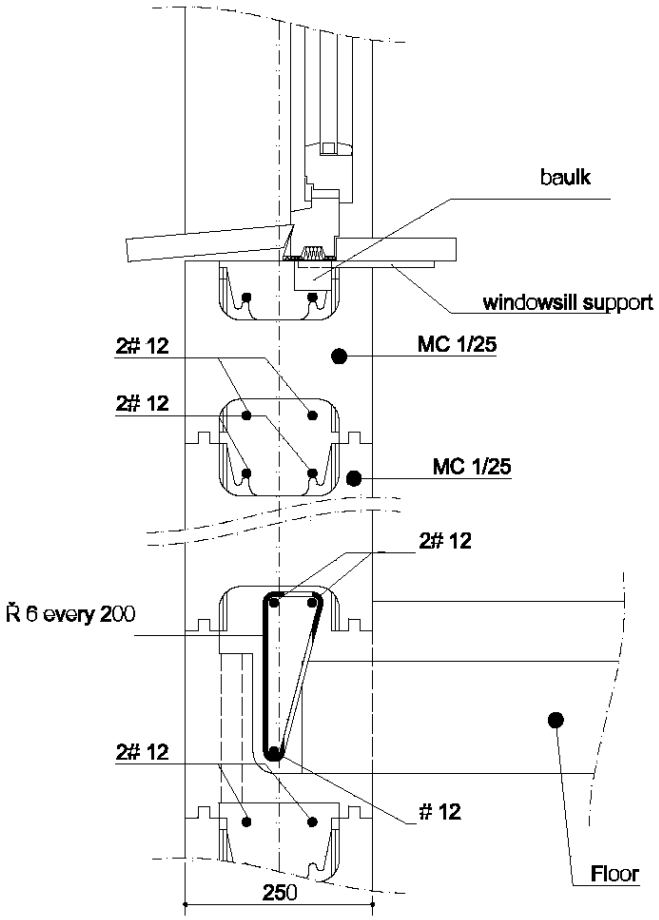
Detail: Fixing of windows

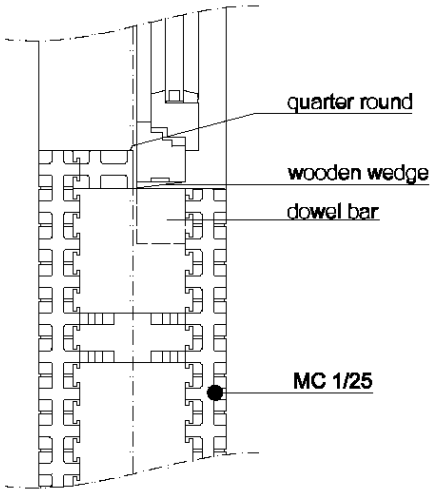
FASTENING OF UPPER WINDOW FRAME – DETAIL



FASTENING OF BOTTOM WINDOW FRAME – DETAIL



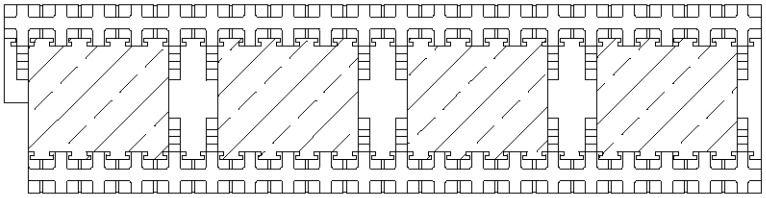
FASTENING OF SIDE WINDOW FRAME – DETAIL



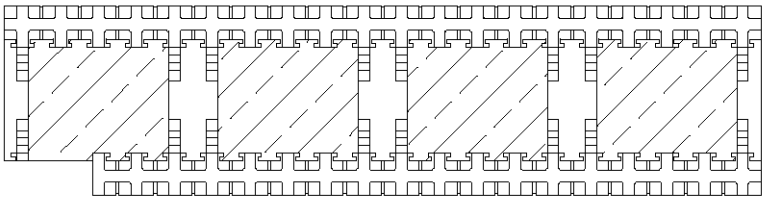
Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B21
Detail: Fixing of windows	

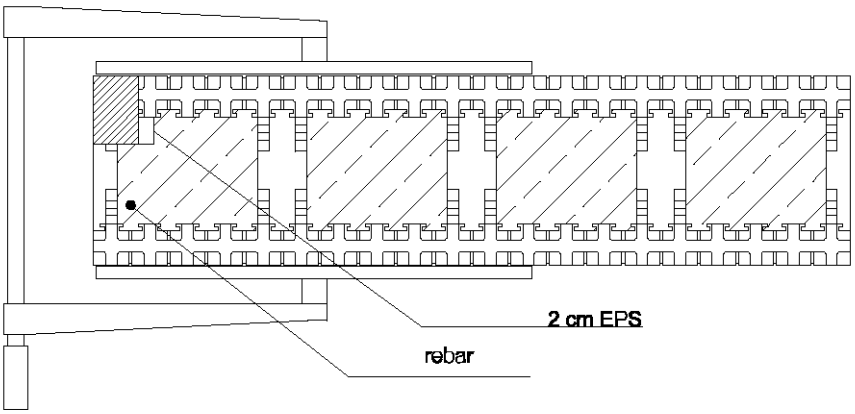
BY PARTIAL EPS REMOVAL



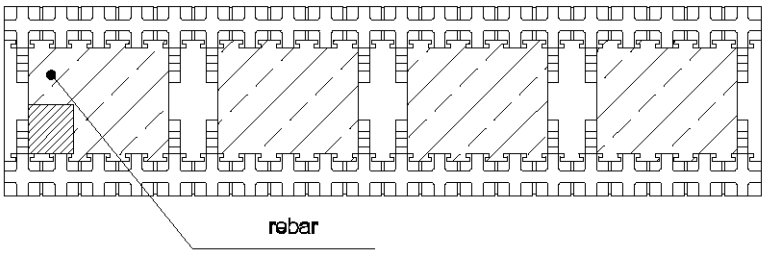
BY PARTIAL EPS REMOVAL



WITH A BAULK USED AS FORMWORK



WITH A BAULK USED AS FORMWORK



Sketches not to scale
All dimensions in mm

Permanent shuttering kit "IZODOM"	Annex B22
Detail: Possible methods of external reveal construction	

Description to BWR 1 – Mechanical resistance and stability

Efficiency of filling

Considering the instructions of Annex B1 and the installation guide of the ETA holder the efficient filling without bursting of the shuttering and without voids or any uncovered reinforcement in the concrete core is possible.

Possibility of steel reinforcement

The instructions in the installation guide of the ETA holder are appropriate to install steel reinforcement for walls according to EN 1992-1-1 or corresponding national rules (see e. g. Annexes B8 to B15 and B21).

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Description to BWR 4 – Safety and accessibility in use

Bond Strength

The shuttering leaves are single layered, hence there is no determination of the bond strength between shuttering leaves.

The EPS shuttering leaf is bonded to the concrete by mechanical interlocking of the T guides [figure 2.2.10.2.1 (b) in EAD 340309-00-0305, chapter 2.2.10.2].

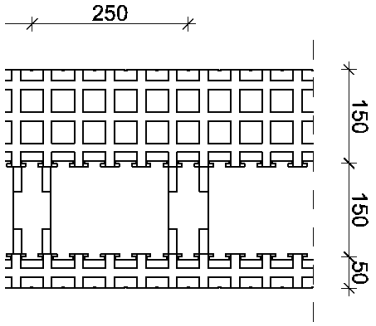

Figure 1: sketch, interlocking mechanism between concrete core and EPS leaf

The T-guides run vertically, full height on the inner surfaces of the leaf at 5 cm centres.

Since the width of the T guides is 20 mm the effective area for transmission of tensile forces is 0.02 x 1 m²/unit x 20 unit/m² = 0.4 m²/m². This is more than 20 % of the whole area of the shuttering leaves and leads to the effective bond strength of 0.04 N/mm² This is sufficient to meet the requirements in EAD 0400083-00-0404, chapter 2.2.13.

Description to BWR 6 – Energy economy and heat retention

Thermal Resistance

The following thermal resistances have been determined by numerical calculations (finite differences) taking into account: the influence of the polystyrene, plastic and plastic combined with steel ties. In these calculations the following thermal conductivities according to EN 13163 of the expanded polystyrene were used:

- White EPS λ_D = 0.035 W/(m K) and
- Graphite-enriched EPS ("grey EPS") λ_D = 0.032 W/(m K)
- For the concrete the value of λ_D = 2.1 W/(m K) was used, which is higher than the value given in EN ISO10456.

Thermal resistance values and equivalent thermal conductivities are given in dependence of

- type of shuttering element,
- type of expanded polystyrene and
- the thickness of the outer layer of expanded polystyrene

All values are determined by neglecting plaster.

In every case the second EPS leaf has a thickness of 50mm.

Table 1: Thermal resistance values and equivalent thermal conductivities for walls with a 150mm concrete core

Thickness of the concrete core 150 mm							
Type of shuttering element	**Material**	**Exterior thermal insulation thickness**					
		50 mm		**150 mm**		**250 mm**	
		R [m²K/W]	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**
MC	White EPS	2.77	0.0901	5.84	0.0600	8.56	0.0526
	Grey EPS	3.02	0.0827	6.37	0.0549	9.34	0.0482
MCFU	White EPS	2.70	0.0926	--	--	--	--
	Grey EPS	2.94	0.0851	--	--	--	--
MCF	White EPS	2.68	0.0933	5.45	0.0642	--	--
	Grey EPS	2.91	0.0859	5.92	0.0592	--	--
MCFU-S	White EPS	2.68	0.0933	5.44	0.0643	--	--
	Grey EPS	2.91	0.0859	5.91	0.0592	--	--

Table 2: Thermal resistance values and equivalent thermal conductivities for walls with a 200mm concrete core

Thickness of the concrete core 200 mm							
Type of shuttering element	**Material**	**Exterior thermal insulation thickness**					
		50 mm		**150 mm**		**250 mm**	
		R [m²K/W]	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**
MCFU	White EPS	2.75	0.109	--	--	7.93	0.0630
	Grey EPS	2.99	0.100	--	--	8.62	0.0580

Table 3 Thermal resistance values and equivalent thermal conductivities for walls with a 400mm concrete core

Thickness of the concrete core 400 mm							
Type of shuttering element	**Material**	**Exterior thermal insulation thickness**					
		50 mm		**150 mm**		**250 mm**	
		R [m²K/W]	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**	**R [m²K/W]**	**λ_{eq} [W/m²K]**
MCF	White EPS	2.85	0.175	--	--	--	--
	Grey EPS	3.08	0.162	--	--	--	--
MCFU-S	White EPS	2.85	0.176	--	--	--	--
	Grey EPS	3.08	0.162	--	--	--	--