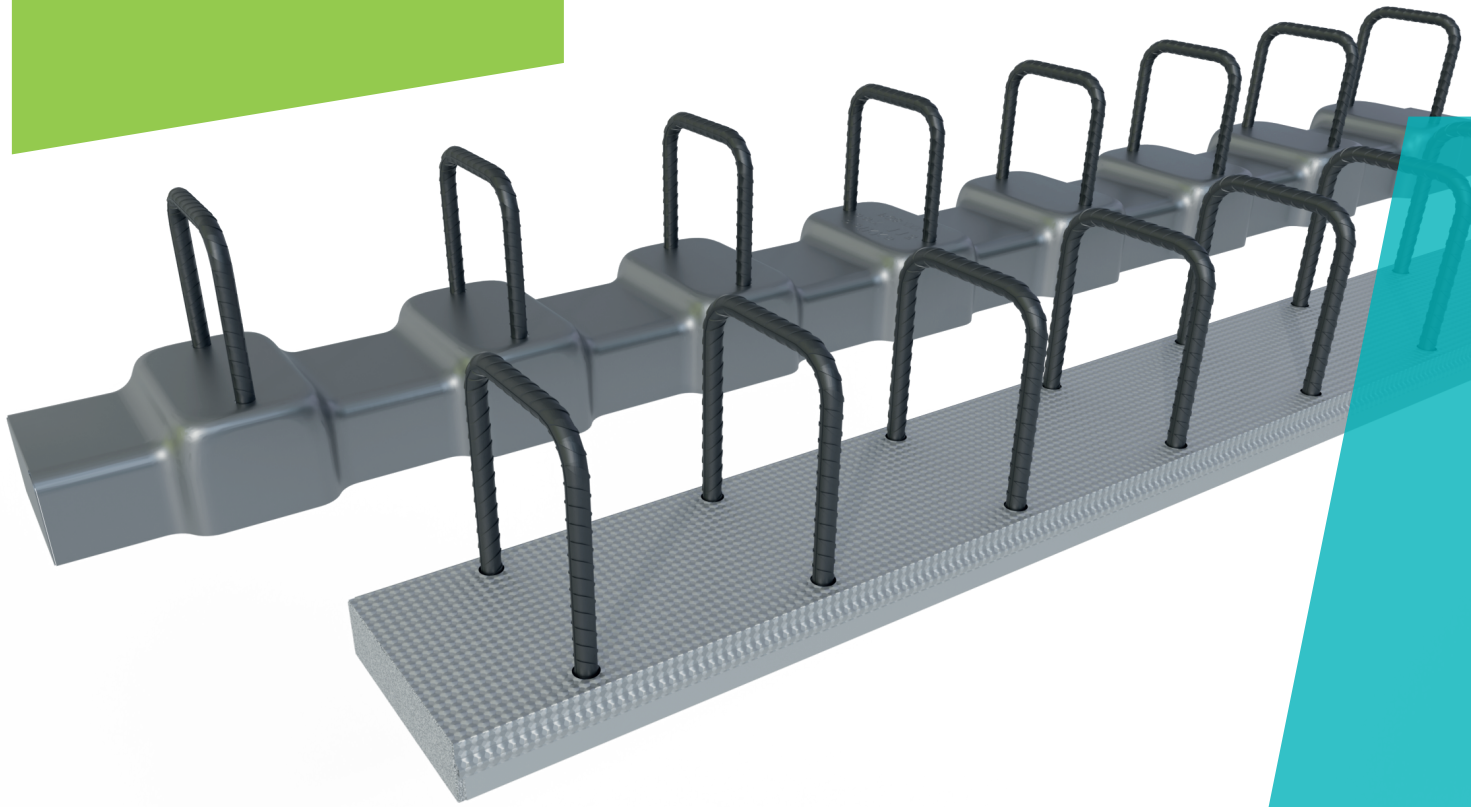


TECHNICAL MANUAL



ARBOX[®] Plus, and ARBOX[®] Strong Joint Reinforcement

Effective Rebar Connection for Concrete Structures

Version PEIKKO GROUP 10/2025

ARBOX® Joint Reinforcement

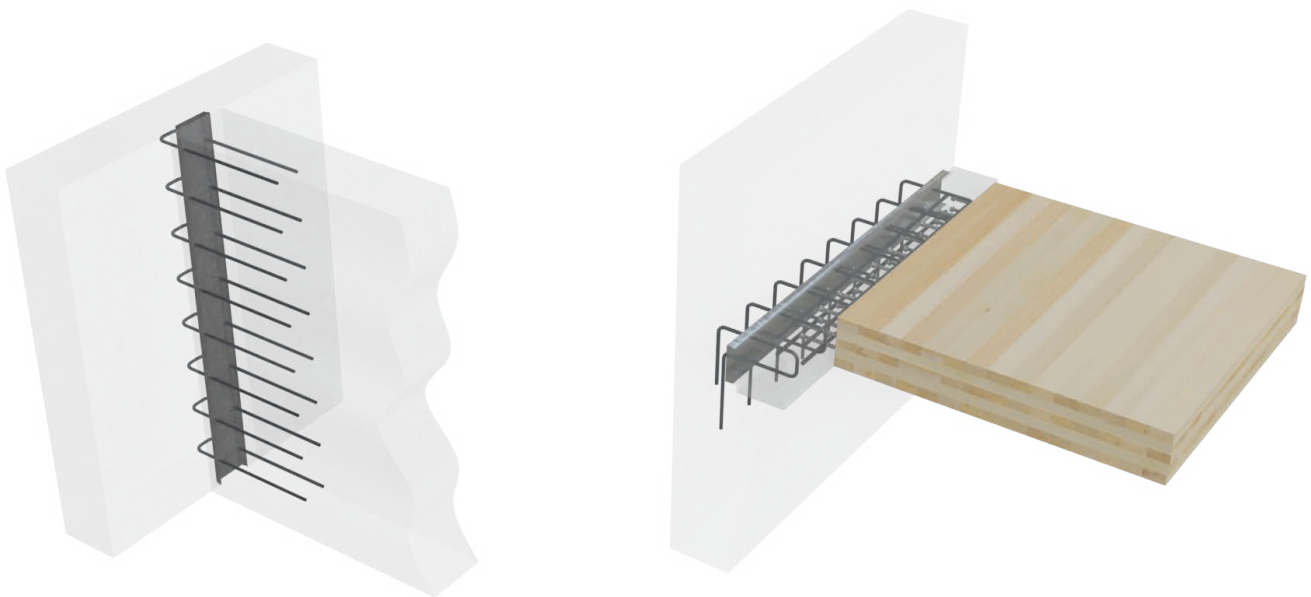
Effective Rebar Connection for Concrete Structures

- Cost- and time-effective installation to the formwork
- Ensuring the continuity of reinforcement at connections between concrete components
- Simple formwork design and joint design
- Transfer of longitudinal and transverse shear forces to the joint
- Highest possible resistance class with rough and indented surfaces according to EN 1992-1-1, Section 6.2.5

ARBOX® Joint Reinforcement is a system for creating connections between concrete elements. The unit is used to simplify formwork at construction joint in reinforced concrete structures. Pre-bent rebars are installed into a galvanized steel box that can be easily attached to formwork without the need to drill holes or make other adjustments to the formwork.

Pre-bent rebars are straightened when required and the process can be continued by overlapping rebars with the main reinforcement of the connected concrete member. This system provides a high production speed with reliable quality for concrete connections in both cast-in-situ and precast structures, as well as for combinations of concrete and CLT materials.

ARBOX® is available with two different surface roughness options. **ARBOX® Plus** features a surface classified as **Rough** in the longitudinal direction and **Indented**, the highest possible, in the transverse direction. The second variant, **ARBOX® Strong**, offers **Indented** surface properties in the longitudinal directions. Width of the boxes are available from 45 mm up to 225 mm. Various shapes of the rebars with diameters of 8 mm, 10 mm and 12 mm, make this system highly versatile. **ARBOX® Plus** combined with **MODIX® Rebar Coupler** is available up to diameter 20 mm. The suitable ARBOX® Joint Reinforcement model can be easily selected by using tables in the ARBOX® Joint Reinforcement Technical manual based on required resistance and dimensions.



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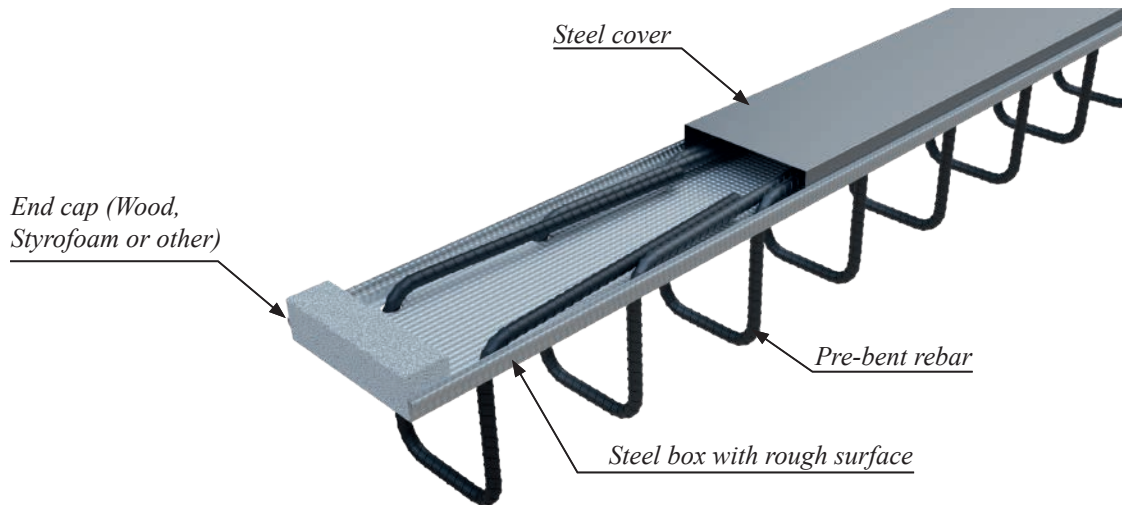
About ARBOX® Joint Reinforcement

1. Product properties

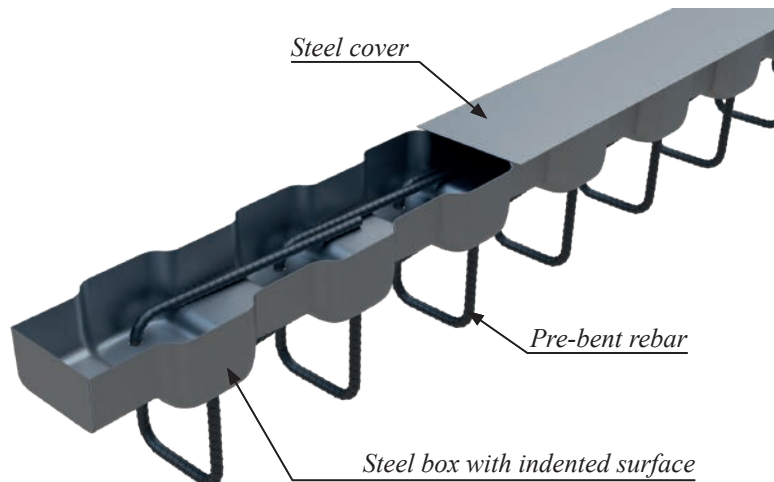
ARBOX® Joint Reinforcement is available in two types, ARBOX® Plus, covered by ETA, and ARBOX® Strong, both with reinforcement diameters of 8mm, 10 mm and 12 mm. ARBOX® Plus combined with MODIX® Rebar Coupler is available up to diameter 20 mm.

ARBOX® Joint Reinforcement is used to efficiently connect concrete components that are cast in different phases. It consists of a galvanized steel box with pre-bent rebars, which are installed within the box and enclosed by a protective steel or plastic cover. Each end of the unit is secured to prevent the ingress of concrete. ARBOX® Joint Reinforcement is available in two main resistance classes based on surface treatment of the box– Rough, and Indented. Rough classes have six basic models and Indented surface has one model, with various box widths (see *Table 1 - Table 3*).

ARBOX® Plus Joint Reinforcement unit

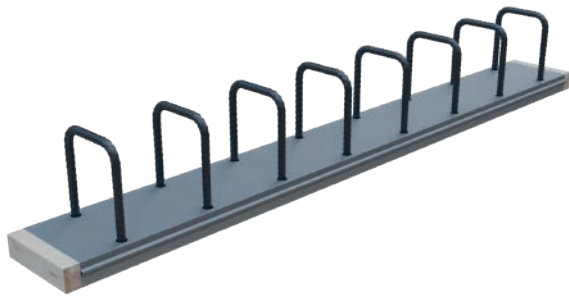


ARBOX® Strong Joint Reinforcement unit



ARBOX® Plus models depended on the shape of reinforcement

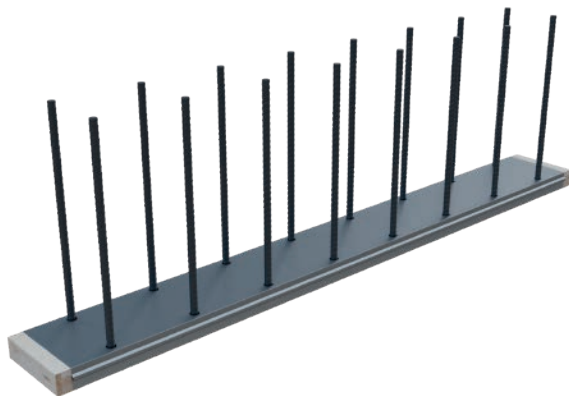
Covered by ETA



Model A

Model with two rows of anchor bars where the straight part of the reinforcement is bent inside the box

Covered by ETA



Model K

Model with two rows of anchor bars where the loop part of the reinforcement is bent inside the box

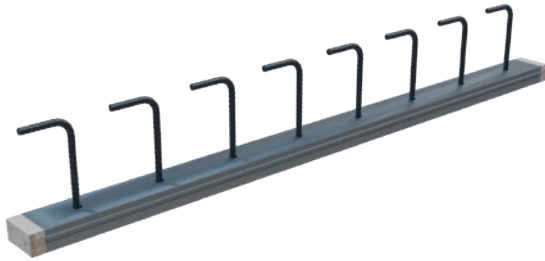
Covered by ETA



Model C

Model with two bent rows of anchor bars where the loop part of the reinforcement is bent inside the box; primarily designed for short cantilevers

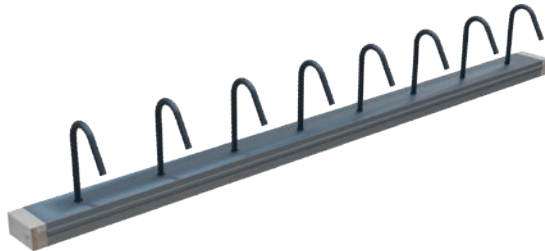
Covered by ETA



Model L

Model with a row of anchor bars where the hook is parallel with the box and the straight part of the reinforcement is bent inside the box

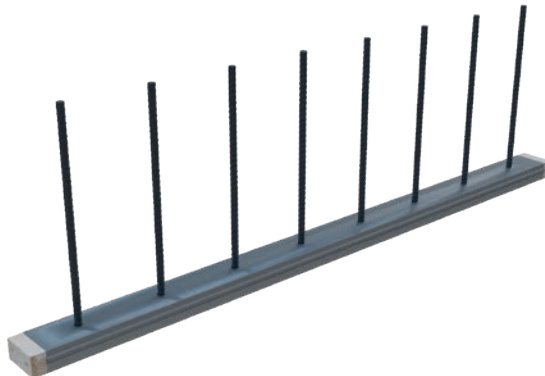
Covered by ETA



Model J

Model with a row of anchor bars where the hook is perpendicular to the box and the straight part of the reinforcement is bent inside the box

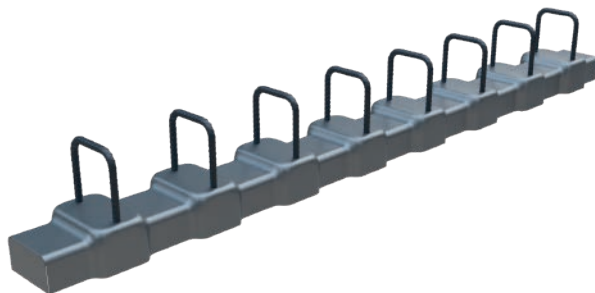
Covered by ETA



Model I

Model with a row of anchor bars where one straight part of the reinforcement is bent inside the box

ARBOX® Strong - model with Indented surface of the box



Model A

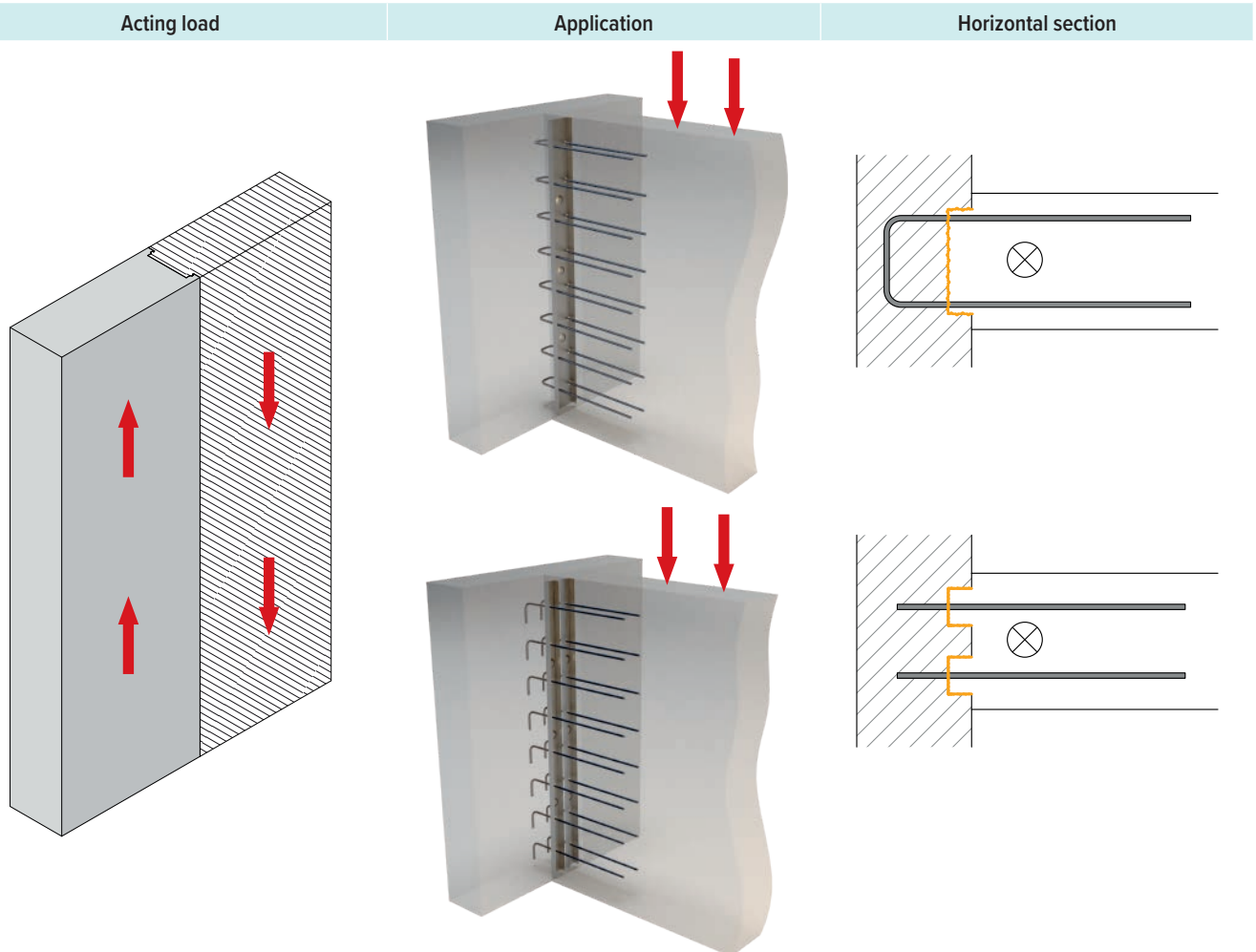
Model with two rows of anchor bars where the straight part of the reinforcement is bent inside the box

1.1 Structural behavior

ARBOX® Joint Reinforcement is designed to transfer shear loads acting longitudinally or transversely to the joint into concrete. Shear force is transferred between concrete elements by friction at joint interfaces. The friction resistance is enhanced by reinforcement bars placed across the joint.

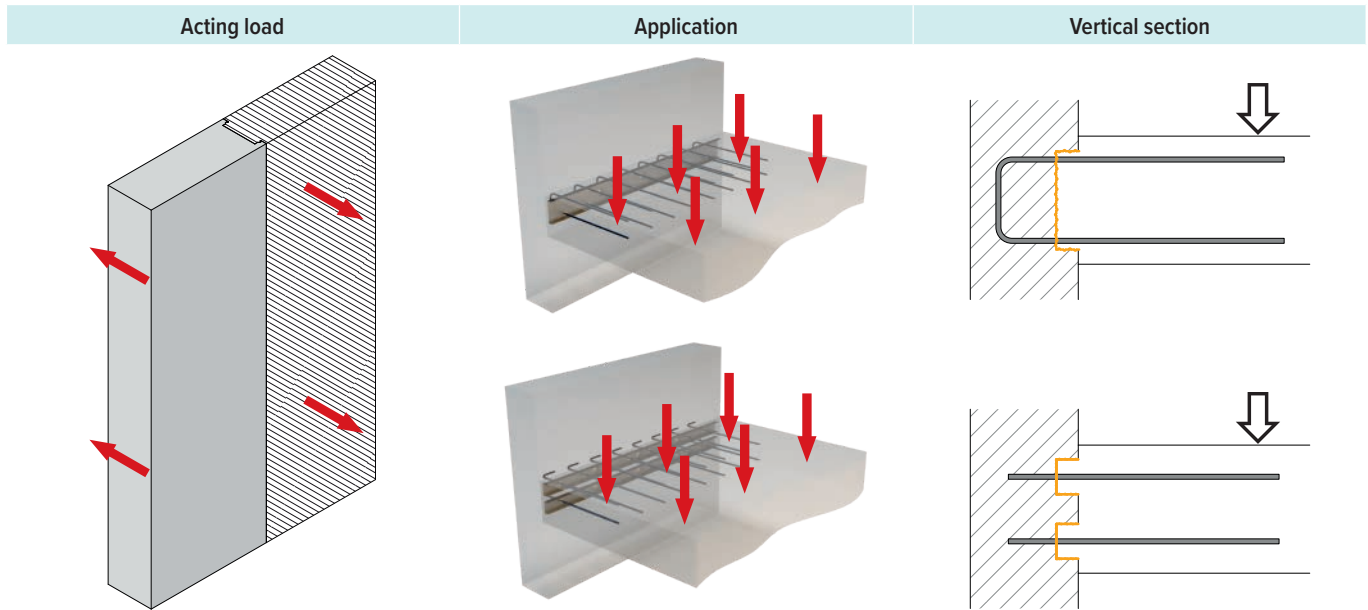
SHEAR LOAD LONGITUDINAL TO THE JOINT

Example: wall–wall connection



SHEAR LOAD TRANSVERSE TO THE JOINT

Example: wall-to-floor slab connection



1.2 Application conditions

ARBOX® Joint Reinforcement is designed to be used under the conditions stated in this chapter. If these conditions are not met, please contact Peikko Technical Support for a custom design of an ARBOX® Joint Reinforcement.

1.2.1 Loading and environmental conditions

ARBOX® Joint Reinforcement is designed to carry static loads. It is designed to be used indoors and in dry conditions. When using ARBOX® Joint Reinforcement in other conditions, the surface treatment, concrete cover, and raw materials must be suitable for the environmental exposure class and operating life.

1.2.2 Positioning of the ARBOX® Joint Reinforcement

The precise position of the ARBOX® Joint Reinforcement is indicated in the design drawings. ARBOX® Joint Reinforcement must be fixed to the formwork in the way that it cannot be displaced during casting.

Units can be fixed to formwork by nailing or securing them with a tie wire to the reinforcement. ARBOX® Joint Reinforcements are installed into position while keeping a minimal concrete cover. The minimum concrete cover c_{nom} for ARBOX® Joint Reinforcement is 30 mm.

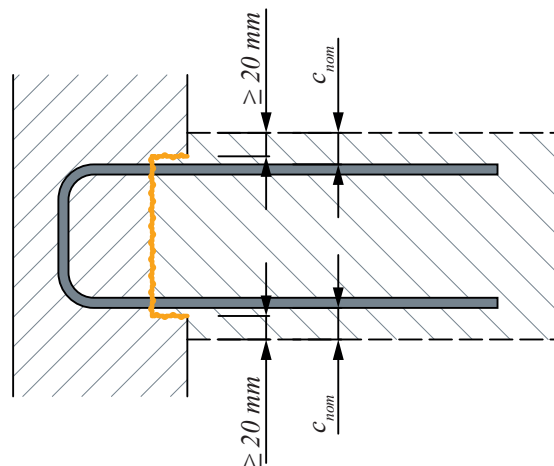


Figure 1. Minimum concrete cover.

1.3 Materials and dimensions

The standard properties of ARBOX® Joint Reinforcement are guaranteed in reinforced concrete structures with concrete grade C20/25 and higher. ARBOX® Joint Reinforcement is made of rebars and galvanized steel sheets with the following properties:

Rebars

Material B500B EN 10080
Diameter 8, 10, 12, 14, 16, 20 mm (Diameters 14, 16, and 20 mm are available in ANNEX A.)

MODIX® Rebar Couplers

Material S355 EN 10025-2
Diameter SM10, 12, 14, 16, 20 mm

Box

Material Galvanized sheet metal
Unit length $L = 1,250$ mm

Tolerance for width, length and height is ± 5 mm

Model	Surface type	Material		
		Rebars		Box
ARBOX® Plus	Rough	B500B	EN 10080	HDG
ARBOX® Strong	Intended	B500B	EN 10080	HDG

Hydrotite

Material Hydrophilic rubber middle expansion type
Dimension $t2 \times w20$ mm

Item	Unit	References
Hardness	JIS	50 $\pm$ 5
Tensile Strength	MPa	min. 2.45
Elongation	%	min. 600
Expansion rate	%	min. 500

In the construction joint that is exposed to water pressure, ARBOX® Plus can be supplemented by highly active sealant strip on both sides of the box. A superior water sealant known as Hydrotite has a unique double action system. The rubber between two surfaces absorbs water thus expanding within the joint gap. The possibility to include Hydrotite type relates to following models: Model A, Model K and Model C.

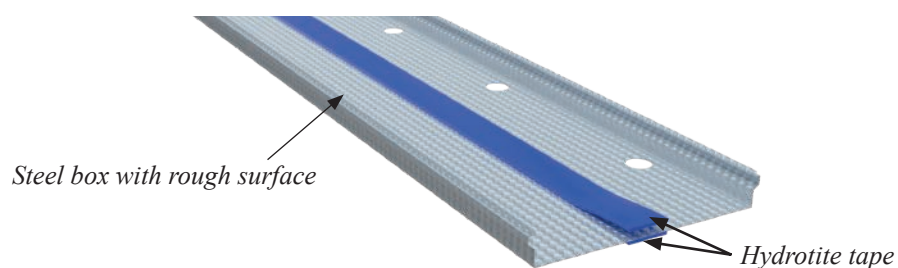


Figure 2. ARBOX® Plus supplemented by Hydrotite.

Peikko Group's production units are externally controlled and periodically audited on the basis of production certifications and product approvals by various independent organizations.

The products bear the inspection mark, the emblem of Peikko Group, the type of product, and the year and week of manufacturing.

ARBOX® Plus (ETA)

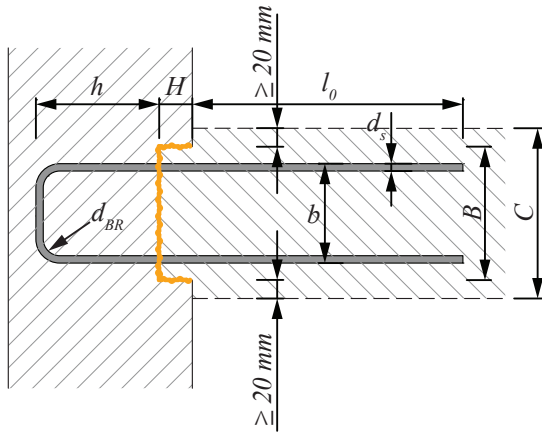


Figure 3. ARBOX® Plus model A dimensions.

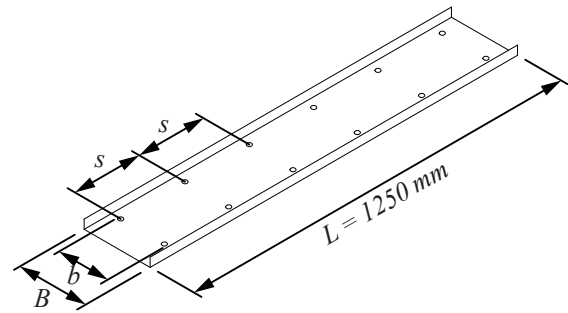


Figure 4. Basic dimensions of steel box.

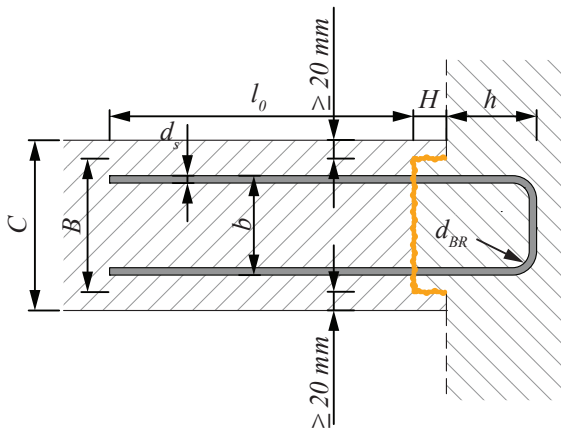


Figure 5. ARBOX® Plus model K dimensions.

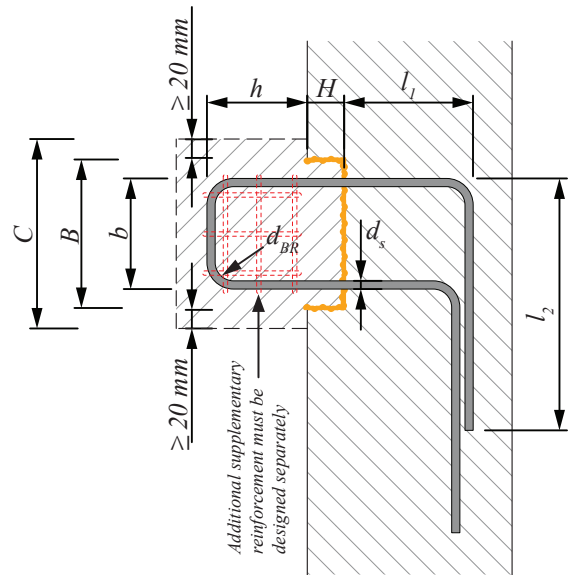


Figure 6. ARBOX® Plus model C dimensions.
($l_1 = 100$ mm as a standard).

Note: The length of the box L is standardized for all models, $L = 1,250$ mm.
The minimum mandrel diameter d_{BR} presented in the figures are defined according to EN 1992-1-1:2004, Section 8.



Additional horizontal and vertical reinforcement of the concrete corbel shall be designed by the designer, according to EN 1992-1-1, Chapter 6.5.3. The overall design and reinforcement of the concrete corbels or concrete elements loaded near supports shall be made in accordance with EN 1992-1-1, Chapter 6.5.4. Suitability of ARBOX® Plus model C is under the consideration of the designer.

Table 1. ARBOX® Plus model A, model K and model C product dimensions.

Type X = A, K or C	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b [mm]	Box height H [mm]	Lap length l_o [mm]	Hook length h [mm]	Anchorage length l_2 [mm]	Component thickness C [mm]
ARBOX Plus X-8-150-85	8	150	85	60	36	330	134	220	≥ 125
ARBOX Plus X-8-200-85	8	200	85	60	36	330	134	220	≥ 125
ARBOX Plus X-8-300-85	8	300	85	60	36	330	134	220	≥ 125
ARBOX Plus X-8-150-115	8	150	115	90	36	330	134	220	≥ 155
ARBOX Plus X-8-200-115	8	200	115	90	36	330	134	220	≥ 155
ARBOX Plus X-8-300-115	8	300	115	90	36	330	134	220	≥ 155
ARBOX Plus X-8-150-145	8	150	145	120	36	330	134	220	≥ 185
ARBOX Plus X-8-200-145	8	200	145	120	36	330	134	220	≥ 185
ARBOX Plus X-8-300-145	8	300	145	120	36	330	134	220	≥ 185
ARBOX Plus X-8-150-175	8	150	175	150	36	330	134	220	≥ 215
ARBOX Plus X-8-200-175	8	200	175	150	36	330	134	220	≥ 215
ARBOX Plus X-8-300-175	8	300	175	150	36	330	134	220	≥ 215
ARBOX Plus X-8-150-205	8	150	205	180	36	330	134	220	≥ 245
ARBOX Plus X-8-200-205	8	200	205	180	36	330	134	220	≥ 245
ARBOX Plus X-8-300-205	8	300	205	180	36	330	134	220	≥ 245
ARBOX Plus X-8-150-225	8	150	225	200	36	330	134	220	≥ 265
ARBOX Plus X-8-200-225	8	200	225	200	36	330	134	220	≥ 265
ARBOX Plus X-8-300-225	8	300	225	200	36	330	134	220	≥ 265
ARBOX Plus X-10-150-85	10	150	85	60	50	410	134	280	≥ 125
ARBOX Plus X-10-200-85	10	200	85	60	50	410	134	280	≥ 125
ARBOX Plus X-10-300-85	10	300	85	60	50	410	134	280	≥ 125
ARBOX Plus X-10-150-115	10	150	115	90	36	410	134	280	≥ 155
ARBOX Plus X-10-200-115	10	200	115	90	36	410	134	280	≥ 155
ARBOX Plus X-10-300-115	10	300	115	90	36	410	134	280	≥ 155
ARBOX Plus X-10-150-145	10	150	145	120	36	410	134	280	≥ 185
ARBOX Plus X-10-200-145	10	200	145	120	36	410	134	280	≥ 185
ARBOX Plus X-10-300-145	10	300	145	120	36	410	134	280	≥ 185
ARBOX Plus X-10-150-175	10	150	175	150	36	410	134	280	≥ 215
ARBOX Plus X-10-200-175	10	200	175	150	36	410	134	280	≥ 215
ARBOX Plus X-10-300-175	10	300	175	150	36	410	134	280	≥ 215
ARBOX Plus X-10-150-205	10	150	205	180	36	410	134	280	≥ 245
ARBOX Plus X-10-200-205	10	200	205	180	36	410	134	280	≥ 245
ARBOX Plus X-10-300-205	10	300	205	180	36	410	134	280	≥ 245
ARBOX Plus X-10-150-225	10	150	225	200	36	410	134	280	≥ 265
ARBOX Plus X-10-200-225	10	200	225	200	36	410	134	280	≥ 265
ARBOX Plus X-10-300-225	10	300	225	200	36	410	134	280	≥ 265
ARBOX Plus X-12-150-115	12	150	115	90	50	490	134	360	≥ 155
ARBOX Plus X-12-200-115	12	200	115	90	50	490	134	360	≥ 155
ARBOX Plus X-12-300-115	12	300	115	90	50	490	134	360	≥ 155
ARBOX Plus X-12-150-145	12	150	145	120	36	490	134	360	≥ 185
ARBOX Plus X-12-200-145	12	200	145	120	36	490	134	360	≥ 185
ARBOX Plus X-12-300-145	12	300	145	120	36	490	134	360	≥ 185

ARBOX Plus X-12-150-175	12	150	175	150	36	490	134	360	≥ 215
ARBOX Plus X-12-200-175	12	200	175	150	36	490	134	360	≥ 215
ARBOX Plus X-12-300-175	12	300	175	150	36	490	134	360	≥ 215
ARBOX Plus X-12-150-205	12	150	205	180	36	490	134	360	≥ 245
ARBOX Plus X-12-200-205	12	200	205	180	36	490	134	360	≥ 245
ARBOX Plus X-12-300-205	12	300	205	180	36	490	134	360	≥ 245
ARBOX Plus X-12-150-225	12	150	225	200	36	490	134	360	≥ 265
ARBOX Plus X-12-200-225	12	200	225	200	36	490	134	360	≥ 265
ARBOX Plus X-12-300-225	12	300	225	200	36	490	134	360	≥ 265

Note 1: When ordering, letter X shall be replaced with the correct letter based on the chosen ARBOX® Plus model (A, K or C), e.g. ARBOX® Plus K-8-150-85.

Note 2: For model C (Figure 6) dimension l_1 is 100 mm as a standard. If another length for l_1 dimension is required, please contact Peikko Customer Engineering. The dimension l_2 is calculated according to anchorage length l_{bd} specified in Table 3.

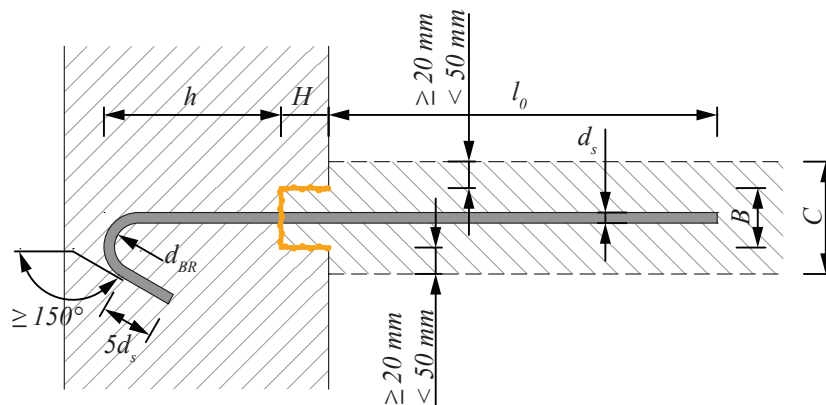


Figure 7. ARBOX® Plus J dimensions.

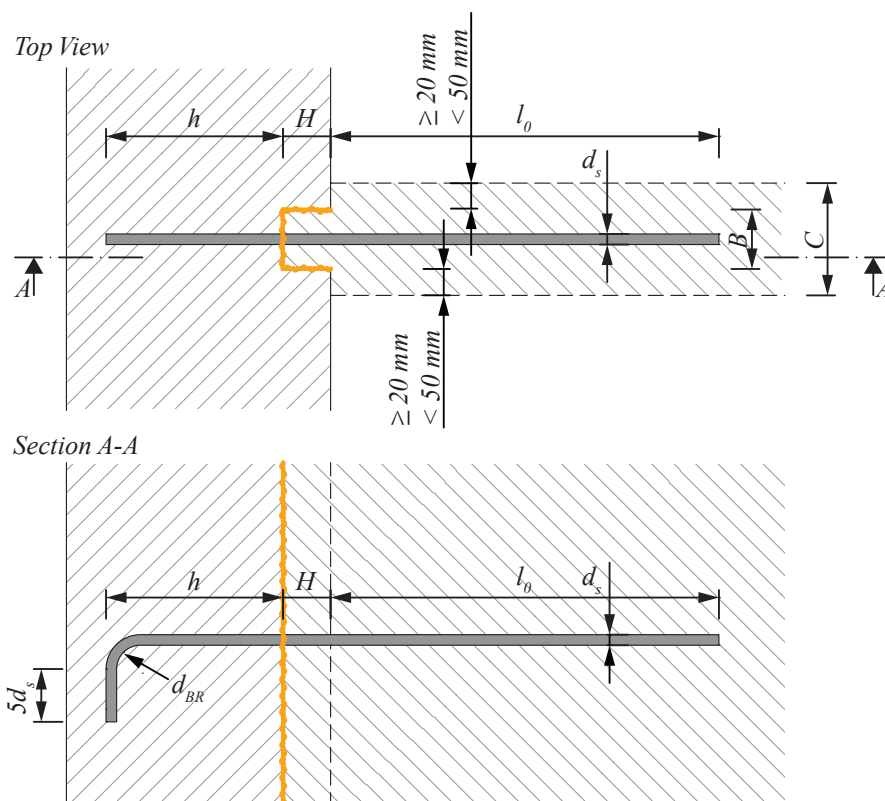


Figure 8. ARBOX® Plus L dimensions.

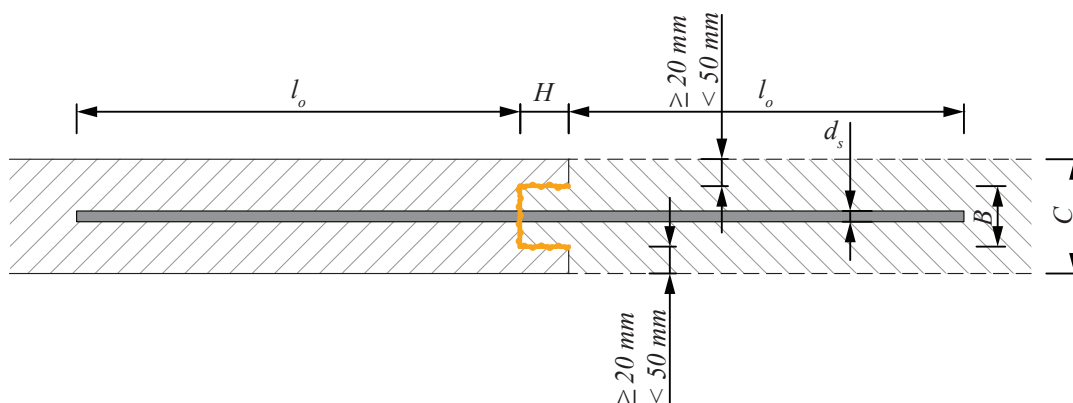


Figure 9. ARBOX® Plus I dimensions.

The minimum mandrel diameter d_{BR} presented in the figures are defined according to EN 1992-1-1:2004, Section 8.

Table 2. ARBOX® Plus model L, model J and model I product dimensions.

Type X = L, J or I	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Lap length l_o [mm]	Hook length h [mm]	Box height H [mm]	Component thickness C [mm]
ARBOX Plus X-8-150-45	8	150	45	330	134	36	≥ 85
ARBOX Plus X-8-300-45	8	300	45	330	134	36	≥ 85
ARBOX Plus X-10-150-60	10	150	60	410	134	36	≥ 100
ARBOX Plus X-10-300-60	10	300	60	410	134	36	≥ 100
ARBOX Plus X-12-150-75	12	150	75	490	134	36	≥ 115
ARBOX Plus X-12-300-75	12	300	75	490	134	36	≥ 115

Note: When ordering, letter X shall be replaced with the correct letter based on the chosen ARBOX® Plus model (L, J or I), e.g. ARBOX® Plus J-8-150-45.

ARBOX® Strong

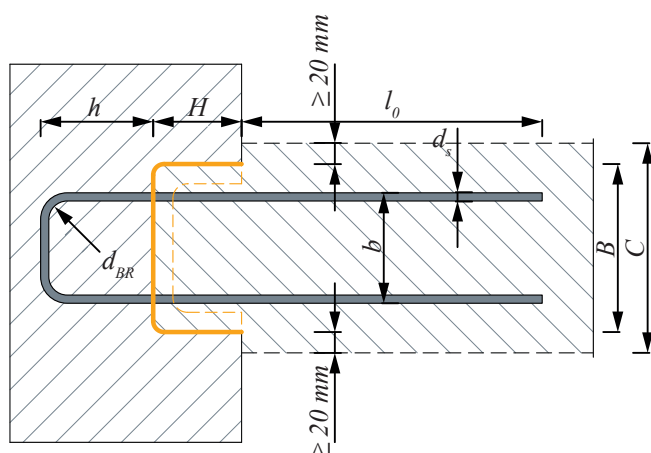


Figure 10. ARBOX® Strong A dimensions.

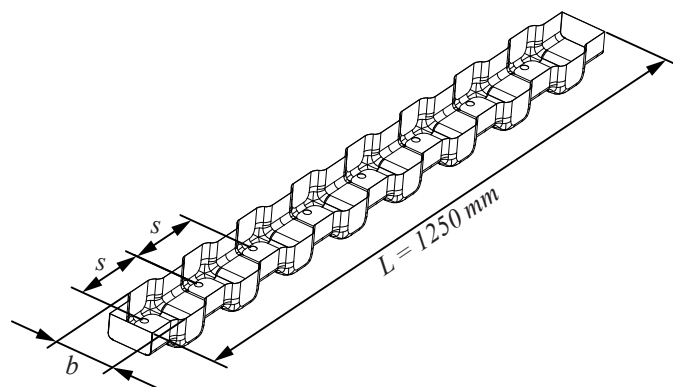
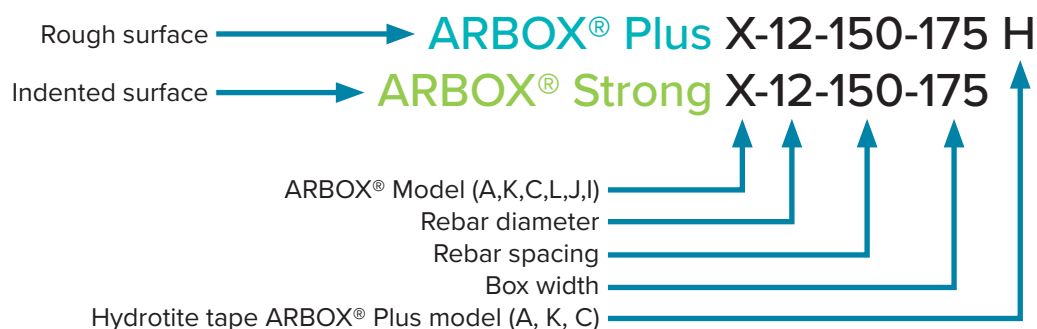


Figure 11. Basic dimensions of steel box.

Table 3. ARBOX® Strong A Joint Reinforcement product dimensions.

Type	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b [mm]	Box height H [mm]	Lap length l_o [mm]	Hook length h [mm]	Anchorage length l_{ad} [mm]	Component thickness C [mm]
ARBOX Strong A-8-150-115	8	150	115	90	60.5	330	130	220	≥ 155
ARBOX Strong A-8-300-115	8	300	115	90	60.5	330	130	220	≥ 155
ARBOX Strong A-8-150-145	8	150	145	120	60.5	330	130	220	≥ 185
ARBOX Strong A-8-300-145	8	300	145	120	60.5	330	130	220	≥ 185
ARBOX Strong A-8-150-175	8	150	175	150	50.5	330	130	220	≥ 215
ARBOX Strong A-8-300-175	8	300	175	150	50.5	330	130	220	≥ 215
ARBOX Strong A-8-150-215	8	150	215	190	50.5	330	130	220	≥ 255
ARBOX Strong A-8-300-215	8	300	215	190	50.5	330	130	220	≥ 255
ARBOX Strong A-10-150-115	10	150	115	90	60.5	410	130	280	≥ 155
ARBOX Strong A-10-300-115	10	300	115	90	60.5	410	130	280	≥ 155
ARBOX Strong A-10-150-145	10	150	145	120	60.5	410	130	280	≥ 185
ARBOX Strong A-10-300-145	10	300	145	120	60.5	410	130	280	≥ 185
ARBOX Strong A-10-150-175	10	150	175	150	50.5	410	130	280	≥ 215
ARBOX Strong A-10-300-175	10	300	175	150	50.5	410	130	280	≥ 215
ARBOX Strong A-10-150-215	10	150	215	190	50.5	410	130	280	≥ 255
ARBOX Strong A-10-300-215	10	300	215	190	50.5	410	130	280	≥ 255
ARBOX Strong A-12-150-115	12	150	115	90	60.5	490	130	360	≥ 155
ARBOX Strong A-12-300-115	12	300	115	90	60.5	490	130	360	≥ 155
ARBOX Strong A-12-150-145	12	150	145	120	60.5	490	130	360	≥ 185
ARBOX Strong A-12-300-145	12	300	145	120	60.5	490	130	360	≥ 185
ARBOX Strong A-12-150-175	12	150	175	150	50.5	490	130	360	≥ 215
ARBOX Strong A-12-300-175	12	300	175	150	50.5	490	130	360	≥ 215
ARBOX Strong A-12-150-215	12	150	215	190	50.5	490	130	360	≥ 255
ARBOX Strong A-12-300-215	12	300	215	190	50.5	490	130	360	≥ 255

General product code principles



Note 1: For model C add dimension l_j at the end of product code, e.g. ARBOX C-10-200-205 $l_j = 200$.

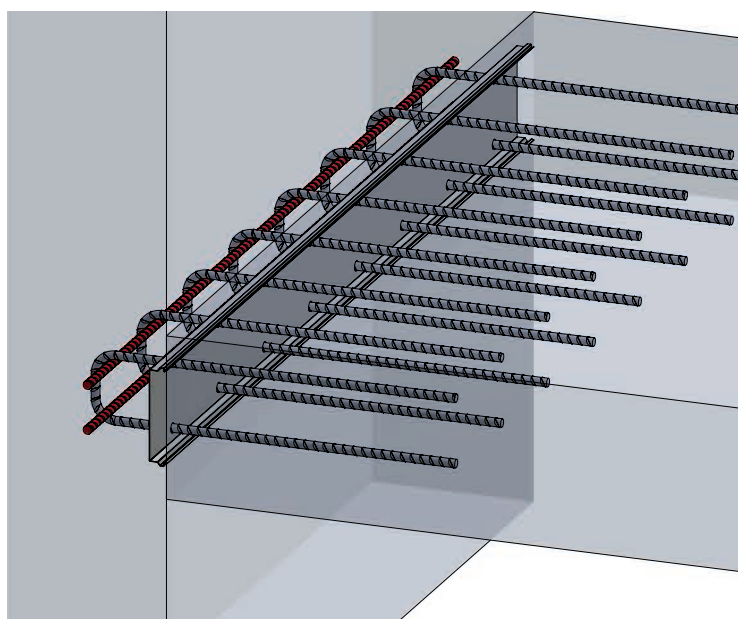
Note 2: If there is need for product with customized lengths, please contact Peikko Customer Engineering.

2. Resistances

The design values of shear load resistance for structural joints using ARBOX® Joint Reinforcement are determined according to following standards:

1. **Bulletin, DBV.** *Rebending of reinforcement steel and requirements for continuity strips according to Eurocode 2.*
2. **EN 1992-1-1:2004/AC:2010.** *Design of concrete structures - Part 1-1: General rules and rules for buildings.*
3. **ETA 23/0895** of 19/12/2023.

The resistances of structural joints against longitudinal shear are summarized in *Tables 4 – 6*. The resistances of structural joints against transverse shear are summarized in *Tables 7 – 9*. The bending resistances of structural joints are summarized in *Table 10*.



Example of anchorage

The reinforcement shall be anchored in the concrete according to EN 1992-1-1, 8.3 (3).

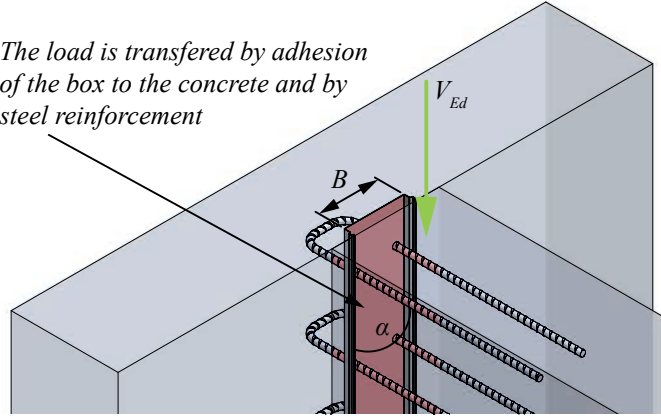
2.1 Load transfer and verifications of ARBOX® Plus according to EN 1992-1-1

2.1.1 Shear resistance in longitudinal direction to the concrete joint

Shear load resistance longitudinal to the concrete joint:

$$V_{Rd,\parallel} = c \times f_{ctd} + \rho \times f_{yd,red} \times (\mu \times \sin \alpha) \times (L \times B) \quad V_{Ed} \leq V_{Rd,\parallel}$$

The load is transferred by adhesion of the box to the concrete and by steel reinforcement



Where:

c = 0.4 - parameter (rough surface)

μ = 0.7

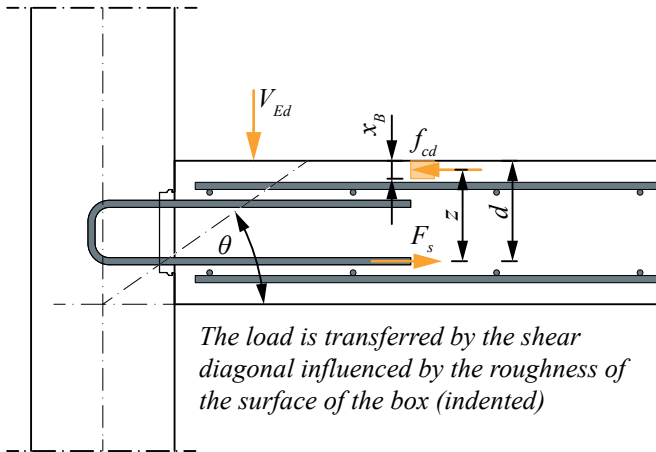
f_{ctd} = design value of concrete tensile strength

ρ = reinforcement ratio

$f_{yd,red}$ = design yield strength of the reinforcement reduced to 80% due to rebending actions

2.1.2 Shear resistance in perpendicular direction to the concrete joint

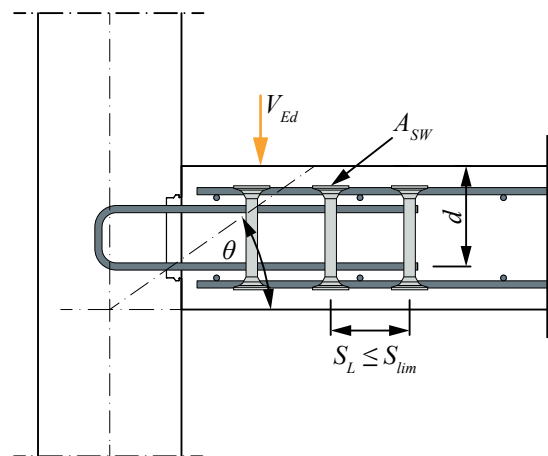
$$V_{Ed} \leq V_{Rd,\perp}$$



Shear load resistance transverse to the concrete joint:

$$V_{Rd,\perp} = \frac{c}{0.5} \times \left[\frac{0.18}{\gamma_c} \times k \times (100 \times \rho_l \times f_{ck})^{1/3} \right] \times b_w \times d$$

$$V_{Ed} \leq V_{Rd,\perp,PSB}$$



Shear resistance transverse to the concrete joint with PSB® or PSB®-S shear reinforcement

(EN 1992-1-1, 6.2.3):

$$V_{Rd,\perp,s} = \frac{A_{sw}}{s_L} \times z \times f_{ywd} \times \cot \theta$$

$$V_{Rd,\perp,max} = \frac{1}{3} \times \frac{\alpha_{cw} \times b_w \times z \times v_l \times f_{cd}}{\cot \theta + \tan \theta}$$

$$V_{Rd,\perp,PSB} = \min(V_{Rd,\perp,s}, V_{Rd,\perp,max})$$

Where:

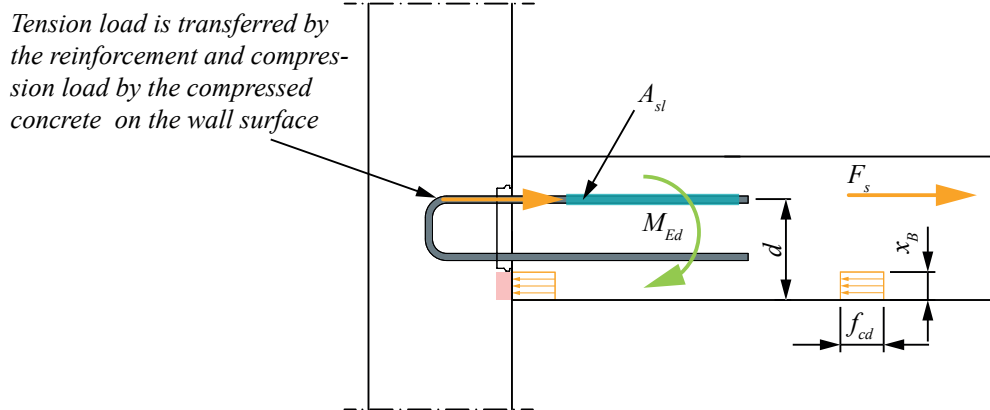
- $c = 0.5$ - parameter (indented surface)
 γ_c = partial safety factor
 $k = \min \left(1 + \left(\frac{200}{d} \right)^{0.5} ; 2 \right)$
 ρ_l = reinforcement ratio
 f_{ck} = characteristic value of concrete compression strength
 b_w = width of the slab, 1 m
 d = effective depth of a cross-section
 $\theta = 1 \leq \cot(\theta) \leq 2.5$ (EN 1992-1-1, 6.2.3, Eq. 6.7N)

- A_{sw} = area of PSB® headed studs in one row along the wall
 z = arm of forces in slab cross-section
 s_L = spacing of PSB® headed studs, acc. to EN 1992-1-1, 9.3.2
 f_{ywd} = design yield strength of the PSB® headed studs
 f_{cd} = design value of concrete compression strength
 α_{cw} = coefficient of the stress in the compression chord
 v_l = strength reduction factor for cracked concrete
 s_{lim} = maximum spacing of PSB® headed studs, acc. to EN 1992-1-1, 9.3.2

A stepped distribution of the shear reinforcement may be used, as indicated in EN 1992-1-1, 6.2.5 (Figure 6.10).

If PSB® or PSB®-S headed studs are used as shear reinforcement of the slab, it is necessary to use installation requirements defined in PSB® Headed Anchors Technical Manual, or to contact Peikko Technical Support.

2.1.3 Bending moment resistance in perpendicular direction to the connection of the slab and wall



Bending moment resistance of the joint:

$$M_{Rd} = x_B \times b_w \times f_{cd} \times \left(d - \frac{x_B}{2} \right) \quad M_{Ed} \leq M_{Rd}$$

Where:

- x_B = height of the compression zone

$$x_B = \frac{A_{sl} \times f_{yd,red}}{b_w \times f_{cd}}$$

- A_{sl} = area of the reinforcement in tension

The decrease in the reinforcement's yield strength by 20% caused by re-bending actions must be considered.

2.1.4 Interaction of forces V_{Ed} and M_{Ed}

In case of interaction of shear force and bending moment, each verification shall be made separately. The connection is designed correctly, if both verifications according to chapters 2.1.2 and 2.1.3 are fulfilled.



NOTE:

The additional tensile force ΔF_{td} in the longitudinal reinforcement shall be taken into account according to EN 1992-1-1, 6.2.3 (6.18). This force shall be considered in verification of bending moment resistance ($M_{Ed,max} = M_{Ed} + \Delta F_{td} \cdot z$).

In case of interaction of longitudinal shear force, transverse shear force and bending moment, contact Peikko Technical Support.

2.2 Shear load resistance of ARBOX® Plus longitudinal to the concrete joint

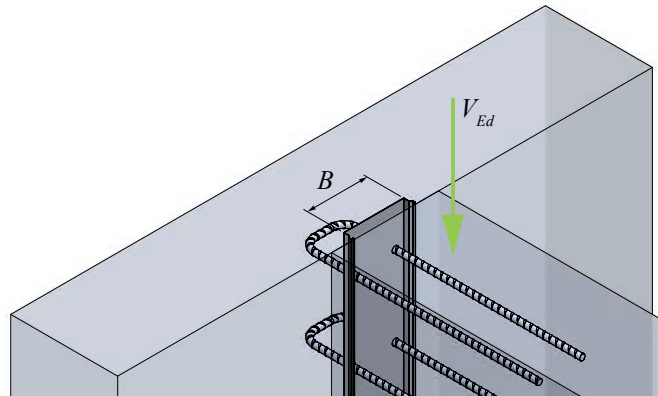
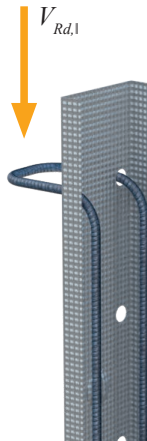
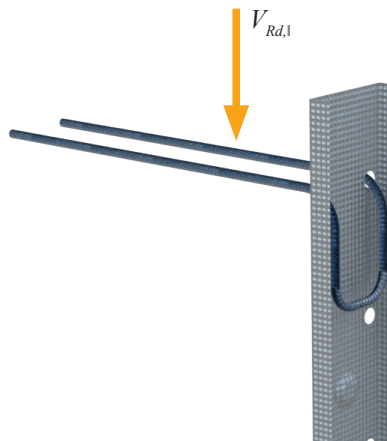


Figure 12. Force acting longitudinal to joint.

ARBOX® Plus A



ARBOX® Plus K



ARBOX® Plus C

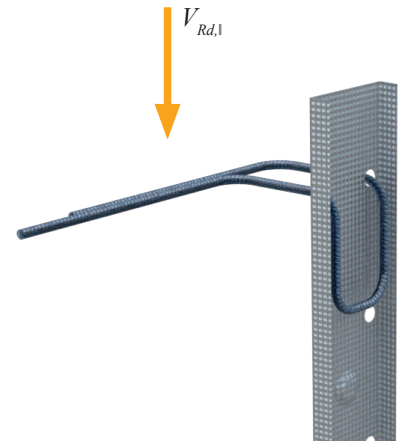
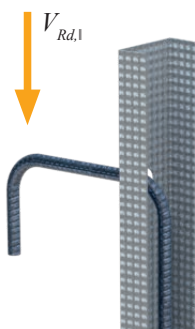


Table 4. Shear load resistance longitudinal to the concrete joint of ARBOX® Plus A, ARBOX® Plus K and ARBOX® Plus C.

diameter/spacing [mm/mm]	Shear resistance $V_{Rd,1}$ [kN/m]																	
	Box width B [mm]																	
	85			115			145			175			205			225		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	115.6	122.4	126.9	127.6	136.8	142.9	139.6	151.2	158.9	151.6	165.6	174.9	163.6	180.0	190.9	171.6	189.6	201.6
8/200	156.4	163.2	167.7	168.4	177.6	183.7	180.4	192.0	199.7	192.4	206.4	215.7	204.4	220.8	231.7	212.4	230.4	242.4
8/150	197.2	204.0	208.5	209.2	218.4	224.5	221.2	232.8	240.5	233.2	247.2	256.5	245.2	261.6	272.5	253.2	271.2	283.2
10/300	161.5	168.3	172.8	173.5	182.7	188.8	185.5	197.1	204.8	197.5	211.5	220.8	209.5	225.9	236.8	217.5	235.5	247.5
10/200	225.2	232.0	236.6	237.2	246.4	252.6	249.2	260.8	268.6	261.2	275.2	284.6	273.2	289.6	300.6	281.2	299.2	311.2
10/150	289.0	295.8	300.3	301.0	310.2	316.3	313.0	324.6	332.3	325.0	339.0	348.3	337.0	353.4	364.3	345.0	363.0	375.0
12/300	-	-	-	212.8	222.0	228.2	224.8	236.4	244.2	236.8	250.8	260.2	248.8	265.2	276.2	256.8	274.8	286.8
12/200	-	-	-	296.3	305.5	311.6	308.3	319.9	327.6	320.3	334.3	343.6	332.3	348.7	359.6	340.3	358.3	370.3
12/150	-	-	-	379.7	388.9	395.0	391.7	403.3	411.0	403.7	417.7	427.0	415.7	432.1	443.0	423.7	441.7	453.7

ARBOX® Plus L



ARBOX® Plus J

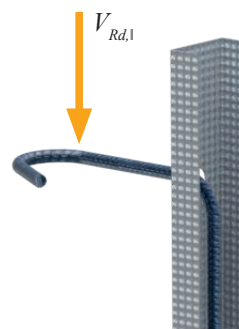


Table 5. Shear load resistance longitudinal to the concrete joint of ARBOX® Plus L and ARBOX® Plus J.

diameter/spacing [mm/mm]	Shear resistance $V_{Rd,1}$ [kN/m]								
	Box width B [mm]								
	45			60			75		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	54.1	62.4	64.8	-	-	-	-	-	-
8/150	90.2	90.2	105.6	-	-	-	-	-	-
10/300	-	-	-	69.1	82.9	92.1	-	-	-
10/150	-	-	-	114.2	137.1	152.3	-	-	-
12/300	-	-	-	-	-	-	78.9	94.7	105.2
12/150	-	-	-	-	-	-	127.8	153.3	170.4

ARBOX® Plus I

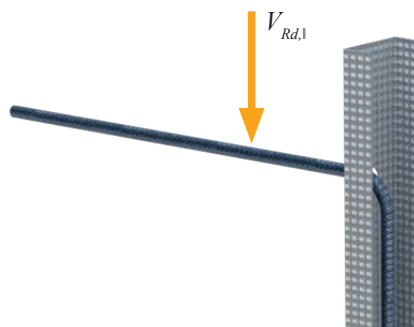


Table 6. Shear load resistance longitudinal to the concrete joint of ARBOX® Plus I.

diameter/spacing [mm/mm]	Shear resistance $V_{Rd,1}$ [kN/m]								
	Box width B [mm]								
	45			60			75		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	58.8	62.4	64.8	-	-	-	-	-	-
8/150	99.6	103.2	105.6	-	-	-	-	-	-
10/300	-	-	-	87.7	92.5	95.7	-	-	-
10/150	-	-	-	151.5	156.3	159.5	-	-	-
12/300	-	-	-	-	-	-	113.4	127.8	131.8
12/150	-	-	-	-	-	-	196.8	219.6	223.6

2.3 Shear load resistance of ARBOX® Plus transverse to the concrete joint

2.3.1 Shear resistance of ARBOX® Plus transverse to the concrete joint without shear reinforcement of the slab

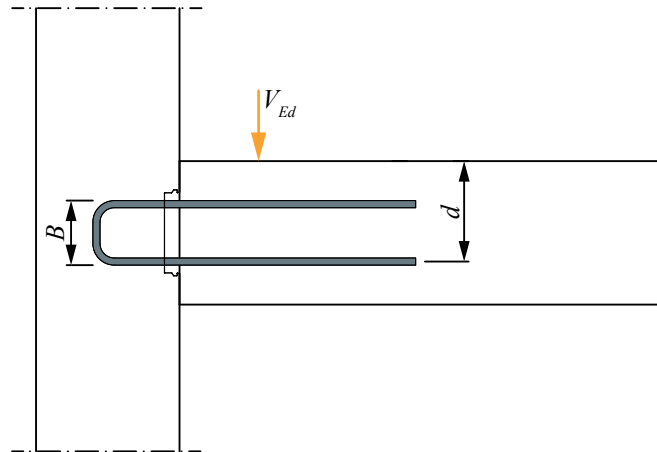


Figure 13. Force acting transverse to joint.

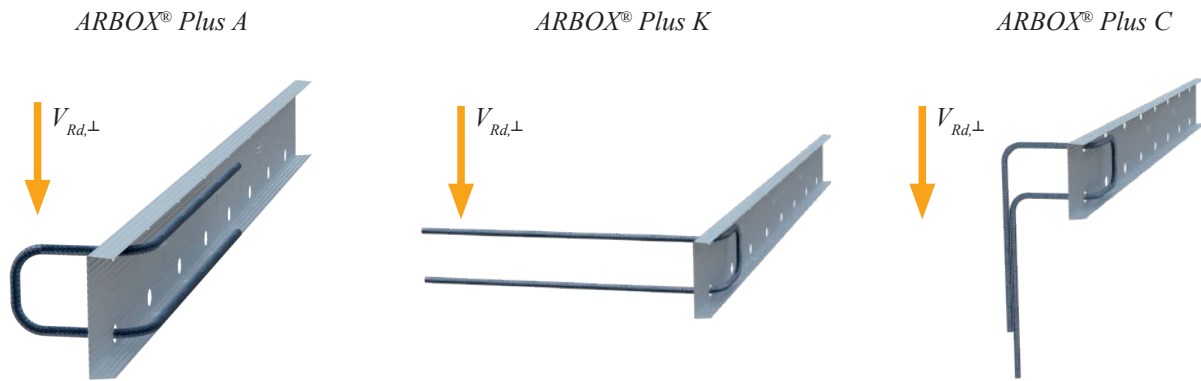
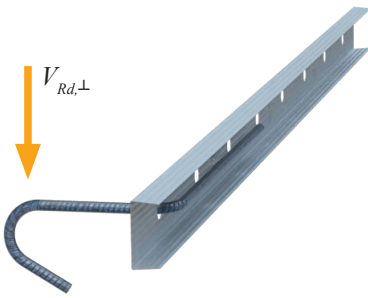


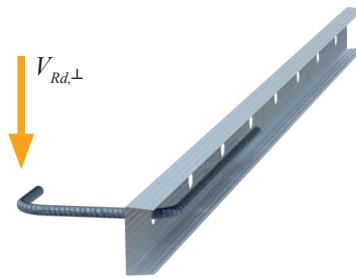
Table 7. Shear load resistance transverse to the concrete joint of ARBOX® Plus A, ARBOX® Plus K and ARBOX® Plus C.

diameter/spacing [mm/mm]	Shear resistance $V_{Rd,\perp}$ [kN/m]																	
	d [mm]																	
	90			120			150			180			210			230		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	33.5	36.1	38.3	40.6	43.7	46.4	47.1	50.7	53.9	53.1	57.2	60.8	58.2	62.7	66.6	60.5	65.1	69.2
8/200	38.3	41.3	43.9	46.4	50.0	53.1	53.9	58.0	61.7	60.8	65.5	69.6	66.6	71.7	76.2	69.2	74.6	79.2
8/150	42.2	45.4	48.3	51.1	55.0	58.5	59.3	63.9	67.9	67.0	72.1	76.6	73.3	79.0	83.9	76.2	82.1	87.2
10/300	38.8	41.8	44.5	47.1	50.7	53.9	54.6	58.8	62.5	61.7	66.4	70.6	67.5	72.7	77.3	70.2	75.6	80.3
10/200	44.5	47.9	50.9	53.9	58.0	61.7	62.5	67.3	71.6	70.6	76.0	80.8	77.3	83.3	88.5	80.3	86.5	91.9
10/150	48.9	52.7	56.0	59.3	63.9	67.9	68.8	74.1	78.8	77.7	83.7	88.9	85.1	91.6	97.4	88.4	95.2	101.2
12/300	-	-	-	53.1	57.2	60.8	61.7	66.4	70.6	69.6	75.0	79.7	76.2	82.1	87.3	79.2	85.4	90.7
12/200	-	-	-	60.8	65.5	69.6	70.6	76.0	80.8	79.7	85.9	91.3	87.3	94.0	99.9	90.7	97.7	103.8
12/150	-	-	-	67.0	72.1	76.6	77.7	83.7	88.9	87.7	94.5	100.4	96.1	103.5	110.0	99.8	107.5	114.3

ARBOX® J



ARBOX® L



ARBOX® I

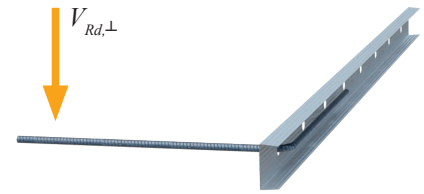


Table 8. Shear load resistance transverse to the concrete joint of ARBOX® Plus L, ARBOX® Plus J and ARBOX® Plus I.

Shear resistance $V_{Rd,\perp}$ [kN/m]									
diameter/spacing [mm/mm]	d [mm]								
	46.5			55			63.5		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	21.6	23.2	24.7	-	-	-	-	-	-
8/150	27.2	29.3	31.1	-	-	-	-	-	-
10/300	-	-	-	28.0	30.1	32.0	-	-	-
10/150	-	-	-	35.2	38.0	40.3	-	-	-
12/300	-	-	-	-	-	-	34.8	37.5	39.8
12/150	-	-	-	-	-	-	43.8	47.2	50.1

2.3.2 Shear resistance of ARBOX® Plus transverse to the concrete joint with shear reinforcement of the slab

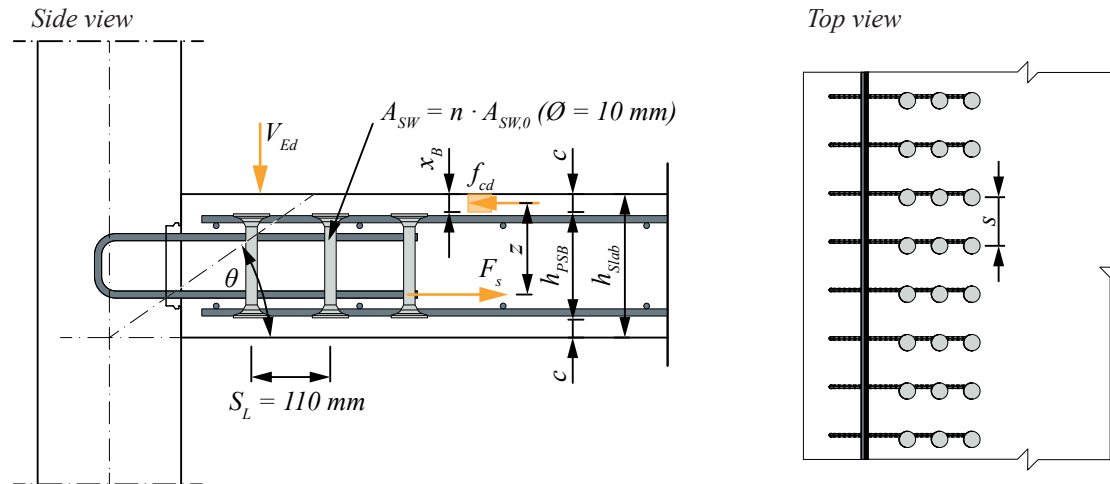


Figure 14. Force acting transverse to joint.

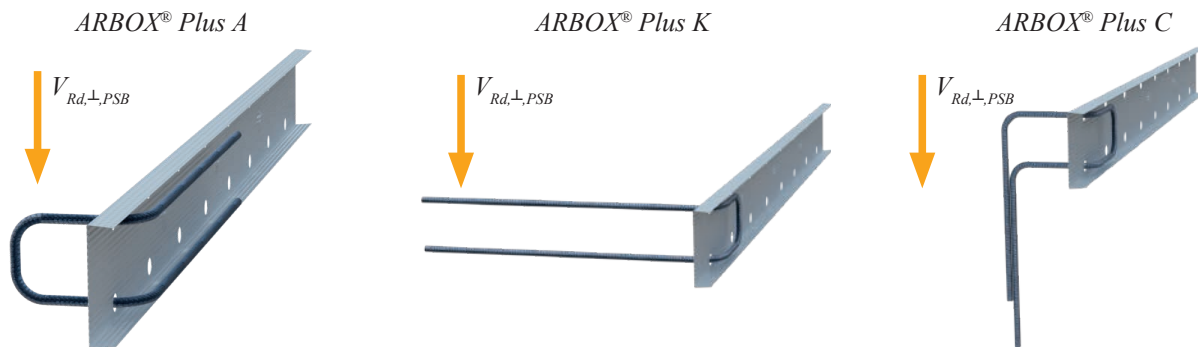


Table 9. Shear load resistance transverse to the concrete joint of ARBOX® Plus A, ARBOX® Plus K and ARBOX® Plus C, with PSB® headed studs reinforcement according to Figure 14.

Shear resistance with PSB® shear reinforcement $V_{Rd,⊥,PSB}$ [kN/m]												
diameter/spacing [mm/mm]	z											
	135			162			189			207		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	166.5			199.8			233.1			255.3		
8/200	177.3	221.6	249.7	212.7	265.9	299.7	248.2	310.2	349.6	271.8	339.8	382.9
8/150		221.6	265.9		265.9	319.1		310.2	372.3		339.8	407.7
10/300	166.5			199.8			233.1			255.3		
10/200	177.3	221.6	249.7	212.7	265.9	299.7	248.2	310.2	349.6	271.8	339.8	382.9
10/150		221.6	265.9		221.6	265.9		221.6	265.9		221.6	265.9
12/300	166.5			199.8			233.1			255.3		
12/200	177.3	221.6	249.7	212.7	265.9	299.7	248.2	310.2	349.6	271.8	339.8	382.9
12/150		221.6	265.9		265.9	319.1		310.2	372.3		339.8	407.7

Resistances in Table 9. are defined based on Chapter 2.1.2 for one row of PSB® diameter 10 mm in 1 m wide slab. Spacing "s" is defined based on ARBOX® reinforcement layout (150, 200 or 300 mm). Spacing along ARBOX® reinforcement is $s_L = 110$ mm, $\theta = 40^\circ$.

If PSB® headed studs are utilized with varying layouts or diameters, or if there is a difference in the effective height, it is necessary to use installation guidelines provided in the PSB® Headed Anchors Technical Manual, or contact Peikko Technical Support.

2.4 Bending resistance of the concrete joint of ARBOX® Plus

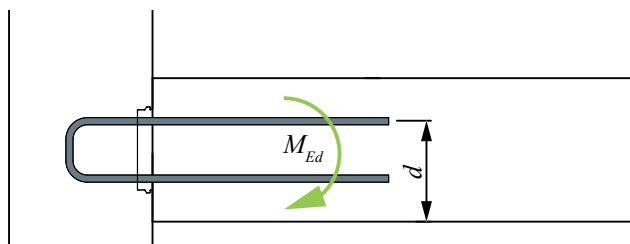


Figure 15. Bending moment acting to the joint.

Table 10. Bending resistance of the concrete joint (minimum concrete grade C20/25)

Bending resistance M_{Rd} [kNm/m]						
20/25	d [mm]					
diameter/spacing [mm/mm]	90	120	150	180	210	230
8/300	5.1	6.9	8.6	10.4	12.1	13.3
8/200	7.6	10.2	12.8	15.4	18.1	19.8
8/150	10.0	13.5	17.0	20.5	24.0	26.3
10/300	7.9	10.6	13.3	16.1	18.8	20.6
10/200	11.6	15.7	19.8	23.9	28.0	30.7
10/150	15.1	20.6	26.1	31.5	37.0	40.6
12/300	-	15.1	19.0	23.0	26.9	29.5
12/200	-	22.2	28.1	34.0	39.9	43.8
12/150	-	28.9	36.8	44.6	52.5	57.7

2.5 Load transfer and verifications of ARBOX® Strong according to EN 1992-1-1

2.5.1 Shear resistance in longitudinal direction to the concrete joint

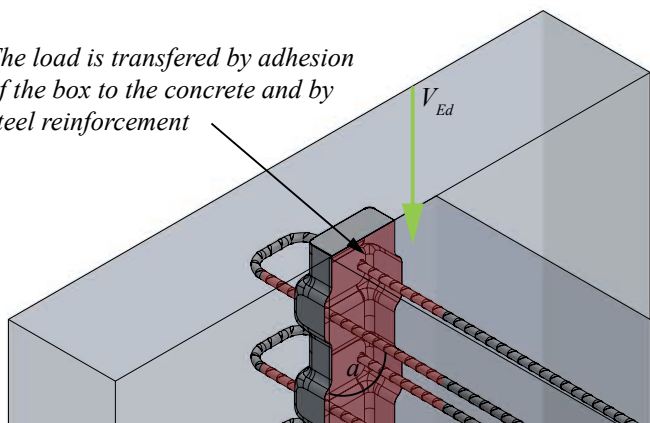
Shear load resistance longitudinal to the concrete joint:

$$V_{Rd||} = c \times f_{ctd} + \rho \times f_{yd,red} \times (\mu \times \sin \alpha) \quad V_{Ed} \leq V_{Rd||}$$

Where:

- c = 0.5 - parameter (indented surface)
- μ = 0.7
- f_{ctd} = design value of concrete tensile strength
- ρ = reinforcement ratio
- $f_{yd,red}$ = design yield strength of the reinforcement reduced to 80 % due to rebending actions

The load is transferred by adhesion of the box to the concrete and by steel reinforcement



It is recommended to use the ARBOX® Plus model for transverse shear loading of the connection. In the case of using the ARBOX® Strong model for transfer of transverse shear, contact Peikko Technical Support.

Bending moment resistance shall be calculated as defined in Chapter 2.1.3.

The reinforcement shall be anchored in the concrete according to EN 1992-1-1, 8.3 (3).

2.6 Shear load resistance of ARBOX® Strong longitudinal to the concrete joint

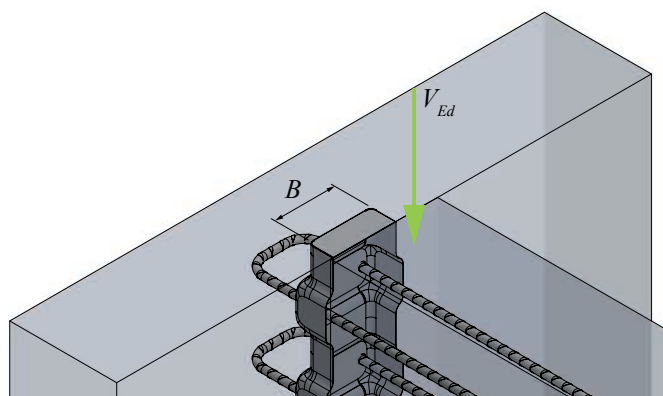


Figure 16. Force acting longitudinal to joint.

ARBOX® Strong A

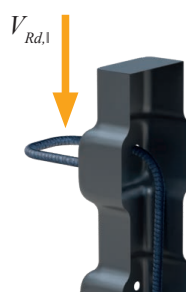


Table 11. Shear load resistance longitudinal to the concrete joint of ARBOX® Strong A.

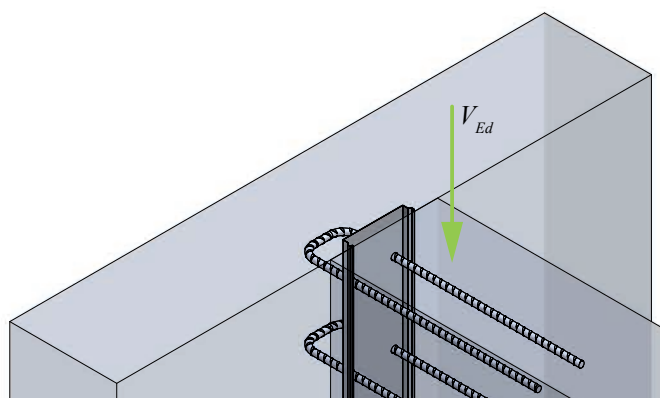
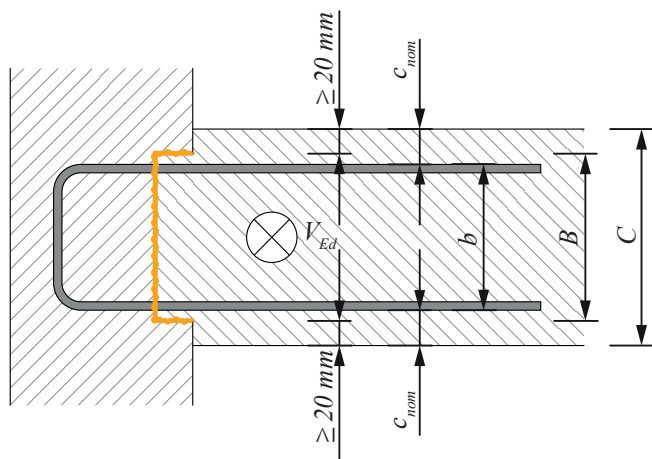
diameter/spacing [mm/mm]	Shear resistance $V_{Rd,l}$ [kN/m]											
	Box width B [mm]											
	115			145			175			215		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	162.4	173.9	181.6	177.4	191.9	201.6	192.4	209.9	221.6	212.4	233.9	248.2
8/150	267.3	278.8	286.5	282.3	296.8	306.5	297.3	314.8	326.5	317.3	338.8	353.1
10/300	221.4	232.9	240.6	236.4	250.9	260.6	251.4	268.9	280.6	271.4	292.9	307.2
10/150	385.3	396.8	404.5	400.3	414.8	424.5	415.3	432.8	444.5	435.3	456.8	471.2
12/300	272.0	283.5	291.2	287.0	301.5	311.2	302.0	319.5	331.2	322.0	343.5	357.9
12/150	423.2	498.0	505.7	501.5	516.0	525.7	516.5	534.0	545.7	536.5	558.0	572.4

Selecting ARBOX® Joint Reinforcement

The following aspects must be considered when selecting the appropriate type of ARBOX® Joint Reinforcement to be used in wall reinforcement:

- Direction of loading – longitudinal/transverse to joint
- Dimensions of the concrete wall
- Reinforcement spacing
- Steel profile diameter
- Concrete class.

Considering all aspects above and based on the properties and dimensions of the joint. ARBOX® Plus model A is the most suitable for this construction.



Input data:

Design load, longitudinal to construction joint	$V_{Ed} = 186.3 \text{ kN/m}$
Width of the wall	$C = 200 \text{ mm}$
Reinforcement spacing	$s = 200 \text{ mm}$
Concrete class	C25/30
Minimal cover	$c_{nom} = 30 \text{ mm}$

Selection process:

Rebar width	$b \leq C - 2c_{nom} = 140 \text{ mm}$	
	$b = 120 \text{ mm} < 140 \text{ mm}$	$\Rightarrow B = 145 \text{ mm}$

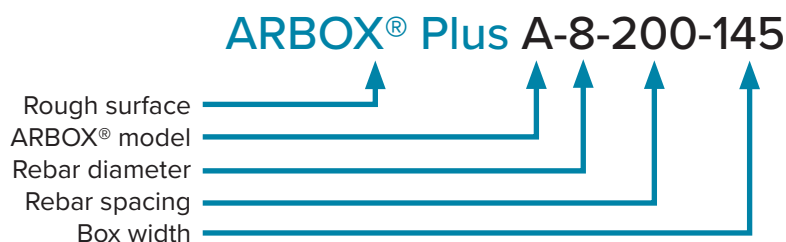
SELECTING

Type X = A, K or C	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b [mm]	Box height H [mm]	Lap length l_o [mm]	Hook length h [mm]	Anchorage length l_{ad} [mm]	Component thickness C [mm]
ARBOX Plus X- 8-150-85	8	150	85	60	36	330	134	220	≥ 125
ARBOX Plus X- 8-200-85	8	200	85	60	36	330	134	220	≥ 125
ARBOX Plus X- 8-300-85	8	300	85	60	36	330	134	220	≥ 125
ARBOX Plus X- 8-150-115	8	150	115	90	36	330	134	220	≥ 155
ARBOX Plus X- 8-200-115	8	200	115	90	36	330	134	220	≥ 155
ARBOX Plus X- 8-300-115	8	300	115	90	36	330	134	220	≥ 155
ARBOX Plus X- 8-150-145	8	150	145	120	36	330	134	220	≥ 185
ARBOX Plus X- 8-200-145	8	200	145	120	36	330	134	220	≥ 185
ARBOX Plus X- 8-300-145	8	300	145	120	36	330	134	220	≥ 185
ARBOX Plus X- 8-150-175	8	150	175	150	36	330	134	220	≥ 215
ARBOX Plus X- 8-200-175	8	200	175	150	36	330	134	220	≥ 215
ARBOX Plus X- 8-300-175	8	300	175	150	36	330	134	220	≥ 215
ARBOX Plus X- 8-150-205	8	150	205	180	36	330	134	220	≥ 245
ARBOX Plus X- 8-200-205	8	200	205	180	36	330	134	220	≥ 245
ARBOX Plus X- 8-300-205	8	300	205	180	36	330	134	220	≥ 245
ARBOX Plus X- 8-150-225	8	150	225	200	36	330	134	220	≥ 265
ARBOX Plus X- 8-200-225	8	200	225	200	36	330	134	220	≥ 265
ARBOX Plus X- 8-300-225	8	300	225	200	36	330	134	220	≥ 265

diameter/spacing [mm/mm]	Shear resistance $V_{Rd,1}$ [kN/m]																	
	Box width B [mm]																	
	85			115			145			175			205			225		
	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37	C20/25	C25/30	C30/37
8/300	115.6	122.4	126.9	127.6	136.8	142.9	139.6	151.2	158.9	151.6	165.6	174.9	163.6	180.0	190.9	171.6	189.6	201.6
8/200	156.4	163.2	167.7	168.4	177.6	183.7	180.4	192.0	199.7	192.4	206.4	215.7	204.4	220.8	231.7	212.4	230.4	242.4
8/150	197.2	204.0	208.5	209.2	218.4	224.5	221.2	232.8	240.5	233.2	247.2	256.5	245.2	261.6	272.5	253.2	271.2	283.2
10/300	161.5	168.3	172.8	173.5	182.7	188.8	185.5	197.1	204.8	197.5	211.5	220.8	209.5	225.9	236.8	217.5	235.5	247.5
10/200	225.2	232.0	236.6	237.2	246.4	252.6	249.2	260.8	268.6	261.2	275.2	284.6	273.2	289.6	300.6	281.2	299.2	311.2
10/150	289.0	295.8	300.3	301.0	310.2	316.3	313.0	324.6	332.3	325.0	339.0	348.3	337.0	353.4	364.3	345.0	363.0	375.0
12/300	-	-	-	212.8	222.0	228.2	224.8	236.4	244.2	236.8	250.8	260.2	248.8	265.2	276.2	256.8	274.8	286.8
12/200	-	-	-	296.3	305.5	311.6	308.3	319.9	327.6	320.3	334.3	343.6	332.3	348.7	359.6	340.3	358.3	370.3
12/150	-	-	-	379.7	388.9	395.0	391.7	403.3	411.0	403.7	417.7	427.0	415.7	432.1	443.0	423.7	441.7	453.7

Max. design load $V_{Rd,1} = 192.0$ kN/m
 $V_{Ed} \leq V_{Rd,1}$
 186.3 kN/m < 192.0 kN/m

Selected product:



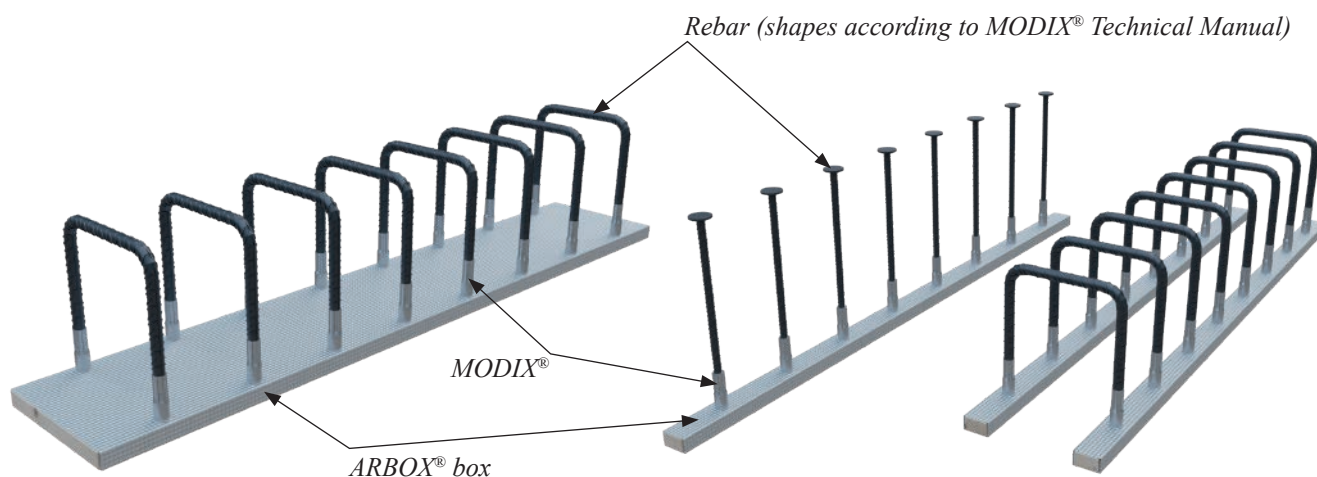
Note 1: For model C add dimension l_f at the end of product code, e.g. ARBOX® Plus C-10-200-205 $l_f = 200$.

Note 2: If there is need for product with customized lengths, please contact Peikko Customer Engineering.

ANNEX A — ARBOX® Joint Reinforcement with MODIX® Rebar Coupler

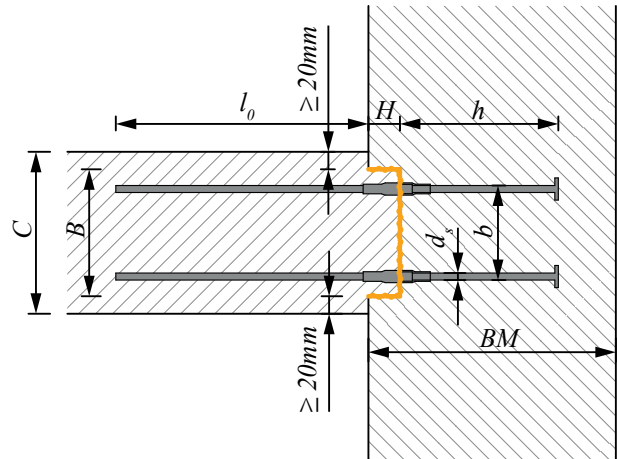
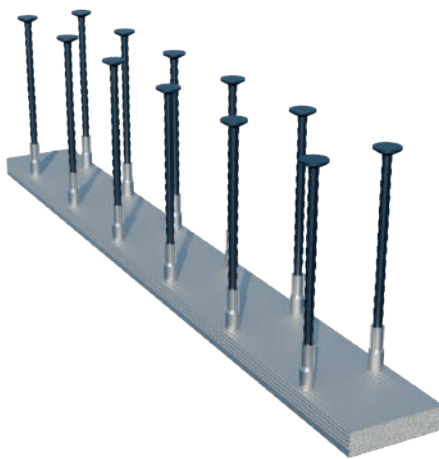
It is possible to use ARBOX® Plus together with MODIX® Rebar coupler and take benefits from both systems:

- No reduction of connection resistances due to re-bending of rebar.
- Possible many rebar shape options including headed anchor (see MODIX® Technical Manual).
- MODIX® Rebar coupler with shear resistance.
- Variable rebar spacing starting from 100 mm up to 300 mm, can adapt to any project.
- Various combinations that cover significant design situations.
- Rebar diameter is from 10 mm to 20 mm.



ARBOX® Plus MA – Single Box with Headed Anchors

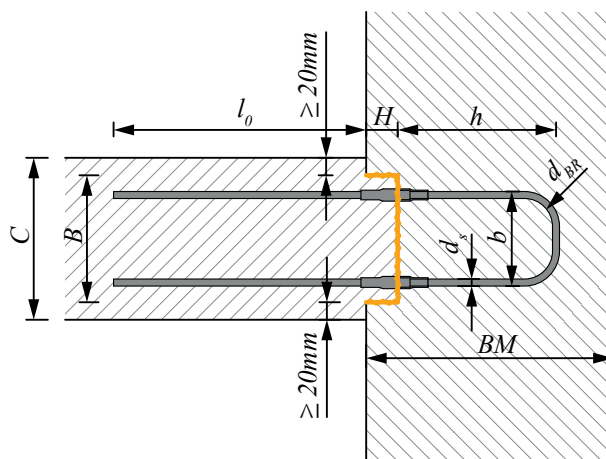
Table 12. ARBOX® Plus Model MA – Single Box with Headed Anchors, product dimensions.



Type MA	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b_{min} [mm]	Rebar width b_{max} [mm]	Box height H [mm]	Headed Anchor length h_{min} [mm]	Headed Anchor length h_{max} [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MA-10-S-115	10	100-300	115	66	85	36	155	500	≥ 155	≥ 220-570
ARBOX Plus MA-10-S-145	10	100-300	145	66	115	36	155	500	≥ 185	≥ 220-570
ARBOX Plus MA-10-S-175	10	100-300	175	66	145	36	155	500	≥ 215	≥ 220-570
ARBOX Plus MA-10-S-205	10	100-300	205	66	175	36	155	500	≥ 245	≥ 220-570
ARBOX Plus MA-10-S-225	10	100-300	225	66	195	36	155	500	≥ 265	≥ 220-570
ARBOX Plus MA-12-S-115	12	100-300	115	75	83	36	160	500	≥ 155	≥ 225-570
ARBOX Plus MA-12-S-145	12	100-300	145	75	113	36	160	500	≥ 185	≥ 225-570
ARBOX Plus MA-12-S-175	12	100-300	175	75	143	36	160	500	≥ 215	≥ 225-570
ARBOX Plus MA-12-S-205	12	100-300	205	75	173	36	160	500	≥ 245	≥ 225-570
ARBOX Plus MA-12-S-225	12	100-300	225	75	193	36	160	500	≥ 265	≥ 225-570
ARBOX Plus MA-14-S-115	14	100-300	115	83	83	36	160	500	≥ 155	≥ 225-570
ARBOX Plus MA-14-S-145	14	100-300	145	83	111	36	160	500	≥ 185	≥ 225-570
ARBOX Plus MA-14-S-175	14	100-300	175	83	141	36	160	500	≥ 215	≥ 225-570
ARBOX Plus MA-14-S-205	14	100-300	205	83	171	36	160	500	≥ 245	≥ 225-570
ARBOX Plus MA-14-S-225	14	100-300	225	83	191	36	160	500	≥ 265	≥ 225-570
ARBOX Plus MA-16-S-115	16	100-300	115	92	92	36	165	500	≥ 185	≥ 225-570
ARBOX Plus MA-16-S-145	16	100-300	145	92	111	36	165	500	≥ 185	≥ 230-570
ARBOX Plus MA-16-S-175	16	100-300	175	92	141	36	165	500	≥ 215	≥ 230-570
ARBOX Plus MA-16-S-205	16	100-300	205	92	171	36	165	500	≥ 245	≥ 230-570
ARBOX Plus MA-16-S-225	16	100-300	225	92	191	36	165	500	≥ 265	≥ 230-570
ARBOX Plus MA-20-S-145	20	100-300	145	108	108	36	170	500	≥ 245	≥ 235-570
ARBOX Plus MA-20-S-175	20	100-300	175	108	138	36	170	500	≥ 245	≥ 235-570
ARBOX Plus MA-20-S-205	20	100-300	205	108	168	36	170	500	≥ 245	≥ 235-570
ARBOX Plus MA-20-S-225	20	100-300	225	108	188	36	170	500	≥ 265	≥ 235-570

ARBOX® Plus MA1 – Single Box

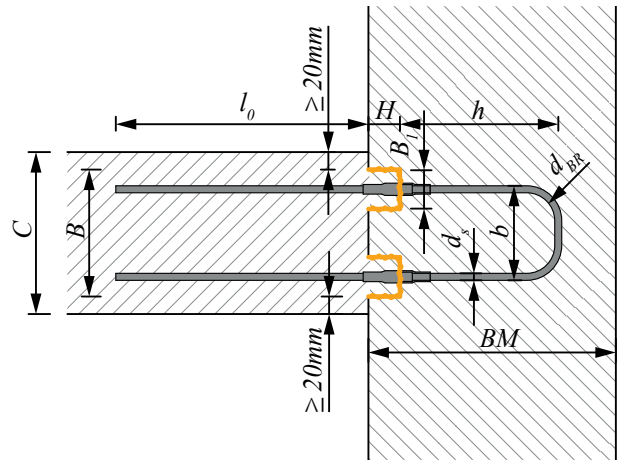
Table 13. ARBOX® Plus model MA1 – Single Box, product dimensions.



Type MA1	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b [mm]	Box height H [mm]	Hook length h_{min} [mm]	Hook length h_{max} [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MA1-10-S-85	10	100-300	85	60	36	112	500	≥ 125	$\geq 180-570$
ARBOX Plus MA1-10-S-115	10	100-300	115	95	36	112	500	≥ 155	$\geq 180-570$
ARBOX Plus MA1-10-S-145	10	100-300	145	125	36	112	500	≥ 185	$\geq 180-570$
ARBOX Plus MA1-10-S-175	10	100-300	175	185	36	112	500	≥ 215	$\geq 180-570$
ARBOX Plus MA1-10-S-205	10	100-300	205	205	36	112	500	≥ 245	$\geq 180-570$
ARBOX Plus MA1-10-S-225	10	100-300	225	90	36	112	500	≥ 265	$\geq 180-570$
ARBOX Plus MA1-12-S-115	12	100-300	115	90	36	135	500	≥ 155	$\geq 205-570$
ARBOX Plus MA1-12-S-145	12	100-300	145	120	36	135	500	≥ 185	$\geq 205-570$
ARBOX Plus MA1-12-S-175	12	100-300	175	150	36	135	500	≥ 215	$\geq 205-570$
ARBOX Plus MA1-12-S-205	12	100-300	205	180	36	135	500	≥ 245	$\geq 205-570$
ARBOX Plus MA1-12-S-225	12	100-300	225	200	36	135	500	≥ 265	$\geq 205-570$
ARBOX Plus MA1-14-S-115	14	100-300	115	90	36	156	500	≥ 155	$\geq 225-570$
ARBOX Plus MA1-14-S-145	14	100-300	145	120	36	156	500	≥ 185	$\geq 225-570$
ARBOX Plus MA1-14-S-175	14	100-300	175	150	36	156	500	≥ 215	$\geq 225-570$
ARBOX Plus MA1-14-S-205	14	100-300	205	180	36	156	500	≥ 245	$\geq 225-570$
ARBOX Plus MA1-14-S-225	14	100-300	225	200	36	156	500	≥ 265	$\geq 225-570$
ARBOX Plus MA1-16-S-145	16	100-300	145	120	36	176	500	≥ 185	$\geq 245-570$
ARBOX Plus MA1-16-S-175	16	100-300	175	150	36	176	500	≥ 215	$\geq 245-570$
ARBOX Plus MA1-16-S-205	16	100-300	205	180	36	176	500	≥ 245	$\geq 245-570$
ARBOX Plus MA1-16-S-225	16	100-300	225	200	36	176	500	≥ 265	$\geq 245-570$
ARBOX Plus MA1-20-S-205	20	100-300	205	180	36	248	500	≥ 245	$\geq 315-570$
ARBOX Plus MA1-20-S-225	20	100-300	225	200	36	248	500	≥ 265	$\geq 315-570$

ARBOX® Plus MA2 – Double Box

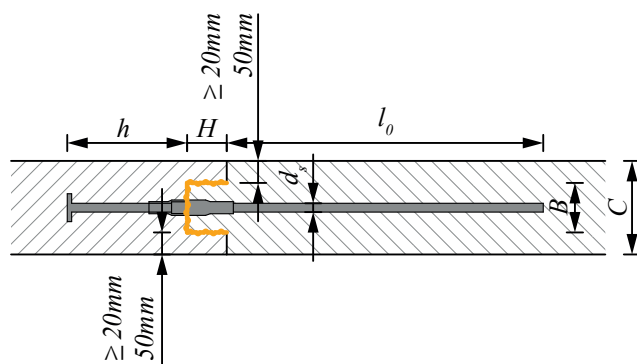
Table 14. ARBOX® Plus model MA2 – Double Box, product dimensions.



Type MA2	Diameter d_s [mm]	Rebar spacing s [mm]	Single Box width BI [mm]	Box width B [mm]	Rebar width b [mm]	Box height H [mm]	Hook length h_{min} [mm]	Hook length h_{max} [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MA2-10-S-115	10	100-300	45	115-475	80-440	36	112	500	≥ 155	$\geq 180-570$
ARBOX Plus MA2-10-S-145	10	100-300	60	145-475	95-425	36	112	500	≥ 185	$\geq 180-570$
ARBOX Plus MA2-10-S-145	10	100-300	75	175-475	110-410	36	112	500	≥ 215	$\geq 180-570$
ARBOX Plus MA2-12-S-115	12	100-300	45	115-475	82-442	36	135	500	≥ 155	$\geq 205-570$
ARBOX Plus MA2-12-S-145	12	100-300	60	145-475	97-427	36	135	500	≥ 185	$\geq 205-570$
ARBOX Plus MA2-12-S-175	12	100-300	75	175-475	112-412	36	135	500	≥ 215	$\geq 205-570$
ARBOX Plus MA2-14-S-115	14	100-300	45	115-475	84-444	36	156	500	≥ 155	$\geq 225-570$
ARBOX Plus MA2-14-S-145	14	100-300	60	145-475	99-429	36	156	500	≥ 185	$\geq 225-570$
ARBOX Plus MA2-14-S-175	14	100-300	75	175-475	114-414	36	156	500	≥ 215	$\geq 225-570$
ARBOX Plus MA2-16-S-145	16	100-300	45	15-475	96-446	36	176	500	≥ 165	$\geq 245-570$
ARBOX Plus MA2-16-S-175	16	100-300	60	145-475	101-431	36	176	500	≥ 185	$\geq 245-570$
ARBOX Plus MA2-16-S-205	16	100-300	75	175-475	116-416	36	176	500	≥ 215	$\geq 245-570$
ARBOX Plus MA2-20-S-205	20	100-300	45	205-475	180-450	36	248	500	≥ 245	$\geq 315-570$
ARBOX Plus MA2-20-S-220	20	100-300	60	220-475	180-435	36	248	500	≥ 260	$\geq 315-570$
ARBOX Plus MA2-20-S-235	20	100-300	75	235-475	180-420	36	248	500	≥ 275	$\geq 315-570$

ARBOX® Plus MI – Single Box with Headed Anchors

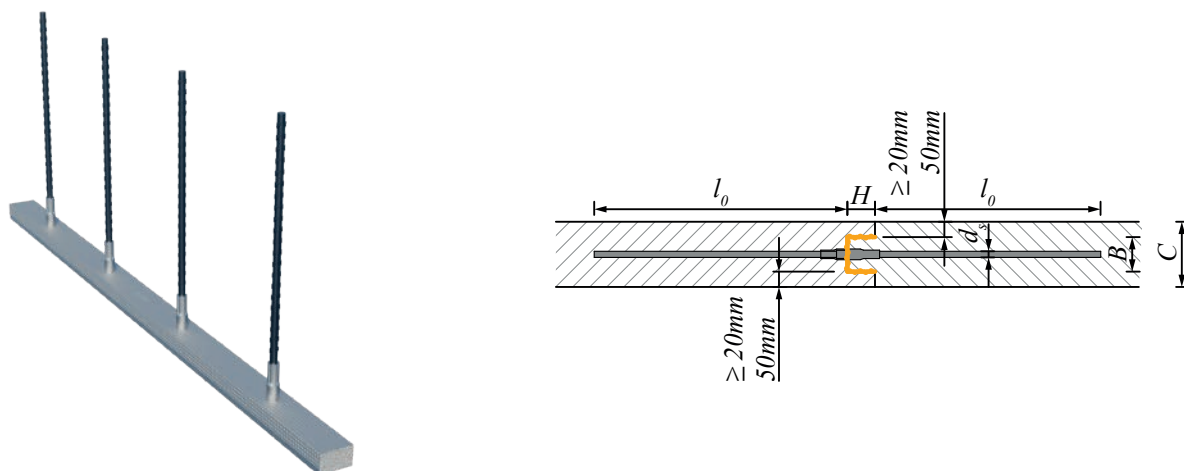
Table 15. ARBOX® Plus model MI – Single Box with Headed Anchors, product dimensions.



Type MI	Diameter d_s [mm]	Rebar spacing s [mm]	Head diameter d_k [mm]	Box width B [mm]	Box height H [mm]	Headed Anchor length h_{min} [mm]	Headed Anchor length h_{max} [mm]	Component thickness C [mm]
ARBOX Plus MI-10-S-45	10	100-300	31	45	36	155	500	≥ 90
ARBOX Plus MI-10-S-60	10	100-300	31	60	36	155	500	≥ 100
ARBOX Plus MI-10-S-75	10	100-300	31	75	36	155	500	≥ 115
ARBOX Plus MI-12-S-45	12	100-300	38	45	36	160	500	≥ 100
ARBOX Plus MI-12-S-60	12	100-300	38	60	36	160	500	≥ 100
ARBOX Plus MI-12-S-75	12	100-300	38	75	36	160	500	≥ 115
ARBOX Plus MI-14-S-45	14	100-300	44	45	36	160	500	≥ 105
ARBOX Plus MI-14-S-60	14	100-300	44	60	36	160	500	≥ 105
ARBOX Plus MI-14-S-75	14	100-300	44	75	36	160	500	≥ 115
ARBOX Plus MI-16-S-45	16	100-300	50.5	45	36	165	500	≥ 110
ARBOX Plus MI-16-S-60	16	100-300	50.5	60	36	165	500	≥ 110
ARBOX Plus MI-16-S-75	16	100-300	50.5	75	36	165	500	≥ 115
ARBOX Plus MI-20-S-45	20	100-300	63	45	36	170	500	≥ 125
ARBOX Plus MI-20-S-60	20	100-300	63	60	36	170	500	≥ 125
ARBOX Plus MI-20-S-75	20	100-300	63	75	36	170	500	≥ 125

ARBOX® Plus MI1 – Single Box with Ribbed Bars

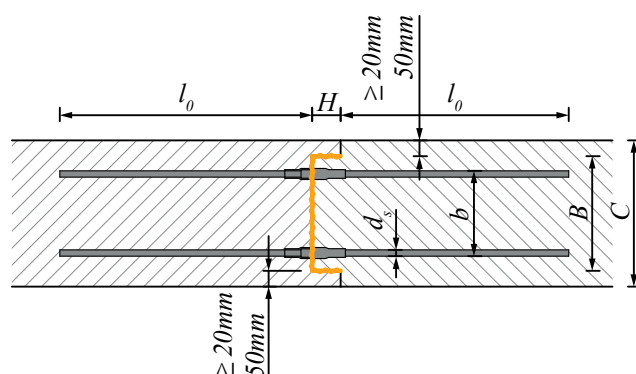
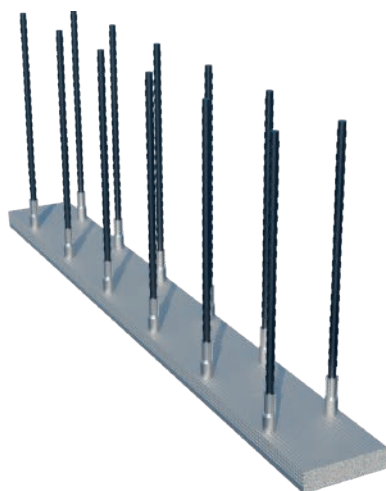
Table 16. ARBOX® Plus model MI1 – Single Box with Ribbed Bars, product dimensions.



Type MI1	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Box height H [mm]	Anchorage length l_0 [mm]	Component thickness C [mm]
ARBOX Plus MI1-10-S-45	10	100-300	45	36	410	≥ 85
ARBOX Plus MI1-10-S-60	10	100-300	60	36	410	≥ 100
ARBOX Plus MI1-10-S-75	10	100-300	75	36	410	≥ 115
ARBOX Plus MI1-12-S-45	12	100-300	45	36	540	≥ 85
ARBOX Plus MI1-12-S-60	12	100-300	60	36	540	≥ 100
ARBOX Plus MI1-12-S-75	12	100-300	75	36	540	≥ 115
ARBOX Plus MI1-14-S-45	14	100-300	45	36	680	≥ 85
ARBOX Plus MI1-14-S-60	14	100-300	60	36	680	≥ 100
ARBOX Plus MI1-14-S-75	14	100-300	75	36	680	≥ 115
ARBOX Plus MI1-16-S-45	16	100-300	45	36	810	≥ 85
ARBOX Plus MI1-16-S-60	16	100-300	60	36	810	≥ 100
ARBOX Plus MI1-16-S-75	16	100-300	75	36	810	≥ 115
ARBOX Plus MI1-20-S-45	20	100-300	45	36	1080	≥ 85
ARBOX Plus MI1-20-S-60	20	100-300	60	36	1080	≥ 100
ARBOX Plus MI1-20-S-75	20	100-300	75	36	1080	≥ 115

ARBOX® Plus MI2 – Single Box with Ribbed Bars (2-rows)

Table 17. ARBOX® Plus model MI2 – Single Box with Ribbed Bars (2-rows), product dimensions.



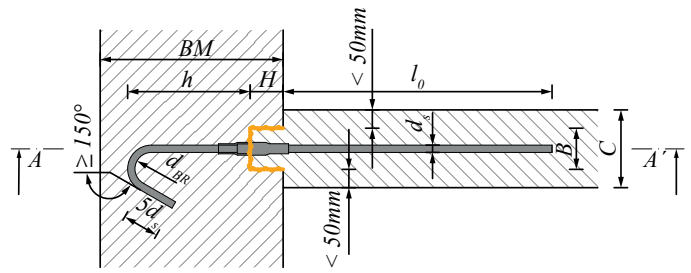
Type MI2	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b_{min} [mm]	Rebar width b_{max} [mm]	Box height H [mm]	Lap length l_0 [mm]	Component thickness C [mm]
ARBOX Plus MI2-10-S-85	10	100-300	85	45	55	36	410	≥ 125
ARBOX Plus MI2-10-S-115	10	100-300	115	66	85	36	410	≥ 155
ARBOX Plus MI2-10-S-145	10	100-300	145	66	115	36	410	≥ 185
ARBOX Plus MI2-10-S-175	10	100-300	175	66	145	36	410	≥ 215
ARBOX Plus MI2-10-S-205	10	100-300	205	66	175	36	410	≥ 245
ARBOX Plus MI2-10-S-225	10	100-300	225	66	195	36	410	≥ 265
ARBOX Plus MI2-12-S-115	12	100-300	115	75	83	36	540	≥ 155
ARBOX Plus MI2-12-S-145	12	100-300	145	75	113	36	540	≥ 185
ARBOX Plus MI2-12-S-175	12	100-300	175	75	143	36	540	≥ 215
ARBOX Plus MI2-12-S-205	12	100-300	205	75	173	36	540	≥ 245
ARBOX Plus MI2-12-S-225	12	100-300	225	75	193	36	680	≥ 265
ARBOX Plus MI2-14-S-115	14	100-300	115	83	83	36	680	≥ 155
ARBOX Plus MI2-14-S-145	14	100-300	145	83	111	36	680	≥ 185
ARBOX Plus MI2-14-S-175	14	100-300	175	83	141	36	680	≥ 215
ARBOX Plus MI2-14-S-205	14	100-300	205	83	171	36	680	≥ 245
ARBOX Plus MI2-14-S-225	14	100-300	225	83	191	36	680	≥ 265
ARBOX Plus MI2-16-S-115	16	100-300	115	91.5	91.5	36	810	≥ 185
ARBOX Plus MI2-16-S-145	16	100-300	145	91.5	111	36	810	≥ 185
ARBOX Plus MI2-16-S-175	16	100-300	175	91.5	141	36	810	≥ 215
ARBOX Plus MI2-16-S-205	16	100-300	205	91.5	171	36	810	≥ 245
ARBOX Plus MI2-16-S-225	16	100-300	225	91.5	191	36	810	≥ 265
ARBOX Plus MI2-20-S-145	20	100-300	145	108	108	36	1080	≥ 245
ARBOX Plus MI2-20-S-175	20	100-300	175	108	138	36	1080	≥ 245
ARBOX Plus MI2-20-S-205	20	100-300	205	108	168	36	1080	≥ 245
ARBOX Plus MI2-20-S-225	20	100-300	225	108	188	36	1080	≥ 265

ARBOX® Plus MJ – Single Box with Hooked Ribbed Bars

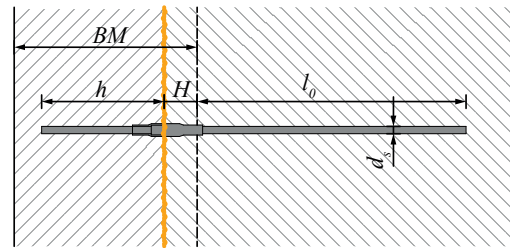
Table 18. ARBOX® Plus model MJ – Single Box with Hooked Ribbed Bars (vertical), product dimensions.



Top view



Section A-A'



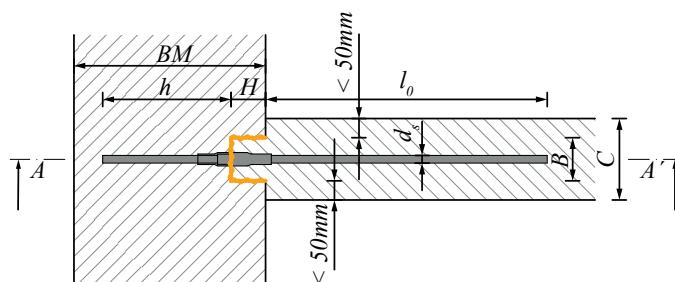
Type MJ	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Box height H [mm]	Hook length h_{min} [mm]	Hook length h_{max} [mm]	Lap length l_0 [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MJ-10-S-45	10	100-300	45	36	112	500	410	≥ 85	$\geq 180-570$
ARBOX Plus MJ-10-S-60	10	100-300	60	36	112	500	410	≥ 100	$\geq 180-570$
ARBOX Plus MJ-10-S-75	10	100-300	75	36	112	500	410	≥ 115	$\geq 180-570$
ARBOX Plus MJ-12-S-45	12	100-300	45	36	135	500	540	≥ 85	$\geq 200-570$
ARBOX Plus MJ-12-S-60	12	100-300	60	36	135	500	540	≥ 100	$\geq 200-570$
ARBOX Plus MJ-12-S-75	12	100-300	75	36	135	500	540	≥ 115	$\geq 200-570$
ARBOX Plus MJ-14-S-45	14	100-300	45	36	156	500	680	≥ 85	$\geq 225-570$
ARBOX Plus MJ-14-S-60	14	100-300	60	36	156	500	680	≥ 100	$\geq 225-570$
ARBOX Plus MJ-14-S-75	14	100-300	75	36	156	500	680	≥ 115	$\geq 225-570$
ARBOX Plus MJ-16-S-45	16	100-300	45	36	176	500	810	≥ 85	$\geq 245-570$
ARBOX Plus MJ-16-S-60	16	100-300	60	36	176	500	810	≥ 100	$\geq 245-570$
ARBOX Plus MJ-16-S-75	16	100-300	75	36	176	500	810	≥ 115	$\geq 245-570$
ARBOX Plus MJ-20-S-45	20	100-300	45	36	248	500	1080	≥ 85	$\geq 315-570$
ARBOX Plus MJ-20-S-60	20	100-300	60	36	248	500	1080	≥ 100	$\geq 315-570$
ARBOX Plus MJ-20-S-75	20	100-300	75	36	248	500	1080	≥ 115	$\geq 315-570$

ARBOX® Plus MJ1 – Single Box with Hooked Ribbed Bars

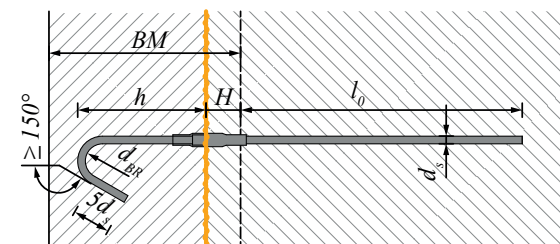
Table 19. ARBOX® Plus model MJ1 – Single Box with Hooked Ribbed Bars (horizontal), product dimensions.



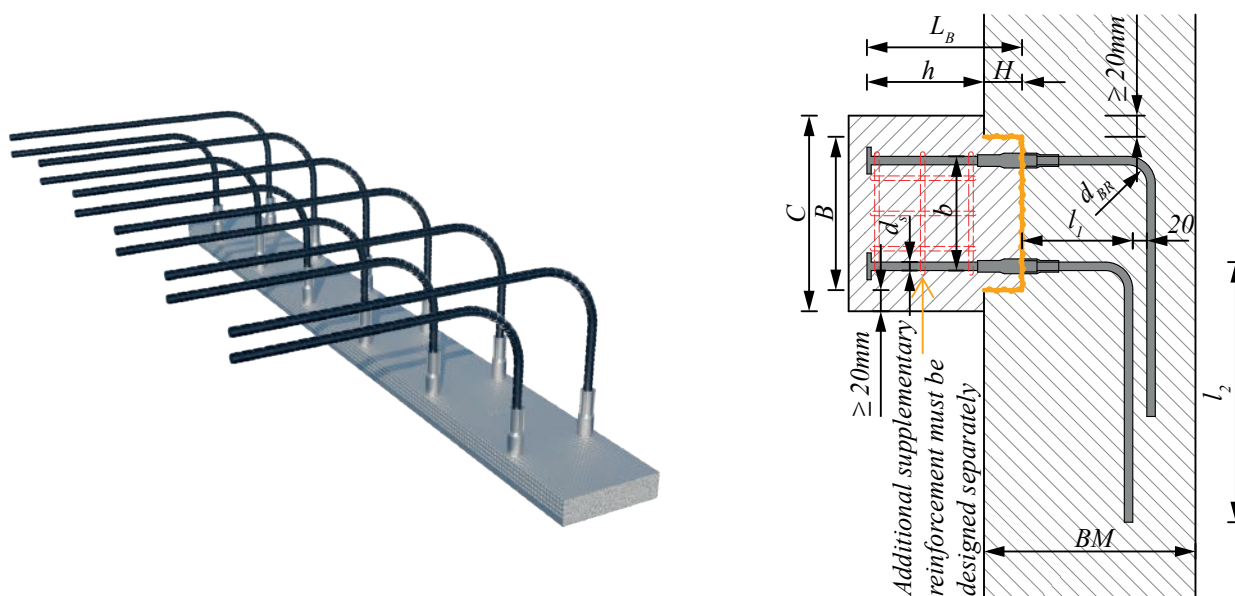
Top view



Section A-A'



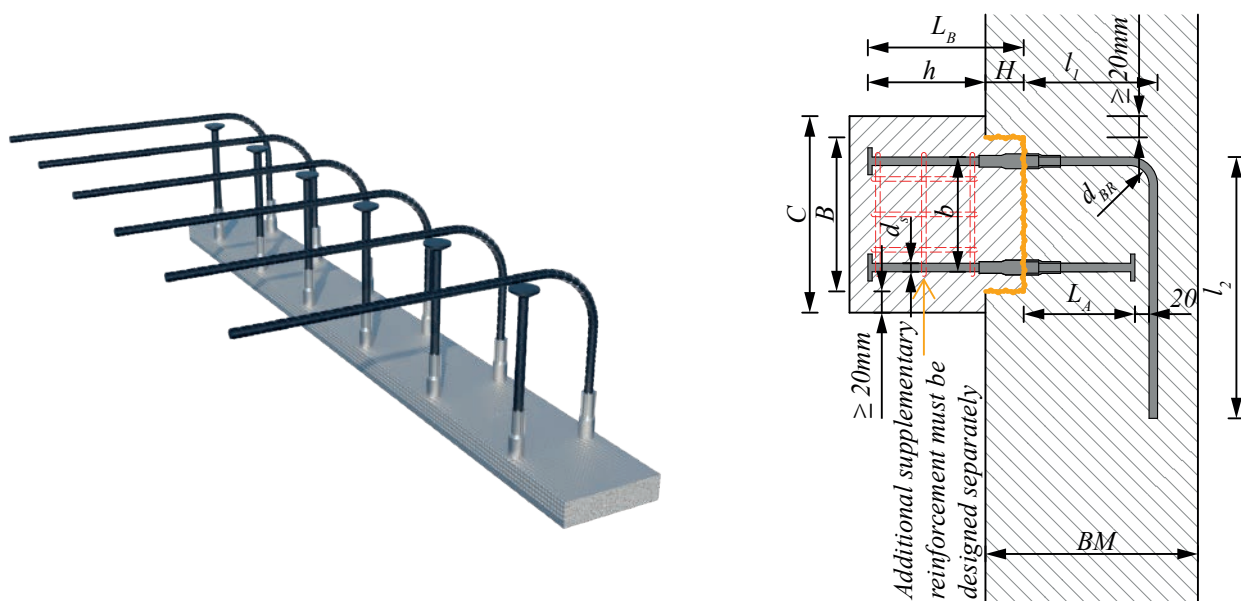
Type MJ1	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Box height H [mm]	Hook length h_{min} [mm]	Hook length h_{max} [mm]	Lap length l_0 [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MJ1-10-S-45	10	100-300	45	36	112	500	410	≥ 85	$\geq 180-570$
ARBOX Plus MJ1-10-S-60	10	100-300	60	36	112	500	410	≥ 100	$\geq 180-570$
ARBOX Plus MJ1-10-S-75	10	100-300	75	36	112	500	410	≥ 115	$\geq 180-570$
ARBOX Plus MJ1-12-S-45	12	100-300	45	36	135	500	540	≥ 85	$\geq 200-570$
ARBOX Plus MJ1-12-S-60	12	100-300	60	36	135	500	540	≥ 100	$\geq 200-570$
ARBOX Plus MJ1-12-S-75	12	100-300	75	36	135	500	540	≥ 115	$\geq 200-570$
ARBOX Plus MJ1-14-S-45	14	100-300	45	36	156	500	680	≥ 85	$\geq 225-570$
ARBOX Plus MJ1-14-S-60	14	100-300	60	36	156	500	680	≥ 100	$\geq 225-570$
ARBOX Plus MJ1-14-S-75	14	100-300	75	36	156	500	680	≥ 115	$\geq 225-570$
ARBOX Plus MJ1-16-S-45	16	100-300	45	36	176	500	810	≥ 85	$\geq 245-570$
ARBOX Plus MJ1-16-S-60	16	100-300	60	36	176	500	810	≥ 100	$\geq 245-570$
ARBOX Plus MJ1-16-S-75	16	100-300	75	36	176	500	810	≥ 115	$\geq 245-570$
ARBOX Plus MJ1-20-S-45	20	100-300	45	36	248	500	1080	≥ 85	$\geq 315-570$
ARBOX Plus MJ1-20-S-60	20	100-300	60	36	248	500	1080	≥ 100	$\geq 315-570$
ARBOX Plus MJ1-20-S-75	20	100-300	75	36	248	500	1080	≥ 115	$\geq 315-570$



Type MC	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b_{min} [mm]	Rebar width b_{max} [mm]	Box height H [mm]	Length l_{min} [mm]	Length l_{max} [mm]	Anchorage length l_2 [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MC-10-S-85	10	100-300	85	45	55	36	112	470	315	≥ 125	≥ 210-570
ARBOX Plus MC-10-S-115	10	100-300	115	66	85	36	112	470	315	≥ 155	≥ 210-570
ARBOX Plus MC-10-S-145	10	100-300	145	66	115	36	112	470	315	≥ 185	≥ 210-570
ARBOX Plus MC-10-S-175	10	100-300	175	66	145	36	112	470	315	≥ 215	≥ 210-570
ARBOX Plus MC-10-S-205	10	100-300	205	66	175	36	112	470	315	≥ 245	≥ 210-570
ARBOX Plus MC-10-S-225	10	100-300	225	66	195	36	112	470	315	≥ 265	≥ 210-570
ARBOX Plus MC-12-S-115	12	100-300	115	75	83	36	135	468	400	≥ 155	≥ 235-570
ARBOX Plus MC-12-S-145	12	100-300	145	75	113	36	135	468	400	≥ 185	≥ 235-570
ARBOX Plus MC-12-S-175	12	100-300	175	75	143	36	135	468	400	≥ 215	≥ 235-570
ARBOX Plus MC-12-S-205	12	100-300	205	75	173	36	135	468	400	≥ 245	≥ 235-570
ARBOX Plus MC-12-S-225	12	100-300	225	75	193	36	135	468	400	≥ 265	≥ 235-570
ARBOX Plus MC-14-S-115	14	100-300	115	83	83	36	156	466	500	≥ 155	≥ 255-570
ARBOX Plus MC-14-S-145	14	100-300	145	83	111	36	156	466	500	≥ 185	≥ 255-570
ARBOX Plus MC-14-S-175	14	100-300	175	83	141	36	156	466	500	≥ 215	≥ 255-570
ARBOX Plus MC-14-S-205	14	100-300	205	83	171	36	156	466	500	≥ 245	≥ 255-570
ARBOX Plus MC-14-S-225	14	100-300	225	83	191	36	156	466	500	≥ 265	≥ 255-570
ARBOX Plus MC-16-S-115	16	100-300	115	91.5	91.5	36	176	464	595	≥ 185	≥ 280-570
ARBOX Plus MC-16-S-145	16	100-300	145	91.5	111	36	176	464	595	≥ 185	≥ 280-570
ARBOX Plus MC-16-S-175	16	100-300	175	91.5	141	36	176	464	595	≥ 215	≥ 280-570
ARBOX Plus MC-16-S-205	16	100-300	205	91.5	171	36	176	464	595	≥ 245	≥ 280-570
ARBOX Plus MC-16-S-225	16	100-300	225	91.5	191	36	176	464	595	≥ 265	≥ 280-570
ARBOX Plus MC-20-S-145	20	100-300	145	108	108	36	248	460	785	≥ 245	≥ 355-570
ARBOX Plus MC-20-S-175	20	100-300	175	108	138	36	248	460	785	≥ 245	≥ 355-570
ARBOX Plus MC-20-S-205	20	100-300	205	108	168	36	248	460	785	≥ 245	≥ 355-570
ARBOX Plus MC-20-S-225	20	100-300	225	108	188	36	248	460	785	≥ 265	≥ 355-570

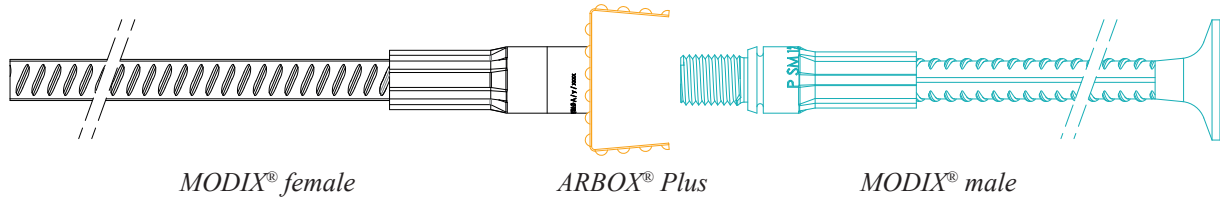
ARBOX® MF – Single Box with Headed Anchors and Bend Ribbed Bars

Table 21. ARBOX® model MF – Single Box with Headed Anchors and Bent Ribbed Bars, product dimensions.



Type MF	Diameter d_s [mm]	Rebar spacing s [mm]	Box width B [mm]	Rebar width b_{min} [mm]	Rebar width b_{max} [mm]	Box height H [mm]	Headed anchor length L_A [mm]	Length l_{min} [mm]	Length l_{max} [mm]	Anchorage length l_2 [mm]	Component thickness C [mm]	Bearing member width BM [mm]
ARBOX Plus MF-10-S-85	10	100-300	85	45	55	36	155	185	500	315	≥ 125	≥ 250-780
ARBOX Plus MF-10-S-115	10	100-300	115	66	85	36	155	185	500	315	≥ 155	≥ 250-780
ARBOX Plus MF-10-S-145	10	100-300	145	66	115	36	155	185	500	315	≥ 185	≥ 250-780
ARBOX Plus MF-10-S-175	10	100-300	175	66	145	36	155	185	500	315	≥ 215	≥ 250-780
ARBOX Plus MF-10-S-205	10	100-300	205	66	175	36	155	185	500	315	≥ 245	≥ 250-780
ARBOX Plus MF-10-S-225	10	100-300	225	66	195	36	155	185	500	315	≥ 265	≥ 250-780
ARBOX Plus MF-12-S-115	12	100-300	115	75	83	36	160	192	500	400	≥ 155	≥ 260-790
ARBOX Plus MF-12-S-145	12	100-300	145	75	113	36	160	192	500	400	≥ 185	≥ 260-790
ARBOX Plus MF-12-S-175	12	100-300	175	75	143	36	160	192	500	400	≥ 215	≥ 260-790
ARBOX Plus MF-12-S-205	12	100-300	205	75	173	36	160	192	500	400	≥ 245	≥ 260-790
ARBOX Plus MF-12-S-225	12	100-300	225	75	193	36	160	192	500	400	≥ 265	≥ 260-790
ARBOX Plus MF-14-S-115	14	100-300	115	83	83	36	160	194	500	500	≥ 155	≥ 260-790
ARBOX Plus MF-14-S-145	14	100-300	145	83	111	36	160	194	500	500	≥ 185	≥ 260-790
ARBOX Plus MF-14-S-175	14	100-300	175	83	141	36	160	194	500	500	≥ 215	≥ 260-790
ARBOX Plus MF-14-S-205	14	100-300	205	83	171	36	160	194	500	500	≥ 245	≥ 260-790
ARBOX Plus MF-14-S-225	14	100-300	225	83	191	36	160	194	500	500	≥ 265	≥ 260-790
ARBOX Plus MF-16-S-115	16	100-300	115	91.5	91.5	36	165	201	500	595	≥ 185	≥ 270-800
ARBOX Plus MF-16-S-145	16	100-300	145	91.5	111	36	165	201	500	595	≥ 185	≥ 270-800
ARBOX Plus MF-16-S-175	16	100-300	175	91.5	141	36	165	201	500	595	≥ 215	≥ 270-800
ARBOX Plus MF-16-S-205	16	100-300	205	91.5	171	36	165	201	500	595	≥ 245	≥ 270-800
ARBOX Plus MF-16-S-225	16	100-300	225	91.5	191	36	165	201	500	595	≥ 265	≥ 270-800
ARBOX Plus MF-20-S-145	20	100-300	145	108	108	36	170	248	500	785	≥ 245	≥ 315-845
ARBOX Plus MF-20-S-175	20	100-300	175	108	138	36	170	248	500	785	≥ 245	≥ 315-845
ARBOX Plus MF-20-S-205	20	100-300	205	108	168	36	170	248	500	785	≥ 245	≥ 315-845
ARBOX Plus MF-20-S-225	20	100-300	225	108	188	36	170	248	500	785	≥ 265	≥ 315-845

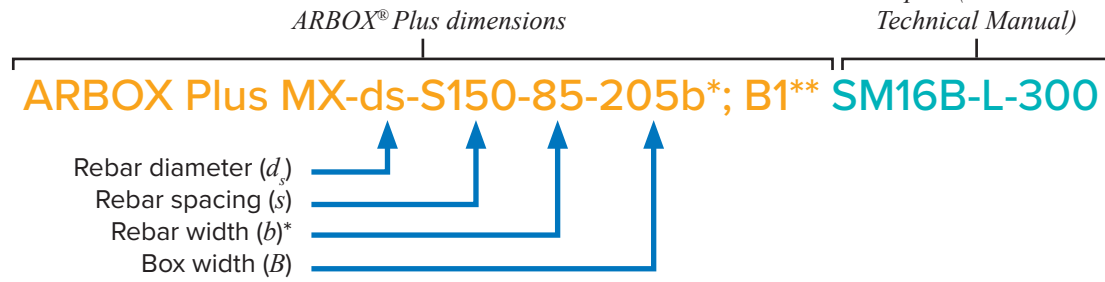
How to order ARBOX® Joint Reinforcement with MODIX® Rebar coupler



BOX part
Assembly part

Rebar part
Separate item

*Description of MODIX®
male part (see MODIX®
Technical Manual)*



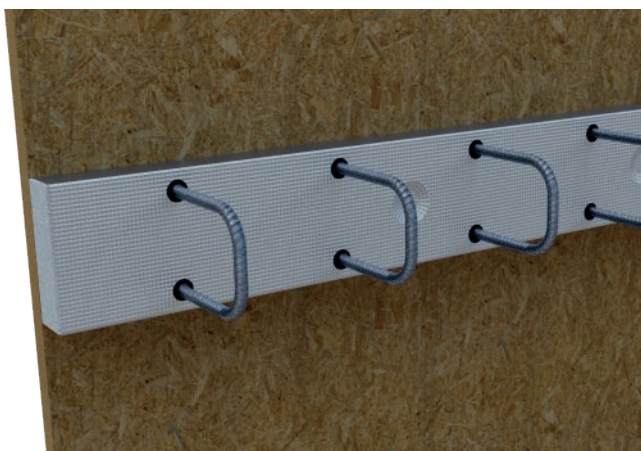
- Respect box dimensions from *Table 17 to 21* of the technical manual.
- Shape of rebars can be produced based on *Tables 17 to 21* of the technical manual.
- Respect minimum dimension of bent reinforcement bar from *Table 5* of MODIX® Technical manual.
- Shear resistances of ARBOX® with MODIX® models can be calculated with full capacity of rebar which is up to 550 MPa considering box surface parameters.
- Rebar spacing starting from 100 mm up to 300 mm with c/c 50 mm.
- Rebar diameter is 10, 12, 14, 16, and 20 mm.
- Maximum width of the ARBOX® Box is 225 mm.
- ARBOX® Box Length is 1250 mm.

* Rebar width (b) needs to be defined for ARBOX® models MA, MA1, MA2, MI2, MC and MF.

** Single box width (B) needs to be defined for ARBOX® model MA2.

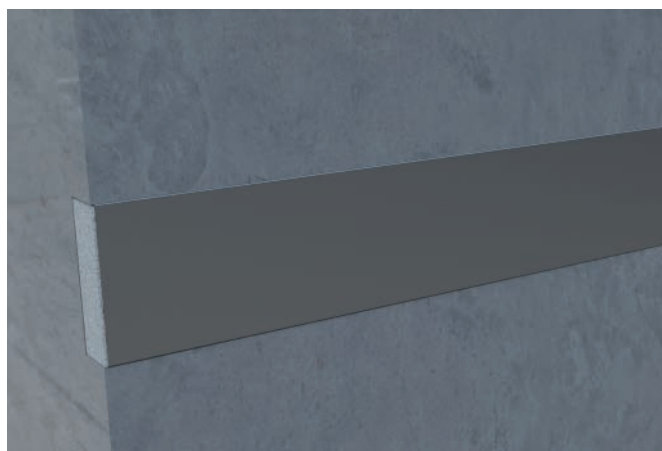
Installing ARBOX® Joint Reinforcement

Before casting, fix the ARBOX® Joint Reinforcement in the planned position by nailing it onto the wooden formwork or connecting it to the existing reinforcement.



Pour concrete into the formwork.

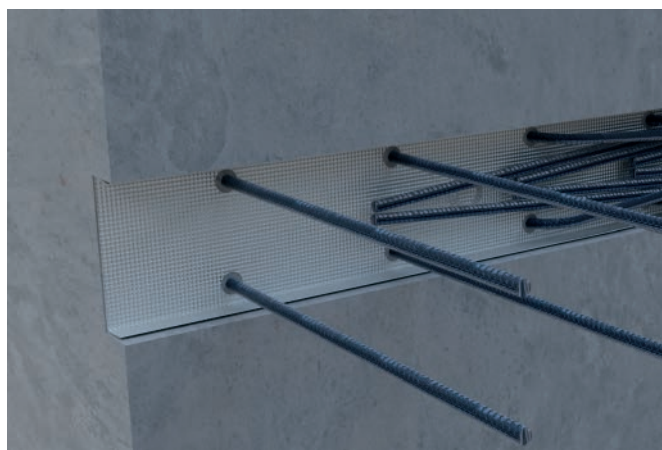
When the formwork is removed the ARBOX® Plus steel cover is revealed.



Remove the ARBOX® Plus steel cover by cutting the tapes that secure it. Then place the claw of a hammer at one end and pull it away to expose the pre-bent bars.



Straighten the bars using an appropriate re-bending tool (e.g. pipe with internal diameter not greater than 2× nominal bar diameter). **Bars must only be straightened once.**



In case of models ARBOX® Plus K and C it is necessary to remove the polystyrene block. For straightening of rebar loops can be used re-bending tool.

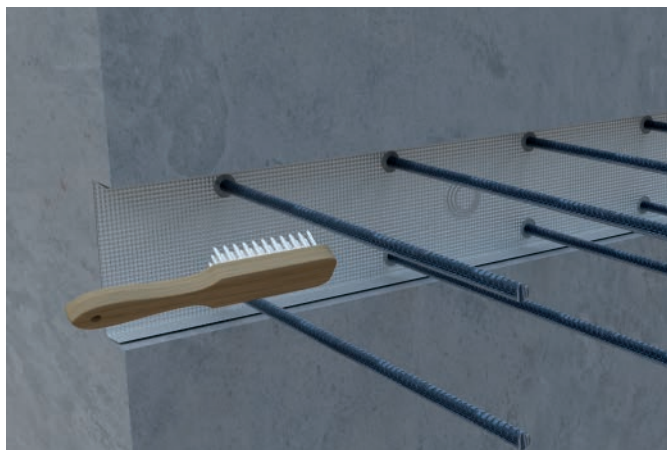


Re-bending tool can be delivered as a special offer. Contact local Peikko unit for more information.

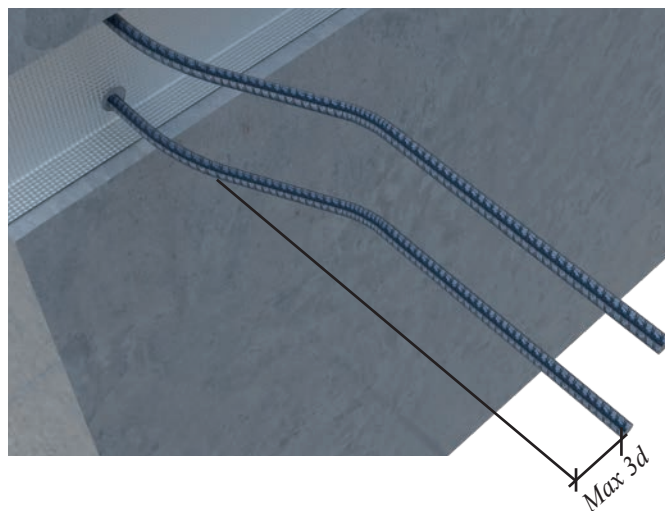


INSTALLING

Remove concrete debris. Once the bars are straightened and aligned. They are ready for overlapping with the element reinforcement. Overlapping length is length l_o .

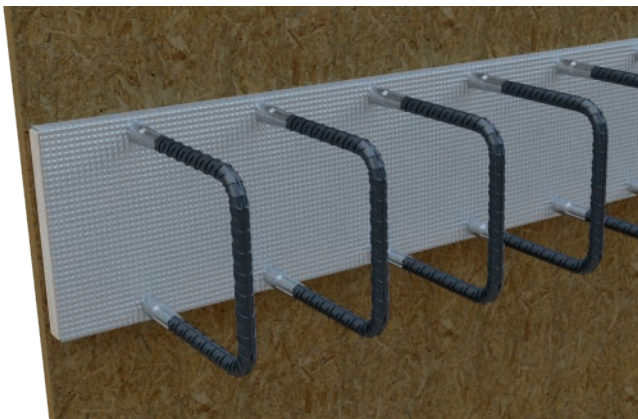


The offset of the rebar after straightening shall be maximum $3 \times d$.



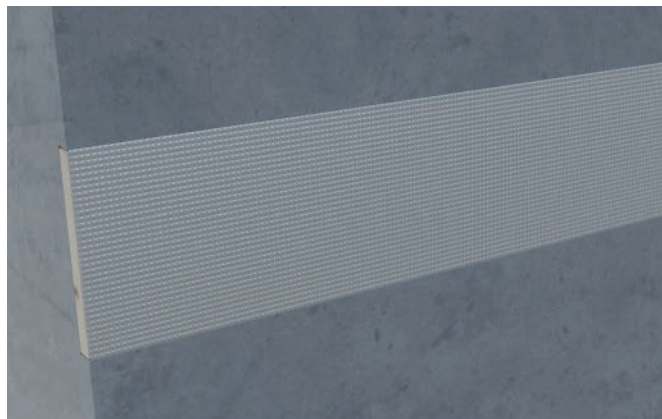
Installation with MODIX® Rebar Coupler

Before casting fix the ARBOX® Joint Reinforcement in the planned position by nailing it onto the wooden formwork or connecting it to the existing reinforcement.

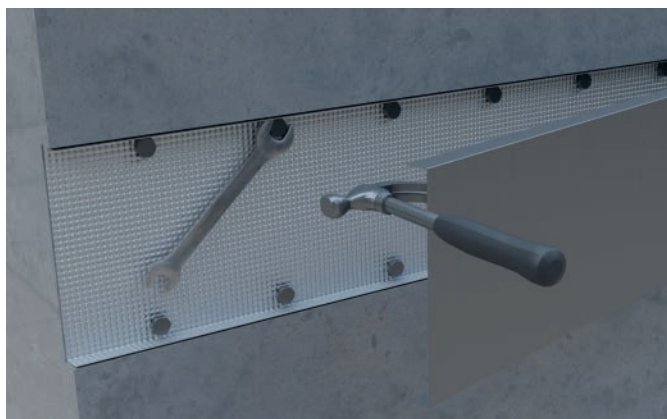


Pour concrete into the formwork.

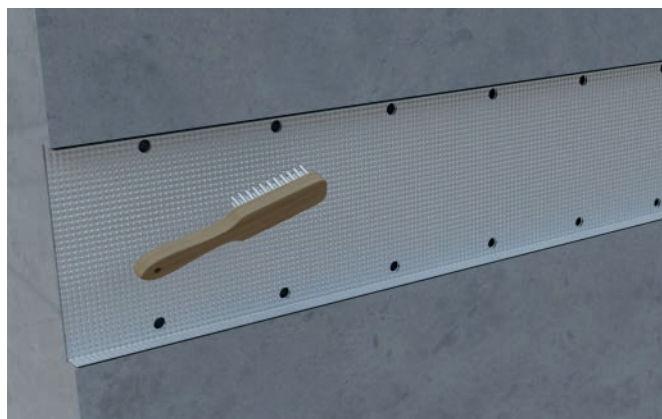
When the formwork is removed the ARBOX® Plus steel cover is revealed.



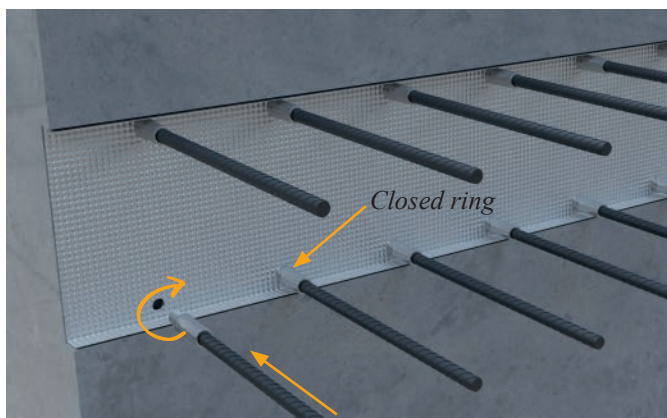
Remove the ARBOX® Plus steel cover by cutting the tapes that secure it, then place the claw of a hammer at one end and pull it away. Remove bolts inside of the steel box by wrench.



Remove concrete debris and clean interior of the box.



Install the male part of the MODIX® Rebar couplers. MODIX® Rebar couplers are tightened when ring at male part is closed. Rebars are then ready for overlapping with the element's reinforcement. Overlapping length is length l_0 .



Revisions

Version: PEIKKO GROUP 10/2025. Revision: 07

- Update of the information related to additional reinforcement of the corbels.
- Update of figures in Chapters 2.1.2 and 2.3.2.
- Updated Chapter 1.3.
- Updated Annex A.
- Added Tables 13 to 22.

Version: PEIKKO GROUP 01/2024. Revision: 06

- Removal of ARBOX® model, implementation of ETA certificate for ARBOX® Plus, shear resistances with PSB® Headed Anchors, and information about installation tool

Version: PEIKKO GROUP 04/2022. Revision: 05

- Updates to Tables 1, 2, 3, 4 and references to tables for ordering clarity.

Version: PEIKKO GROUP 05/2021. Revision: 04

- Product portfolio extended.
- Includes ARBOX®, ARBOX® Plus, ARBOX® Strong models.

Version: PEIKKO GROUP 10/2020. Revision: 03

- Internal use only. Not intended for public use.
- Includes ARBOX® Plus and ARBOX® Strong models.

Version: PEIKKO GROUP 01/2019. Revision: 02

- Product portfolio extended.
- Branding updated to 2018.

Version: PEIKKO GROUP 04/2018. Revision: 01*

- New cover design for 2018 added.

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Environmental Product Declarations and management system certificates can be found at the quality section of our websites.

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