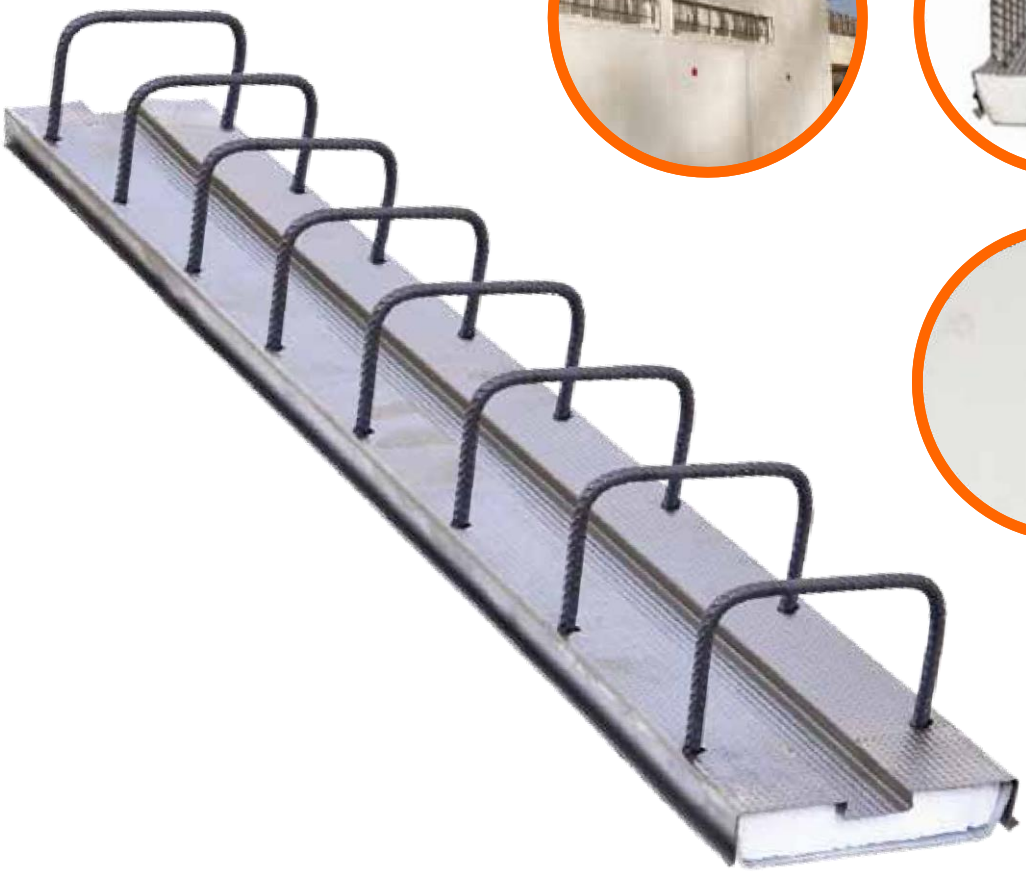
cortartec

STbox

Waiting boxes for reinforced concrete

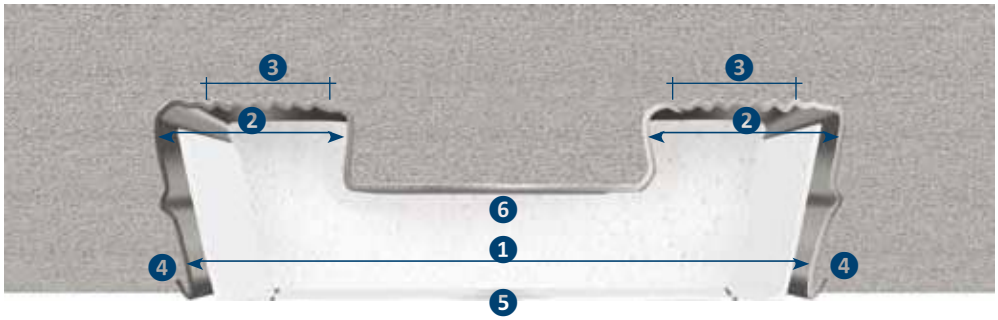
1.1



STbox

It is the only waiting box that performs an effective mechanical fastening between two concrete phases/elements.

Thanks to its uniquely shaped profile specially designed to anchor in concrete, the Cortartec Stbox is the only waiting box that becomes an anchor capable of recovering the important forces that occur in the construction joints.



The technical and geometric characteristics of the Stabox provide the following unique advantages:

❶ The outer dovetail shape ensures the seal of the joint between the two concrete parts.

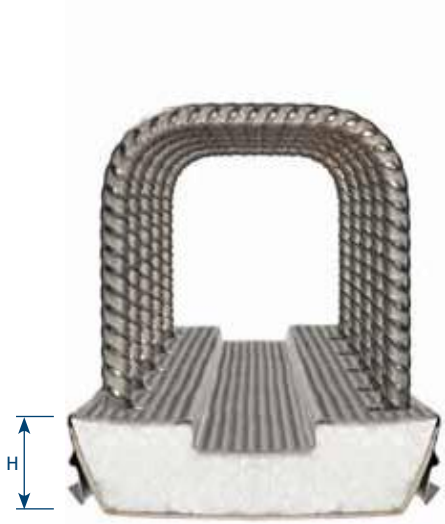
❷ The triple inner dovetail shape anchors the profile to the concrete and bridges the joint. Only Stbox is able to improve the seal at the construction joint.

❸ The diamond-shaped tips on the back of the steel case improve the surface roughness and thus allow the transmission of stresses and settlements.

❹ The anchor tongues ensure that the edges of the box do not detach from the concrete when removing the cover and guarantee a high anchor quality.

❺ Thanks to longitudinal perforations along the Tetrapack lid, its removal is very easy and simple in any circumstance.

❻ The polystyrene elements, perfectly adapted to the box profile, prevent the grout and formwork oil from penetrating through the ends of the box.



Ribbed steel BE 500 sAFCA-BENOR KIWA CERTIFICATE

6 mm cold molded.

Folding of 8, 10 and 12 mm – in one go.

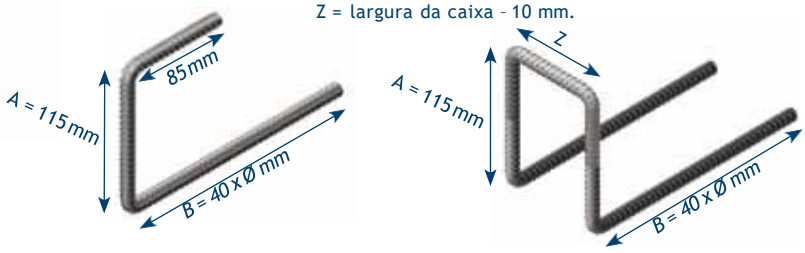
Technical details

Standard box lengths are 1.20 m and 2.45 m.

The width of the box is defined by the template.

The thickness, H, of the box varies between 30 and 45 mm, depending on the diameter and dimensions of the holding rods.

Z = largura da caixa - 10 mm.



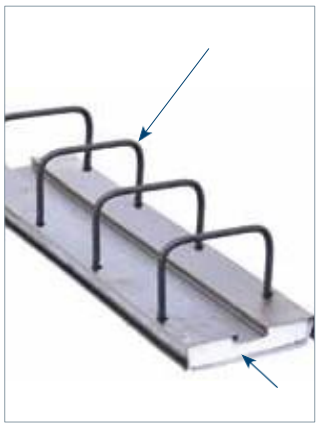
* The length of the profile is 1.20m and 2.45m

Detail of the standard stirrups. On request, other lengths of A and B can be manufactured.

STbox

Installation

1. Verify that the dimensions of the STBOX waithold box you choose that are compatible with the coatings required in the second phase. Check the correct location of the poly-pull plugs at both ends of the box.
2. Attach the Stbox box to the formwork and/or possibly to the reinforcement.
3. Concreting the first phase.
4. After concreting, remove the polystyrene cover and plugs from the Stbox.
5. The waiting rods look perfectly clean.
6. Straighten the waiting rods with the help of the appropriate tool so as not to create "bayonets".



1

2

3

4

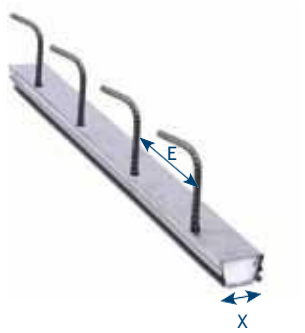
5

6

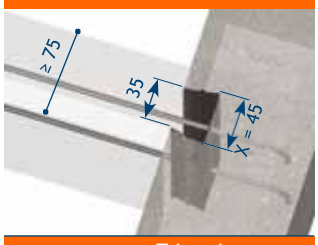
STbox

Standard stbox types

Type S

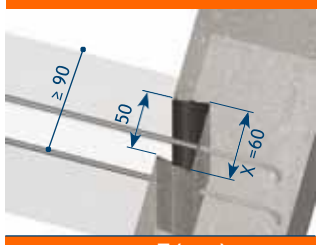


45 S



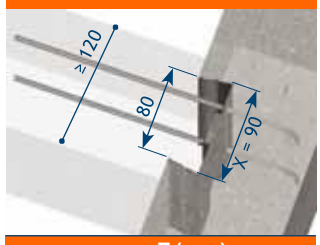
	E (mm)			
Ø 6	-	200	240	300
Ø 8	150	200	240	-
Ø 10	150	200	-	-

60 S



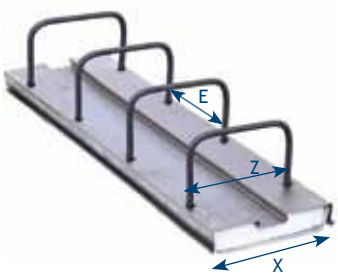
	E (mm)			
Ø 6	-	-	-	-
Ø 8	150	200	-	-
Ø 10	150	200	-	-

90 S

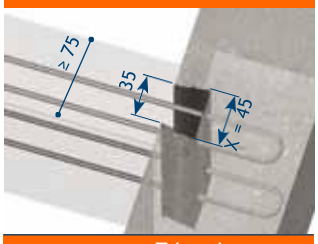


	E (mm)			
Ø 8	-	-	-	-
Ø 10	100	150	-	-
Ø 12	100	150	200	-

Type D

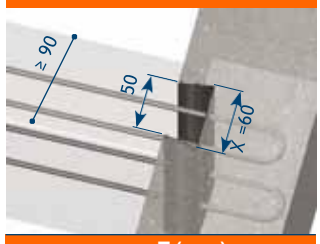


45 D



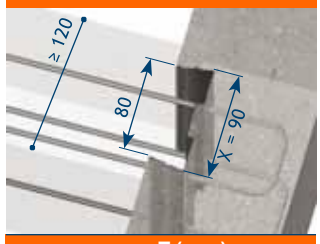
	E (mm)			
Ø 6	200	-	300	-
Ø 8	-	-	-	-
Ø 10	-	-	-	-

60 D



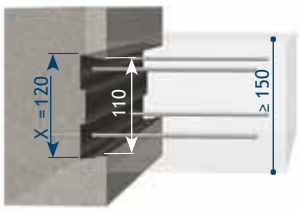
	E (mm)			
Ø 6	-	-	-	-
Ø 8	200	-	-	-
Ø 10	-	-	-	-

90 D



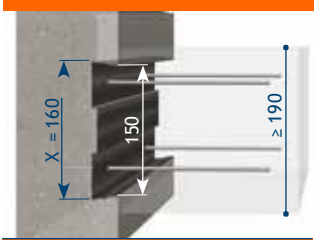
	E (mm)			
Ø 6	-	200	240	300
Ø 8	150	200	240	-
Ø 10	150	200	-	-

120 D



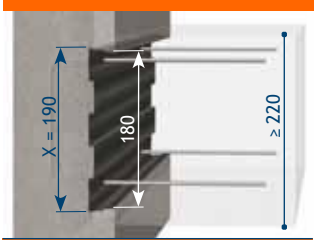
	E (mm)			
Ø 6	-	200	240	-
Ø 8	150	200	240	-
Ø 10	150	200	-	-

160 D



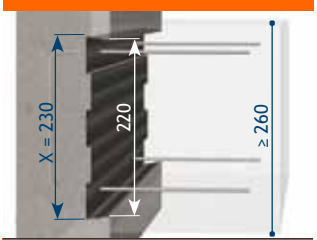
	E (mm)			
Ø 6	-	-	-	-
Ø 8	150	200	-	-
Ø 10	150	200	-	-
Ø 12	150	200	-	-

190 D



	E (mm)			
Ø 6	-	-	-	-
Ø 8	150	200	-	-
Ø 10	150	200	-	-
Ø 12	150	200	-	-

230 D

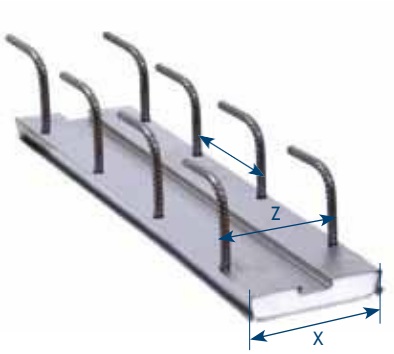


	E (mm)			
Ø 6	-	-	-	-
Ø 8	150	-	-	-
Ø 10	150	200	-	-
Ø 12	150	-	-	-

Tipo DS

Tipo 120 - 160 - 190 - 230 DS			
Tipo	Ø mm	E mm	
120 DS	Ø 10	100	150
	Ø 12	100	150
160 DS	Ø 10	-	150
	Ø 12	100	150
190 DS	Ø 10	-	150
	Ø 12	100	150
230 DS	Ø 10	-	150
	Ø 12	100	150

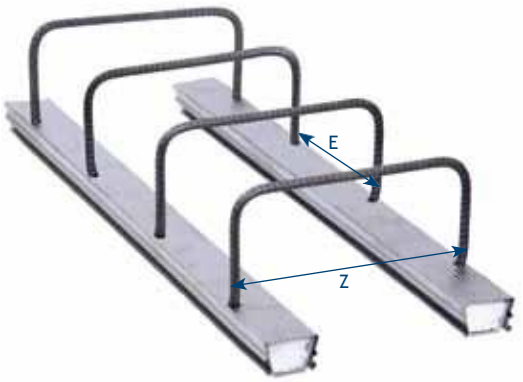
Z = X - 10 mm



Tipo DX

Tipo DX				
Ø mm	E mm			
Ø 6	-	200	240	300
Ø 8	150	200	240	-
Ø 10	150	200	-	-
Ø 12	150	200	-	-

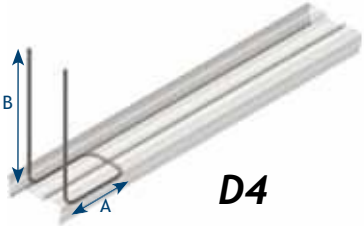
Z = dimensão a determinar



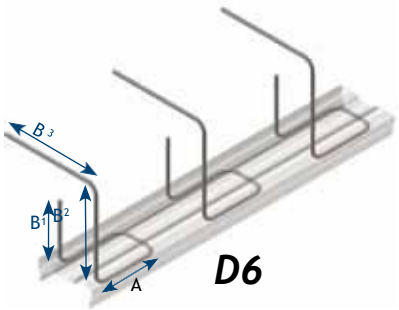
Inverted Footpeg Stabox

For the execution of reinforced concrete supports, the Stabox waiting box can be used with the running board folded inside the box. The stirrups can be folded according to details D4, D6 and D7.

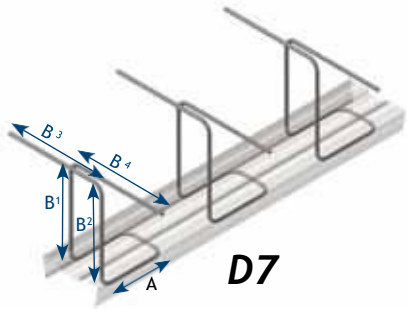
Specify the dimensions and coatings of the brackets.



D4



D6



D7

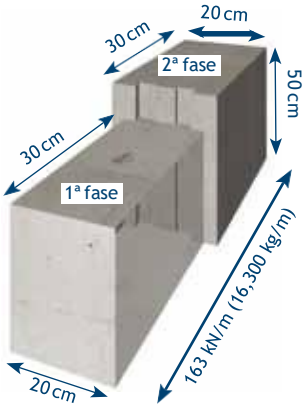
Dimensions of the holds:

A - depending on the dimensions of the work and coating required. B x 40xmm. B1, B2, B3 according to the concrete dimension.

Table of correspondence between steel sections and maximum lengths of bars by diameter: See page 8

STbox

Influence of the box profile



In the laboratory, tensile tests were carried out on all types of unarmored Stabox boxes.
It was carried out in two phases and the tensile test was carried out until the result was achieved.

Several types of rupture were found:

A - liquid concrete breakage, the box is fitted to the concrete of the first stage.

B - local breakage followed by a softening of the box outside the concrete of the first phase.

C - softening of the two phases of the concrete.

Essay I

Stabox 45 box and other profiles available on the market

Essay	Box	Load N/mm2	Breakage
I-1	**Stabox**	**2,1**	**A**
I-2	X	1,3	B
I-3	Y	1,9	A
I-4	Z	0,9	C

Essay II

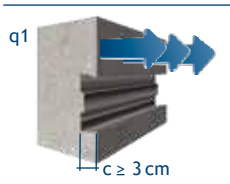
Stabox 120 box and other profiles available on the market

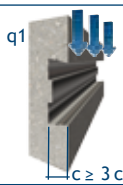
Essay	Box	Load N/mm2	Breakage
II-1	**Stabox**	**1,5**	**A**
II-2	X	1,8	B
II-3	Y	0,3	A
II-4	Z	1,3	C

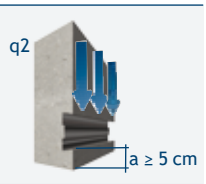
STABOX Profile Features

Thanks to the dove-like shape of the profile, the Stabox can recover important efforts on its own.

The permissible values are shown in kN/m for the boxes (without stirrups) in concrete class C25/30.







Modelo	Tração (kN/m)	Rasante (kN/m)	Cortante (kN/m)	Cortante (kN/m)
45S - 45D	17,5	43,2	14,9	7,4
60S - 60D	25,0	59,4	17,9	8,9
90S - 90D	40,0	91,8	26,4	13,4
120D	55,0	124,2	38,7	19,3
160D	75,0	167,4	47,6	23,8
190D	90,0	199,8	56,5	28,2
230D	110,0	242,0	68,4	34,2

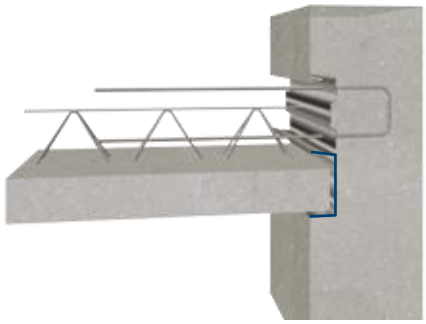
Estes resultados não implicam que o aço possa ser considerado como tendo menos esforço, porque a caixa absorve o resto, mas também permite evitar o excesso de dimensionamento.

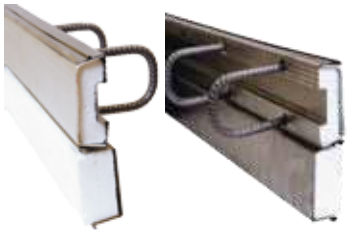
STbox

Accessories

Pre-formwork

Special box acting as a negative for the support of the pre-lage system and thus facilitate its placement.





Brace

Tie rods to ensure good stability of the set and prevent possible sliding on the slab.
The tie rod shall have a total length of less than 20 mm of the wall thickness.

On-site fastening

- In a wooden formwork, the Stbox is nailed or tied to the reinforcement
- In a metal formwork, the Stbox is fixed by magnets or magnetized bands, and connected to the reinforcement.
-

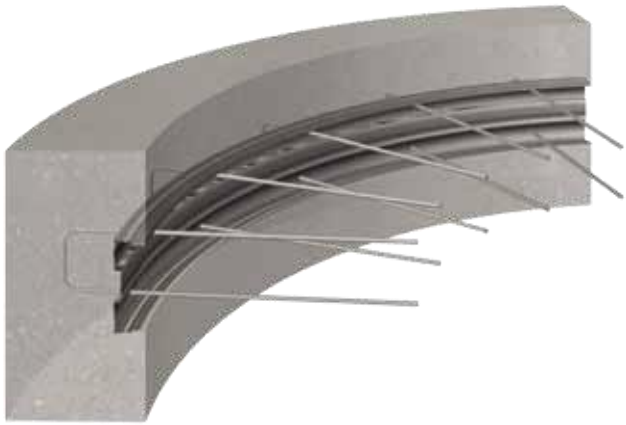
Magnets:

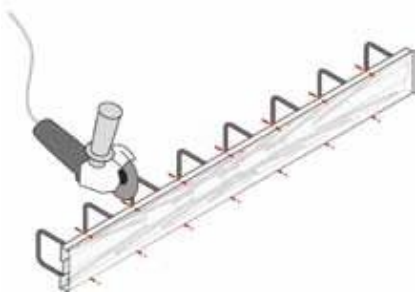
Type 45 for Stbox 45 and 60.
Type 90 for the Stbox 90
Type 120 for Stbox 120
Type 160 for Stbox 160
Type 190 for stbox 190 and 230

The magnet is made of synthetic resin with ferrites inserted. It is placed on each extension of the Stbox by pushing the polystyrene fill into the box (never take polystyrene out).
For each of the Stbox waiting boxes placed horizontally, it is necessary to place a strap. The magnet always recovers very easily during formwork.

Stbox curved

It is possible to bend the Stbox boxes by sawing the edges of the box, special care will be taken not to cut or damage the folded armor inside. The cuts will need to be covered to prevent mortar from entering the box during concreting.



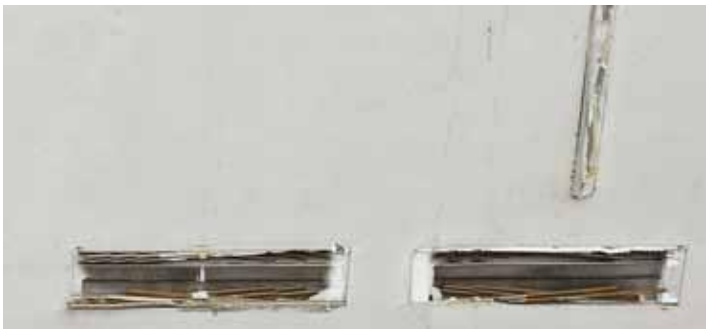


Tabelas STbox

cortartec

Concordance between steel sections - cm2/m					
Ø /E (mm)	100	150	200	240	300
6 (0,222 kg/m)	2,83	1,87	1,41	1,18	0,95
8 (0,395 kg/m)	5,03	3,33	2,51	2,09	1,71
10 (0,617 kg/m)	7,85	5,27	3,93	3,27	2,67
12 (0,888 kg/m)	11,31	7,53	5,65	4,71	3,84

Maximum length of dimension B						
		Clearance				
Tipo	Ø Aço	300	240	200	150	100
45 S	6	1100	1100	1000		
	8	1000	800	700	500	
	10		600	500	390	
	12					
60 S	6					
	8		1100	1000	800	
	10			800	700	
	12					
90 S	6					
	8					
	10			1050	900	600
	12			950	700	480
90 D	6	1000	900	800	750	
	8	800	700	600	450	
	10			500	390	
	12					
120 D	6	1200	1200	1000		
	8	1000	750	600	500	
	10			650	400	
	12					
160 D	6			1200	1200	
	8			1100	900	
	10			800	700	
	12			750	600	



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