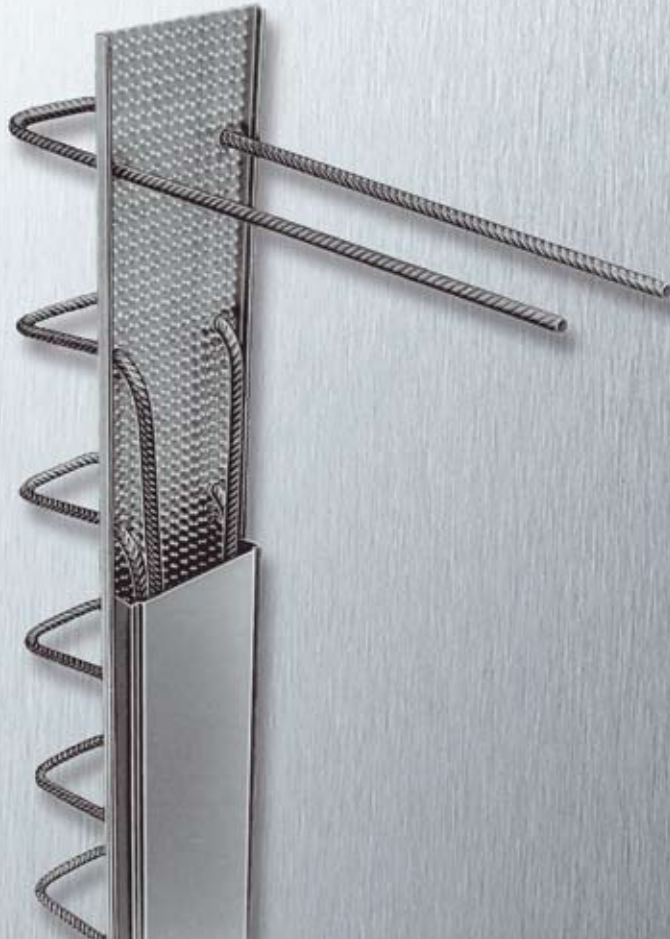


HALFEN HBT REBEND CONNECTION

TECHNICAL PRODUCT INFORMATION



HALFEN HBT REBEND CONNECTION

HBT 06-E

CONCRETE



HALFEN

YOUR BEST CONNECTIONS

HALFEN REBEND CONNECTION HBT

System description



HBT technical specifications

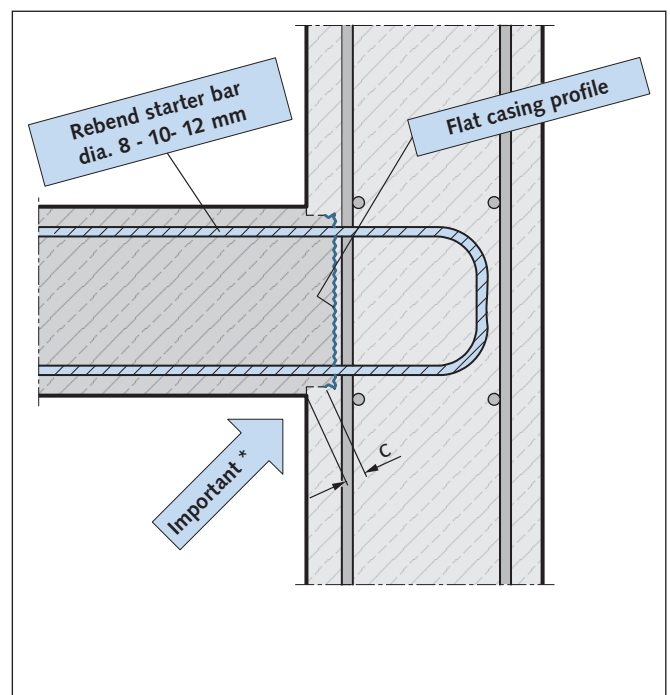
- Material of starter bars:
 - a) BSt 500 acc. to DIN 488
(characteristic yield strength $f_{yk} = 500 \text{ N/mm}^2$)
 - b) BSt 500 NR, stainless steel grade A4 available on request,
bar diam. 8 - 10 - 12 mm
- Bending roll diameter at the rebending angle $d_{BR} = 6 \times d_s$.
- 7 different profiles to suit wall thicknesses from 8 to 23 cm. (Special versions are available on request for thicker walls).
- Casings available for single or double bars - 13 different bar shapes in the range.
- Standard element lengths: 1,25 m and 0,80 m. Other lengths on request.

HBT product features

HALFEN Rebind Connections HBT are type tested. They comply with the requirements acc. to applicable specifications such as the German specification sheet for rebending of reinforcement bars and requirements on recess casings of the DBV (German Concrete Association) issued 02/2005. The overlapping lengths are according to DIN 1045-1:2001-07, sec. 12.3.2.

For these reasons an approval certificate is not required for the rebind connection.

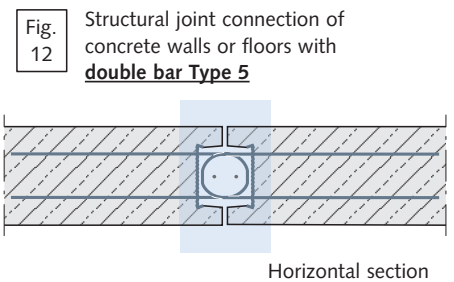
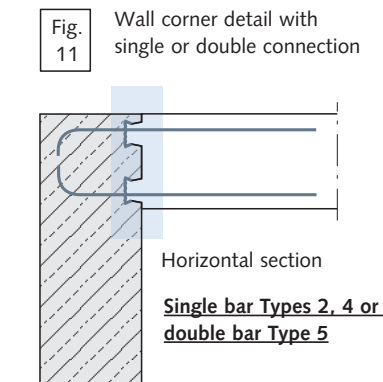
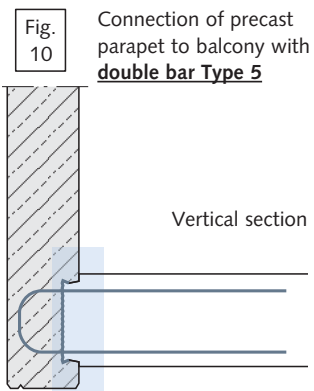
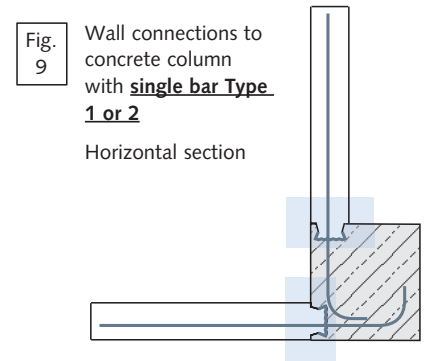
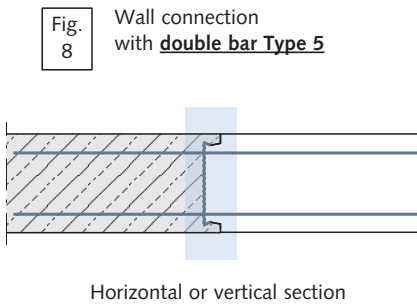
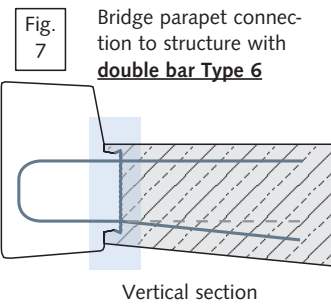
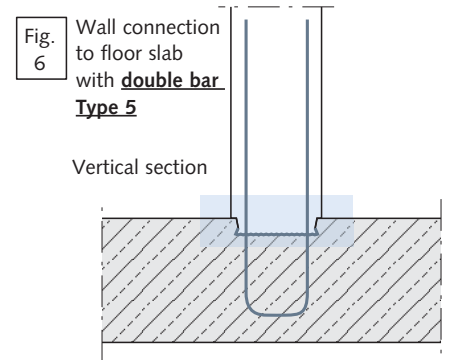
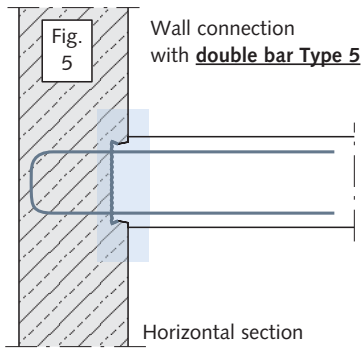
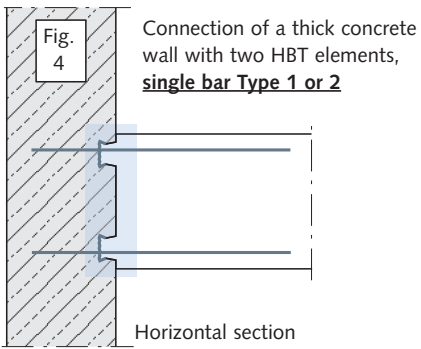
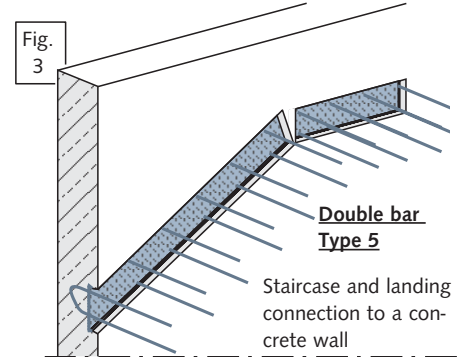
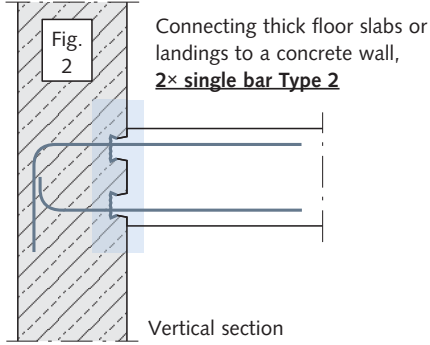
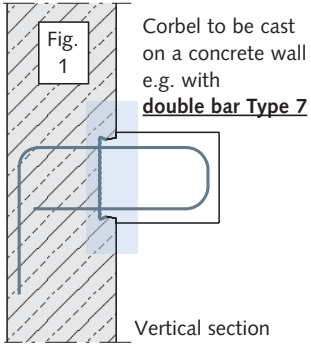
- The expansion tests carried out with rebind starter bars resulted in crack widths 'w' clearly below the required limits.
- The steel casing with profiled back provides an optimal key with the adjacent concrete and resistance to shear loads.
- The casing has short side returns to keep the steel well back and provide concrete cover (see "c" in drawing below).
- Casing can easily be nailed to the formwork.
- U-shaped profile covers made of **pre-galvanized steel** prevent corrosion and assure the necessary stability during the concreting.
- Special flanges of the casing profile prevent ingress of fresh concrete.
- Preformed hole to facilitate the removal of the covering from HBT casing profile.
- No plastic components remaining in the concrete.



HALFEN REBEND CONNECTION HBT

System description

HBT application examples

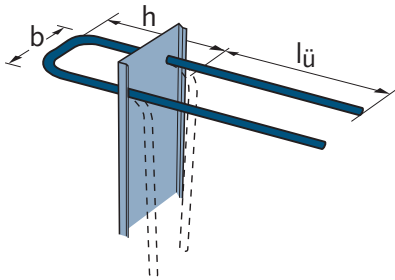


HALFEN REBEND CONNECTION HBT

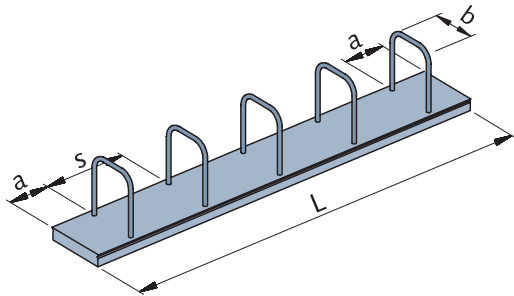
Double bar

HBT 120 und HBT 150

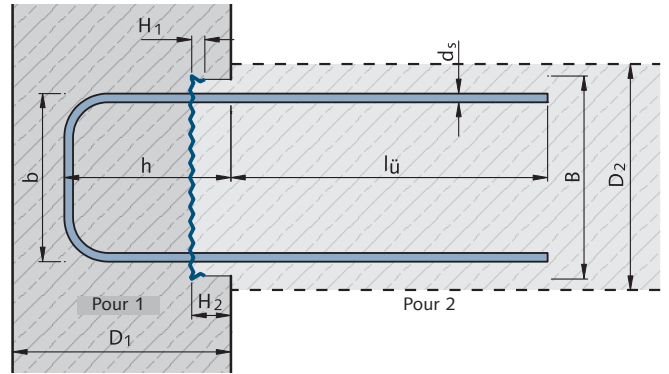
Type 5 Double bar, standard version



- Bending roll diameter at the rebending point $d_{BR} = 6 \times d_s$ (acc. to regulation)
- Material: Reinforcement steel BSt 500 S or BSt 500 WR.



System:



HBT Type 5 – system arrangement

Element length L	Bar spacing s [cm]	No. of bars	End distance a [cm]
Standard element L = 1250 mm	10	12	7,5
	15	8	10,0
	20	6	12,5
	25	5	12,5

HBT Type 5 – standard elements length 1250 mm (continuation of the table see → next page)

Designation	Bar diam. d_s / - spacing s [mm/cm]	Order code	Connecting reinforcement dimensions			For element thickness		Casing dimensions			Element weight [kg]	
			$l_{\ddot{u}}$ [mm]	h [mm]	b [mm]	D_1 [cm]	D_2 [cm]	Width B [mm]	Height H_1 [mm]	Height with coverl H_2 [mm]		
HBT 120	8/15	00001	320	170	88	≥ 20	13 - 18	122	12	24	4,9	
	8/20	00002									4,1	
	8/25	00003									3,7	
	10/15	00004	390		90					30	7,5	
	10/20	00005										6,1
	10/25	00006										5,4
	12/15	00007	390		92					36	10,1	
	12/20	00008	8,5									
	12/25	00009	7,6									
HBT 150	8/15	00001	320	170	116	≥ 20	16 - 21	150	12	24	5,3	
	8/20	00002									4,4	
	8/25	00003									4,0	
	10/10	00010	360		118					30	10,8	
	10/15	00004	7,9									
	10/20	00005	6,4									
	10/25	00006	390		120					36	5,6	
	12/10	00011										16,2
	12/15	00007										11,5
	12/20	00008	460		9,1							
	12/25	00009								7,9		

Notes:

- Other element lengths on request.
- The anchoring lengths of the respective bars must be dimensioned according to the actual tension loads. The applicable standards such as DIN 1045-1, sect. 12.6 must be observed.
- Notes for the calculation of the anchoring length see → DBV specification sheet 'rebending', for further information please contact HALFEN.
- Standard- $l_{\ddot{u}}$ corresponds with the required overlapping length acc. to DIN 1045-1 for concrete grade C20/25, reduced by 20%, as the allowable load of the reinforcement can be used at 80% of the full capacity (see DBV specification sheet 'rebending')

HALFEN REBEND CONNECTION HBT

Double bar

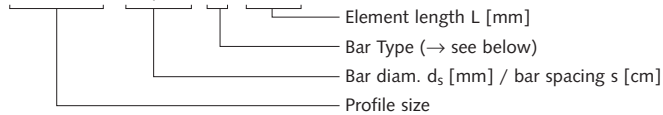
HBT 190 und HBT 220

HBT Type 5 – standard elements length 1250 mm (continuation of the table see → next page)

Designation Profile	Bar diam. d_s / - spacing s [mm/cm]	Order code 0054.060-	Connecting reinforcement dimensions			For element thickness		Casing dimensions			Element weight [kg]
			$l_{\ddot{u}}$ [mm]	h [mm]	b [mm]	D_1 [cm]	D_2 [cm]	Width B [mm]	Height H_1 [mm]	Height with coverl H_2 [mm]	
HBT 190	8/15	00001	320	170	152	≥ 20	19 - 24	186	12	24	5,8
	8/20	00002									4,9
	8/25	00003									4,5
	10/10	00010	390		154					30	11,5
	10/15	00004									8,5
	10/20	00005									6,9
	10/25	00006	460		156					36	6,2
	12/10	00011									17,0
	12/15	00007									12,1
	12/20	00008									9,7
12/25	00009	8,5									
Profile		0054.070-									
HBT 220	8/15	00001	320	170	188	≥ 20	23 - 28	222	12	24	6,2
	8/20	00002									5,3
	8/25	00003									4,9
	10/10	00010	390		190					30	12,1
	10/15	00004									9,0
	10/20	00005									7,4
	10/25	00006	460		192					36	6,6
	12/10	00011									17,7
	12/15	00007									12,7
	12/20	00008									10,2
12/25	00009	9,0									

Order example:

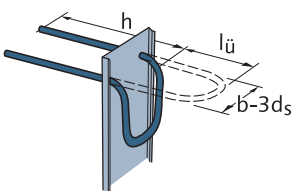
HBT 220 - 10/15 - 5 - 1250



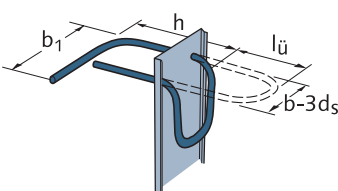
The notes on page 4 (bottom) are to be observed!

HBT - double bar special versions

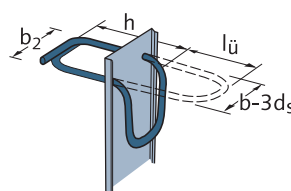
Type 6



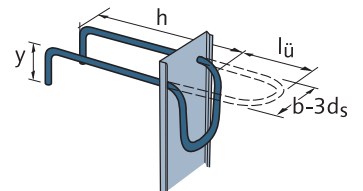
Type 7



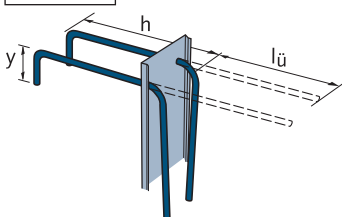
Type 8



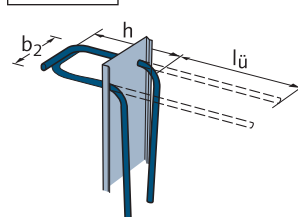
Type 9



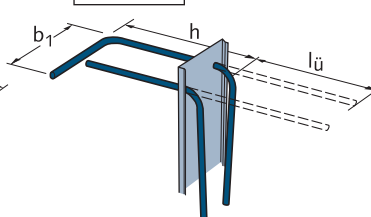
Type 11 = 2 × Typ 1



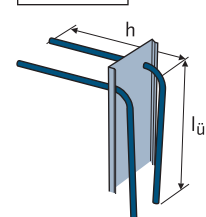
Type 22 = 2 × Typ 2



Type 23 = Typ 2 und Typ 3



Type 33 = 2 × Typ 3

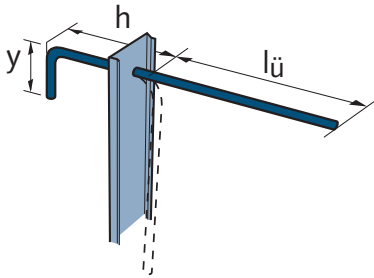


HALFEN REBEND CONNECTION HBT

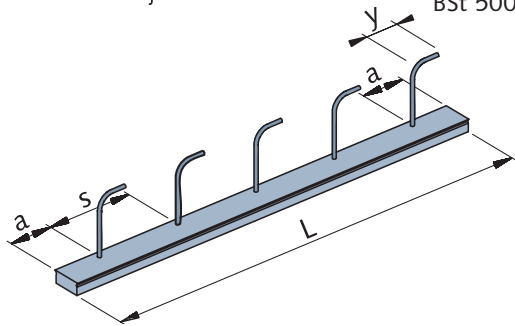
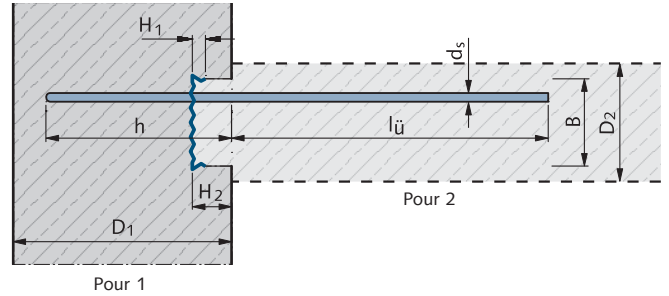
Single bar

HBT 55 and HBT 85

Type 1 Single bar, standard version



- Bending roll diameter at the rebending point $d_{BR} = 6 \times d_s$ (acc. to regulation)
- Material: Reinforcement steel BSt 500 S or BSt 500 WR.



Element length L	Bar spacing s [cm]	No. of bars	End distance a [cm]
Standard element L = 1250 mm	10	12	7,5
	15	8	10,0
	20	6	12,5
	25	5	12,5

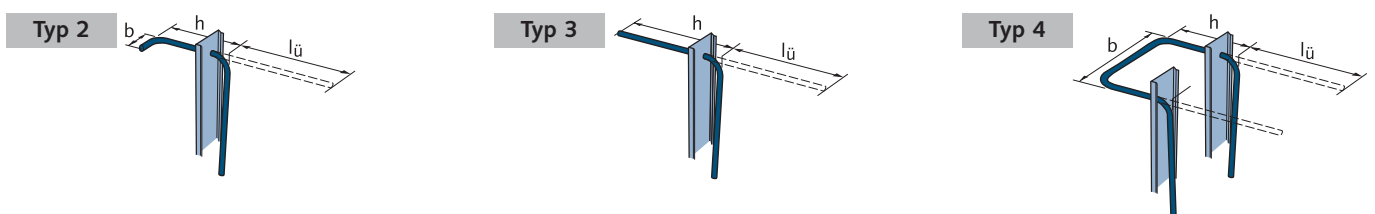
Designation	Bar diam. d_s / - spacing s [mm/cm]	Order code	Connecting reinforcement dimensions			For element thickness		Casing dimensions			Element weight [kg]
			$l_{\ddot{u}}$ [mm]	h [mm]	y [mm]	D_1 [cm]	D_2 [cm]	Width B [mm]	Height H_1 [mm]	Height with cover H_2 [mm]	
HBT 55	8/15	00001	320	170	75	≥ 20	≥ 8	58	12	24	2,7
	8/20	00002									2,3
	8/25	00003									2,1
	10/15	00004	390	95	30					4,1	
	10/20	00005								3,4	
	10/25	00006								3,0	
HBT 85	10/10	00007	390	170	95	≥ 20	≥ 11	86	12	30	6,0
	10/15	00001									4,4
	10/20	00002									3,7
	10/25	00003									3,3
	12/10	00008	430	110	36					9,0	
	12/15	00004	6,4								
	12/20	00005	460							5,2	
	12/25	00006	4,5								

Order example: **HBT 85 - 10/15 - 1 - 1250**

Element length L [mm]
 Bar Type
 Bar diam. d_s [mm] / bar spacing s [cm]
 Profile size

Notes: See explanations on page 4 (bottom)

HBT - single bar special versions

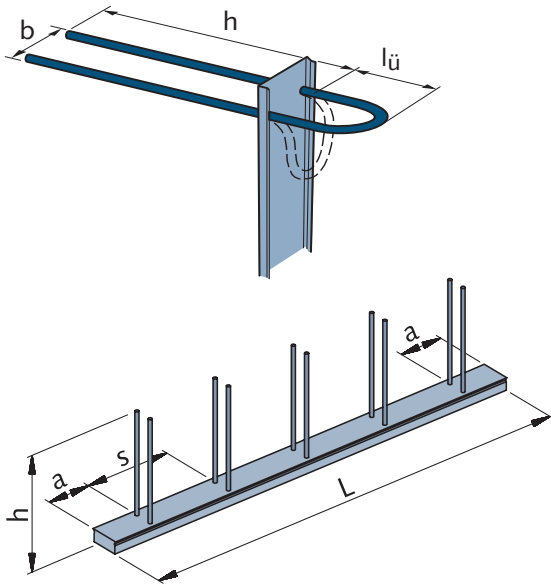


HALFEN REBEND CONNECTION HBT

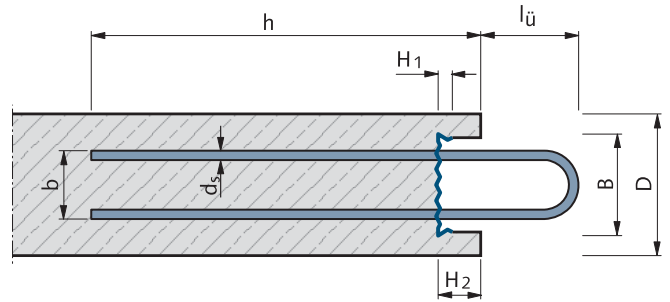
Double bar precast element connection

HBT 80

Type 6 Double bar, standard version



System:



HBT 80 Type 6 – system arrangement

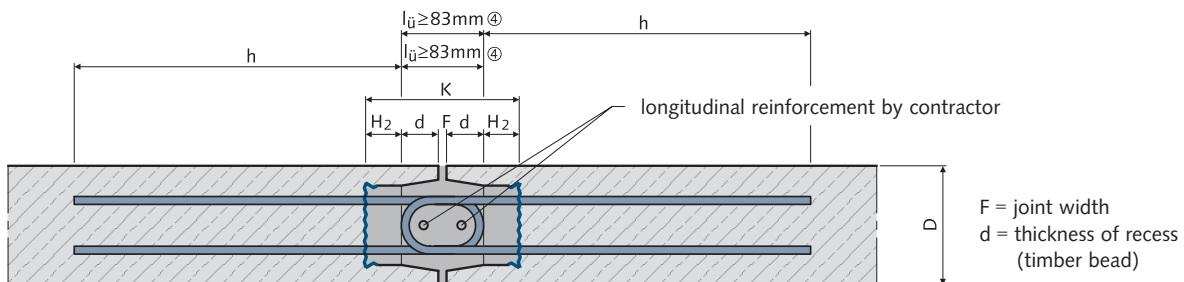
Element length L	Bar spacing s [cm]	No. of bars	End distance a [cm]
Standard element L = 1250 mm	10	12	7,5
	15	8	10,0
	20	6	12,5
	25	5	12,5

HBT 80 Type 6 – Precast element connection with element length 1250 mm

Designation	Order code	Connecting reinforcement dimensions			For element thickness		Casing dimensions			Element weight [kg]	
		Bar diam. d_s / - spacing s [mm/cm]	$l_{\ddot{u}}$ [mm]	h [mm]	b [mm]	D [cm]	B [cm]	Width B [mm]	Height H_1 [mm]		Height with cover H_2 [mm]
HBT 80	0054.030-00001	8/15	≥ 83	330	58	12 - 16	≥ 12	86	12	24	4,0
	00002	8/20									3,3
	00003	8/25									3,0
	00004	10/15	≥ 83	400	60						6,2
	00005	10/20									5,0
	00006	10/25									4,4

- Notes:
- Constructive connection.
 - Other bar dimensions and element lengths on request.
 - At $D = 12$ cm the concrete cover is 1,7 cm on each side of the HBT casing.

Example of a joint design for precast wall panels



Order code:

HBT 80 - 10/15 - 6 - 1250				
—	—	—	—	—
				Element length L [mm]
				Bar type (→ S. 10)
				Bar diam. d_s [mm] / bar spacing s [cm]
				Profile designation

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