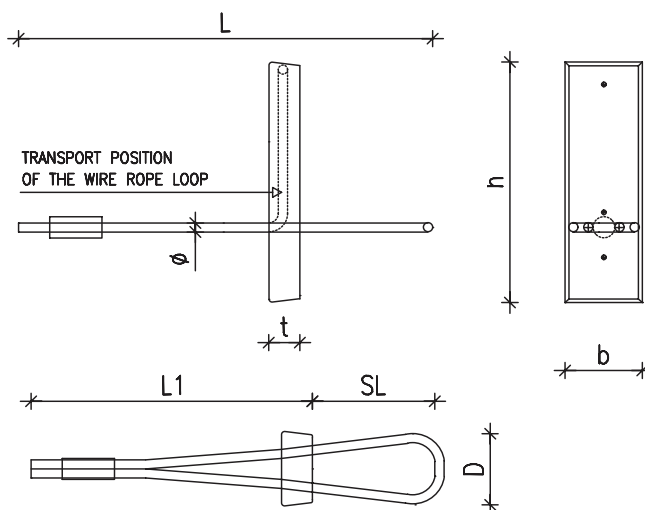




# Wire Loop Box

HULKMETAL

## HULK Metal Wire Loop Box



### HULK Metal Wire Loop Box

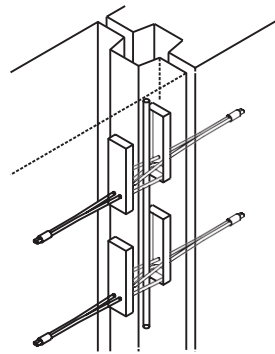
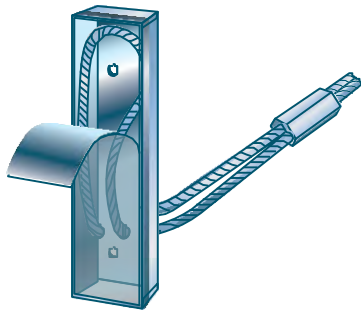
Types	SL [mm] ±10	L1 [mm] ±10	L [mm] ±20	C [mm] ±2	D [mm]	B [mm] ±2	T [mm] ±2	Φ [mm]
HM-60	60	210	276	160	60	50	20	6
HM-80	80	210	296	160	60	50	20	6
HM-100	100	210	316	160	65	50	20	6
HM-120	120	210	336	160	70	50	20	6
HM-140	140	370	528	200	100	70	30	8

### Thickness of the Steel Plate of the Box

0.5~0.7mm

### Materials of the Wire Loop Box

Compression Sleeve	20# Steel
Wire Loop	high strength steel wire rope SE-Zn
Box	galvanized sheet
Packaging	Wooden case / Carton / Bulk / Individually Packaged / Customized
Service	Freight consulting / Quality inspection / After-sales / Other value-added services.
Delivery Method	Sea / Air / Land
Quality Assurance	Life-Long



Wire Loop Boxes are designed to be used as a structural connection for pre-cast units with recesses, or between precast units and in-situ concrete components. The casing of the box eliminates the need for additional formwork. The rope boxes are very easy to use on site, with no-tool tear-off tape that releases the flexible loops. The loops are stitched into the adjoining element with rods and insitu concrete.

**You Will Enjoy Them When You Buy Wire Loop Box in HULK Metal.**

**Higher Quality Wire Loop Box:**

We own factory equipped with advanced production equipment and testing equipment. We also have experienced quality inspection team to ensure your orders' Qualification rate.

**Shorter Production Cycle:**

We will Design a better production solution for you according your requirements. We have a full range of wire loop box molds. Our production team can complete your orders faster.

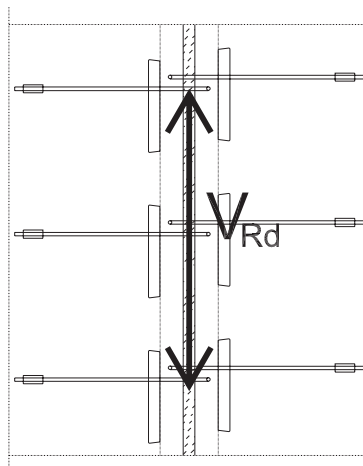
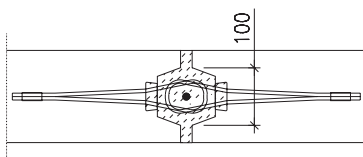
**Best Freight Solution:**

We integrated hundreds of freight companies to provide you with suitable freight routes. We also provide goods transit, goods warehousing, and other freight services.

**Comprehensive After Service:**

We have professional after service team to solve problems about technology, freight, quality, and others.

**Capacities:**



**Design Principles:**

The capacities presented in the tables below are calculated for static loads. Our wire rope loops are not designed to be used for dynamic loading or for lifting. For the capacities to be achieved, there should be no cracks or deformations in the joints.

The capacities of the wire rope loops are calculated for a joint as presented in the diagram with seam thickness and reinforcement as outlined in the following sections. The steel boxes and the seam must be fully filled with concrete.

The capacities given are the resistances in ultimate limit state, so please compare to design loads.

The resistance is defined by the weakest concrete in the joint (element/joint concrete). Resistances are calculated for concrete classes C25/30, C30/37 and C40/50.

### Longitudinal Shear Capacity

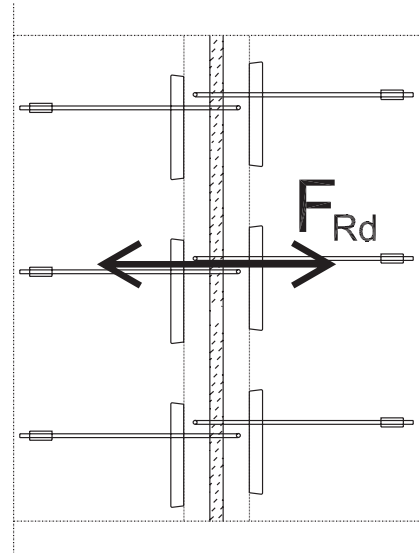
Boxes Centre to Centre	Design Value of Longitudinal Shear Resistance, VRd (kN/m)			
	Standard			
	HM-60, -80, -100, -120		HM-140	
	C25/30	C40/50	C25/30	C40/50
250	125	159	-	-
300	117	148	-	-
350	101	128	182	230
400	89	112	163	207
450	79	100	146	184
500	72	91	131	166
550	66	83	120	152
600	60	76	110	139
650	56	71	102	129
700	52	66	95	120
750	49	62	-	-

The resistance is defined by the weakest concrete in the system, either to fill the joint or the concrete used to make the precast element.

### Tensile Capacities:

Capacities are shown here per box

Box Type	Part No.	Design Value of Tensile Resistance, FRd (kN)	
		C25/30	C40/50
Standard	HM-60	12.9	12.9
	HM-80		
	HM-100		
	HM-120	23.1	23.1
	HM-140		

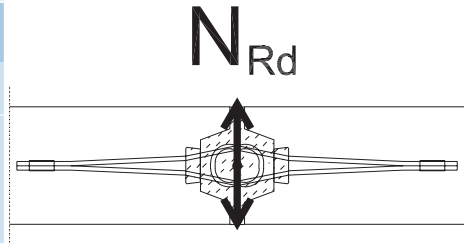


The resistance is defined by the weakest concrete in the system, either to fill the joint or the concrete used to make the precast element. The distance between wire loop boxes must be as defined later in this section.

### Transversal Shear Force:

Capacities are shown here per box

Box Type	Part No.	Design Value of Horizontal Shear Resistance, NRd (kN)	
		C25/30	C40/50
Standard	HM-60	4.6	5.8
	HM-80	8.2	10.3
	HM-100		
	HM-120		
	HM-140		



The resistance is defined by the weakest concrete in the system, either to fill the joint or the concrete used to make the precast element. The distance between wire loop boxes must be as defined later in this section.

### Combined Forces:

For circumstances where there is a combination of forces on the wire loop joints, the following must apply:

$$\frac{\sqrt{F_{Applied}}}{\sqrt{F_{Rd}}} + \frac{F_{Applied}}{F_{Rd}} + \frac{N_{Applied}}{N_{Rd}} \leq 1$$

### Installation:

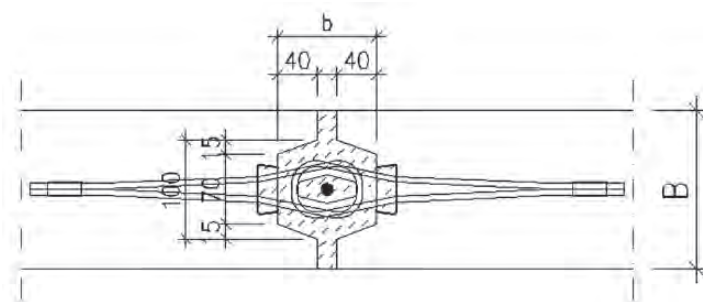
The wall elements must be reinforced according to the wall element design

### Seam Thickness (b):

The size of the wire rope loops must be chosen according to the thickness of the joint to enable the vertical ribbed steel bar in the joint to pass through the wire rope loops on both side of the joint.

Indented joint dimensions used in calculations for transversal shear force.

Box Type	Part No.	Recommended Thickness of Rope Loop Seam (mm)
Standard	HM-60	70-90
	HM-80	90-110
	HM-100	110-140
	HM-120	140-190
	HM-140	160-220

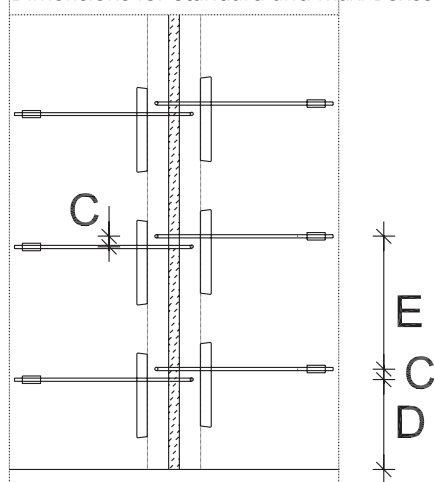


### Minimum Edge Distance and Spacing:

Centre to centre Emin = minimum distance between wire rope loops at the same side of the joint.

Centre to centre Cmax = minimum distance between wire rope loops at opposite sides of the joint.

Dimensions for Standard and Maxi Boxes

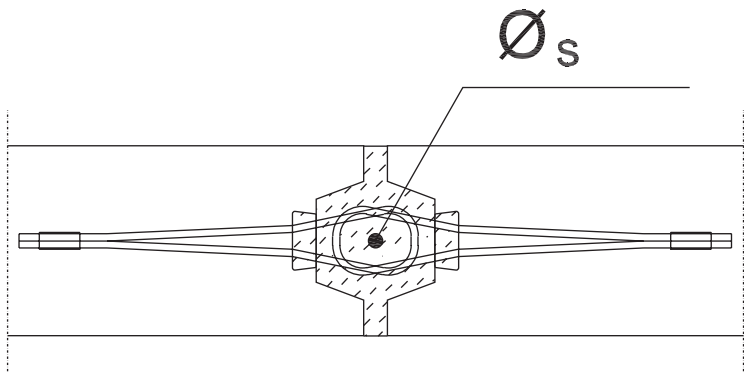


Part No.	Centre to Centre Emin	Edge Distance Dmin	Centre to Centre Cmax	Minimum Width Bmin
	mm			
HM-60	250	100	20	120
HM-80				
HM-100				
HM-120				
HM-140	350	200	25	150

### Reinforcement of the joint:

When using wire loops boxes, a vertical ribbed steel bar must always be installed through the wire loops as shown here.

Box Type	Part No.	Recommended thickness of rope loop seam (mm)
Standard	HM-60	12
	HM-80	12
	HM-100	12
	HM-120	12
	HM-140	16



### Installation:

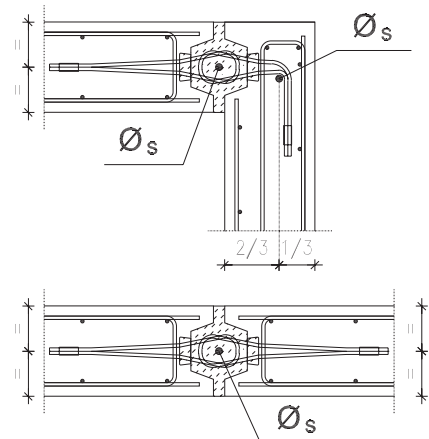
When using wire loop boxes, a vertical ribbed steel bar must always be installed through the wire loops as shown here.

#### Case 1 – Where wire loops are used to transfer forces.

When HM wire loop boxes are used to transfer forces in the joint, anchorage of the wire loop box must be secured by overlapping the wire loop box sufficiently with the reinforcement of the concrete element. This should be done to the engineer's design depending on your precise arrangement.

Where the wire loop is used in a corner joint a reinforcing bar should be installed into the inner edge of the fold of the HM wire loop box, the diameter of this bar should be the same as the reinforcement installed in the joint.

Case Study 1



#### Case 2 – Where HM wire loops are not used to transfer forces.

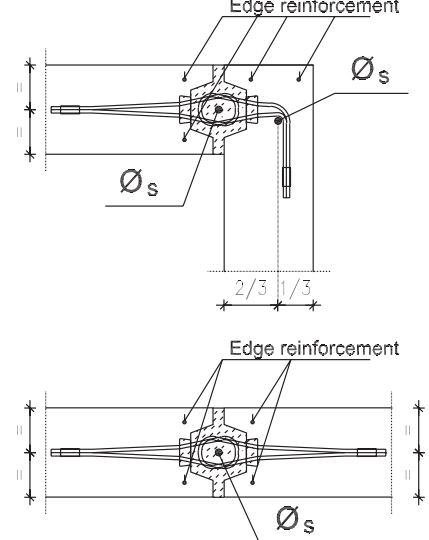
When wire loops boxes are used to limit cracking of the seam or to tie elements together without defining the required force, additional reinforcement in the wall is recommended as shown here, including 2 No 10mm diameter additional bars in each piece.

#### Attachment to the formwork:

The wire rope loop box must be attached securely so it cannot move during casting of the concrete. At the wire rope loop, the concrete must be compacted carefully as the loop cannot be vibrated. The wire rope loops boxes may be fastened to formwork with nails or by magnets.

The part of the wire rope which enters the concrete element is installed amidst the reinforcement and does not need to be tied to the reinforcement.

Case Study 2





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