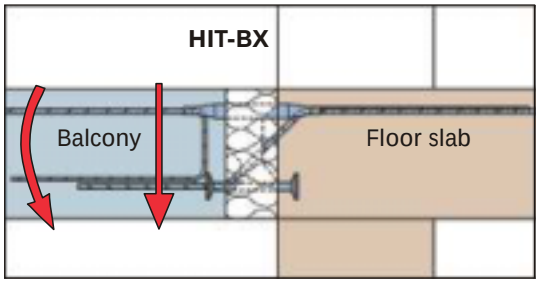
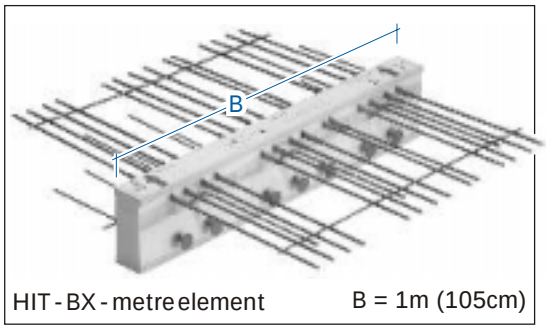
HALFEN-ISO-ELEMENT TYPE HIT-BX

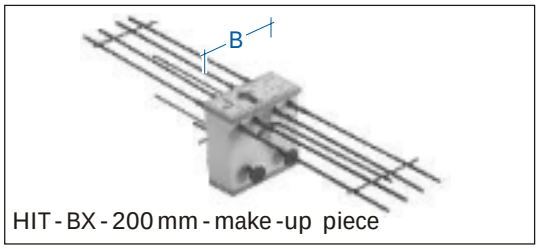
Applications and Load Capacities

Application:
Cantilever balcony





HIT-BX-metre element B = 1m (105cm)



HIT-BX-200 mm-make-up piece

Application examples:

Fig. 1: Cantilever balcony

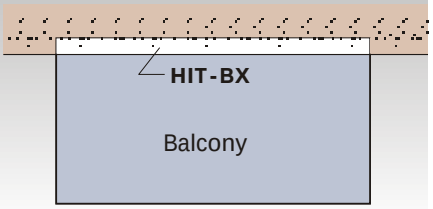


Fig. 2: External corner balcony

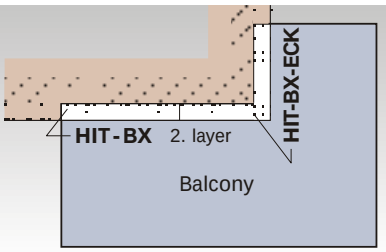


Fig. 3: Internal balcony/ Loggia, 3-sides supported and partial cantilever

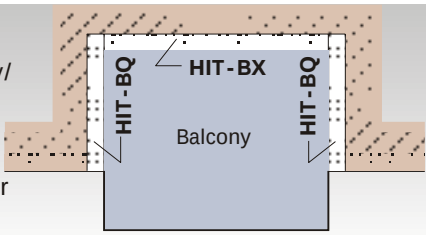
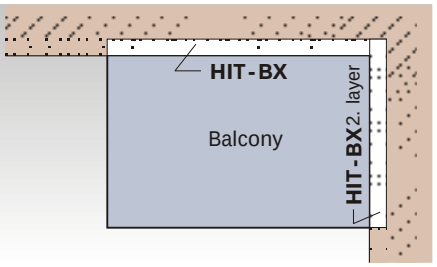


Fig. 4: Inner corner balcony



Selection chart for concrete B ≥ 25

Load capacity	Slab thickness [mm]	Type HIT-BX- 10/7	12/7	12/8	12/10	12/12	14/12 ①	HIT-BX-MOD	
all. m [kNm/m]	160	10.3	14.4	16.5	20.4	25.1	29.9	20.6	②
	170	11.7	16.3	18.6	23.1	28.4	33.8	23.3	
	180	13.0	18.2	20.8	25.8	31.8	37.8	26.0	②
	190	14.4	20.1	23.0	28.5	35.1	41.8	28.7	
	200	15.7	22.0	25.1	31.2	38.5	45.8	31.2	②
	210	17.1	23.9	27.3	33.9	41.8	49.8	34.1	
	220	18.4	25.8	29.5	36.5	45.1	53.7	36.9	
	230	19.8	27.7	31.7	39.2	48.5	57.7	39.6	
	240	21.1	29.6	33.8	41.9	51.8	61.7	42.3	
	250	22.5	31.5	36.0	44.6	55.2	65.7	45	
all. q [kN/m]	160 - 250	17.1	25.6	34.1	34.1	34.1	40.6	42.7	③

Load capacity	Slab thickness [mm]	Type HIT-BX- . . -QE with extra shear reinforcement 10/7-QE	12/7-QE	12/8-QE	12/10-QE	12/12-QE	14/12-QE
all. q [kN/m]	180 - 250	26.7	40.0	53.3	53.3	53.3	63.5

① The indicated values **all. m** for the bending load capacity for HIT-BX- and HIT-BF-elements type **14/12** are applicable under the condition, that the connection to the reinforcement is a single layer lap joint. For 2-layer lap joints the load values must be reduced acc. to the type test certificate.
See page 29.

② Allowable load **all. m** per element:

at slab thickness [mm]	all. m [kNm]
160	4.12
180	5.20
200	6.24

③ Allowable load **all. q** per element: 8.54 kN

All capacities given as characterstic safe working capacities

HALFEN-ISO-ELEMENT TYPE HIT-BX

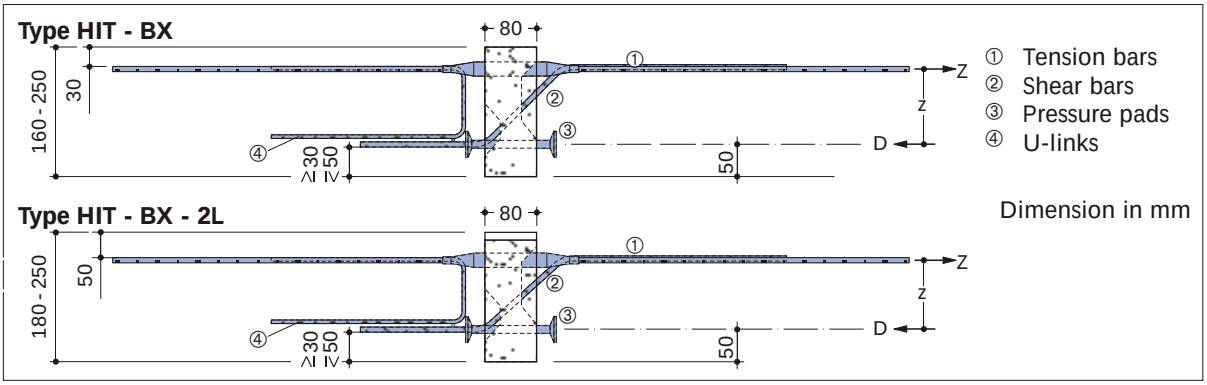
Product Details and Dimensions

Design details

Item:	Load range	Type HIT-BX - 10/ 7	12/ 7	12/ 8	12/10	12/12	14/12	HIT-BX-MOD Make up piece
	Elem. length [m]	1.00	1.00	1.00	1.00	1.00	1.05	0.20
Tension reinforcement ①	number	10	14	16	19	16	20	4
	Ø / length [mm]	Ø 8 / 1290	Ø 8 / 1290	Ø 8 / 1290	Ø 8 / 1290	Ø 10 / 1480	Ø 10 / 1480	Ø 8 / 1290
Shear reinforcement (QE: Ø10) ②	number	2	3	4	4	4	5	1
	Ø [mm]	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8
Pressure pads ③	number	5	7	8	10	16	20	2
	Ø / length [mm]	Ø 12 / 110	Ø 12 / 110	Ø 12 / 110	Ø 12 / 110	Ø 12 / 140	Ø 12 / 140	Ø 12 / 110
U-bar reinforcement ④	Slab thickns [mm]	160 - 250	160-220 | 230-250	160 - 250	160 - 250	160 - 250	160 - 250	160, 180, 200
	Number/Ø [mm]	6 Ø 6	7 Ø 6 | 7 Ø 8	7 Ø 8	6 Ø 8	7 Ø 8	7 Ø 8	1 Ø 8

Other load ranges on request

Dimensions



Order example:

Code: **HIT - BX - 12/10 - 20 - F90 - QE - 2L**

- Type
- Load range (see chart above)
- Slab thickness [cm]
- Fire resistant ⑤
- Extra shear ⑤
- Increased top cover ⑤

Order example make up piece: **HIT - BX - MOD - 20 - F90**

⑤ - If you order the type "normal" you don't have to give this code

Options

• Fire resistant	
normal	
F90 (up to 90 minutes)	F90
• Shear	
normal	
increased (→ chart page 12)	QE
increased, special version *	QEE
• 2L (increased top cover)	
no = normal	
Yes = 2nd layer	2L

* Please consult Halfen

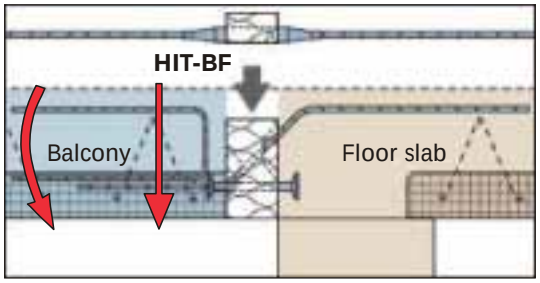
Note: When using increased top cover **2L**, find the load capacity shown for a slab thickness which is 2 cm less than the actual thickness (chart page 12).
Example:
Type HIT-BX - 12/10 - **20** - **2L**
permissible m → see line for slab thickness 18 → permissible m = 25.8 kNm/m.

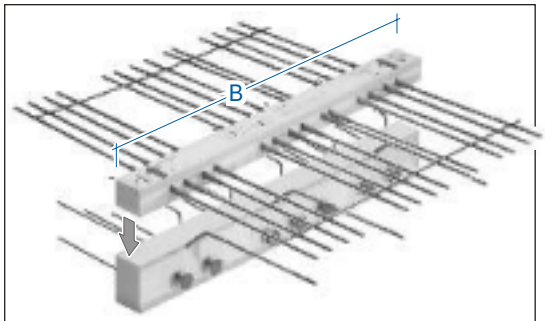
HALFEN-ISO-ELEMENT TYPE HIT-BF

Applications and Load Capacities

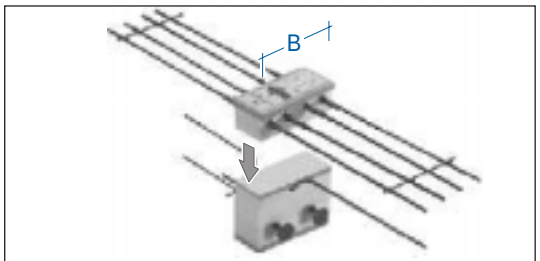
Application:

Cantilever balcony
using precast planks





HIT-BF-metre element B = 1m (105 cm)



HIT-BF-200 mm - make up piece (two parted)

Note: Balcony split level connection type HV
→ page 35.

Application examples:

Fig. 1:
Cantilever balcony

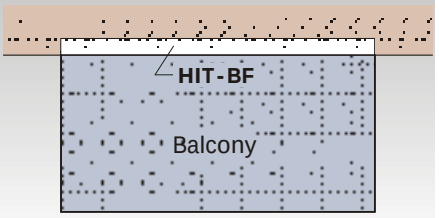
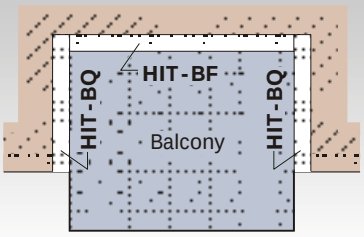


Fig. 2:
Internal balcony/ Loggia, 3-sides supported and partial cantilever



Selection chart for concrete B ≥ 25

Load capacity	Slab thickness [mm]	Type HIT-BF- 10/7	12/7	12/10	14/12 ①	HIT-BF-MOD
all. m [kNm/m]	160	10.3	14.4	20.4	29.9	20.6 ②
	170	11.7	16.3	23.1	33.8	23.3
	180	13.0	18.2	25.8	37.8	26.0 ②
	190	14.4	20.1	28.5	41.8	28.7
	200	15.7	22.0	31.2	45.8	31.2 ②
	210	17.1	23.9	33.9	49.8	34.1
	220	18.4	25.8	36.5	53.7	36.9
	230	19.8	27.7	39.2	57.7	39.6
	240	21.1	29.6	41.9	61.7	42.3
	250	22.5	31.5	44.6	65.7	45.0
all. q [kN/m]	160 - 250	17.1	25.6	34.1	40.6	42.7 ③

Load capacity	Slab thickness [mm]	Type HIT-BF- . . -QE with extra shear reinforcement 10/7-QE	12/7-QE	12/10-QE	14/12-QE
all. q [kN/m]	180 - 250	26.7	40.0	53.3	63.5

① The indicated values **all. m** for the bending load capacity for HIT-BF- and HIT-BX-elements type **14/12** are applicable under the condition, that the connection to the reinforcement is a single layer lap joint. For 2-layer lap joints the load values must be reduced acc. to the type test certificate. See page 29.

② Allowable load **all. m** per element:

at slab thickness [mm]	all. m [kNm]
160	4.12
180	5.20
200	6.24

③ Allowable load **all. q** per element: 8.54 kN

All capacities given as characteristic safe working capacities

HALFEN-ISO-ELEMENT TYPE HIT-BF

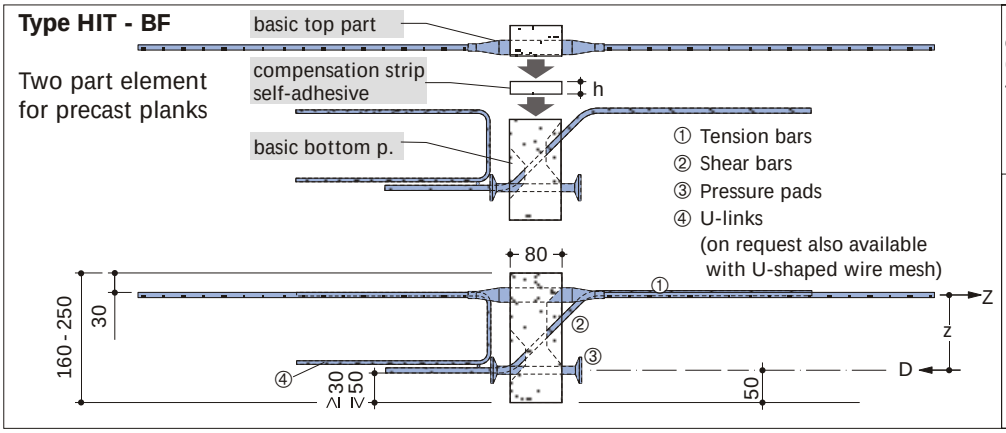
Product Details and Dimensions

Design details

Item:	Load range	Type HIT-BF - 10/ 7	12/ 7	12/ 8	12/10	12/12	14/12	HIT-BF-MOD
	Elem. length [m]	1.00	1.00	1.00	1.00	1.00	1.05	0.20
Tension reinforcement ①	number	10	14	16	19	16	20	4
	Ø / length [mm]	Ø 8 / 1290	Ø 8 / 1290	Ø 8 / 1290	Ø 8 / 1290	Ø 10 / 1480	Ø10/1480	Ø 8 / 1290
Shear reinforcement (QE: Ø 10) ②	number	2	3	4	4	4	5	1
	Ø [mm]	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø 8 (10)	Ø8(10)	Ø 8
Pressure pads ③	number	5	7	8	10	16	20	2
	Ø / length [mm]	Ø 12 / 110	Ø 12 / 110	Ø 12 / 110	Ø 12 / 110	Ø 12 / 140	Ø12/140	Ø 12 / 110
U-bar reinforcement ④	Slab thickns[mm]	160 - 250	160-220 / 230-250	160 - 250	160 - 250	160 - 250	160-250	160, 180, 200
	Number/Ø [mm]	6 Ø 6	7 Ø6 / 7 Ø 8	7 Ø 8	6 Ø 8	7 Ø 8	7 Ø8	1 Ø 8
Color code top- and bottom part:		green	blue	red		yellow		

Other load ranges on request

Dimensions



Height h required of compensation strips: (available 10 - 20 - 40mm, can be combined)

f. slab thickness [mm]:	h [mm]
160	-
170	10
180	20
190	30
200	40
210	50
220	60
230	70
240	80
250	90

Order example:

Code: **HIT - BF - 12/10 - 20 - F90 - QE**

Type
Load range (see chart above)
Slab thickness [cm]
Fire resistant ⑤
Extra shear ⑤

Options

- Fire resistant
  - normal
  - F90 (up to 90 minutes) — F90
- Shear
  - normal
  - increased (→ chart page 14) — QE
  - increased, special version * — QEE

*Please consult Halfen

Order example make up piece: **HIT - BF - MOD - 20 - F90**

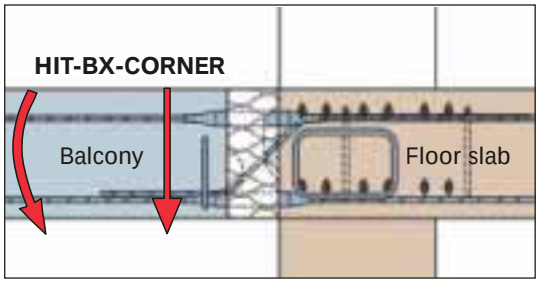
⑤ If You order the “normal” type you don´t have to give this code.

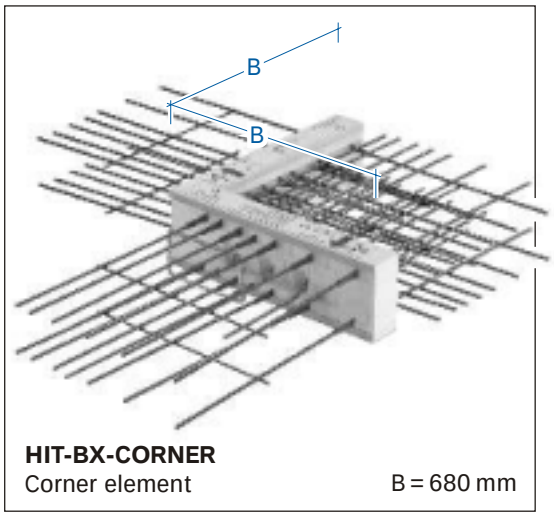
HALFEN-ISO-ELEMENT TYPE HIT-BX-CORNER

Applications and Load Capacities

Application:

Cantilever balcony for corners





HIT-BX-CORNER
Corner element B = 680 mm

Application examples:

Fig. 1:
Cantilever balcony with exterior corner

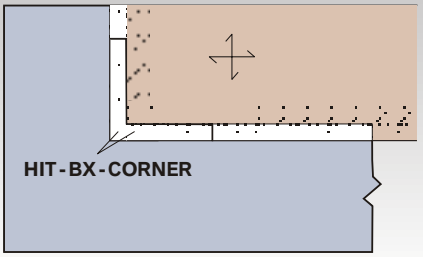
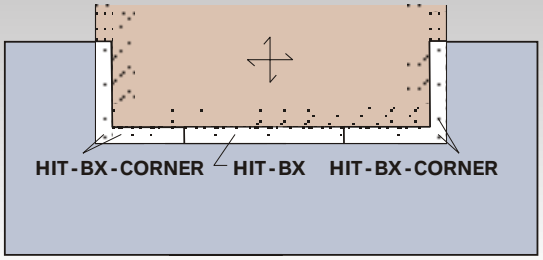


Fig. 2:
Cantilever balcony with two exterior corners



Selection chart for concrete grade ≥ B 25

Load capacity	Slab thickness [mm]	Type HIT BX - CORNER PIECE 10/ 7	12/ 7
allowable moment all.m [kNm]	180	14.1	20.2
	190	15.7	22.5
	200	17.3	24.7
	210	18.9	27.0
	220	20.4	29.2
	230	22.0	31.4
	240	23.6	33.7
	250	25.2	35.9
all.q [kN]	180 - 250	40.0	40.0

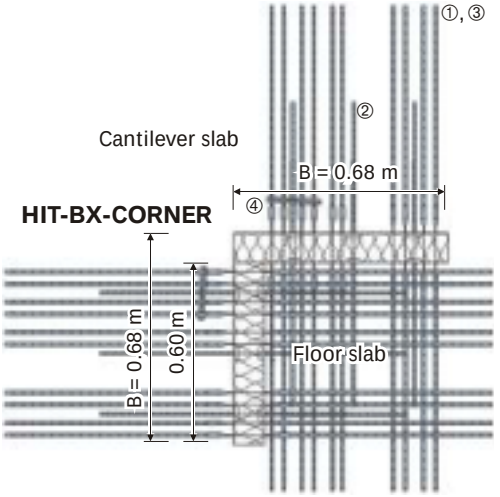
All capacities given as characteristic safe working capacities

HALFEN-ISO-ELEMENT TYPE HIT-BX-CORNER

Product details and Dimensions

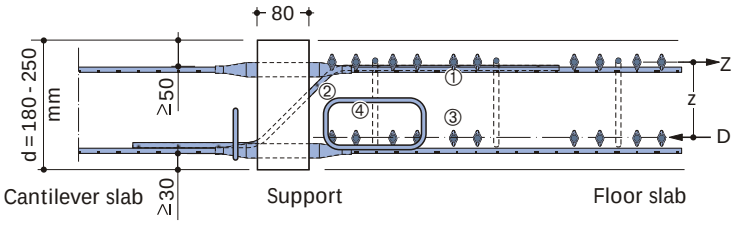
Design details

Item:	Load range	Type HIT-BX-CORNER - 10/ 7	Type HIT-BX-CORNER - 12/ 7
	Elem. length [m]	0.68/0.68	0.68/0.68
Tension reinforcement ①	number	2 × 7	2 × 10
	Ø / length [mm]	Ø 10 / 1480	Ø 10 / 1480
Shear reinforcement ②	number	2 × 3	2 × 3
	Ø [mm]	Ø 10	Ø 10
Pressure bars ③	number	2 × 7	2 × 10
	Ø [mm]	Ø 10	Ø 10



Dimensions

Type HIT-BX-CORNER ("-ECK")



① Tension bars (top)
② Shear bars
③ Pressure pads (bottom)
④ Links

Dimensions in mm

Order example

Code: **HIT - BX-ECK - 12/7 - 20 - F90**

- Type
- Load range (see chart above)
- Slab thickness [cm]
- Fire resistant ⑤

Options

• Fire resistant	
normal	
F90 (up to 90 minutes)	F90

⑤ If you order the “normal” type you don´t have to give this code.