HCX(-R) Cast-in socket

Product Technical Datasheet

Update: Jun 25

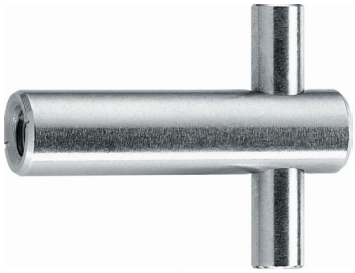
HCX(-R) Cast-in socket

Internally threaded cast-in socket

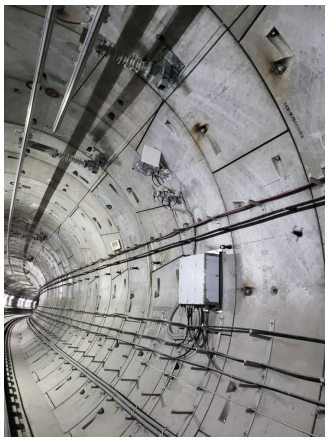
Anchor version	Benefits

HCX
Carbon steel

- Simple well proven design
- Easy installation to formwork
- For use with bolts or threaded rods
- Available in 5µm galvanized or stainless steel A4 to suit environmental conditions
- HCX-R with head markings for easy identification

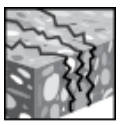


HCX-R
Stainless steel
A4



Base material	Load conditions

Concrete
(uncracked)



Concrete
(cracked)

Static/
quasi-static

Fire
resistance[1)]

Other information

Hilti Technical
data

[1)] For HCX-R M16, please refer to ETA-20/0479 for more details.

Linked Approvals/Certificates and Instructions for use

Approvals/certificates

Approval no	Application / loading condition	Authority / Laboratory	Date of issue
ETA-20/0479 (HCX-R M16)	Static and quasi-static / Fire	ZAG, Ljubljana	23-09-2021
Hilti Technical Data	Static and quasi-static	Hilti Corp.	-

The instructions for use can be viewed using the link in the instructions for use table or the QR code/link in the Hilti webpage table

Instructions for use (IFU)

Anchor size	HCX(-R)			HCX	HCX-R
	M8	M10	M12	M16	M16
`IFU	IFU HCX(-R)				IFU HCX-R

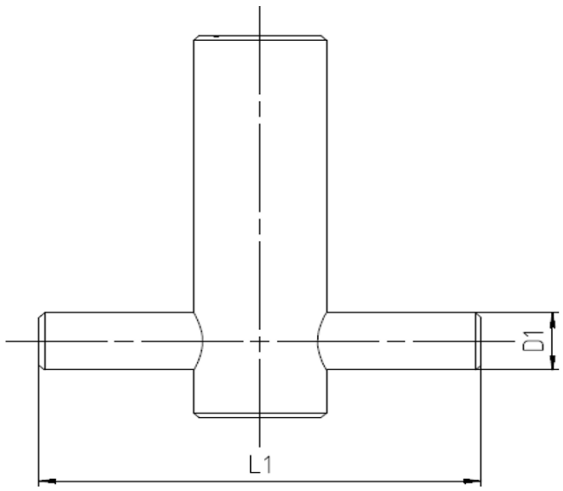
Link to Hilti Webpage

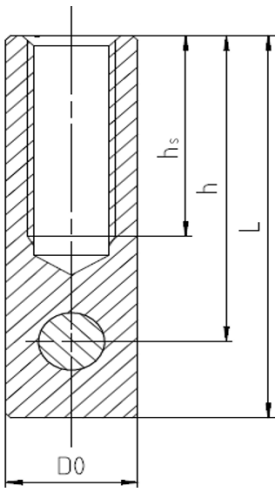
HCX	HCX-R

Fastener special dimensions

Anchor dimensions

Anchor Size			M8x40	M10x50	M12x60	M16x70
Anchor body diameter	D_0	[mm]	12	16	18	22
Anchor Length	L	[mm]	40	50	60	70
Anchor pin diameter	D_1	[mm]	6	8	8	12
Anchor pin position from top	h	[mm]	32	40	50	56
Allowable Screwing Depth	$h_{s,min}$	[mm]	10	12	14	19
	$h_{s,max}$	[mm]	21	23	26	33
Anchor pin length	L_1	[mm]	40	50	60	90





Static and quasi-static loading based on ETA-20/0479 and Hilti Technical data.
Design according to CEN/TS 1992-4, part 1 and part 2.

All data in this section applies to:
- Correct setting (see Instructions for use (IFU))
- For a single anchor
- No edge distance and spacing influence (see setting detail tables with characteristic distances)
- Characteristic spacing and edge distance for splitting failure apply only for uncracked concrete.
- For cracked concrete only the characteristic spacing and edge distance for concrete cone failure are decisive
- Minimum base material thickness (see setting detail table)
- Embedment depth((see setting detail table)
- Anchor and bolt material, as specified in the tables of this section
- Concrete C20/25
- Recommended loads: With overall partial safety factor for action γ = 1,4.

Design resistance

Anchor size			Hilti technical data				ETA
			M8x40	M10x50	M12x60	M16x70	M16x70
Uncracked concrete							
Tension							
HCX (With bolt 4.6)	N_{Rd}	[kN]	6,1	8,4	11,7	13,7	-
HCX-R (With bolt A4-50)	N_{Rd}	[kN]	6,1	8,4	11,7	-	-
HCX-R (With bolt A4-70)	N_{Rd}	[kN]	6,1	8,4	11,7	-	14
Shear							
HCX (With bolt 4.6)	V_{Rd}	[kN]	4,4	7,0	10,1	18,8	-
HCX-R (With bolt A4-50)	V_{Rd}	[kN]	3,8	6,1	8,9	-	-
HCX-R (With bolt A4-70)	V_{Rd}	[kN]	3,8	6,1	8,9	-	14
Cracked concrete							
Tension							
HCX-R (With bolt A4-70)	N_{Rd}	[kN]	-				10
Shear							
HCX-R (With bolt A4-70)	V_{Rd}	[kN]	-				10

Recommended loads

Anchor size			Hilti technical data				ETA
			M8x40	M10x50	M12x60	M16x70	M16x70
Uncracked concrete							
Tension							
HCX (With bolt 4.6)	N_{rec}	[kN]	4,3	6,0	8,4	9,8	-
HCX-R (With bolt A4-50)	N_{rec}	[kN]	4,3	6,0	8,4	-	10
HCX-R (With bolt A4-70)	N_{rec}	[kN]	4,3	6,0	8,4	-	10
Shear							
HCX (With bolt 4.6)	V_{rec}	[kN]	3,1	5,0	7,2	13,5	-
HCX-R (With bolt A4-50)	V_{rec}	[kN]	2,7	4,4	6,3	-	10
HCX-R (With bolt A4-70)	V_{rec}	[kN]	2,7	4,4	6,3	-	10
Cracked concrete							
Tension							
HCX-R (With bolt A4-70)	N_{rec}	[kN]	-				7,2
Shear							
HCX-R (With bolt A4-70)	V_{rec}	[kN]	-				7,2

Fire loading data based on ETA-20/0479. Design according to TR 020.

All data in this section applies to:

- Correct setting (see Instructions for use (IFU))
- For a single anchor
- No edge distance and spacing influence (see setting detail tables with characteristic distances)
- Characteristic spacing and edge distance for splitting failure apply only for uncracked concrete.
- For cracked concrete only the characteristic spacing and edge distance for concrete cone failure are decisive
- Minimum base material thickness (see setting detail table)
- Embedment depth((see setting detail table)
- Anchor and bolt material, as specified in the tables of this section
- Concrete C20/25
- Partial safety factor for resistance under fire exposure $\gamma_{M,fi}$ = 1,0 (in absence of other national regulations)

Design resistance

Anchor size				**HCX-R M16x70**
Approval document				ETA
Fire Exposure R30				
Tension	HCX-R (With bolt A4-70)	$N_{Rd,fi}$	[kN]	3,76
Shear		$V_{Rd,fi}$	[kN]	3,75
Fire Exposure R60				
Tension	HCX-R (With bolt A4-70)	$N_{Rd,fi}$	[kN]	3,76
Shear		$V_{Rd,fi}$	[kN]	3,75
Fire Exposure R90				
Tension	HCX-R (With bolt A4-70)	$N_{Rd,fi}$	[kN]	3,14
Shear		$V_{Rd,fi}$	[kN]	3,14
Fire Exposure R120				
Tension	HCX-R (With bolt A4-70)	$N_{Rd,fi}$	[kN]	2,51
Shear		$V_{Rd,fi}$	[kN]	2,51

Setting information

Setting details

Anchor Size			HCX(-R)			HCX	HCX-R
			M8x40	M10x50	M12x60	M16x70	M16x70
Nominal embedment depth	h_{nom}	[mm]	40	50	60	70	70
Effective anchorage depth	h_{ef}	[mm]	29	36	45	50	50
Minimum base material thickness	h_{min}	[mm]	100	100	100	100	100
Minimum spacing	s_{min}	[mm]	58	72	90	100	150
Minimum edge distance	c_{min}	[mm]	44	54	68	75	100
Torque moment	T_{inst}	[Nm]	8	15	25	50	50
Characteristic spacing [1)]	s_{cr}	[mm]	3 h_{ef}				
Characteristic edge distance [1)]	c_{cr}	[mm]	1,5 h_{ef}				

[1)] For static condition ,for fire please refer ETA 20/0479