




HRD MECHANICAL ANCHOR

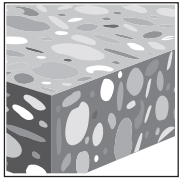


HRD MECHANICAL ANCHORS

PRODUCT DESCRIPTION

HRD frame anchors

Anchor System	Features and Benefits
 <p data-bbox="302 520 604 571">HRD-H 10 (carbon steel) HRD-HR 10 (stainless steel A4)</p>	<ul data-bbox="824 344 1500 571" style="list-style-type: none"> • Innovative plastic framing screw anchor designed for Ventilated façade brackets • Flexible embedment depth (tech data for 2-in (50 mm) and 2-3/4-in (70 mm) embedment depths) • Available in two different materials for optimum suitability (carbon steel and stainless steel) • Pre-assembled for easy handling and fastening quality



Uncracked concrete

MATERIAL SPECIFICATIONS

HRD-H screws are manufactured from carbon steel with 5µm zinc plating.

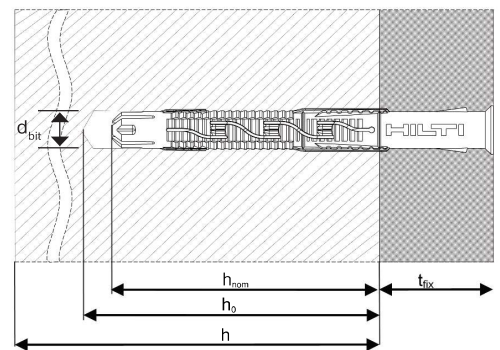
HRD-HR screws are manufactured from A4 stainless steel according to ISO 3506.

INSTALLATION PARAMETERS — CONCRETE

Table 1 — Hilti HRD M10 setting information

Setting information	Symbol	Units	Nominal anchor diameter (mm)	
Nominal drill bit diameter	d_{bit}	mm	10	
Nominal embedment	h_{nom}	in. (mm)	2 (50)	2-3/4 (70)
Hole depth in concrete	h_0	in. (mm)	2-3/8 (60)	3-1/8 (80)
Minimum concrete thickness	h_{min}	in. (mm)	4 (100)	4-3/4 (120)
Minimum edge distance	c_{min}	in. (mm)	6 (150)	6 (150)
Minimum anchor spacing	s_{min}	in. (mm)	2 (50)	2 (50)

Figure 1 — Hilti HRD specifications



DESIGN DATA IN CONCRETE

Table 2 — Hilti HRD carbon and stainless steel allowable loads in concrete¹

Nominal anchor diameter mm	Nominal embedment in. (mm)	$f'_c \geq 2,500$ psi (17.2 MPa)	
		Tension lb (kN)	Shear lb (kN)
10	2	670	655
	(50)	(3.0)	(2.9)
	2-3/4	1215	655
	(70)	(5.4)	(2.9)

¹ Allowable loads calculated with a factor of safety of 4.

Combined tension and shear loading for Table 2

$$\left(\frac{N_d}{N_{rec}}\right)^{5/3} + \left(\frac{V_d}{V_{rec}}\right)^{5/3} \leq 1.0$$

Table 3 — Load adjustment factors for Hilti HRD carbon steel anchors in concrete

Load adjustment factors (anchor spacing) f_A				Load adjustment factors (edge distance) f_R							
Tension/Shear				Tension f_{RN}				Shear (toward edge) f_{RV}		Shear (to edge) f_{RV}	
Spacing		Nominal embedment (mm)		Edge distance		Nominal embedment (mm)		Nominal embedment (mm)		Nominal embedment (mm)	
in.	(mm)	50	70	in.	(mm)	50	70	50	70	50	70
2	(51)	0.67	0.62	2	(51)	0.38	0.44	0.18	0.12	0.36	0.23
2-1/2	(64)	0.71	0.65	2-1/2	(64)	0.44	0.49	0.25	0.16	0.44	0.33
3	(76)	0.75	0.68	3	(76)	0.51	0.55	0.33	0.21	0.51	0.43
4	(102)	0.84	0.74	4	(102)	0.68	0.68	0.51	0.33	0.68	0.66
4-3/4	(121)	0.90	0.79	4-3/4	(121)	0.80	0.80	0.66	0.43	0.80	0.80
5	(127)	0.92	0.80	5	(127)	0.85	0.85	0.72	0.46	0.85	0.85
6	(152)	1.00	0.86	6	(152)	1.00	1.00	0.94	0.61	1.00	1.00
7	(178)		0.92	7	(178)			1.00	0.77		
8	(203)		0.98	8	(203)				0.94		
9	(229)		1.00	9	(229)				1.00		

INSTALLATION INSTRUCTIONS

Manufacturer's Printed Installation Instructions (MPII) are included with each product package. They can also be viewed or downloaded at www.hilti.com. Because of the possibility of changes, always verify that downloaded MPII are current when used. Proper installation is critical to achieve full performance. Training is available on request. Contact Hilti Technical Services for applications and conditions not addressed in the MPII.

ORDERING INFORMATION

Description	Length in (mm)	Nominal embed. 1 in (mm)	Max. fixture thickness 1 in (mm)	Nominal embed. 2 in (mm)	Max. fixture thickness 2 in (mm)	Packaging quantity
HRD-H 10x60	2-3/8 (60)	2 (50)	3/8 (10)	-	-	50
HRD-H 10x80	3-1/8 (80)	2 (50)	1-1/8 (30)	2-3/4 (70)	3/8 (10)	50
HRD-HR 10x60	2-3/8 (60)	2 (50)	3/8 (10)	-	-	50
HRD-HR 10x80	3-1/8 (80)	2 (50)	1-1/8 (30)	2-3/4 (70)	3/8 (10)	50



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