



The following excerpt are pages from the North American Product Technical Guide, Volume 2: Anchor Fastening, Edition 21.

Please refer to the publication in its entirety for complete details on this product including data development, product specifications, general suitability, installation, corrosion and spacing and edge distance guidelines.

US&CA: <https://submittals.us.hilti.com/PTGVol2/>

To consult directly with a team member regarding our anchor fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am – 6:00pm CST.

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### 3.2.7 HAS THREADED RODS AND HIT-Z ANCHOR RODS

Hilti has a full line of threaded rods available in 8 different material and coating types. Our new enhanced carbon steel rods now all meet the requirements of ASTM F1554, which allows engineers to design ductile fastening points with predictable steel failure for seismic applications in the three most common and relevant steel grades 36, 55 and 105.

Hilti still continues to provide the innovative HIT-Z anchor rods with HIT-HY 200. This Hilti SafeSet system provides the ultimate in safety and load capacity combined with 60% faster installation due to zero-cleaning.

The following is the technical data and ordering information for diameters up to 1-1/4" and pre-cut lengths. Contact Hilti for additional information on HAS rod diameters up to 2-1/2" and custom lengths.

#### Specifications and physical properties of Hilti HAS threaded rods and Hilti HIT-Z anchor rods

Threaded Rod Specification	Units	Specified Ultimate Strength, $f_{uta}$		Minimum Specified Yield Strength 0.2% Offset, $f_{ya}$	$f_{uta} / f_{ya}$	Elongation, Min. %	Reduction of Area, Min. %	Specification for Nuts and Washers	
		Min.	Max <sup>6</sup>						
<b>CARBON STEEL</b>	<b>HAS-V-A307</b> 1/4-in. to 5/16-in. ASTM A307 Grade A <sup>1,2</sup>	psi (MPa)	60,000 (414)	NA	37,500 (259)	1.60	10	-	<b>Nuts:</b> SAE J995 Grade 5 <b>Washers:</b> ASTM F884, HV and ANSI B18.22.1 Type A Plain
	<b>HAS-V / HAS-V-36 / HAS-V-36 HDG</b> ASTM F1554, Grade 36 <sup>1,3,9</sup> 	psi (MPa)	58,000 (400)	80,000 (552)	36,000 (248)	1.61	23	40	<b>Nuts:</b> ASTM A194/194M, Grade 2H, Heavy or ASTM A563-15 Grade A, Heavy <b>Washers:</b> ASTM F436 Type 1 and ANSI B18.22.1 Type A Plain
	<b>HAS-E-55 / HAS-E-55 HDG</b> ASTM F1554, Grade 55 <sup>1,3,9</sup> 	psi (MPa)	75,000 (517)	95,000 (655)	55,000 (379)	1.36	21	30 (3/8" - 2") 22 (2-1/4" - 2-1/2")	
	<b>HAS-B 105 / HAS-B-105 HDG</b> ASTM A193, Grade B7 <sup>1,4</sup> ASTM F1554, Grade 105 <sup>1,3,9</sup> 	psi (MPa)	125,000 <sup>(7)</sup> (862) <sup>(7)</sup>	150,000 (1,034)	105,000 (724)	1.19	16 (B7) 15 (Gr. 105)	50 (B7) 45 (Gr. 105)	<b>Nuts:</b> ASTM A194/194M, Grade 2H, Heavy or ASTM A563-15 Grade C <b>Washers:</b> ASTM F436 Type 1 and ANSI B18.22.1 Type A Plain
	<b>HIT-Z Anchor rod</b> (HIT-HY 200 only) Unalloyed carbon steel <sup>1</sup>	psi (MPa)	94,200 (650)	NA	75,300 (519)	1.25	8	20	<b>Nuts:</b> ASTM A563 Gr. A <b>Washers:</b> ASTM F844, HV and ANSI B18.22.1 Type A Plain
<b>STAINLESS STEEL</b>	<b>HAS-R 304 / 316</b> 3/8-in. 5/8-in. AISI Type 304 / 316 ASTM F 593 CW1 <sup>5</sup>	psi (MPa)	100,000 (690)	150,000 (1,034)	65,000 (448)	1.54	20	-	<b>Nuts:</b> ASTM F594 <b>Washers:</b> ASTM A240 and ANSI B18.22.1 Type A Plain
	<b>HAS-R 304 / 316</b> 3/4-in. to 1-in. AISI Type 304 / 316 ASTM F 593 CW2 <sup>5</sup>	psi (MPa)	85,000 (586)	140,000 (966)	45,000 (310)	1.89	25	-	
	<b>HAS-R 304 / 316</b> 1/4-in. to 5/16-in. and 1-1/8" to 2-in. ASTM A193 Grade8(M), Class 1 <sup>4</sup>	psi (MPa)	75,000 <sup>(8)</sup> (517) <sup>(8)</sup>	NA	30,000 (207)	2.50 <sup>(7)</sup>	30	50	
	<b>HIT-Z Anchor rod</b> (HIT-HY 200 only) Grade 316	psi (MPa)	94,200 (650)	NA	75,300 (519)	1.25	8	20	

1 All electroplated carbon steel threaded rods are zinc plated in accordance with ASTM F1941 Fe/Zn 5 AN, with nuts and washers zinc plated in accordance with ASTM B633 SC 1 Type III. All hot-dipped galvanized threaded rods, nuts, and washers are zinc plated in accordance with ASTM F2329.  
 2 Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.  
 3 Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.  
 4 Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.  
 5 Standard Steel Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.  
 6 Maximum specified steel strength according to ASTM standard. NA indicates that ASTM standard does not publish a maximum value.  
 7 For designs according to CSA A23.3 Annex D, the maximum value of  $f_{ya}$  is 860 MPa (124,700 psi) per clause D.6.1.2.  
 8 For calculating steel strength, ACI 318 section 17.4.1.2 and CSA A23.3 clause D.6.1.2 limit the ultimate strength to 1.9  $f_{yt}$ . Thus,  $f_{uta} = 57,000$  psi (393 MPa) for calculation purposes when determining steel strength in tension ( $N_{st}$ ) and shear ( $V_{st}$ ).  
 9 3/8-inch dia. threaded rods are not included in the ASTM F1554 standard. Hilti 3/8-inch dia. HAS-V-36, HAS-E-55, and HAS-B-105 (incl. HDG) threaded rods meet the chemical composition and mechanical property requirements of ASTM F1554.

## ORDERING INFORMATION

### Hilti HIT-Z Anchor rods for Hilti HIT-HY 200 Anchoring system

HIT-Z Carbon Steel		HIT-Z-R 316 Stainless Steel		HIT-Z (-R) Length Code
Description	Qty	Description	Qty	
3/8" x 3-3/8"	40	3/8" x 3-3/8"	40	D
3/8" x 4-3/8"	40	3/8" x 4-3/8"	40	F
3/8" x 5-1/8"	40	3/8" x 5-1/8"	40	H
3/8" x 6-3/8"	40	3/8" x 6-3/8"	40	J
1/2" x 4-1/2"	20	1/2" x 4-1/2"	20	F
1/2" x 6-1/2"	20	1/2" x 6-1/2"	20	J
1/2" x 7-3/4"	20	1/2" x 7-3/4"	20	M
5/8" x 6"	12	5/8" x 6"	12	I
5/8" x 8"	12	5/8" x 8"	12	M
5/8" x 9-1/2"	12	5/8" x 9-1/2"	12	P
3/4" x 6-1/2"	6	3/4" x 6-1/2"	6	K
3/4" x 8-1/2"	6	3/4" x 8-1/2"	6	N
3/4" x 9-3/4"	6	3/4" x 9-3/4"	6	Q



Hilti Rods are now stamped on the end to show grade of steel and overall anchor length!



"△" = HIT-Z  
"J" = Length Code



"HV" = HAS-V-36  
"6 1/2" = Length



× = 1/4" & 5/16" HAS-V  
Carbon steel  
No length identification



"HE" = HAS-E-55  
"6 1/2" = Length



"HB" = HAS-B-105  
"6 1/2" = Length



● = 1/4" & 5/16" HAS-R  
Stainless steel 304  
No length identification



"R1" = 304 SS  
"6 1/2" = Length



"R2" = 316 SS  
"6 1/2" = Length



--- = 1/4" & 5/16" HAS-R  
Stainless steel 316  
No length identification

Overview of the Hilti HAS standard off-the-shelf anchor rods for Hilti chemical anchoring systems<sup>1</sup>



HAS-V does not come with chisel point



HAS-E, HAS-B, and HAS-R all come with chisel point

HAS-V		HAS-V-36/ HAS-V-36 HDG		HAS-E-55		HAS-B-105		HAS-B-105 HDG Hot-dipped galvanized		HAS-R 304 Stainless Steel		HAS-R 316 Stainless Steel	
Description	Qty	Description	Qty	Description	Qty	Description	Qty	Description	Qty	Description	Qty	Description	Qty
1/4" x 3"	20	-	-	-	-	-	-	-	-	-	-	-	-
1/4" x 4-1/2"	20	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	3/8" x 3"	20	-	-	-	-	-	-	-	-
5/16" x 3"	20	-	-	-	-	-	-	-	-	-	-	-	-
5/16" x 4-1/2"	20	-	-	-	-	-	-	-	-	-	-	-	-
-	-	3/8" x 4-3/8" <sup>2</sup>	20	3/8" x 4-3/8"	20	-	-	-	-	-	-	-	-
-	-	3/8" x 5-1/8" <sup>2</sup>	20	3/8" x 5-1/8"	20	3/8" x 5-1/8"	20	-	-	3/8" x 5-1/8"	20	3/8" x 5-1/8"	20
-	-	3/8" x 8" <sup>2</sup>	10	3/8" x 8"	10	-	-	-	-	3/8" x 8"	10	3/8" x 8"	10
-	-	-	-	3/8" x 12"	10	-	-	-	-	-	-	-	-
-	-	-	-	1/2" x 3-1/8"	20	-	-	-	-	-	-	-	-
-	-	1/2" x 4-1/2"	20	1/2" x 4-1/2"	20	-	-	-	-	-	-	-	-
-	-	1/2" x 6-1/2"	20	1/2" x 6-1/2"	20	1/2" x 6-1/2"	20	-	-	1/2" x 6-1/2"	20	1/2" x 6-1/2"	20
-	-	1/2" x 8" <sup>2</sup>	10	1/2" x 8"	10	-	-	1/2" x 8"	10	1/2" x 8"	10	1/2" x 8"	10
-	-	-	-	1/2" x 10"	10	-	-	-	-	1/2" x 10"	10	1/2" x 11"	10
-	-	-	-	1/2" x 12"	10	-	-	-	-	-	-	1/2" x 12"	10
-	-	5/8" x 6"	10	5/8" x 6"	10	-	-	-	-	-	-	-	-
-	-	5/8" x 8"	10	5/8" x 8"	10	5/8" x 8"	10	5/8" x 8"	10	5/8" x 7-5/8"	20	5/8" x 7-5/8"	20
-	-	5/8" x 10" <sup>2</sup>	10	5/8" x 9"	10	-	-	-	-	5/8" x 10"	10	5/8" x 9"	10
-	-	5/8" x 12" <sup>2</sup>	10	5/8" x 12"	10	-	-	5/8" x 12"	10	-	-	5/8" x 12"	10
-	-	-	-	5/8" x 17"	10	-	-	-	-	-	-	-	-
-	-	3/4" x 6" <sup>2</sup>	10	3/4" x 6"	10	-	-	-	-	-	-	-	-
-	-	3/4" x 8"	10	3/4" x 8"	10	-	-	-	-	-	-	-	-
-	-	3/4" x 10"	10	3/4" x 10"	10	3/4" x 10"	10	3/4" x 10"	10	3/4" x 9-5/8"	10	3/4" x 9-5/8"	10
-	-	-	-	3/4" x 11"	10	-	-	-	-	-	-	3/4" x 10"	10
-	-	3/4" x 12" <sup>2</sup>	10	3/4" x 12"	10	-	-	-	-	3/4" x 12"	10	-	-
-	-	-	-	3/4" x 14"	10	3/4" x 14"	10	3/4" x 14"	10	3/4" x 14"	10	-	-
-	-	3/4" x 16" <sup>2</sup>	10	3/4" x 17"	10	-	-	-	-	3/4" x 16"	10	3/4" x 16"	10
-	-	-	-	3/4" x 19"	8	-	-	3/4"x20"	8	-	-	-	-
-	-	-	-	3/4" x 21"	8	-	-	-	-	-	-	-	-
-	-	-	-	3/4" x 25"	4	-	-	-	-	-	-	-	-
-	-	-	-	7/8" x 10"	10	-	-	7/8" x 10"	10	7/8" x 10"	10	7/8" x 10"	10
-	-	-	-	7/8" x 13"	8	-	-	7/8" x 12"	10	-	-	-	-
-	-	-	-	-	-	-	-	7/8" x 16"	10	-	-	7/8" x 16"	10
-	-	1" x 12"	4	1" x 12"	4	1" x 12"	4	-	-	1" x 12"	4	1" x 12"	4
-	-	-	-	1" x 14"	4	1" x 14"	4	-	-	-	-	-	-
-	-	-	-	1" x 16"	2	1" x 16"	2	1" x 16"	2	-	-	1" x 16"	2
-	-	-	-	1" x 20"	2	1" x 21"	2	1" x 21"	2	-	-	1" x 20"	2
-	-	-	-	1-1/4" x 16"	2	1-1/4" x 16"	2	1-1/4" x 16"	2	-	-	-	-
-	-	-	-	1-1/4" x 22"	2	1-1/4" x 23"	2	-	-	-	-	-	-

1 Additional diameters (up to 2-1/2") and lengths are available upon request. Contact Hilti for the full portfolio.  
 2 Not available in hot dipped galvanized.

3.2.7

## 3.2.8 ADHESIVE ANCHOR ACCESSORIES

### Accessories — dispensers

#### Battery powered

Description	
<b>HDE 500-A18/A22 compact battery dispenser kit<sup>1</sup></b> Includes dispenser, (2) compact B 18/22 1.6-Ah Li-Ion batteries, C 4/36 battery charger, black and red cartridge holders in a soft bag.	
<b>HDE 500-A18/A22 industrial battery dispenser kit<sup>1</sup></b> Includes dispenser, (2) industrial B 18/22 3.3-Ah Li-Ion batteries, C 4/36 battery charger, black and red cartridge holders in a soft bag.	
<b>HDE 500-A18/A22 battery dispenser tool body<sup>1</sup></b> Includes black and red cartridge holders	
<b>Battery charger C 4/36 Li-Ion 115V</b> Use with all B 14.4, B 18/22 batteries or B 36 batteries	
<b>Battery compact 18/22 1.6-Ah Li-Ion</b>	
<b>Battery industrial B 18/22 3.3-Ah Li-Ion</b>	
<b>HDE 500-A18/22 hard case</b>	

#### Manual

Description	
<b>MD 1000 manual dispenser<sup>1</sup></b> For HIT ICE	
<b>HDM 500 manual dispenser with black foil pack holder</b> For use with 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil packs of HIT-RE 500-V3, HIT-HY 10 PLUS, HIT-HY 270	
<b>HDM 500 manual dispenser with red foil pack holder</b> For use with 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil pack adhesives HY 200-A and HY 200-R	
<b>HDM 500 manual dispenser with black and red foil pack holder</b> For use with 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil pack adhesives HIT-HY 200-A, HIT-HY 200-R, HIT-RE 500-V3, HIT-HY 10 PLUS and HIT-HY 270	
<b>HIT-CB 500 black cartridge (foil pack) holder replacement</b> For use with 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil packs or HIT-RE 500V-3, HIT-HY 10 PLUS and HIT-HY 270	
<b>HIT-CR 500 red cartridge (foil pack) holder replacement</b> For use with 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil pack adhesives HIT-HY 200-A and HIT-HY 200-R	
<b>HDM 500 hard case only, no tool</b>	

#### Pneumatic with 1/4 female compressed air coupling

Description	
<b>P 3500 pneumatic dispenser<sup>1</sup></b> For use with HIT 11.1 fl oz/330 ml and 16.9 fl oz/500 ml foil pack	
<b>HIT-P 8000D pneumatic dispenser<sup>1</sup></b> For use with HIT 47.3 fl oz/1400 ml jumbo foil pack	
<b>P 3500 Cartridge (black foil pack) holder replacement</b> For use with the P 3500 Pneumatic Dispenser and HIT-RE 500-V3, HIT-HY 270 and HIT-HY 10 PLUS	

<sup>1</sup> Dispensers not compatible with HIT-HY 200 Adhesive Anchor System.

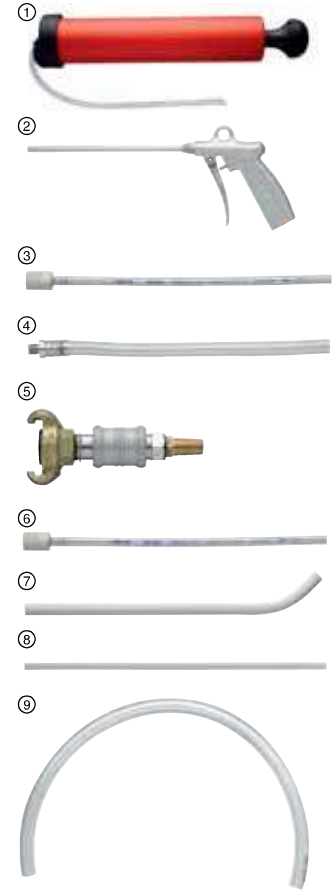
### Color coded cartridge holders with the same quality dispenser

With the introduction of HIT-HY 200 and Safe Set™ Technology, Hilti has introduced a new chemistry with a 5:1 ratio. **All other Hilti adhesive anchor system have a 3:1 mix ratio.** The new technology allows for better performance and both the HDM 500 Manual Dispensers and HDE 500-A18/A22 Battery Dispenser can accept both cartridge ratios. Simply change out the cartridge holder and you can use the dispenser on any jobsite with any Hilti foil pack adhesive.



**Hilti HIT Profi accessories for blowing out drilled holes**

Description	Diameter in.	Length ft	Qty
<b>Blow-Out Pump</b> For use in holes up to 10 in. deep	①		1
<b>Blow-Out Tool G 1/4 NPT Inlet</b> For use in holes up to 11 in. deep. For holes deeper than 11 in., use Blow-Out Tool plus the following extensions	②		1
<b>Extension hose for blow-out tool HIT-DL 10/0.8</b>	③	0.39	2.6
<b>Extension hose for blow-out tool HIT-DL 16/0.8</b>	④	0.71	2.6
<b>3/8 Claw-type Quick Connect HIT-DL A</b>	⑤		1
<b>Extension hose for HIT-DL A HIT-DL V10/1</b>	⑥	0.39	3.3
<b>Extension tube HIT-DL B (Rigid/bent)</b>	⑦	0.63	5
<b>Extension tube HIT-VL 16/0.7 (Rigid/straight)</b>	⑧	0.63	2.3
<b>Coupler for blowing extensions HIT-DL K</b> Metal coupler for splicing 16 mm extension hose		0.63	10
<b>Extension hose HIT-VL 16 (Flexible)</b>	⑨	0.63	33
<b>HIT-DRS</b> Dust Removal System with one hole for vacuum attachment and another hole for the Blow-Out Tool. For use with compressed air			1



**Air nozzles**

Attach to extension end for proper hole cleaning<sup>1</sup>

Description	Qty
<b>HIT-DL 1/2</b> Use with 10 mm diameter hose	1
<b>HIT-DL 9/16</b> Use with 10 mm diameter hose	1
<b>HIT-DL 11/16</b> Use with 10 mm diameter hose	1
<b>HIT-DL 3/4</b> Use with 16 mm diameter hose/tube	1
<b>HIT-DL 7/8</b> Use with 16 mm diameter hose/tube	1
<b>HIT-DL 1</b> Use with 16 mm diameter hose/tube	1
<b>HIT-DL 1-3/8</b> Use with 16 mm diameter hose/tube	1

<sup>1</sup> HIT-DL size determined by the diameter of drilled hole; see Accessory Selection Table below for proper sizing

**Also available in metric!**



Hole diameter <sup>1</sup>	Description	Description	Use with hose dia.	Description
7/16	HIT-RB 7/16	-	-	-
1/2	HIT-RB 1/2	HIT-IP 1/2	9 mm	HIT-DL 1/2
9/16	HIT-RB 9/16	HIT-IP 9/16	9 mm	HIT-DL 9/16
5/8	HIT-RB 5/8	HIT-IP 5/8	9 mm	-
11/16	HIT-RB 11/16	HIT-IP 11/16	9 mm	HIT-DL 11/16
3/4	HIT-RB 3/4	HIT-IP 3/4	16 mm	HIT-DL 3/4
7/8	HIT-RB 7/8	HIT-IP 7/8	16 mm	HIT-DL 7/8
1	HIT-RB 1	HIT-IP 1	16 mm	HIT-DL 1
1-1/8	HIT-RB 1 1/8	HIT-IP 1 1/8	16 mm	-
1-1/4	HIT-RB 1 1/4	HIT-IP 1 1/4	16 mm	-
1-3/8	HIT-RB 1 3/8	HIT-IP 1 3/8	16 mm	HIT-DL 1 3/8
1-1/2	HIT-RB 1 1/2	HIT-IP 1 1/2	16 mm	-
1-3/4	HIT-RB 1 3/4	HIT-IP 1 3/4	16 mm	-

<sup>1</sup> Refer to adhesive anchor system installation instructions to determine the proper hole diameter for the fastening element to be used.

<sup>2</sup> Attach brush to HIT-RBH T-handle, HIT-RBS or HIT-RBV extensions.

<sup>3</sup> Use piston plugs to help prevent air voids during injection.

## Hilti HIT Profi accessories for brushing drilled holes

### Manual brush handle for round steel brush

Description		Qty
<b>HIT-RBH (T-handle)</b>	①	1
Use to clean holes up to 11 in. deep		



### Manual brush extension for round steel brush

Description		Qty
<b>HIT-RBV 11 in. extension for HIT-RBH (T-handle)</b>	②	1



### HOLDERS for brush extension RBS

Connects RBS extension to your Hilti drill for use in cleaning holes

Description		Qty
<b>TE-Y SDS Max connection</b>	③	1
<b>TE-C SDS + Connection</b>	④	1



### Extensions for round steel brushes

Description		Diameter in.	Length ft.	Qty
<b>HIT-RBS 10/0.7</b>	⑤	0.39	2.3	1
<b>HIT-RBS-10/0.35</b>	⑤	0.39	1.2	1



## Hilti HIT Profi accessories for adhesive injection

### Extension hoses

For use in holes deeper than 10 in.

Description		Diameter in.	Length ft.	Qty
<b>HIT-VL 9/1.0 flexible hose</b>	⑥	0.35	3.3	10
<b>HIT-VL 16/0.7 rigid tube</b>	⑦	0.63	2.3	10
<b>HIT-VL 16 flexible hose</b>		0.63	33	1



### Coupler for injection extensions

Description		Diameter in.	Qty
<b>HIT-VL K</b>	⑧	0.63	5
Plastic coupler for connecting 16 mm (0.63 in.) hoses and tubes			



### Overhead injection accessories

Description		Hole Diameter in.	Qty
<b>HIT-OHW overhead wedge</b>	⑨	7/16 to 1-1/4	100
<b>HIT-OHC1 overhead drip guard</b>	⑩	7/16 to 5/8	10
<b>HIT-OHC2 overhead drip guard</b>		11/16 to 1-1/4	10

