





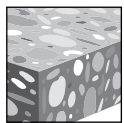


3.2.2 HIT-HY 200 ADHESIVE ANCHORING SYSTEM

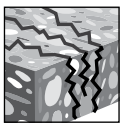
PRODUCT DESCRIPTION

HIT-HY 200 with HIT-Z rods, Threaded Rod, Rebar, and HIS-N/RN Inserts

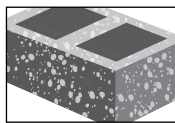
| Anchor System | Features and Benefits |
|---|--|
|  <p>Hilti HIT-HY 200-R Cartridge</p> | <ul style="list-style-type: none"> Two great products with equal performance data User can select product gel time suitability based on temperature of the base material and jobsite time requirements |
|  <p>Hilti HIT-HY 200-A Cartridge</p> | <ul style="list-style-type: none"> No hole cleaning requirement when installed SafeSet™ hollow drill bit technology No hole cleaning requirement when installing HIT-Z anchor rods in dry conditions with hammer drilled holes |
|  <p>Hilti HIT-Z Anchor Rod</p> | <ul style="list-style-type: none"> ICC-ES approved for cracked concrete and seismic service May be installed in diamond cored holes with HIT-Z anchor rod only when additional cleaning steps are employed |
|  <p>Hilti HAS Threaded Rod</p> | <ul style="list-style-type: none"> ICC-ES approved for grout-filled concrete masonry |
|  <p>Rebar</p> | |
|  <p>Hilti HIS-N/RN</p> | |



Uncracked concrete



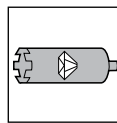
Cracked concrete



Grout-filled concrete masonry



Seismic Design Categories A-F



Diamond cored holes for Cracked and Uncracked Concrete



Hollow Drill Bit



Profis Anchor design software

| Approvals/Listings | |
|-------------------------------------|---|
| ICC-ES (International Code Council) | ESR-3187 in concrete per ACI 318-14 Ch. 17 / ACI 355.2/ ICC-ES AC308 ESR-3963 in grout-filled CMU per ICC-ES AC58 ELC-3187 in concrete per CSA A23.3-14 / ACI 355.2 |
| NSF/ANSI Std 61 | Certification for use in potable water |
| European Technical Approval | ETA-11/0492, ETA-11/0493 ETA-12/0006, ETA-12/0028 ETA-12/0083, ETA-12/0084 |
| City of Los Angeles | City of Los Angeles 2017 LABC Supplement (within ESR-3187 for Concrete) Research Report No. 26077 for Masonry |
| Florida Building Code | 2017 Florida Building Code Supplement (within ESR-3187) |
| U.S. Green Building Council | LEED® Credit 4.1-Low Emitting Materials |
| Department of Transportation | Contact Hilti for various states |

MATERIAL SPECIFICATIONS

For material specifications for anchor rods and inserts, please refer to section 3.2.8.

DESIGN DATA IN CONCRETE PER ACI 318

ACI 318-14 Chapter 17 design








The load values contained in this section are Hilti Simplified Design Tables. The load tables in this section were developed using the Strength Design parameters and variables of ESR-3187 and the equations within ACI 318-14 Chapter 17. For a detailed explanation of the Hilti Simplified Design Tables, refer to section 3.1.8. Data tables from ESR-3187 are not contained in this section, but can be found at www.icc-es.org or at www.hilti.com.

HIT-HY 200 adhesive with HIT-Z and HIT-Z-R anchor rods





3.2.2

Figure 1 - Hilti HIT-Z and HIT-Z-R installation conditions

| | | | | | | | |
|---------------------------------|---|--------------------|---|--------------------------|-----------------------------|---|--|
| Permissible concrete conditions |  | Uncracked concrete |  | Dry concrete | Permissible drilling method |  | Hammer drilling with carbide tipped drill bit ¹ |
| |  | Cracked concrete |  | Water-saturated concrete | |  | Hilti TE-CD or TE-YD Hollow Drill Bit ² |
| | | | | | |  | Diamond core drill bit ³ |
| | | | | | | | |

- Anchor may be installed in a hole drilled with a carbide-tipped bit without cleaning the drilling dust from the hole. Temperature must be 41° F or higher. Drilling dust must be removed from the hole if the temperature is below 41° F. See Manufacturer's Published Installation Instructions (MPII).
- When temperatures are below 41° F, TE-CD or TE-YD Hollow Drill Bits used with a Hilti vacuum cleaner are viable methods for removing drilling dust from the hole.
- Holes drilled by diamond coring require cleaning with a wire brush, a water hose and compressed air. See MPII.

Table 1 - Specifications for Hilti HIT-Z and HIT-Z-R installed with Hilti HIT-HY 200 adhesive

| Setting information | | Symbol | Units | Nominal anchor diameter | | | |
|--------------------------|-------------|---|---------------|-------------------------|---------------|--------------------|--------------------|
| | | | | 3/8 | 1/2 | 5/8 | 3/4 |
| Nominal bit diameter | | d_o | in. | 7/16 | 9/16 | 3/4 | 7/8 |
| Effective embedment | minimum | $h_{ef,min}$ | in. (mm) | 2-3/8 (60) | 2-3/4 (70) | 3-3/4 (95) | 4 (102) |
| | maximum | $h_{ef,max}$ | in. (mm) | 4-1/2 (114) | 6 (152) | 7-1/2 (190) | 8-1/2 (216) |
| Diameter of fixture hole | through-set |  | in. | 1/2 | 5/8 | 13/16 ¹ | 15/16 ¹ |
| | preset |  | in. | 7/16 | 9/16 | 11/16 | 13/16 |
| Installation torque | | T_{inst} | ft-lb (Nm) | 15 (20) | 30 (40) | 60 (80) | 110 (150) |

¹ Install using (2) washers. See Figure 3.

Figure 2 - Hilti HIT-Z and HIT-Z-R specifications

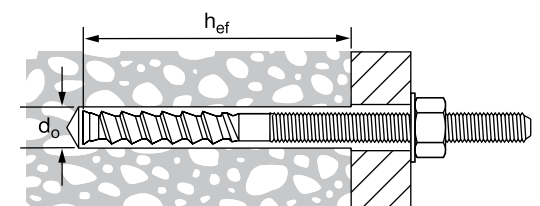


Figure 3 - Installation with (2) washers



Table 2 - Hilti HIT-Z and HIT-Z-R anchor rod length and thread dimension

| Size | ℓ Anchor length | | ℓ_{helix} Helix length | | Smooth shank length | | Total thread length | | Usable thread length | | HIT-Z Length Code |
|-------------|-------------------------|-------|---------------------------------------|-------|------------------------|------|------------------------|-------|-------------------------|-------|-------------------------|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | |
| 3/8 x 3-3/8 | 3-3/8 | (111) | 2-1/4 | (57) | 5/16 | (8) | 1-13/16 | (46) | 1-5/16 | (33) | D |
| 3/8 x 4-3/8 | 4-3/8 | (111) | 2-1/4 | (57) | 5/16 | (8) | 1-13/16 | (46) | 1-5/16 | (33) | F |
| 3/8 x 5-1/8 | 5-1/8 | (130) | 2-1/4 | (57) | 5/16 | (8) | 2-9/16 | (65) | 2-1/16 | (52) | H |
| 3/8 x 6-3/8 | 6-3/8 | (162) | 2-1/4 | (57) | 5/16 | (8) | 3-13/16 | (97) | 3-5/16 | (84) | J |
| 1/2 x 4-1/2 | 4-1/2 | (114) | 2-1/2 | (63) | 5/16 | (8) | 1-11/16 | (43) | 1 | (26) | F |
| 1/2 x 6-1/2 | 6-1/2 | (165) | 2-1/2 | (63) | 5/16 | (8) | 3-11/16 | (94) | 3-1/16 | (77) | J |
| 1/2 x 7-3/4 | 7-3/4 | (197) | 2-1/2 | (63) | 5/16 | (8) | 4-15/16 | (126) | 4-5/16 | (109) | M |
| 5/8 x 6 | 6 | (152) | 3-5/8 | (92) | 7/16 | (11) | 1-15/16 | (49) | 1-1/8 | (28) | I |
| 5/8 x 8 | 8 | (203) | 3-5/8 | (92) | 7/16 | (11) | 3-15/16 | (100) | 3-1/8 | (79) | M |
| 5/8 x 9-1/2 | 9-1/2 | (241) | 3-5/8 | (92) | 1-15/16 | (49) | 3-15/16 | (100) | 3-1/8 | (79) | P |
| 3/4 x 6-1/2 | 6-1/2 | (165) | 4 | (102) | 5/16 | (8) | 2 | (51) | 1 | (26) | K |
| 3/4 x 8-1/2 | 8-1/2 | (216) | 4 | (102) | 7/16 | (12) | 4 | (102) | 3-1/16 | (77) | N |
| 3/4 x 9-3/4 | 9-3/4 | (248) | 4 | (102) | 1-11/16 | (44) | 4 | (102) | 3-1/16 | (77) | Q |

Figure 4 - Hilti HIT-Z and HIT-Z-R anchor rod length and thread dimension

