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ICC-ES Evaluation Report

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DIVISION: 04 00 00—MASONRY
Section: 04 05 19.16—Masonry Anchors

REPORT HOLDER:

HILTI, INC.

EVALUATION SUBJECT:

HILTI HIT-HY 200 ADHESIVE ANCHOR SYSTEM

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012 and 2009 *International Building Code®* (IBC)
- 2018, 2015, 2012 and 2009 *International Residential Code®* (IRC)

For evaluation for compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see ESR-3963 LABC and LARC Supplement.

Property evaluated:

Structural

2.0 USES

The Hilti HIT-HY 200 Adhesive Anchor System is used to anchor building components to fully grouted concrete masonry walls. Threaded rods, Hilti HIT-Z(-R) anchor rods, steel reinforcing bars, and internally threaded inserts installed with Hilti HIT-HY 200 can resist static, wind, and earthquake loads, as noted in Section 4.0 of this evaluation report. The anchor system is an alternative to Section 8.1.3 (2016 or 2013 editions) or Section 2.1.4 (2011 or 2008 editions) of TMS 402/ ACI 530/ ASCE 5, as applicable, as referenced in Section 2107.1 of the IBC. The anchor system may also be used where an engineered design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 General:

The Hilti HIT-HY 200 Adhesive Anchoring System is comprised of the following components:

- Hilti HIT-HY 200 adhesive packaged in foil packs (either Hilti HIT-HY 200-A or Hilti HIT-HY 200-R)
- Adhesive mixing and dispensing equipment
- Equipment for hole cleaning and adhesive injection

The Hilti HIT-HY 200 Adhesive Anchoring System may be used with continuously threaded rod, Hilti HIT-Z(-R) anchor rods, Hilti HIS-N and HIS-RN internally threaded inserts or deformed steel reinforcing bars as depicted in Figures 4 and 5. The primary components of the Hilti Adhesive Anchoring System, including the Hilti HIT-HY 200 Adhesive, HIT-RE-M static mixing nozzle and steel anchoring elements, are shown in Figure 5 of this report.

The manufacturer's printed Installation instructions (MPII), as included with each adhesive unit package, are replicated as Figure 6.

3.2 Materials:

3.2.1 Hilti HIT-HY 200 Adhesive: Hilti HIT-HY 200 Adhesive is an injectable, two-component hybrid adhesive. The two components are separated by means of a dual-cylinder foil pack attached to a manifold. The two components combine and react when dispensed through a static mixing nozzle attached to the manifold. Hilti HIT-HY 200 is available in 11.1-ounce (330 mL) and 16.9-ounce (500 mL) foil packs. The manifold attached to each foil pack is stamped with the adhesive expiration date. The shelf life, as indicated by the expiration date, applies to an unopened foil pack stored in a dry, dark environment and in accordance with Figure 6.

Hilti HIT-HY 200 Adhesive is available in two options, Hilti HIT-HY 200-A and Hilti HIT-HY 200-R. Both options are subject to the same technical data as set forth in this report. Hilti HIT-HY 200-A will have shorter working times and curing times than Hilti HIT-HY 200-R. The packaging for each option employs a different color (dark grey for the plastic cap of HIT-HY 200-A, and light grey for that of HIT-HY 200-R), which helps the user distinguish between the two adhesives.

3.2.2 Hole Cleaning Equipment:

3.2.2.1 Standard Equipment: Standard hole cleaning equipment, comprised of steel wire brushes and air nozzles, is described in Figure 6 of this report.

3.2.2.2 Hilti Safe-Set™ System: The Hilti Safe-Set™ with Hilti HIT-HY 200 consists of one of the following:

- For the Hilti HIT-Z(-R) anchor rods, hole cleaning is not required after drilling the hole.
- For Threaded Steel Rods, Steel Reinforcing Bars, and Hilti HIS-N and HIS-RN Inserts, the Hilti TE-CD or TE-YD hollow carbide drill bit with a carbide drilling head conforming to ANSI B212.15 is used in conjunction with a Hilti VC 20/40 vacuum. The Hilti TE-CD or TE-YD drill bit will remove drilling dust, automatically cleaning the hole.

3.2.3 Dispensers: Hilti HIT-HY 200 must be dispensed with manual or electric dispensers provided by Hilti.

3.2.4 Anchor Elements:

3.2.4.1 Threaded Steel Rods: Threaded steel rods must be clean, continuously threaded rods (all-thread) in diameters as described in Tables 2A and 2B of this report. Carbon steel threaded rods must be furnished with a 0.0002-inch-thick (0.005 mm) zinc electroplated coating complying with ASTM B 633 SC 1 or must be hot-dipped galvanized complying with ASTM A 153, Class C or D. Stainless steel threaded rods must comply with ASTM F593 or ISO 3506 A4. Threaded steel rods must be straight and free of indentations or other defects along their length. The ends may be stamped with identifying marks and the embedded end may be blunt cut or cut on the bias to a chisel point.

3.2.4.2 Hilti HIT-Z(-R) Anchor Rods: Hilti HIT-Z(-R) anchor rods have a conical shape on the embedded section and a threaded section above the concrete surface. The rods are available in diameters described in Tables 2A and 2B of this report. Hilti HIT-Z(-R) anchor rods are produced from carbon steel and furnished with a 0.005 millimeter-thick (5 μm) zinc electroplated coating. Hilti HIT-Z(-R) anchor rods are fabricated from grade 316 stainless steel.

3.2.4.3 Steel Reinforcing Bars: Steel reinforcing bars are deformed reinforcing bars (rebar) having diameters described in Tables 2A and 2B of this report, and must comply with ASTM A615, Grade 60. The embedded portions of reinforcing bars must be straight, and free of mill scale, rust, mud, oil, and other coatings that impair the bond with the adhesive.

3.2.4.4 Hilti HIS-N and HIS-RN Inserts: Hilti HIS-N and HIS-RN steel inserts have a profile on the external surface and are internally threaded. Inserts are available in $^3/_8$- and $^1/_2$-inch (9.5 and 12.7 mm) internal thread diameters. HIS-N inserts are produced from carbon steel and furnished either with a 0.005-millimeter-thick (5 μm) zinc electroplated coating complying with ASTM B633 SC 1 or a hot-dipped galvanized coating complying with ASTM A153, Class C or D. The stainless steel HIS-RN inserts are fabricated from X5CrNiMo17122 K700 steel conforming to DIN 17440. Common threaded rods as per Section 3.2.3, or bolts, cap screws, and studs conforming to SAE J995, ASTM A563 C, C3, D, DH, DH3 Heavy Hex, and ASTM F594 can be used with internally threaded inserts. Bolt grade and material type (carbon, stainless) must be matched to the insert.

3.3 Fully Grouted Concrete Masonry: Fully grouted concrete masonry must comply with Chapter 21 of the IBC. The compressive strength of masonry, f'_m, at 28 days must be a minimum of 1,500 psi (10.3 MPa). Fully grouted masonry systems must be constructed from the following materials:

3.3.1 Concrete Masonry Units (CMUs): Fully grouted concrete masonry walls must be constructed from minimum Type I, Grade N, lightweight, medium-weight or normal-weight concrete masonry units (CMUs) conforming to ASTM C90 (IBC). The minimum allowable nominal size of the CMU is 8 inches (203 mm) wide by 8 inches (203 mm) high by 16 inches (406 mm) long.

3.3.2 Grout: The masonry units must be fully grouted with grout complying with Section 2103.3 of the 2018 and 2015 IBC, Section 2103.13 of the 2012 IBC, or Section 2103.12 of the 2009 IBC, Section R606.2.12 of the 2018 IRC, Section R606.2.11 of the 2015 IRC, or Section R609.1.1 of the 2012 and 2009 IRC, as applicable. Alternatively, the grout must have a minimum compressive strength, when tested in accordance with ASTM C1019, equal to its specified strength, but not less than 2,000 psi (13.8 MPa).

3.3.3 Mortar: Mortar must be Type N, S or M, prepared in accordance with Section 2103.2.1 of the 2018 and 2015 IBC, Section 2103.9 of the 2012 IBC, Section 2103.8 of the 2009 IBC, Section R606.2.8 of the 2018 IRC, Section R606.2.7 of the 2015 IRC, or Section R607.1 of the 2012 and 2009 IRC, as applicable.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General: Anchors described in this report are assigned allowable tension and shear load values based on allowable stress design (ASD), as an alternative to Section 8.1.3 (2016 or 2013 editions) or Section 2.1.4 (2011 or 2008 editions) of TMS 402/ ACI 530/ ASCE 5 as referenced in Section 2107.1 of the IBC. For use under the IRC, an engineered design in accordance with Section R301.1.3 must be submitted to the code official. The allowable tension and shear values reported herein must be adjusted in accordance with Figure 1 for in-service base-material temperatures in excess of 70°F (21°C). Allowable tension and shear loads based on steel strength for threaded rods and HIT-Z(-R) Anchor Rods are described in Table 5, and for reinforcing bars are described in Table 6. Anchors installed or cured at temperatures below 14°F (-10°C) for threaded rods, rebars, and Hilti HIS-(R)N inserts or below 41°F (5°C) for HIT-Z(-R) anchor rods are outside the scope of this report.

Allowable stress design tension and shear load values in Tables 2A, 2B, 4A and 4B may be used for resistance to short-term loads such as wind and seismic, in accordance with Section 5.5 and Table 1 of this report. Use of the values in the remaining tables for seismic loads is beyond the scope of this report. Use of the values in the remaining tables may be used for short-term loading due to wind forces; however, the allowable loads must not be increased.

4.1.2 Combined Loading: Allowable loads for anchors installed in masonry and subjected to combined tension and shear forces must be determined by the following formula:

$$\left(\frac{P_s}{P_t}\right) + \left(\frac{V_s}{V_t}\right) \leq 1.0$$

where:

P_s = Applied service tension load (lbf or kN).

P_t = Allowable service tension load (lbf or kN).

V_s = Applied service shear load (lbf or kN).

V_t = Allowable service shear load (lbf or kN).

4.1.3 Design of Threaded Rods, Hilti HIT-Z(-R) Anchor Rods, and Reinforcing Bars Installed in the Face of Fully Grouted CMU Walls: Allowable tension and shear load values for $^3/_8$-, $^1/_2$-, $^5/_8$-, and $^3/_4$-inch-diameter (9.5, 12.7, 15.9, and 19.1 mm) steel threaded rods, Hilti HIT-Z (-R) anchor rods, and No. 3, 4, 5, and 6 reinforcing bars installed in the face of grout-filled CMU walls are reported in Tables 2A and 2B. The allowable tension and shear loads are for anchors installed in any location in the face of the grout-filled CMU walls (cell, web, joints), and resisting static, wind, or earthquake loads. Critical and minimum spacing and edge distances, with appropriate reduction factors, are given in Tables 2A and 2B and shown in Figure 2.

4.1.4 Design of Threaded Rods and Reinforcing Bars Installed in the Top of Fully Grouted CMU Walls: Allowable tension and shear load values for $^1/_2$- and

$^5/_8$-inch-diameter (12.7 mm and 15.9 mm) steel threaded rods and No. 4 and No. 5 reinforcing bars installed in the top of grout-filled CMU walls and resisting static, wind, or earthquake loads are reported in Table 4A and Table 4B, respectively. Minimum edge and end distances are noted in Table 4A and Table 4B and shown in Figure 3.

4.1.5 Design of HIS-N and HIS-RN Inserts Installed in the Face of Fully Grouted CMU Walls: Allowable tension and shear load values for $^3/_8$-inch and $^1/_2$-inch (9.5 and 12.7 mm) HIS-N and HIS-RN internally threaded inserts installed in the face of fully grouted CMU walls are reported in Tables 3A and 3B. The allowable tension and shear loads are for HIS-(R)N inserts installed in any location in the face of the fully grouted CMU walls (cell, web, joints), and resisting static and wind load applications only. Use of these anchors to resist earthquake loads is outside the scope of this report. Critical and minimum spacing and edge distances, with appropriate reduction factors, are also given in Tables 3A and 3B.

4.2 Installation:

Installation parameters are illustrated in Figure 4. Installation of the Hilti HIT-HY 200 Adhesive Anchor System must conform to the manufacturer's printed installation instructions (MPII) included in each unit package as provided in Figure 6 of this report. Anchor locations must comply with this report and the plans and specifications approved by the code official.

4.3 Special Inspection:

Periodic special inspections are required in accordance with IBC Section 1704, and are also applicable for installations under the IRC.

The approved special inspector must be on the jobsite initially during anchor installation to verify anchor type, anchor dimensions, adhesive identification and expiration date, masonry type, masonry compressive strength, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, masonry wall thickness, anchor embedment, tightening torque, base-material temperature, and adherence to the manufacturer's printed installation instructions (MPII).

The special inspector must verify the initial installations of each type and size of adhesive anchor by construction personnel on the site.

Subsequent installations of the same anchor type and size by the same construction personnel are permitted to be performed in the absence of the special inspector. Any change in the anchor product being installed or the personnel performing the installation requires an initial inspection. For ongoing installations over an extended period, the special inspector must make regular inspections to confirm correct handling and installation of the product.

5.0 CONDITIONS OF USE

The Hilti HIT-HY 200 Adhesive Anchor System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The Hilti HIT-HY 200 Adhesive Anchor System must be installed in accordance with the manufacturer's printed installation instructions (MPII) and this report. In case of conflict, this report governs.

5.2 Anchor sizes, dimensions, and minimum embedment depths must be as set forth in this report.

5.3 Prior to installation, calculations and details demonstrating compliance with this report must be submitted to the code official for approval. The calculations must be prepared by a registered design professional when required by the statutes of the jurisdiction in which the project is to be constructed.

5.4 Anchors resisting static, seismic or wind loads in masonry must be designed in accordance with Section 4.0 of this report.

5.5 Grout-filled concrete masonry under the IBC or the IRC (Tables 2A, 2B, 4A, and 4B): The adhesive anchors described in Sections 4.1.3 and 4.1.4 of this evaluation report are capable of resisting seismic and wind loads. When using the basic load combinations in accordance with IBC Section 1605.3.1, allowable loads must not be increased for seismic or wind loading. When using the alternative basic load combinations in 2009 IBC Section 1605.3.2 that include seismic or wind loads, the allowable loads may be increased in accordance with Table 1, or the alternative basic load combinations may be decreased by the factors in Table 1, as applicable. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.

5.6 HIS-N and HIS-RN inserts (Tables 3A and 3B) under the IBC or the IRC: Use of the adhesive anchors described in Section 4.1.5 for resistance to seismic loads is beyond the scope of this report. The allowable loads or load combinations for these anchors must not be adjusted for applications subjected to wind loads.

5.7 Since an ICC-ES acceptance criteria for evaluating data to determine the performance of adhesive anchors subjected to fatigue or shock loading is unavailable at this time, the use of these anchors under these conditions is beyond the scope of this report.

5.8 The Hilti HIT-HY 200 Adhesive Anchor Systems may be used to resist tension and shear forces in wall installations only if consideration is given to the effects of elevated temperature conditions on anchor performance. Figure 1 describes load reduction factors for elevated temperatures.

5.9 Anchors are not permitted to support fire-resistive construction. Where not otherwise prohibited by the code, anchors are permitted for installation in fire-resistive construction provided that at least one of the following conditions is fulfilled:

- Anchors are used to resist wind or seismic forces only.
- Anchors that support gravity load-bearing structural elements are within a fire-resistive envelope or a fire-resistive membrane, are protected by approved fire-resistive materials, or have been evaluated for resistance to fire exposure in accordance with recognized standards.
- Anchors are used to support nonstructural elements.

5.10 Since an ICC-ES acceptance criteria for evaluating the performance of adhesive anchors in cracked masonry is unavailable at this time, the use of anchors is limited to installation in uncracked masonry. Cracking occurs when $f_t > f_r$ due to service loads or deformations.

5.11 Use of Hilti HIT-HY 200 Adhesive Anchor System in conjunction with uncoated or zinc electroplated carbon steel threaded rods, HIT-Z anchor rods, HIS-N steel internally threaded inserts, or steel reinforcing bars must be limited to interior exposure. Use of

stainless steel (AISI 304 or 316) anchors or hot dipped galvanized anchors with a zinc coating conforming to ASTM A153, Class C or D, is permitted for exterior or damp environments.

5.12 The Hilti HIT-HY 200 Adhesive Anchor System may be installed in base materials having interior temperatures between 14°F (-10°C) and 104°F (40°C) for threaded rods, rebars, and Hilti HIS-(R)N inserts or between 41°F (5°C) and 104°F (40°C) for HIT-Z(-R) anchor rods at the time of installation. Installation of HIT-HY 200 adhesive in base materials having temperatures beyond this range is outside the scope of this report.

5.13 When anchors are located where the base-material temperature may exceed 70°F (21°C), allowable tension and shear loads indicated in this report must be adjusted for in-service temperatures in accordance with Figure 1. The use of HIT-HY 200 adhesive in base materials having interior temperatures exceeding 180°F (82°C) during their service life is outside the scope of this report.

5.14 Steel anchoring materials in contact with preservative-treated wood or fire-retardant-treated wood must be stainless steel or hot-dipped galvanized in accordance with ASTM A153 Class C or D.

5.15 Special inspection in accordance with Section 4.3 of this report must be provided for all anchor installations.

5.16 The Hilti HIT-HY 200 Adhesive Anchor Systems must be installed in holes created using a carbide-tipped masonry drill bit manufactured within the range of the maximum and minimum dimensions of ANSI B212.15-1994.

5.17 Hilti HIT-HY 200-A and Hilti HIT-HY 200-R adhesives are manufactured by Hilti GmbH, Kaufering, Germany, with quality control inspections by ICC-ES.

5.18 The Hilti HIT-Z and HIT-Z(-R) rods are manufactured by Hilti AG, Schaan, Liechtenstein, with quality control inspections by ICC-ES.

5.19 The Hilti HIS-N and HIS-RN inserts are manufactured by Hilti (China) Ltd., Guangdong, China, with quality control inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Adhesive Anchors in Masonry Elements (AC58), dated March 2018, including tests on the effects of edge distance on tension performance (Test Series 4 and 5); the effects of spacing on tension performance (Test Series 8 and 9), the effects of spacing on shear performance; the effects of edge distance on shear performance (Test Series 13 and 14) for installations in grout-filled CMU; and suitability tests (Test Series 17 through 21) for installations in grout-filled CMU walls.

6.2 A quality-control manual.

7.0 IDENTIFICATION

7.1 The Hilti HIT-HY 200-A and Hilti HIT-HY 200-R adhesive is identified by packaging labeled with the manufacturer's name (Hilti Corp.) and address, product name, lot number, expiration date, and evaluation report number (ICC-ES ESR-3963).

7.2 The Hilti HIT-Z and HIT-Z(-R) rods are identified by packaging labeled with the manufacturer's name (Hilti Corp.) and address, anchor name, and evaluation report number (ICC-ES ESR-3963).

7.3 The Hilti HIS-N and HIS-RN inserts are identified by packaging labeled with the manufacturer's name (Hilti Corp.) and address, anchor name and size, and evaluation report number (ICC-ES ESR-3963).

7.4 Threaded rods, reinforcing bars, nuts, washers, bolts, cap screws, and deformed reinforcing bars are standard elements and must conform to applicable national or international specifications.

7.5 The report holder's contact information is the following:

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HiltiTechEng@us.hilti.com

TABLE 1—ALTERNATIVE BASIC LOAD COMBINATION ADJUSTMENT FACTORS[1,2,3]

Steel Type	Modification Factors			
	Reductions for Alternate Basic Load Combinations		Increase Factor for Allowable Loads for Short-term Loading Conditions	
	Tension	Shear	Tension	Shear
Standard threaded rods and inserts	0.75	0.75	1.33	1.33
High-strength rods	0.75	1	1.33	1
Stainless steel rods and inserts	0.75	0.87	1.33	1.14
Steel reinforcing bars	0.75	0.75	1.33	1.33

[1]When using the basic load combinations in accordance with IBC Section 1605.3.1, allowable loads must not be increased for wind or seismic loading.
[2]When using the alternative basic load combinations in the 2009 IBC Section 1605.3.2 that include wind or seismic loads, the allowable loads for anchors may be increased by the tabulated factors found in the right half of the table. Alternatively, the alternate basic load combinations may be reduced by multiplying them by the reduction factors found in the left half of the table. For example, for stainless steel rods in shear, the alternate basic loads for wind or seismic may be multiplied by 0.87 for shear loading or divided by 1.14 (1/1.14 = 0.87), as applicable. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.
[3]The above modification factors are applicable under the 2009 IBC only, for Tables 2A, 2B, 4A and 4B of this report for seismic loads, and Tables 2A, 2B, 3A, 3B, 4A, 4B, 5, and 6 of this report for wind loads.

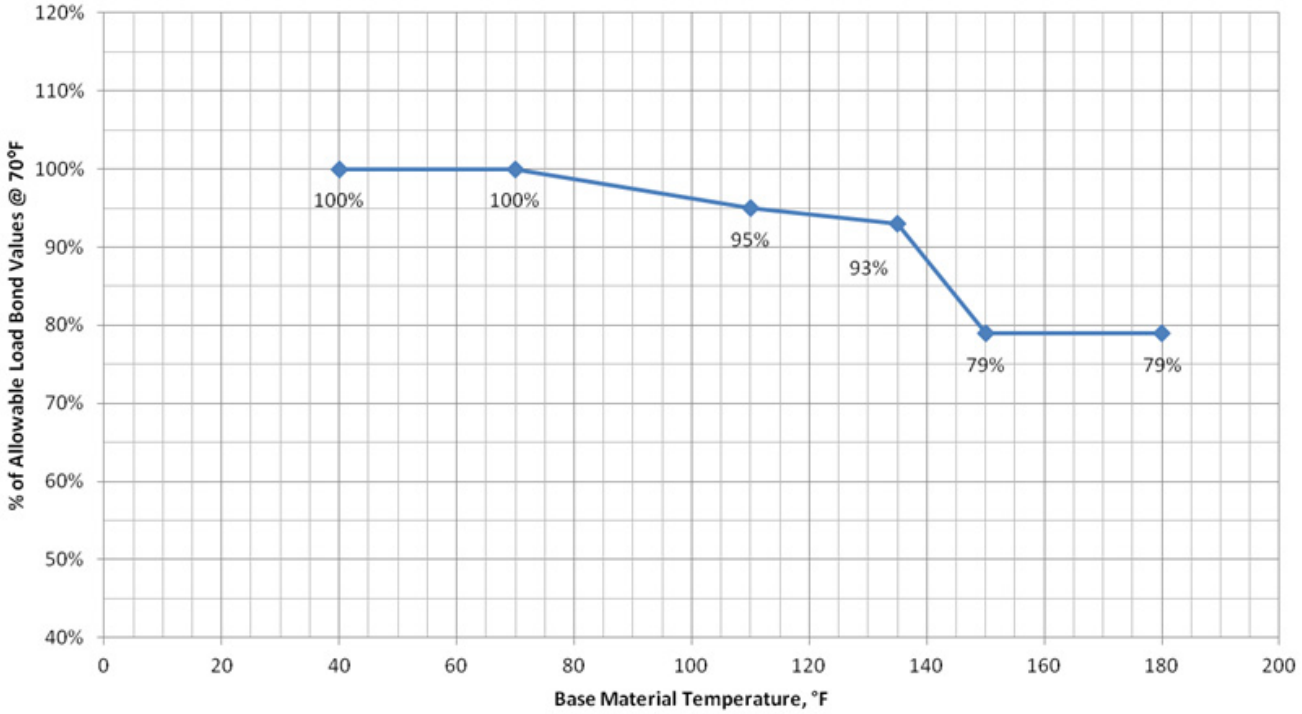


FIGURE 1—INFLUENCE OF BASE MATERIAL TEMPERATURE ON ALLOWABLE TENSION AND SHEAR LOADS FOR HILTI HIT-HY 200 ADHESIVE

TABLE 2A—ALLOWABLE ADHESIVE BOND TENSION LOADS FOR THREADED RODS, HIT-Z(-R) ANCHOR RODS, AND REINFORCING BARS IN THE FACE OF GROUT-FILLED CONCRETE MASONRY UNITS (POUNDS)[1,2,7,8,9,11,12,13]

Anchor Diameter (inches), or Rebar Size	Embedment (inches)[3]	Load @ c_{cr} and s_{cr}	Spacing[4]			Edge Distance[5]		
			Critical, s_{cr} (inches)	Minimum, s_{min} (inches)	Load Reduction Factor at s_{min}[6]	Critical, c_{cr} (inches)	Minimum, c_{min} (inches)	Load Reduction Factor at c_{min}[6]
3/8 or No. 3	3 3/8	960	13.5	4	0.60	12	4	0.58
1/2 or No. 4	4 1/2	1,520	18	4	0.60	20	4	0.70
5/8 or No. 5	5 5/8	1,810	22.5	4	0.50	20	4	0.82
3/4 or No. 6	6 3/4	2,215	27	4	0.50	20	4	0.68

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.

[1]All values are for anchors installed in fully grouted concrete masonry with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.

[2]Anchors may be installed in any location in the face of the masonry wall (cell, web, joints). Anchors are limited to one per masonry cell.

[3]Embedment depth is measured from the outside face of the concrete masonry unit.

[4]The critical spacing, s_{cr}, is the anchor spacing where full load values in the table may be used. The minimum spacing, s_{min}, is the minimum anchor spacing for which values are available and installation is recommended. Spacing is measured from the center of one anchor to the center of an adjacent anchor.

[5]The critical edge distance, c_{cr}, is the edge distance where full load values in the table may be used. The minimum edge distance, c_{min}, is the minimum edge distance for which values are available and installation is permitted. Edge distance is measured from the center of the anchor to the closest edge (See Figure 2).

[6]Load reduction factors are multiplicative; both spacing and edge distance load reduction factors must be considered.

[7]Load values for anchors installed at less than s_{cr} and c_{cr} must be multiplied by the appropriate load reduction factor based on actual edge distance (c) or spacing (s).

[8]Linear interpolation of load values between minimum spacing (s_{min}) and critical spacing (s_{cr}) and between minimum edge distance (c_{min}) and critical edge distance (c_{cr}) is permitted.

[9]Concrete masonry thickness must be equal to or greater than 1.5 times the anchor embedment depth. EXCEPTION: the 5/8-inch- and the 3/4-inch-diameter anchors and No.5 and No. 6 reinforcing bars may be installed in minimum nominally 8-inch-thick concrete masonry.

[10]When using the basic load combinations in accordance with IBC Section 1605.3.1, tabulated allowable loads must not be increased for seismic or wind loading. When using the alternative basic load combinations in the 2009 IBC Section 1605.3.2 that include seismic or wind loads, tabulated allowable loads may be increased, or the alternative basic load combinations may be reduced according to Table 1. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.

[11]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Tables 5 and 6.

[12]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.

[13]For combined loading, see Section 4.1.2.

TABLE 2B—ALLOWABLE ADHESIVE BOND SHEAR LOADS FOR THREADED RODS, HIT-Z(-R) ANCHOR RODS, AND REINFORCING BARS IN THE FACE OF GROUT-FILLED CONCRETE MASONRY UNITS (POUNDS)[1,2,7,8,9,10,11,12,13]

Anchor Diameter (inches)	Embedment (inches)[3]	Load @ c_{cr} and s_{cr}	Spacing[4]			Edge Distance[5]			
			Critical, s_{cr} (inches)	Minimum, s_{min} (inches)	Load Reduction Factor at s_{min}[6]	Critical, c_{cr} (inches)	Minimum, c_{min} (inches)	Load Reduction Factor at c_{min}[6]	
								Load Perpendicular to Edge	Load Parallel to Edge
3/8 or No. 3	3 3/8	825	13.5	4	0.56	12	4	0.60	0.72
1/2 or No. 4	4 1/2	1,240	18	4	0.50	12	4	0.44	0.85
5/8 or No. 5	5 5/8	2,120	22.5	4	0.50	20	4	0.22	0.71
3/4 or No. 6	6 3/4	2,480	27	4	0.50	20	4	0.19	0.71

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.
[1]All values are for anchors installed in fully grouted concrete masonry with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.
[2]Anchors may be installed in any location in the face of the masonry wall (cell, web, joints). Anchors are limited to one per masonry cell.
[3]Embedment depth is measured from the outside face of the concrete masonry unit.
[4]The critical spacing, s_{cr}, is the anchor spacing where full load values in the table may be used. The minimum spacing, s_{min}, is the minimum anchor spacing for which values are available and installation is recommended. Spacing is measured from the center of one anchor to the center of an adjacent anchor.
[5]The critical edge distance, c_{cr}, is the edge distance where full load values in the table may be used. The minimum edge distance, c_{min}, is the minimum edge distance for which values are available and installation is permitted. Edge distance is measured from the center of the anchor to the closest edge (See Figure 2).
[6]Load reduction factors are multiplicative; both spacing and edge distance load reduction factors must be considered.
[7]Load values for anchors installed at less than s_{cr} and c_{cr} must be multiplied by the appropriate load reduction factor based on actual edge distance (c) or spacing (s).
[8]Linear interpolation of load values between minimum spacing (s_{min}) and critical spacing (s_{cr}) and between minimum edge distance (c_{min}) and critical edge distance (c_{cr}) is permitted.
[9]Concrete masonry thickness must be equal to or greater than 1.5 times the anchor embedment depth. EXCEPTION: the 5/8-inch- and the 3/4-inch-diameter anchors and No.5 and No. 6 reinforcing bars may be installed in minimum nominally 8-inch-thick concrete masonry.
[10]When using the basic load combinations in accordance with IBC Section 1605.3.1, tabulated allowable loads must not be increased for seismic or wind loading. When using the alternative basic load combinations in the 2009 IBC Section 1605.3.2 that include seismic or wind loads, tabulated allowable loads may be increased, or the alternative basic load combinations may be reduced according to Table 1. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.
[11]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Tables 5 and 6.
[12]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.
[13]For combined loading, see Section 4.1.2.

TABLE 3A—ALLOWABLE ADHESIVE BOND TENSION LOADS FOR HIS-N AND HIS-RN INSERTS IN THE FACE OF GROUT-FILLED CONCRETE MASONRY UNITS (POUNDS)[1,2,7,8,9,10,11,12, 13]

Anchor Diameter (inches)	Embedment (inches)[3]	Load @ c_{cr} and s_{cr}	Spacing[4]			Edge Distance[5]		
			Critical, s_{cr} (inches)	Minimum, s_{min} (inches)	Load Reduction Factor @ s_{min}[6]	Critical, c_{cr} (inches)	Minimum, c_{min} (inches)	Load Reduction Factor @ c_{min}[6]
3/8	4 3/8	1,355	17	4	0.68	12	4	0.81
1/2	5	1,640	20	4	0.68	20	4	0.74

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.
[1]All values are for anchors installed in fully grouted concrete masonry walls with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.
[2]Anchors may be installed in any location in the face of the masonry wall (cell, web, joints). Anchors are limited to one per masonry cell.
[3]Embedment depth is measured from the outside face of the concrete masonry unit.
[4]The critical spacing, s_{cr}, is the anchor spacing where full load values in the table may be used. The minimum spacing, s_{min}, is the minimum anchor spacing for which values are available and installation is recommended. Spacing is measured from the center of one anchor to the center of an adjacent anchor.
[5]The critical edge distance, c_{cr}, is the edge distance where full load values in the table may be used. The minimum edge distance, c_{min}, is the minimum edge distance for which values are available and installation is permitted. Edge distance is measured from the center of the anchor to the closest edge (See Figure 2).
[6]Load reduction factors are multiplicative; both spacing and edge distance load reduction factors must be considered.
[7]Load values for anchors installed at less than s_{cr} and c_{cr} must be multiplied by the appropriate load reduction factor based on actual edge distance (c) or spacing (s).
[8]Linear interpolation of load values between minimum spacing (s_{min}) and critical spacing (s_{cr}) and between minimum edge distance (c_{min}) and critical edge distance (c_{cr}) is permitted.
[9]Concrete masonry thickness must be equal to or greater than 1.5 times the anchor embedment depth.
[10]Anchors are not recognized for resisting earthquake forces. When using the basic load combinations in accordance with IBC Section 1605.3.1, or the alternative basic load combinations in IBC Section 1605.3.2, tabulated allowable loads must not be increased for wind loading.
[11]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Table 5.
[12]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.
[13]For combined loading, see Section 4.1.2.

TABLE 3B—ALLOWABLE ADHESVE BOND SHEAR LOADS FOR HIS-N AND HIS-RN INSERTS IN THE FACE OF GROUT-FILLED CONCRETE MASONRY UNITS (POUNDS)[1,2,7,8,9,10,11,12, 13]

Anchor Diameter (inches)	Embedment (inches)[3]	Load @ c_{cr} and s_{cr}	Spacing[4]			Edge Distance[5]			
			Critical, s_{cr} (inches)	Minimum, s_{min} (inches)	Load Reduction Factor @ s_{min}[6]	Critical, c_{cr} (inches)	Minimum, c_{min} (inches)	Load Reduction Factor @ c_{min}[6]	
								Load Perpendicular to Edge	Load Parallel to Edge
3/8	4 3/8	1,045	17	4	0.56	12	4	0.65	1.00
1/2	5	1,730	20	4	0.50	20	4	0.36	0.91

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.
[1]All values are for anchors installed in fully grouted concrete masonry walls with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.
[2]Anchors may be installed in any location in the face of the masonry wall (cell, web, joints). Anchors are limited to one per masonry cell.
[3]Embedment depth is measured from the outside face of the concrete masonry unit.
[4]The critical spacing, s_{cr}, is the anchor spacing where full load values in the table may be used. The minimum spacing, s_{min}, is the minimum anchor spacing for which values are available and installation is recommended. Spacing is measured from the center of one anchor to the center of an adjacent anchor.
[5]The critical edge distance, c_{cr}, is the edge distance where full load values in the table may be used. The minimum edge distance, c_{min}, is the minimum edge distance for which values are available and installation is permitted. Edge distance is measured from the center of the anchor to the closest edge (See Figure 2).
[6]Load reduction factors are multiplicative; both spacing and edge distance load reduction factors must be considered.
[7]Load values for anchors installed at less than s_{cr} and c_{cr} must be multiplied by the appropriate load reduction factor based on actual edge distance (c) or spacing (s).
[8]Linear interpolation of load values between minimum spacing (s_{min}) and critical spacing (s_{cr}) and between minimum edge distance (c_{min}) and critical edge distance (c_{cr}) is permitted.
[9]Concrete masonry thickness must be equal to or greater than 1.5 times the anchor embedment depth.
[10]Anchors are not recognized for resisting earthquake forces. When using the basic load combinations in accordance with IBC Section 1605.3.1, or the alternative basic load combinations in IBC Section 1605.3.2, tabulated allowable loads must not be increased for wind loading.
[11]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Table 5.
[12]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.
[13]For combined loading, see Section 4.1.2.

TABLE 4A—ALLOWABLE ADHESIVE BOND TENSION AND SHEAR LOADS FOR THREADED RODS IN THE TOP OF GROUT-FILLED MASONRY UNITS (POUNDS)[1,2,3,4,8]

Anchor Diameter (inches)	Embedment (inches)	Edge Distance[5,6] (inches)	Minimum End Distance (inches)	Tension Load[7]	Shear Load[7]	
					Load Parallel to Edge of Masonry Wall	Load Perpendicular to Edge of Masonry Wall
1/2	4 1/2	1 3/4	8	685	775	285
		4		880	1,156	480
5/8	5 5/8	1 3/4		830	890	315
		4		980	1,315	625

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.
[1]All values are for anchors installed in fully grouted concrete masonry with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.
[2]When using the basic load combinations in accordance with IBC Section 1605.3.1, tabulated allowable loads must not be increased for seismic or wind loading. When using the alternative basic load combinations in the 2009 IBC Section 1605.3.2 that include seismic or wind loads, tabulated allowable loads may be increased, or the alternative basic load combinations may be reduced according to Table 1. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.
[3]One anchor must be permitted to be installed in each CMU block. Refer to Figure 3 for an illustration of the anchor location for which the tabulated values are applicable.
[4]The tabulated edge distance is measured from the anchor centerline to the edge of the CMU block as depicted in Figure 3.
[5]Anchors must be installed into the grouted cell. Anchors are not permitted to be installed in a head joint, flange or web of the concrete masonry unit.
[6]Linear interpolation of load values between the two tabulated edge distances is permitted, as applicable
[7]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Tables 5 and 6.
[8]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.

TABLE 4B—ALLOWABLE ADHESIVE BOND TENSION AND SHEAR LOADS FOR REINFORCING BARS IN THE TOP OF GROUT-FILLED MASONRY UNITS (POUNDS)[1,2,3,4,8]

Reinforcing Bar Size	Embedment (inches)	Edge Distance[5,6] (inches)	Minimum End Distance (inches)	Tension Load[7]	Shear Load[7]	
					Load Parallel to Edge of Masonry Wall	Load Perpendicular to Edge of Masonry Wall
No. 4	$4^1/_2$	$1^3/_4$	8	770	605	235
No. 5	$5^5/_8$	$1^3/_4$		795	720	295

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1 psi = 6.89 kPa.
[1]All values are for anchors installed in fully grouted concrete masonry with minimum masonry strength of 1500 psi. Concrete masonry units must be light-, medium-, or normal-weight conforming to ASTM C90. Allowable loads have been calculated using a safety factor of 5.
[2]When using the basic load combinations in accordance with IBC Section 1605.3.1, tabulated allowable loads must not be increased for seismic or wind loading. When using the alternative basic load combinations in the 2009 IBC Section 1605.3.2 that include seismic or wind loads, tabulated allowable loads may be increased, or the alternative basic load combinations may be reduced according to Table 1. For the 2018, 2015 and 2012 IBC, the allowable loads or load combinations must not be adjusted.
[3]One anchor must be permitted to be installed in each CMU block. Refer to Figure 3 for an illustration of the anchor location for which the tabulated values are applicable.
[4]The tabulated edge distance is measured from the anchor centerline to the edge of the CMU block as depicted in Figure 3.
[5]Anchors must be installed into the grouted cell. Anchors are not permitted to be installed in a head joint, flange or web of the concrete masonry unit.
[6]Linear interpolation of load values between the two tabulated edge distances is permitted, as applicable
[7]Allowable loads must be the lesser of the adjusted masonry or bond values tabulated above and the steel values given in Tables 5 and 6.
[8]Tabulated allowable bond loads must be adjusted for increased base material temperatures in accordance with Figure 1, as applicable.

TABLE 5—ALLOWABLE TENSION AND SHEAR LOADS BASED ON STEEL STRENGTH FOR THREADED RODS AND HIT-Z(-R) ANCHOR RODS (POUNDS)[1,2,3]

Anchor Diameter (inches)	Tension						Shear					
	ISO 898 Class 5.8	ASTM A36	ASTM A307	ASTM A193 B7	ASTM F593 CW (316/304)	HIT-Z(-R)	ISO 898 Class 5.8	ASTM A36	ASTM A307	ASTM A193 B7	ASTM F593 CW (316/304)	HIT-Z(-R)
$^3/_8$	2,640	2,115	2,185	4,555	3,645	3,430	1,360	1,090	1,125	2,345	1,875	1,770
$^1/_2$	4,700	3,755	3,885	8,100	6,480	6,100	2,420	1,935	2,000	4,170	3,335	3,145
$^5/_8$	7,340	5,870	6,075	12,655	10,125	9,535	3,780	3,025	3,130	6,520	5,215	4,915
$^3/_4$	10,570	8,455	8,750	18,225	12,390	13,735	5,445	4,355	4,505	9,390	6,385	7,075

[1]Allowable load used in the design must be the lesser of bond values and tabulated steel values.
[2]Allowable tension and shear loads for threaded rods to resist short term loads, such as wind or seismic, must be calculated in accordance with Section 4.1 as applicable.
[3]Allowable steel loads are based on allowable tension and shear stresses equal to 0.33 x F_u and 0.17 x F_u, respectively.

TABLE 6—ALLOWABLE TENSION AND SHEAR LOADS BASED ON STEEL STRENGTH FOR REINFORCING BARS (POUNDS)[1,2,3]

Rebar Size	Tension	Shear
	ASTM A615, Grade 60	ASTM A615, Grade 60
No. 3	3,270	1,685
No. 4	5,940	3,060
No. 5	9,205	4,745
No. 6	13,070	6,730

[1]Allowable load used in the design must be the lesser of bond values and tabulated steel values.
[2]Allowable tension and shear loads for threaded rods to resist short term loads, such as wind or seismic, must be calculated in accordance with Section 4.1 as applicable.
[3]Allowable steel loads are based on allowable tension and shear stresses equal to 0.33 x F_u and 0.17 x F_u, respectively.

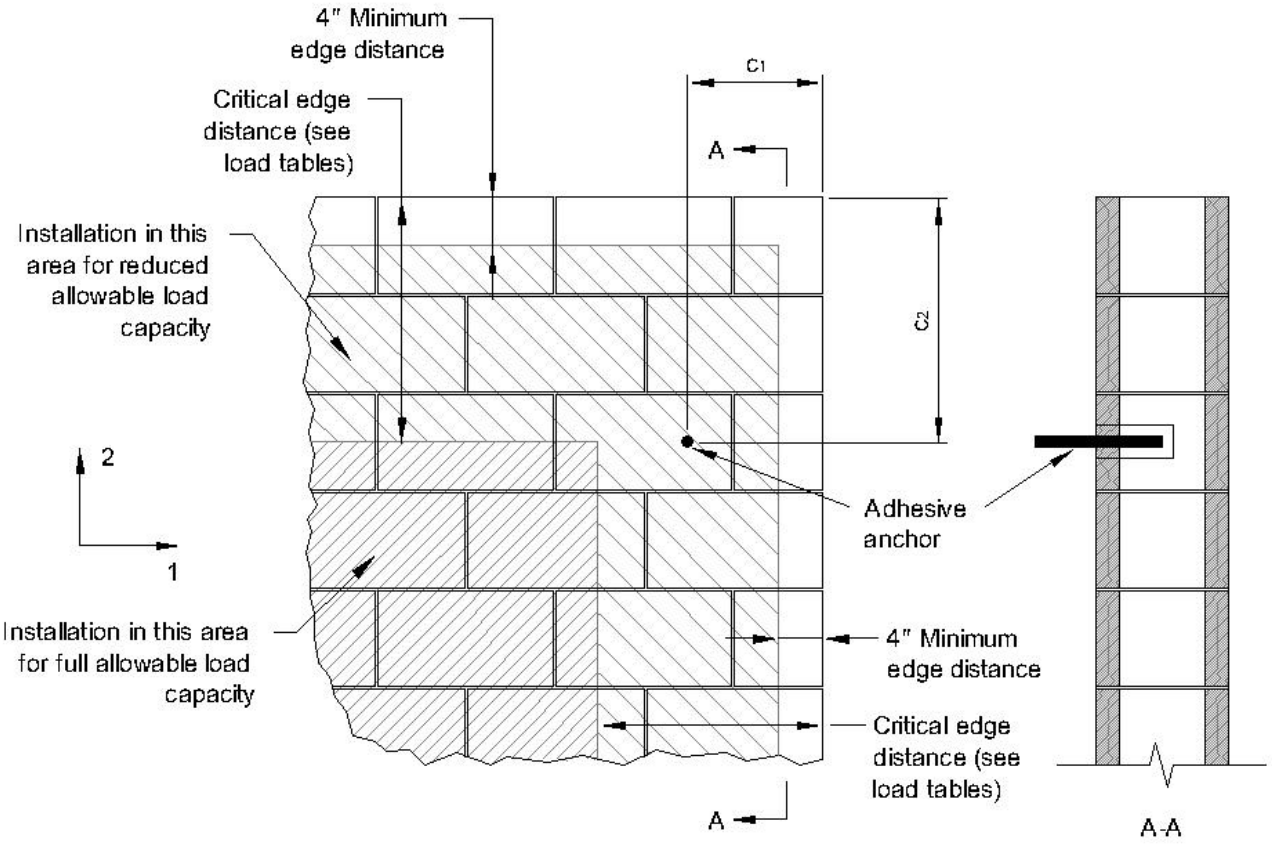


FIGURE 2—ALLOWABLE ANCHOR INSTALLATION LOCATIONS IN THE FACE OF GROUT-FILLED CONCRETE MASONRY (ASTM C90)

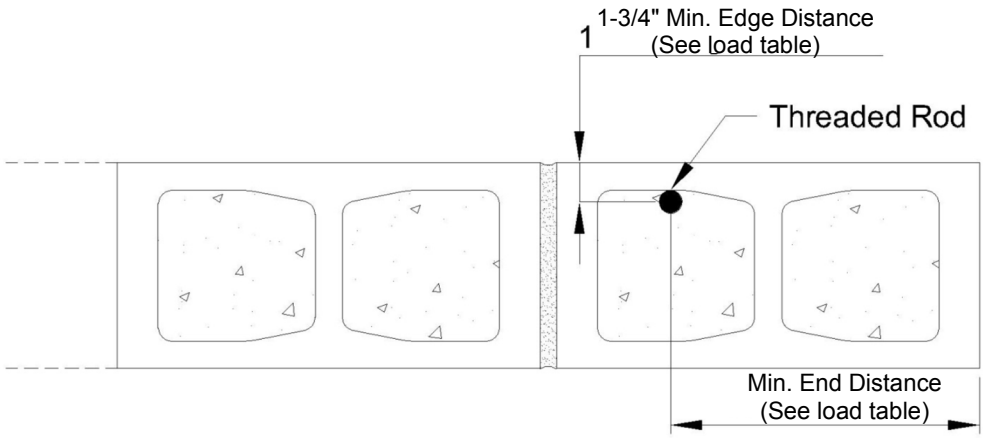
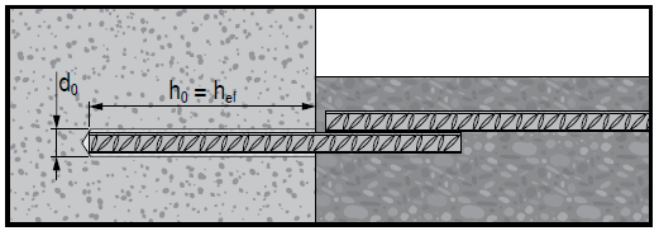


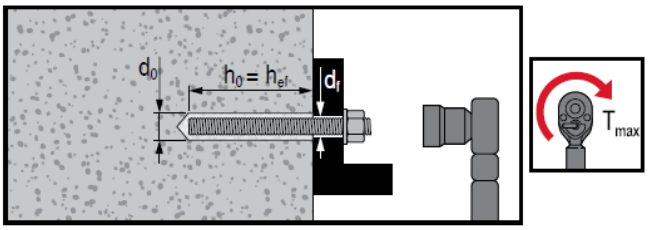
FIGURE 3—EDGE AND END DISTANCES FOR THREADED RODS INSTALLED IN THE TOP OF GROUT-FILLED CONCRETE MASONRY

DEFORMED REINFORCMENT



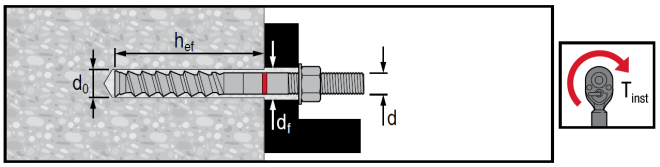
Rebar	d_0 [inch]	$h_0 = h_{ef}$ [inch]	HIT-RB
#3	1/2	3 3/8	1/2
#4	5/8	4 1/2	5/8
#5	3/4	5 5/8	3/4
#6	7/8	6 3/4	7/8

THREADED STEEL ROD



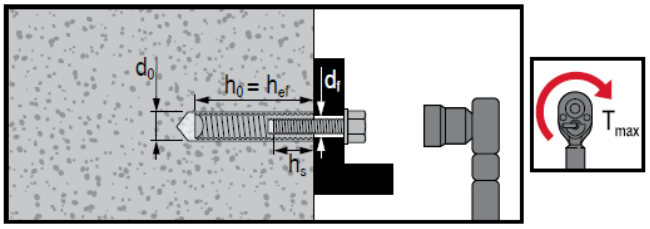
HAS	d_0 [inch]	$h_0 = h_{ef}$ [inch]	HIT-RB	d_f [inch]	T_{max} [ft lb]
3/8	7/16	3 3/8	7/16	7/16	15
1/2	9/16	4 1/2	9/16	9/16	30
5/8	3/4	5 5/8	3/4	11/16	60
3/4	7/8	6 3/4	7/8	13/16	100

HILTI HIT-Z AND HIT-Z(-R) ANCHOR ROD



Ø d [inch]	Ø d_0 [inch]	h_{ef} [inch]	T_{inst} [ft-lb]	T_{inst} [Nm]
3/8	7/16	3-3/8	15	20
1/2	9/16	4-1/2	30	40
5/8	3/4	5-5/8	60	80
3/4	7/8	6-3/4	110	150

HILTI HIS-N AND HIS-RN THREADED INSERTS

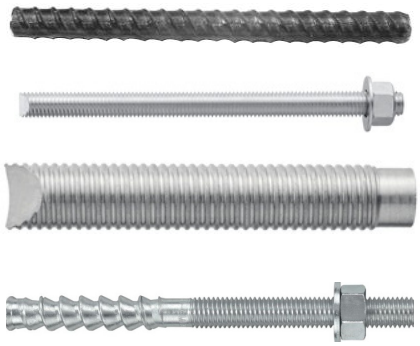


HIS	d_0 [inch]	$h_0 = h_{ef}$ [inch]	HIT-RB	d_f [inch]	h_s [inch]	T_{max} [ft lb]
3/8	11/16	4 3/8	11/16	7/16	3/8 – 1	15
1/2	7/8	5	7/8	9/16	1/2 – 1 1/4	30

FIGURE 4—INSTALLATION PARAMETERS

HILTI HIT-HY 200 FOIL PACK AND MIXING NOZZLE

HILTI DISPENSER



ANCHORING ELEMENTS

HILTI TE-CD OR TE-YD HOLLOW CARBIDE DRILL BIT

FIGURE 5—HILTI HIT-HY 200 ANCHORING SYSTEM

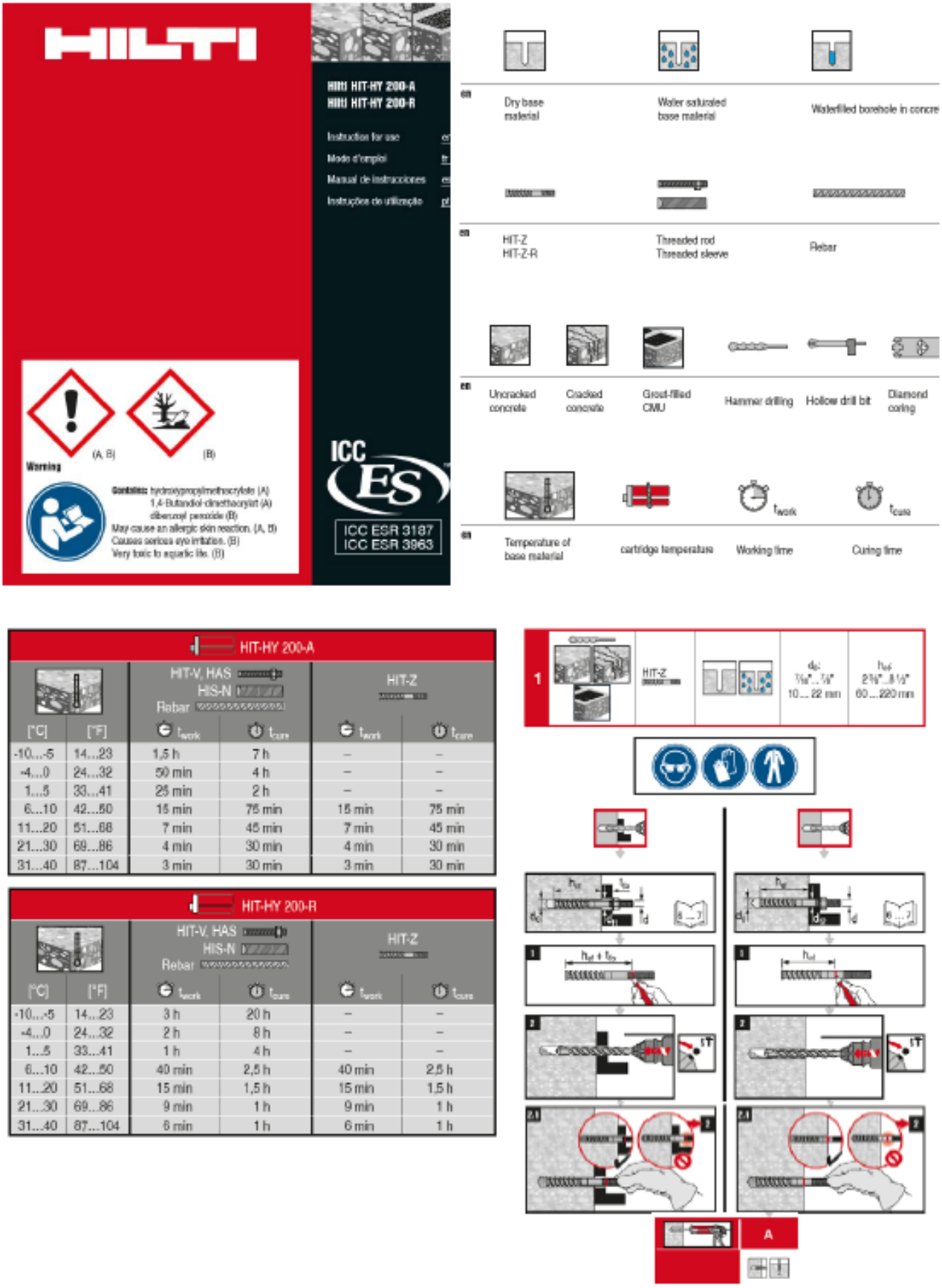


FIGURE 6—MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII)

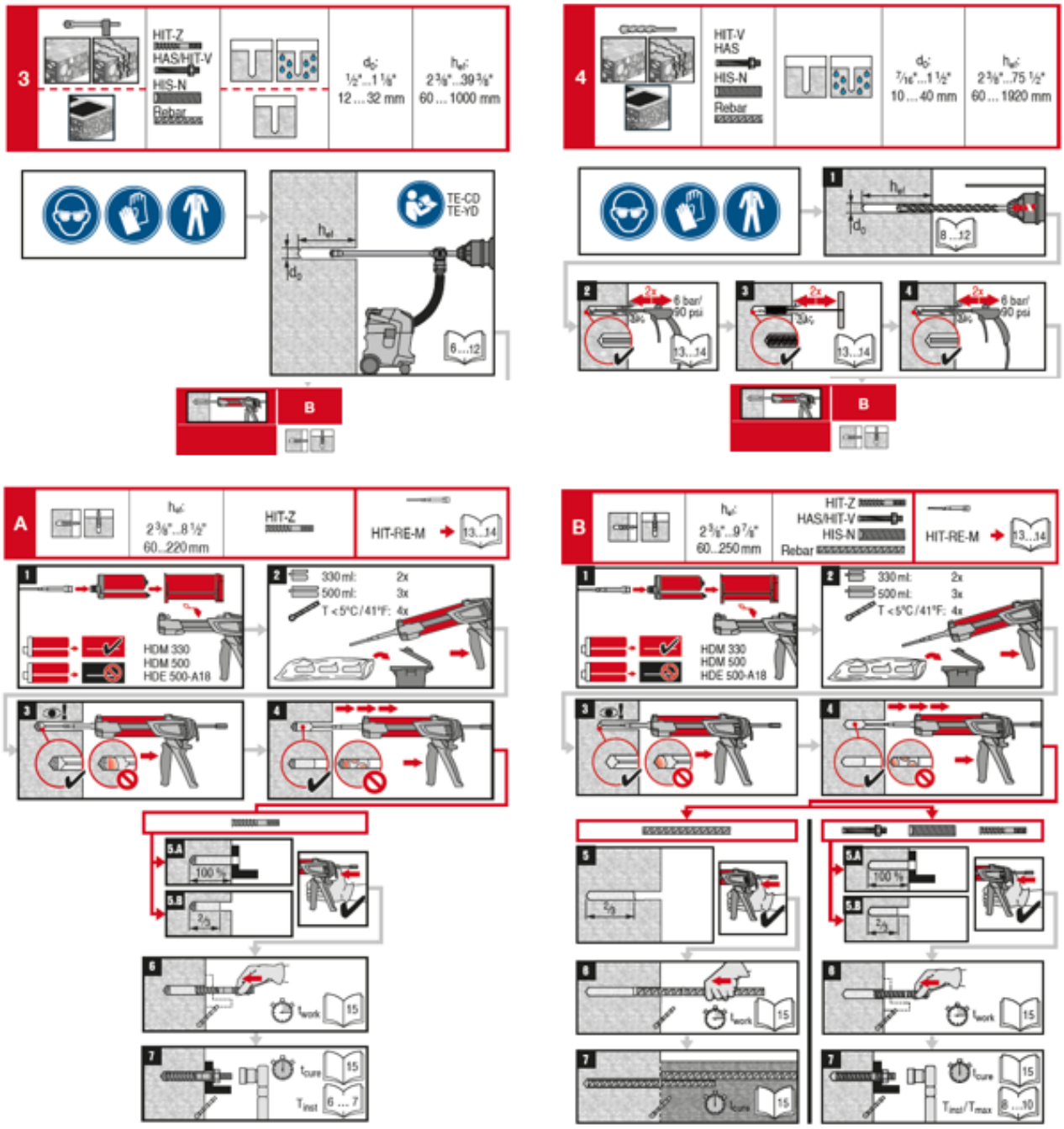


FIGURE 6—MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) (Continued)

Product information

- Always keep these instructions together with the product even when given to other persons.
- **Material Safety Data Sheet:** Review the MSDS before use.
- **Check expiration date:** See imprint on foil pack manifold (month/year). Do not use expired product.
- **Foil pack temperature during usage:** 0 °C to 40 °C / 32 °F to 104 °F.
- **Base material temperature at time of installation:**
  HAS/HIT-V, HIS, Rebar: between -10 °C and 40 °C / 14 °F and 104 °F.
  HIT-Z: between +5°C and 40°C / 41°F and 104°F.
- **Conditions for transport and storage:** Keep in a cool, dry and dark place between 5 °C and 25 °C / 41 °F and 77 °F.
- For any application not covered by this document / beyond values specified, please contact Hilti.
- **Partly used foil packs must remain in the cassette** and has to be used within **4 weeks.** Leave the mixer attached on the foil pack manifold and store within the cassette under the recommended storage conditions. If reused, attach a new mixer and discard the initial quantity of anchor adhesive.

⚠ NOTICE

⚠ The surface of the HIT-Z anchor rod must not be altered in any way.

⚠ Improper handling may cause mortar splashes.

- Always wear safety glasses, gloves and protective clothes during installation.
- Never start dispensing without a mixer properly screwed on.
- Attach a new mixer prior to dispensing a new foil pack (ensure snug fit).
- Use only the type of mixer (HIT-RE-M) supplied with the adhesive. Do not modify the mixer in any way.
- Never use damaged foil packs and/or damaged or unclean foil pack holders (cassettes).

⚠ Poor load values / potential failure of fastening points due to inadequate borehole cleaning.

- The boreholes must be free of debris, dust, water, ice, oil, grease and other contaminants prior to adhesive injection.
- For blowing out the borehole – blow out with oil free air until return air stream is free of noticeable dust.
- For flushing the borehole – flush with water line pressure until water runs clear.
- For brushing the borehole – only use specified wire brush. The brush must resist insertion into the borehole – if not the brush is too small and must be replaced.

⚠ Ensure that boreholes are filled from the back of the borehole without forming air voids.

- If necessary use the accessories / extensions to reach the back of the borehole.
- For overhead applications use the overhead accessories HIT-SZ and take special care when inserting the fastening element. Excess adhesive may be forced out of the borehole. Make sure that no mortar drips onto the installer.

⚠ Not adhering to these setting instructions can result in failure of fastening points!

Hilti HIT-HY 200-A / -R

Adhesive anchoring system for rebar and anchor fastenings in concrete and masonry.

Hilti HIT-HY 200-A
Contains: Hydroxypropylmethacrylat (A), 1,4-Butandiol-dimethacrylat (A), Dibenzoylperoxid (B)

(A, B) (B)

Warning

H317	May cause an allergic skin reaction. (A, B)
H319	Causes serious eye irritation. (B)
H400	Very toxic to aquatic life. (B)
P262	Do not get in eyes, on skin or on clothing.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P337+313	If eye irritation persists: Get medical advice/attention.

Disposal considerations

Empty packs:

► Leave the mixer attached and dispose of via the local Green Dot recovery system
► or EAK waste material code: 150102 plastic packaging

Full or partially emptied packs:

► Must be disposed of as special waste in accordance with official regulations.
- EAK waste material code: 08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances.
- or EAK waste material code: 20 01 27* paint, inks, adhesives and resins containing dangerous substances.

Content: 330 ml / 11.1 fl.oz. 500 ml / 16.9 fl. oz **Weight:** 590 g / 20.8 oz 890 g / 31.4 oz

Failure to observe these installation instructions, use of non-Hilti anchors, poor or questionable base material conditions, or unique applications may affect the reliability or performance of the fastenings.

FIGURE 6—MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) (Continued)

DIVISION: 04 00 00—MASONRY
Section: 04 05 19.16—Masonry Anchors

REPORT HOLDER:

HILTI, INC.

EVALUATION SUBJECT:

HILTI HIT-HY 200 ADHESIVE ANCHOR SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Hitli HIT-HY 200 Adhesive Anchor System, described in ICC-ES evaluation report ESR-3963, has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Hitli HIT-HY 200 Adhesive Anchor System, described in Sections 2.0 through 7.0 of the evaluation report ESR-3963, complies with LABC Chapter 21, and LARC, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Hitli HIT-HY 200 Adhesive Anchor System described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-3963.
- The design, installation, conditions of use and labeling of the Hitli HIT-HY 200 Adhesive Anchor System are in accordance with the 2018 *International Building Code*® (2018 IBC) provisions noted in the evaluation report ESR-3963.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.
- The allowable design values listed in the evaluation report and tables are for the connection of the adhesive anchors to fully grouted concrete masonry walls. The connection between the adhesive anchors and the connected members shall be checked for capacity (which may govern).
- For use in wall anchorage assemblies to flexible diaphragm applications, anchors shall be designed per the requirements of City of Los Angeles Information Bulletin P/BC 2017-071.

This supplement expires concurrently with the evaluation report, reissued December 2020.

ICC-ES Evaluation Report

ESR-3963 FBC Supplement

Reissued December 2020

This report is subject to renewal December 2021.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 04 00 00—MASONRY
Section: 04 05 19.16—Masonry Anchors

REPORT HOLDER:

HILTI, INC.

EVALUATION SUBJECT:

HILTI HIT-HY 200 ADHESIVE ANCHOR SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Hitli HIT-HY 200 Adhesive Anchor System, described in ICC-ES evaluation report ESR-3963, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2017 *Florida Building Code—Building*
- 2017 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Hitli HIT-HY 200 Adhesive Anchor System, described in Sections 2.0 through 7.0 of the evaluation report ESR-3693, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design and installation are in accordance with the 2015 *International Building Code®* provisions noted in the evaluation report.

Use of the Hitli HIT-HY 200 Adhesive Anchor System with stainless steel rods and inserts for use in exterior exposure and damp environments has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential.*

Use of the Hitli HIT-HY 200 Adhesive Anchor System with carbon steel rods and inserts for use in dry, interior locations has also been found to be in compliance with the High-velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 9N-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued December 2020.