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RESEARCH REPORT: RR 26077
(CSI # 04 05 19.16)

BASED UPON ICC EVALUATION SERVICE
REPORT No. ESR-3963

REEVALUATION DUE
DATE: January 1, 2020
Issued Date: January 1, 2018
Code: 2017 LABC

**GENERAL APPROVAL** – Reevaluation – Hilti HIT-HY 200 Adhesive Anchor System for use in fully grouted concrete masonry (CMU) walls

## DETAILS

The above assemblies and/or products are approved when in compliance with the use, description, design, installation, conditions of approval, and identification of Evaluation Report No. ESR-3963 reissued December 2017 of the ICC-ES Evaluation Services, LLC. The report, in its entirety, is attached and made part of this general approval.

The parts of the ES Report, ESR-3963, which are excluded on the attached copy have been removed by the Los Angeles Building Department as not being included in this approval.

**The approval is subject to the following conditions:**

1. The anchors must be installed in accordance with the manufacturer's printed installation instructions (MPII) and this general approval. In case of conflict, this approval letter governs.
2. The use of this adhesive system is limited to installation in uncracked masonry only.
3. Anchor sizes, dimensions, and minimum embedment depths must be as set forth in this report.
4. Prior to installation, calculations and details demonstrating compliance with this approval and the 2017 Los Angeles Building Code must be submitted to the structural plan check section. The calculations and details must be prepared by a registered engineer, licensed in the State of California.
5. Anchors resisting static, seismic or wind loads in masonry must be designed in accordance with Section 4.0 of attached ICC-ES Evaluation Report, ESR-3963.
6. Grout-filled concrete masonry under the IBC or IRC (Tables 2A, 2B, 4A, and 4B): The adhesive anchors described in Sections 4.1.3 and 4.1.4 of attached ICC-ES Evaluation Report, ESR-3963 are capable of resisting seismic and wind loads. When using the basic load combinations in accordance with 2017 Los Angeles Building Code Section 1605.3.1, allowable loads must not be increased for seismic or wind loading.
7. HIS-N and HIS-RN inserts (Tables 3A and 3B of ESR-3963) under the 2017 Los Angeles Building Code: Use of the adhesive anchors described in Section 4.1.5 of attached ICC-ES Evaluation Report, ESR-3963, for resistance to seismic loads is beyond the scope of this approval. The allowable loads or load combinations for these anchors must not be adjusted for applications subjected to wind loads.
8. The use of this adhesive system under shock or fatigue loading is beyond the scope of this approval.
9. The Hilti HIT-HY 200 Adhesive Anchor System may be used to resist tension and shear forces in wall installation only if consideration is given to the effects of elevated temperature conditions on anchor performance. Figure 1 of attached ICC-ES Evaluation Report, ESR-3963 describes load reduction factors for elevated temperatures.
10. Periodic special inspection is required in accordance with Section 1705.1.1 and Table 1705.3 of the 2017 Los Angeles Building Code. The special inspector must make periodic inspections during anchor installation to verify anchor type, anchor dimensions, concrete type, concrete compressive strength, anchor spacing, edge distances, concrete member thickness, tightening torque, hole dimensions, anchor embedment and adherence to the manufacturer's printed installation instructions. The special inspector must be present as often as required in accordance with the "statement of special inspection." Under the Los Angeles Building Code, additional requirements as set forth in Sections 1705, 1706 and 1707 must be observed, where applicable.

11. Anchors are not permitted to support fire-resistive construction. Where not otherwise prohibited in the code, anchors are permitted for use with fire-resistance-rated 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 a fire-resistance-rated envelope or a fire- resistance-rated membrane are protected by approved fire-resistance- rated materials, or have been evaluated for resistance to fire exposure in accordance with recognized standards.
    - Anchors are used to support nonstructural elements.

12. Use of Hilti HIT-HY 200 Adhesive Anchor System min 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.

13. Steel anchor 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.

14. Periodic special inspections are required in accordance with Section 1704 of the 2017 Los Angeles Building Code and are also application for installation under the 2017 Los Angeles Residential Code.

15. Anchors are manufactured by Hilti AG under an approved quality-control program with inspections by ICC-ES.

16. 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).

17. 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).

18. 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).

19. Threaded rods, reinforcing bars, nuts washers, bolts cap screws, and deformed reinforcing bars are standard elements and must conform to national specifications as referenced in the 2017 Los Angeles Building Code.

**DISCUSSION**

This report is in compliance with the 2017 City of Los Angeles Building Code.

The approval is based on data in accordance with the ICC-ES Acceptance Criteria for Adhesive Anchors in Masonry Elements (AC58), dated November 2015, 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; 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.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revisions to the report must be submitted to this Department, with appropriate fee, for review in order to continue the approval of the revised report.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

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Attachment: ICC-E.S. Evaluation Report No. ESR-3963 (13 Pages)