November 11, 2020

RE: Hilti KB-TZ2 to replace Hilti KB-TZ

To Whom It May Concern:

For over 10 years, Hilti has been providing the Kwik Bolt TZ (KB-TZ) carbon and stainless-steel anchors in cracked and uncracked concrete and grout-filled CMU for various anchoring applications in the construction industry. Although KB-TZ is already an outstanding expansion anchor solution in the market, Hilti wants to take the expansion anchor further to provide an even more optimized fastening solution.

In 2021, we are happy to announce Hilti is introducing the Kwik Bolt TZ2 (KB-TZ2) as a replacement to the KB-TZ. Similar to the KB-TZ, the KB-TZ2 anchor is a torque-controlled, mechanical expansion anchor consisting of a stud, wedge, washer and nut. When compared to KB-TZ, the KB-TZ2 will offer a wider portfolio of diameters and lengths.

The KB-TZ2 can be used in the following base materials:

- Cracked and uncracked normal-weight concrete to lightweight concrete (specified compressive strength, f'_c, of 2,500 psi to 8,500 psi)
- Lightweight concrete over metal deck (3,000 psi minimum specified compressive strength)
- Uncracked, fully grouted concrete masonry unit (CMU) construction

As with the KB-TZ, Hilti has thoroughly tested the KB-TZ2 in accordance with the following:

- ICC-ES Acceptance Criteria for Mechanical Anchors in Concrete Elements (AC193) which incorporates requirements in ACI 355.2-07
- ICC-ES Acceptance Criteria for Expansion Anchors in Masonry Elements (AC01)
- FM 1951 and UL 203 for use with fire sprinkler pipes

Based on this testing, ICC-ES recently released the Evaluation Report ESR-4266 (Concrete) and ESR-4561 (Masonry). KB-TZ2 is an ultimate performance anchor and in most cases has the best performance in the industry. KB-TZ2 is equal to or better than KB-TZ, with the following limited exceptions:

- Pullout Strength in uncracked concrete, $N_{p,uncr}$:
  - 1/2” stainless steel at 2” h_{ef} and 3¼” h_{ef}
  - 5/8” carbon steel at 4” h_{ef}
  - 5/8” stainless steel at 3¼” h_{ef} and 4” h_{ef}
- Pullout Strength in cracked concrete, $N_{p,cr}$:
  - 1/2” stainless steel at 2” h_{ef}
  - 3/4” stainless steel at 3¾” h_{ef}
- Steel strength in shear, V_{sa}, for 3/8” carbon steel at 2” h_{ef}
- Minimum edge distance, c_{min}, and minimum spacing, s_{min}, are different in a few instances
- In grout-filled CMU, the 1/2” carbon and stainless-steel tension and shear

The full ICC ES reports for KB-TZ2 are available for download at www.hilti.com or www.icc.es.org. In any case, it is highly recommended to use PROFIS Engineering to redesign your existing projects with the new KB-TZ2.

Please feel free to contact our Engineering Technical Services department for more information or any questions.

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