# COMPLIANCE TESTED by berkeley analytical

## VOC Emission Test Certificate

**Product Name: CFS BTS - Bottom Track Seal 1-1/4"**

| Product Sample Information | |
|---|---|
| Company: | Hilti Inc. |
| Company Website: | www.hilti.com |
| Product Type: | Fire Stopping - Track Seal |
| Date Produced: | 7/26/2023 |

| Certificate Information | |
|---|---|
| Certificate No: | 230823-05 |
| Certified By: | Raja S. Tannous, Laboratory Director |
| Date: | August 23, 2023 |

**Reference Standard & Modeling Scenario:** California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017 (Emission testing method for CA Specification 01350); Section 4.3.6, Company defined application, see attached Company statement

**Acceptance Criteria and Results Demonstrating Compliance of Product Sample to Referenced Standard:**

| Exposure Scenario[1] | Individual VOCs of Concern[2] | | Formaldehyde[3] | | TVOC[4] |
|---|---|---|---|---|---|
| | Criterion | Compliant? | Criterion | Compliant? | Range |
| School Classroom | ≤½ Chronic REL | YES | ≤9.0 µg/m³ | YES | ≤ 0.5 mg/m³ |
| Private Office | ≤½ Chronic REL | YES | ≤9.0 µg/m³ | YES | ≤ 0.5 mg/m³ |

**Sample Coverage[5]:** Not applicable

1. Exposure scenarios & product quantities for classroom & office are defined in Tables 4-2 – 4-5 (CDPH Std. Mtd. V1.2-2017)
2. Maximum allowable concentrations of individual target VOCs are specified in Table 4-1 (*ibid*.)
3. Maximum allowable formaldehyde concentration is ≤9 µg/m³, effective Jan 1, 2012; previous limit was ≤16.5 µg/m³ (ibid.)
4. Informative only; predicted TVOC Range in three categories, i.e., ≤0.5 mg/m³, >0.5 – 4.9 mg/m³, and ≥5.0 mg/m³
5. Informative and applicable only to tests of wet-applied products; grams of sample applied per square meter of substrate

**Standards & Codes Recognizing CDPH Standard Method V1.2 (partial list)**

- USGBC LEED Version 4/4.1, BD&C, ID&C, Residential BD&C Multifamily
- The WELL Building Standard, WELL v2, Feature X06
- ANSI/GBI 01-2019 Green Globes Assessment Protocol

**Narrative:** Hilti Inc. selected a sample representative of its CFS BTS - Bottom Track Seal 1-1/4" product and submitted it on 7/28/2023 for testing. Berkeley Analytical measured and evaluated the emissions of VOCs from this sample following CDPH/EHLB/Standard Method V1.2-2017. The results of the test are presented in Berkeley Analytical report, 1031-016-01A-Aug2323.

**Berkeley Analytical** is an independent, third-party laboratory specializing in the analysis of organic chemicals emitted by and contained in building products, finishes, furniture, and consumer products. We are an ISO/IEC 17025 accredited laboratory (IAS, TL-383); all standards used in performing this test are in Berkeley Analytical's scope of accreditation.

**Date:** September 7,2023

**RE:** Statement of product quantities to be used to model and determine compliance of test results with VOC emission guidelines in CDPH Standard Method V1.2 (see Section 4.3.6)

**Company Name:** Hilti, Inc

**Location:** Hilti, Inc Plano, Texas USA

**Contact:** William Chapman Jr Product Care Manager

**Name/Number of Product Sample:** CFS-BTS Bottom Track Seal

**How Product is Used in Buildings:** Preformed firestop solution for bottom-of-wall drywall joints. Product is used as firestop, smoke, and sound seal for the bottom of wall joints between bottom track and drywall to flat concrete slabs.

**Basis for Determining Typical or Realistic Worst-case Product Use:** The values were determined by using the specified dimensions (i.e. joint length, joint width, & drywall depth).

**Typical or Realistic Worst-case product areas for CDPH Standard Method V1.2 modeling:**

| | | Exposed Surface Area [$in^2$] | Exposed Surface Area [$m^2$] | Volume [$in^3$] | Volume [$m^3$] |
|---|---|---|---|---|---|
| 5/8 BTS | 5/8" Joint (TYP) | 960 | 0.6193536 | 642.519685 | 0.010530898 |
| | 3/4" Joint (MAX) | 1152 | 0.74322432 | 771.023622 | 0.012637077 |
| 1 1/4 BTS | 5/8" Joint (TYP) | 960 | 0.6193536 | 1247.244094 | 0.020442331 |
| | 3/4" Joint (MAX) | 1152 | 0.74322432 | 1496.692913 | 0.024530797 |

**NOTES**
- Typical classroom size 40ft x 24ft (per CDPH Standard Test Method V1.2)

| | | Exposed Surface Area [$in^2$] | Exposed Surface Area [$m^2$] | Volume [$in^3$] | Volume [$m^3$] |
|---|---|---|---|---|---|
| 5/8 BTS | 5/8" Joint (TYP) | 330 | 0.2129028 | 220.8661417 | 0.003619996 |
| | 3/4" Joint (MAX) | 396 | 0.25548336 | 265.0393701 | 0.004343995 |
| 1 1/4 BTS | 5/8" Joint (TYP) | 330 | 0.2129028 | 428.7401575 | 0.007027051 |
| | 3/4" Joint (MAX) | 396 | 0.25548336 | 514.488189 | 0.008432461 |

**NOTES**
- Typical office size 12ft x 10ft (per CDPH Standard Test Method V1.2)

***Standard School Classroom (CDPH Standard Method, Table 4-2)***

The dimensions of a typical classroom are given by the CDPH Standard as 40 x 24ft. Using the joint openings listed below, the amount of Hilti CFS-BTS Bottom Track Seal required would be as follows:

| | Exposed Surface Area | Volume |
|---|---|---|
| | [$in^2$] | [$in^3$] |
| 1 ¼" BTS $_{5/8"}$ Joint (Typical) | 960 | 1247.24 |
| 1 ¼" BTS ¾" Joint (Max) | 1152 | 1496.69 |

***Standard Private Office (CDPH Standard Method, Table 4-4)***

The dimensions of a typical office are given by the CDPH Standard as 12 ft x 10 ft. Using the joint openings listed below, the amount of Hilti CFS-BTS Bottom Track Seal required would be as follows:

| | Exposed Surface Area | Volume |
|---|---|---|
| | [$in^2$] | [$in^3$] |
| 1 ¼" BTS $_{5/8"}$ Joint (Typical) | 330 | 428.74 |
| 1 ¼" BTS ¾" Joint (Max) | 396 | 514.49 |

Best Regards,

Joshua Close

**Joshua Close**
Marketing | Product Manager – Fire Protection

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