



COMPLIANCE TESTED by berkeley analytical

VOC Emission Test Certificate

Product Name: Thermo-Sorb® VOC - 21DD5849L

Product Sample Information		Certificate Information	
Company:	Carboline	Certificate No:	220217-02
Company Website:	www.carboline.com	Certified By:	 Raja S. Tannous, Laboratory Director
Product Type:	Paints & Coatings - Fire Resistive Material	Date:	February 17, 2022
Date Produced:	1/24/2022		

Reference Standard: California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017 (Emission testing method for CA Specification 01350)

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?	
School Classroom	≤½ Chronic REL	YES	≤9.0 µg/m ³	YES	≤ 0.5 mg/m ³
Private Office	≤½ Chronic REL	YES	≤9.0 µg/m ³	YES	≤ 0.5 mg/m ³

Product Coverage⁵: 800 g/m² (25 mil as dry film)

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
- ANSI/ASHRAE/USGBC/IES Standard 189.1

Narrative: Carboline selected a sample representative of its Thermo-Sorb VOC - 21DD5849L intumescent fire proofing product and submitted it on 1/26/2022 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, 904-016-04A-Feb1722.

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.

DISCLAIMER: THIS CERTIFICATE OF COMPLIANCE AFFIRMS THAT: 1) A SAMPLE OF THE LISTED PRODUCT WAS TESTED ACCORDING TO THE REFERENCED STANDARD; 2) THE MEASURED VOC EMISSIONS FROM THE SAMPLE WERE EVALUATED FOR THE DEFINED EXPOSURE SCENARIO(S); AND 3) THE RESULTS MEET THE ACCEPTANCE CRITERIA OF THE REFERENCED STANDARD(S). BERKELEY ANALYTICAL IS NOT RESPONSIBLE FOR ANY CLAIMS REGARDING A PRODUCT OR PRODUCTS ENTERED INTO COMMERCE THAT MAY BE BASED ON THIS TEST. BERKELEY ANALYTICAL PROVIDES THIS CERTIFICATE OF COMPLIANCE "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.



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February 25, 2022

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RE: VOC Emission Testing; CDPH Standard Method V1.2; non-full spread application calculations, Thermo-Sorb VOC

To Whom It May Concern,

Below is the rationale and calculations for quantity of Carboline paint products that would commonly be used in the standard school classroom and the standard private office scenarios as defined in CDPH Standard Method V1.2.

CLASSROOM

Intumescent fireproofing materials are typically utilized for fire protection of exposed columns in this type of building for aesthetic purposes. Beams and concealed steel members would generally be protected with lower cost Spray-applied Fire Resistive Materials (SFRM). The typical layout for columns on a commercial construction project is in a grid pattern of 25' x 30'. Using this as the reference, a standard 40'x24'x8.5' school classroom would have a worst case of 2 columns per room. The typical construction for this type of building would use tube steel columns with 6" x 6" x 9' as the worst-case scenario. A column of this size would have 2 ft² per linear foot of column (2 ft² x 9' = 18 ft² per column). To add an additional margin of safety, we would like to round this calculation up to 20 ft² per column. The average exposed surface area is 20 ft² x 2 = 40 ft² total to be applied with intumescent materials. With an applied thickness of 25 mils and a density of 1.26 g/cm³ the weight per ft² would be 0.16 lbs or 6.5 lbs total.

OFFICE

Intumescent fireproofing materials are typically utilized for fire protection of exposed columns in this type of building for aesthetic purposes. Beams and concealed steel members would generally be protected with lower cost Spray-applied Fire Resistive Materials (SFRM). The typical layout for columns on a commercial construction project is in a grid pattern of 25' x 30'. Using this as the reference, a standard 10'x12'x9' school classroom would have a worst case of 1 column per room. The typical construction for this type of building would use tube steel columns with 6" x 6" x 9' as the worst-case scenario. A column of this size would have 2 ft² per linear foot of column (2 ft² x 9' = 18 ft² per column). To add an additional margin of safety, we would like to round this calculation up to 20 ft² per column. With an applied thickness of 25 mils and a density of 1.26 g/cm³ the weight per ft² would be 0.16 lbs or 3.3 lbs total.



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Please contact me if I can be of further assistance.

Sincerely,

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