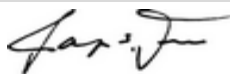




# COMPLIANCE TESTED by berkeley analytical

## VOC Emission Test Certificate

**Product Name: Rapid Refloor - MMRRC-600-12**

Product Sample Information		Certificate Information	
Company:	Metzger McGuire	Certificate No:	200514-03
Company Website:	www.metzgermcguire.com	Certified By:	
Product Type:	Floor joint filler; see attached customer letter for product coverage.		Raja S. Tannous, Laboratory Director
Date Produced:	3/30/2020	Date:	May 14, 2020

**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 <sup>1</sup>	Individual VOCs of Concern <sup>2</sup>		Formaldehyde <sup>3</sup>		TVOC <sup>4</sup>
	Criterion	Compliant?	Criterion	Compliant?	
School Classroom	≤½ Chronic REL	YES	≤9.0 µg/m <sup>3</sup>	YES	≤ 0.5 mg/m <sup>3</sup>
Private Office	≤½ Chronic REL	YES	≤9.0 µg/m <sup>3</sup>	YES	≤ 0.5 mg/m <sup>3</sup>

**Product Coverage<sup>5</sup>:** 45 g/m<sup>2</sup>

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/m<sup>3</sup>, effective Jan 1, 2012; previous limit was ≤16.5 µg/m<sup>3</sup> (*ibid.*)
4. Informative only; predicted TVOC Range in three categories, i.e., ≤0.5 mg/m<sup>3</sup>, >0.5 – 4.9 mg/m<sup>3</sup>, and ≥5.0 mg/m<sup>3</sup>
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, BD&C, ID&C
- The WELL Building Standard
- ANSI/GBI 01, Green Building Assessment Protocol

**Narrative:** Metzger McGuire selected a sample representative of its Rapid Refloor - MMRRC-600-12 product and submitted it on 4/13/2020 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, 1040-003-03A-May1420.

**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.



March 18, 2020

To Whom It May Concern

RE: VOC Emission Testing; CDPH Standard Method V1.2; non-full spread adhesive/sealant application calculations

Below are the rationale and the calculations for quantity of Metzger/McGuire Rapid Refloor Low Viscosity Structural Polyurea repair polymer that would be used in the standard school classroom and the standard private office defined in CDPH Standard Method V1.2.

#### CLASSROOM

Metzger/McGuire's Rapid Refloor is designed for use in repairing cracks or small surface defects in a concrete floor. There are no industry standards for the expectation of incidence of surface defects. For cracks, American Concrete Institute guides suggest that cracking should be acceptable if occurring in no more than 3% of concrete panels in a building. Because joints are saw cut in concrete floors to alleviate concrete shrinkage stresses and essentially result in cracking occurring at joint lines rather than randomly, a worst case scenario could potentially involve placement of concrete slabs with no jointing being performed – i.e. cracks occurring at locations where joints should have been saw cut into the floor. American Concrete Institute guidelines (and common industry practice) is to place joints no further apart than  $30t$  where  $t$ =slab thickness. Most slabs on ground or elevated slabs on deck in schools are placed at depths of 4-5" in thickness. At 5" anticipated slab thickness joint spacing would be approx. 12.5' on center. In a 40'x24' room (ceiling height of 8.5' not relevant as this is only for floor) following guidelines there would normally be 3 joints 24' long and 1 joint 40' long. That's a total of 112 lf of joints. If no joints were introduced into a floor, it could be anticipated that instead an approximately equivalent amount of cracks would occur where joints were designed to be located. The Portland Cement Association suggest that a concrete slab mass shrinks 1/8" every 20' after drying shrinkage is completed. While that shrinkage does not occur only at joint or crack locations, for a worst case scenario let's assume it did. In this case, the 40' long crack would have a dimension of approximately 1/8" wide by 1/2" deep (the depth that filling is recommended). The 3 24' cracks would have dimensions of approximately .08" ( $1/8" + 1/8"$  divided by 3). Crack depth would again be 1/2".

Coverage rate for  $1/8" \times 1/2" = 300$  lf/gallon. The 40' crack would then require .13 gallons of Rapid Refloor. Coverage rate for  $.08" \times 1/2" = 500$  lf/gallon. The 3 - 24' cracks would then require .14 gallons of Rapid Refloor. Accordingly, the maximum amount of material that would be used in "worst case" scenario in a 40x24x8.5' room would be approximately .27 gallons. Coverage rates are referenced on Rapid Refloor Technical Data Sheet.

#### OFFICE

Metzger/McGuire's Rapid Refloor is primarily used for repairing cracks in concrete floors. Using the same logic as above – i.e. cracking occurs because a floor is not properly jointed, the overall amount of cracking should not exceed the overall lineal footage count of designed joints if the floor was properly designed. Concrete Institute guidelines (and common industry practice) is to place joints no further apart than  $30t$  where  $t$ =slab thickness. Most slabs on ground in office buildings are placed at depths of 4-5" in thickness. At a 5" slab depth, anticipated joint spacing would be approx. 12.5 feet on center. In a 12'x10' room (ceiling height of 9' not relevant as this is only for floor) following ACI guidelines there would be no saw cut joints required as the concrete shrinkage stresses in a 12'x10' panel would not normally lead to cracking. Were a crack to occur though, the most likely occurrence would be a mid-panel crack in the long direction. Assuming this occurred in this office model, the result would be one crack 10' long and approximately 1/16" wide (based on PCA concrete drying shrinkage tables). The coverage rate for a crack 1/16" wide x 1/2" deep is 600 lf/gal. Accordingly, the maximum amount of material that would be used in "worst case" scenario in a 12'x10'x9' room with a mid-panel crack .016 gallons.

**800-223-MM80**

[www.metzgermcguire.com](http://www.metzgermcguire.com)

P.O. Box 2217 Concord, NH 03302

Please contact me should you have further questions or concerns regarding this issue.

Best Regards,

A handwritten signature in blue ink, appearing to read "Scott Metzger".

Scott Metzger  
President

**800-223-MM80**

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