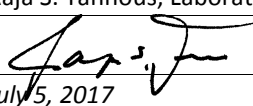


**BERKELEY ANALYTICAL**  
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## Product Sample Formaldehyde Emissions

### Customer & Building Product Sample Information

Report Certification	
Report number	962-001-02A-Jul0517
Report date	Jul 5, 2017
Certified by (Name/Title)	Raja S. Tannous, Laboratory Director
Signature	
Date	July 5, 2017
Standards	
Test method	ASTM D6007
Analytical method	ASTM D5197
Preparation/Configuration	Deconstructed, back-to-back configuration, CARB SOP 9/13/2013
Customer Information	
Manufacturer or organization	Eternity Flooring
City/State/Country	Pacoima, CA USA
Contact name/Title	Jessica Palma, Manager
Phone number	818.361.0099
Product Sample Information	
Manufacturer (if not customer)	Same as above
Product name / Number	Milano - Triple Moisture Collection / REM1440
Lot Number	20170514
Product category	Laminate Flooring (09 62 19)
Core type	MDF/HDF
Manufacturing location or mill	Eternity Pacoima, CA
Date sample manufactured	May 14, 2017
Date sample collected	Jun 14, 2017
Sample selected & collected by	Customer
Date sample received by lab	Jun 16, 2017
Sample shipped / stored in	Vapor barrier
Condition of received sample	OK
Lab sample tracking number	<b>962-001-02A</b>
Conditioning start date & duration	Jun 21, 2017; 168 hours
Test start date & duration	Jun 28, 2017; 1 days (18 hours)

### Formaldehyde Concentration Test Result

**Test Results** – The measured formaldehyde chamber concentration and the concentration adjusted to standard conditions of 25 °C and 50% relative humidity are presented in Table 1.

**Table 1.** Test results. Measured and standardized formaldehyde concentration (ppm)

Compound	Elapsed Time (h)	Chamber Concentration ( $\mu\text{g}/\text{m}^3$ )	Chamber Concentration (ppm)	Standardized Concentration (ppm)	Meets CARB Phase 2 Standard?*
Formaldehyde	18	61.2	0.050	0.048	Yes

\*CARB Phase 2 standard for corresponding composite wood core material (Table 2)

**CARB Phase 2** – The California Air Resources Board (CARB) Phase 2 formaldehyde emission standards are published in Final Regulation Order, Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products, Section 93120.2 Table 1, Title 17, California Code of Regulations. The emission standards are standardized chamber concentrations for composite wood core materials measured by primary method ASTM Standard Method E-1333. Secondary test method ASTM Standard Method D6007 has been shown to produce equivalent results. CARB Phase 2 formaldehyde emission standards are reproduced in Table 2.

**Table 2.** CARB Phase 2 Formaldehyde Emission Standards in parts-per-million (ppm)

Composite Wood Core Material	Phase 2 Effective Date	Specified Q/A Test Ratio (m/h)	Phase 2 Emission Standard (ppm)
Hardwood plywood (HWPW)	7/1/2012	1.173	$\leq 0.05$
Particleboard (PB)	1/1/2011	1.173	$\leq 0.09$
Medium Density Fiberboard (MDF)	1/1/2011	1.905	$\leq 0.11$
Thin MDF <8mm thick	1/1/2012	1.905	$\leq 0.13$

### Test Standards & Procedures

**Test Protocol Summary\*** – Formaldehyde emission testing is performed following ASTM Standard Method D6007. As employed herein, ASTM D6007 is a quality control test as defined by CARB. Particleboard and hardwood plywood panels (veneer core and composite core) are tested with an area-specific airflow rate (Q/A) = 1.173 m/h. MDF/HDF and thin MDF (<8mm thick) are tested with Q/A = 1.905 m/h. The specimen is placed directly into the conditioning environment and maintained at specified temperature and relative humidity (RH) conditions for the specified period. Conditioning formaldehyde concentration is  $\leq 0.1$  ppm. At the end of this period, the specimen is transferred to a small-scale chamber. Chamber parameters for the test are shown in Table 3.

Sampling and analysis for formaldehyde are performed following ASTM Standard Method D5197. Sample is collected at end of test period at 0.6 L/m for 60 min. The test result is determined as chamber formaldehyde concentration in parts-per-million (ppm) as shown in Calculation and Comments section. Measured chamber concentration is corrected to standard conditions of 25 °C and 50% RH. Chamber background formaldehyde concentration is  $\leq 0.002$  ppm unless otherwise noted.

\*All standards identified in this section are included in Berkeley Analytical's scope of ISO/IEC17025 accreditation, Testing Laboratory TL-383, International Accreditation Service, [www.iasonline.org](http://www.iasonline.org)

**Test Standards & Procedures, Continued**

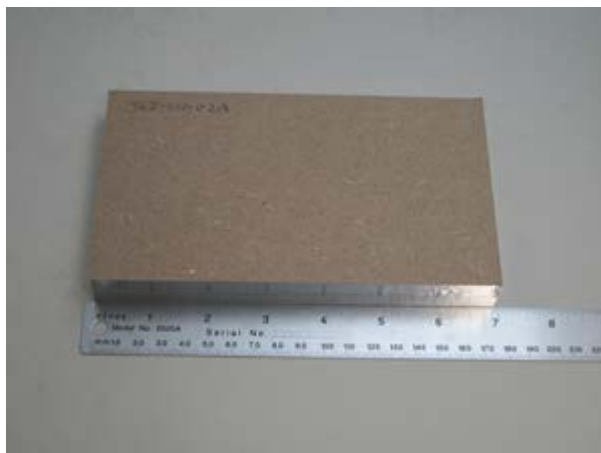
**Test Specimen Preparation** – Product sample was deconstructed following California Air Resources Board *Standard Operating Procedure for Finished Good Test Specimen Preparation Prior to Analysis of Formaldehyde Emissions from Composite Wood Products*, 9/13/2013. Bottom surface was removed by sanding. Sanded surfaces of specimen were exposed using back-to-back configuration. The test results are specific to the test item.

**Table 3.** Chamber conditions for test

Parameter	Symbol	Units	Value
Tested specimen exposed area	$A_s$	$m^2$	0.035
Chamber volume	$V_c$	$m^3$	0.067
Inlet gas flow rate	$Q_c$	$m^3/h$	0.067 (0.064-0.070)
Area-specific airflow rate	$Q_c/A_s$	$m/h$	1.90
Temperature		$^{\circ}C$	25.3
Relative humidity		%	50.3
Test period duration		h	18

**Photographs of Tested Product Specimen**

**Photo Documentation** – The product sample specimen is photographed following specimen preparation. The top and bottom faces of the specimen are photographed.



**Calculation and Comments**

**Equation Used in Calculation** – Chamber concentration is converted from  $\mu\text{g}/\text{m}^3$  to ppm, using Equation 1:

$$C = (M \times 24.47) / (V \times 30.03) / 1000 \quad (1)$$

where:

C = Formaldehyde parts-per-million in air, ppm,

M = Mass of formaldehyde in sample,  $\mu\text{g}$ ,

V = Volume of air sample at standard conditions (25 °C, 101 kPa), L,

30.03 = Molecular weight of formaldehyde,

24.47 =  $\mu\text{L}$  of formaldehyde gas in 1  $\mu\text{mol}$  at 25 °C, 101 kPa, and

1000 = Conversion factor.

Calculated formaldehyde concentration is rounded to nearest 0.01 ppm. Measured concentration is adjusted to standard conditions of 25 °C and 50% RH using conversion factors in ASTM Standard Method D6007, Annex Tables A1.1 and A2.1, respectively.

**Comments:** None

**END OF REPORT**

Ship to: 815 Harbour Way South, No. 6 Richmond, CA 94804  
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info@berkeleyanalytical.com

**Customer Information**

Company: **ETERNITY FLOORING**  
Street Address: **9880 SAN FERNANDO RD**  
City/State/Zip(postal code): **PACOIMA CA 91331**  
Country: **USA**  
Contact Name & Title (for reporting): **JESSICA PALMA MANAGER**  
Contact Phone/Fax Numbers: **818.361.0099 / 818 480 7844**  
Contact E-mail Address: **JESSICA@ETERNITYFLOORING.COM**  
Financially Responsible Co.: **ETERNITY FLOORING**

**Manufacturer (if different from customer)**

Company:  
City/State/Country:  
Contact Name/Title:  
Phone Number/E-mail Address:

**Sample Details**

Product Commercial Name\*: **MILANO - TRIPLE MOISTURE Collection**  
Product Commercial Part No.: **REM1440**  
Manufacturer Lot / Batch No.: **20170514**  
Date Manufactured\*: **05-14-17**  
Product Category & Use\*: **FLOORING**  
Sample Construction Material\*: **LAMINATE/HDF**  
Plant Name & Location\*: **ETERNITY PACOIMA, CA**  
Collection Location within Plant: **WAREHOUSE**  
Date & Time Collected\*: **06-14-17 11:30AM**  
Number of Sample Pieces\*: **4** Photo(s) of Collection Location: ☐ Yes  
Sample Collected by\*: **JESSICA**  
Phone/Fax Numbers\*: **818 361 0099 / 818 480 7844**  
E-mail Address\*: **JESSICA@ETERNITYFLOORING.COM**

**Shipping Details**

Packed & Shipped By: **JESSICA**  
Shipping Date: **6/14/17**  
Carrier/Airbill Number: **GSO/536494272**

**Sample Handling**

Relinquished By	Received By*	Signature	Date	Company
JESSICA PALMA	ALEC ITHANKA	Jessica Palma	6/14/17	ETERNITY
		Alec Ithanka	6-16-17	BKA

**Chain of Custody for ASTM D6007 Emission Test**

A Separate COC must be completed for EACH product/material sample

A link to Berkeley Analytical's Services Agreement is included in this workbook. By submitting samples, customer acknowledges and accepts these terms & conditions unless a prior written contract is in effect.

Berkeley Analytical Quotation Number: **170614-2**  
Purchase Order (enter company & number): **3917**

**Requested Test**

Test Method to be performed	ASTM D6007
Test results acceptance criterion	CARB ATCM Phase 2
Test schedule	7-day Conditioning, 20-hrs Test
CARB Phase 2 Screening Test?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
TPC Certification Test?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes TPC #:

**For Berkeley Analytical Use:**

Report ID	
Billing Reference	

**Customer Instructions for Sample Prep., Test Type, schedule, etc.**

Small-scale, composite wood Formaldehyde emission screening test or TPC Certification test by ASTM D6007 with sampling and analysis by ASTM D5197. Deconstruction of finished product following CARB SOP if required. CARB Phase 2 acceptance criterion, 7 days conditioning unless shorter time is specified followed by chamber test with sampling for formaldehyde in 16 to 20 hours interval.

**Customer Authorizes Laboratory to Submit Copies of Test Report to:**

Contact/E-mail Address: **JESSICA/JESSICA@ETERNITYFLOORING.COM**  
Organization: **ETERNITY**  
Contact/E-mail Address:  
Organization:

**For Berkeley Analytical Use Only**

Condition of Shipping Package: **ok**  
Condition of Sample: **ok**  
Lab Tracking Number: **962-001-02A**

Astrisk (\*) See Notes Tab