



February 26, 2016

**RESIDENTIAL BULLETIN: #019**

**TO: ALL MANNINGTON DISTRIBUTORS AND CUSTOMERS**

**SUBJECT: FOLLOW-UP REGARDING  
FORMALDEHYDE IN LAMINATE**

**EFFECTIVE DATE: February 26, 2016**

On February 21, 2016, 60 Minutes aired a follow up segment regarding formaldehyde emissions from laminate flooring sold by Lumber Liquidators. Since then, numerous other reporting sources have repeated the findings of the story. This news cycle has reinvigorated the questions about laminate flooring and its potential health effects on consumers.

The following are a few key facts regarding this latest report.

1. The Centers for Disease Control (CDC) conducted an investigation at the direction of the Consumer Products Safety Commission (CPSC) to determine the potential effects of exposure to Chinese produced laminate flooring from Lumber Liquidators, following the initial investigations back in 2015.
2. It is without dispute that the Chinese produced laminate flooring purchased from Lumber Liquidators did not comply with CARB (California Air Resources Board) guidelines for formaldehyde emissions. When 60 Minutes conducted their initial report, they indicated that among all of their testing, it was only Chinese produced laminate sourced from Lumber Liquidators which did not meet CARB guidelines. All US produced laminate was found to be compliant.
3. The recent CDC report, issued February 10, 2016 suggested negligible health effects. 60 Minutes had the report independently verified. Through independent verification, it was determined that the CDC miscalculated the results of their report.
4. On February 18, 2016, the CDC issued a new statement that they were in the process of producing a new report. By adjusting their findings, they determined that "Exposure to the lowest modeled levels of formaldehyde could result in ear, nose, and throat irritation for anyone..." The revised statement also speculated about the potential for increased risk of cancer from the Chinese produced laminate flooring. The CDC will be issuing a revised report in the coming weeks.

The following are some key facts regarding Mannington laminate flooring:

1. All of our laminate flooring is produced in the United States. As noted during the original 60 Minutes segment, the producers of the program purchased more than 150 cartons of laminate flooring around the state of California and had the flooring tested for formaldehyde emissions. The only products failing the test were Chinese produced laminate flooring sold by Lumber Liquidators.
2. We certify our product to the NALFA LF-01 standard. This requires 3<sup>rd</sup> party testing and includes conformance to the CARB standard. Attached to this communication is a copy of our laminate specification letter. Additional information can be found at [www.nalfa.com](http://www.nalfa.com).
3. We certify our laminate flooring to the FloorScore indoor air quality standard. This also requires 3<sup>rd</sup> party testing to the CA1350 standard, which is even more stringent than the CARB formaldehyde standard. Further information regarding FloorScore may be found at [www.scsglobalservices.com/floorscore](http://www.scsglobalservices.com/floorscore).
4. Over the past year, we have sampled product in the field to confirm our regular testing. Test results show that our products emit below any measurable level (BLQ). Please see an example of a product tested from the field in the attached test results.

As always, you can remain confident in the safety and quality of Mannington laminate flooring. Should you have any questions, please do not hesitate to contact me.

Sincerely,

MANNINGTON MILLS, INC.

Dan Natkin  
Senior Director of Residential Products  
(856) 339-6146

:rlw  
Attachments



To: Whom It May Concern

Reference: Mannington Laminate Flooring – General Specification

The general standard that applies to Laminate flooring for the North American market is NALFA (North American Laminate Flooring Association) LF – 01 – 2011 and LF-02-2011. The full specifications can be downloaded from the website at [www.nalfa.com](http://www.nalfa.com). Mannington laminate flooring products including Restoration, Restoration Wide Plank, Laminate for Life, Diamond Bay, Revolutions Plank and Tile, Nature Form Plank, Coordinations, Value-Lock, Domestic, Fast Start Promotional Products are approved products. Mannington Laminate Flooring meets all FHA/HUD requirements. Mannington Domestic achieves a NALFA certification level 1. All other Mannington laminate achieves a NALFA certification level 2.

The product consists of a backing layer, a core layer, a printed décor layer and a protective wear layer. The core is commonly referred to as a HDF or MDF (high or medium density fiber) board. It is composed of wood fibers and resins, cured under heat and pressure. The surface and backing layers are a build-up of paper and resins, merged together under heat and pressure. The decorative layer is typically a paper printed with pigments that provide a stable and color fast visual. The resin system, which is water based, along with the pigments utilized in the production of laminate flooring, typically does not require solvents nor heavy metal components. The composition of the wear layer more specifically is a melamine impregnated layer containing aluminum oxide for added wear and scratch resistance.

The total thickness of the laminate product is 8 mm thick or approximately 5/16<sup>th</sup> inches with the exceptions of Revolutions Plank—Diamond Bay, Restoration, Laminate for Life, and Restoration Wide Plank which are 12 mm thick or approximately 1/2 inches and Domestic which is 7mm thick or approximately 1/4 inches. The majority of the thickness comprised of the core board. The composition of the core board is made up of primarily cellulosic fibers. The major component in laminate flooring is wood residue streams such as saw dust, panel trimmings etc, utilized primarily in the core layer

See table listing performance criteria for Laminate Flooring.

		MINIMUM PERFORMANCE VALUES		
Usage Level		Residential	Light Commercial	Commercial
Certification Level		1	2	3
LF-01 TEST METHOD	PROPERTY			
3.1	Static Load	≥ 6 MPa (870 psi)	≥ 6 MPa (870 psi)	≥ 8 MPa (1160 psi)
3.2	Thickness Swell	≤ 20%	≤ 16%	≤ 16%
3.3	Light Resistance	No Effect	No Effect	No Effect
3.4	Cleanability/ Stain Resistance	Score < 20 No Effect	Score < 20 No Effect	Score < 20 No Effect
3.5	Large Ball Impact Resistance	> 800 mm (31.5 in)	> 1000 mm (39.4 in)	> 1400 mm (55.1 in)
3.6	Small Ball Impact Resistance	> 200 mm (7.9 in)	> 200 mm (7.9 in)	> 500 mm (19.7 in)
3.7	Wear Resistance	IP <sup>3</sup> 1800 cycles	IP <sup>3</sup> 2500 cycles	IP <sup>3</sup> 4000 cycles
3.8	Dimensional Tolerances (maximum)	Length: 0.50 mm (0.020 in) Width: 0.20 mm (0.008 in)  Thickness: 0.50 mm (0.020 in) Squareness: 0.20 mm (0.008 in)  Straightness: 0.30 mm (0.012 in)	Length: 0.50 mm (0.020 in) Width: 0.20 mm (0.008 in)  Thickness: 0.50 mm (0.020 in) Squareness: 0.20 mm (0.008 in)  Straightness: 0.30 mm (0.012 in)	Length: 0.50 mm (0.020 in) Width: 0.20 mm (0.008 in)  Thickness: 0.50 mm (0.020 in) Squareness: 0.20 mm (0.008 in)  Straightness: 0.30 mm (0.012 in)
3.9	Castor Chair Resistance	25000 cycles No Effect	25000 cycles No Effect	25000 cycles No Effect

It should be noted that Mannington Laminate flooring has been tested per ASTM E-648 *Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source* and passes with a Class 1 rating (CRF Value GT or equal to 0.45 watts per sqcm) as well as per ASTM E- 662 *Test Method for Specific Optical Smoke Density of Smoke Generated by Solid Materials* (passes with value LT 450). ASTM E 648 and E-662 are the more common fire test requirements for flooring materials and what building codes normally reference.

Laminate flooring has the following attributes:

- Low VOC emission levels
  - The resins used to bind the HDF do contain small amounts of formaldehyde
  - It is generally known, trace levels of formaldehyde can exist in natural wood and timber, thus may be inherent in laminate flooring products.
  - Mannington products meet or are below even the prescribed phase 2 California Air Resources Board (CARB) emission levels.
  - All Mannington Laminate is FloorScore certified for indoor air quality
- Utilizes a large percentage of renewable resource materials, primarily in core
- No heavy metal components
- Durable long lasting flooring
- Majority of laminate floors are installed glue-less
- Utilizes large amounts of wood and paper residue streams, providing upgraded use for normal waste streams
- Underlayment minimizes surface prep work required
- As of December 2013, 100% of Mannington Laminate Flooring is Made in the USA

If there are additional questions that may arise, please feel free to contact us.

Respectfully,

Dan Natkin  
Senior Director – Residential Products

SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

# Mannington Mills, Inc

75 Mannington Mills Road, P.O. Box 30, Salem, NJ, United States

For the following product(s):

## Laminate Flooring:

Coordinations Collection, Diamond Bay Collection, Fast Start Collections, Mannington Domestic, NatureForm Tile Collection, Restoration Collection, Restoration Wide Plank Collection, Revolutions Plank Collection, Revolutions Tile Collection, Value Lock Collection

This product meets all of the necessary qualifications to be certified for the following claim:

## FloorScore®

### Indoor Air Quality Certified to SCS-EC10.3-2014

Conforms to the CDPH/EHLB Standard Method v1.1-2010 (effective January 1, 2012) for the school classroom and private office parameters when modeled as Flooring.

Measured Concentration of Total Volatile Organic Compounds (TVOC): Less than/equal to 0.5 mg/m<sup>3</sup> (in compliance with CDPH/EHLB Standard Method v1.1-2010)

### Registration # SCS-FS-01343

Valid from: October 1, 2015 to September 30, 2016

SCS Global Services is currently the only certification body approved by the Resilient Floor Covering Institute (RFCI) to provide FloorScore® product certification; certified products are only listed on the SCS Green Products Guide. <http://www.scsglobalservices.com/certified-green-products-guide>.



ANSI ACCREDITED PROGRAM  
PRODUCT CERTIFICATION  
#0821

A handwritten signature in black ink, reading "Robert J. Hrubes".

Robert J. Hrubes, Ph.D., Executive Vice President  
SCS Global Services  
2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA

# SCS global

S E R V I C E S



# HPVA Laboratories

1825 Michael Faraday Drive, Reston, VA 20190-5350  
PHONE 703-435-2900 FAX 703-435-2537



## TEST REPORT ON FORMALDEHYDE EMISSIONS FROM WOOD PRODUCTS

Test Method: ASTM D6007-14

Analytical Procedure: Modified NIOSH 3500

CUSTOMER INFORMATION	SAMPLE IDENTIFICATION
Mannington 75 Mannington Mills Road Salem, NJ 08079-0030	Test ID#: FSC1295 Date of Test: 10/7/2015 Customer Sample ID: N/A Adhesive: N/A

SAMPLE DESCRIPTION			
Product Type:	1/2" Sawmill Hickory Natural Laminate Flooring (Faces tested only)	Sample Thickness:	1/2"
Core Type:	MDF/HDF	Sample shipped/stored in:	Vapor Barrier
Sample Condition:	OK	Date Selected:	N/A
Date of Manufacture:	N/A	Date Received:	9/29/2015
Date Conditioned:	9/30/2015	Selected by:	Client
Date Tested:	10/7/15	Sample Plan:	PAY

CONDITIONING DATA	Value	Units
Temperature: (range)	76.5;(78.7-74.2)	°F
Relative Humidity: (range)	48.0;(52.7-43.3)	% RH
Conditioning Background HCHO:	BLQ	ppm
Conditioning Time:	168	hours
Chamber Background HCHO:	BLQ	ppm

TEST DATA	Value	Units
Test Chamber:	2	n/a
Chamber Location:	Reston	n/a
Test Chamber Volume :	2.31	ft <sup>3</sup>
Loading Ratio (ft <sup>2</sup> /ft <sup>3</sup> ) :	1.04	ft <sup>2</sup> /ft <sup>3</sup>
# of Specimens in Test:	6	n/a
Sample Size:	6 1/8" x 9.40"	inches
Total Surfaces Exposed:	6	surfaces (faces only)
Edges Sealed:	Yes	n/a
Test Temperature: (range):	76;(76.7-75.7)	°F
Relative Humidity: (range):	48.9;(56.7-46.7)	% RH
Air Change Rate:	4	AC/h
Sample Flow Rate:	1.00	L/min
Sample Collection Time:	60	Min.
TEST RESULT: (At Test Conditions)	BLQ	ppm
<b>TEST RESULT: (Corrected to 77°F &amp; 50%RH)</b>	<b>BLQ</b>	<b>ppm</b>
UNCERTAINTY (+/-):		n/a

**NOTES:**  
(including any deviations from the ASTM procedure or sample defects)

*Josh Hosen*

Josh Hosen  
Senior Manager - Certification Programs

*This is a factual report of the results obtained from laboratory tests of sample products. The results may be applied only to the products tested and should not be construed as applicable to other similar products of the manufacturer. The HPVA does not verify the description of the materials and products when the description is provided by the client. This report is not a recommendation or a disapprobation by the HPVA of the material or product tested. While this report may be used for obtaining product acceptance, it may not be used in advertising.*



# HPVA Laboratories

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## TEST REPORT ON FORMALDEHYDE EMISSIONS FROM WOOD PRODUCTS

Test Method: ASTM D6007-14

Analytical Procedure: Modified NIOSH 3500

CUSTOMER INFORMATION	SAMPLE IDENTIFICATION
Mannington 75 Mannington Mills Road Salem, NJ 08079-0030	Test ID#: FSC1296 Date of Test: 10/7/2015 Customer Sample ID: N/A Adhesive: N/A

SAMPLE DESCRIPTION			
Product Type:	1/2" Sawmill Hickory Natural Laminate Flooring (Core tested only)	Sample Thickness:	1/2"
Core Type:	MDF/HDF	Sample shipped/stored in:	Vapor Barrier
Sample Condition:	OK	Date Selected:	N/A
Date of Manufacture:	N/A	Date Received:	9/29/2015
Date Conditioned:	9/30/2015	Selected by:	Client
Date Tested:	10/7/15	Sample Plan:	PAY

CONDITIONING DATA	Value	Units
Temperature: (range)	76.5;(78.7-74.2)	°F
Relative Humidity: (range)	45.7;(48.0-43.3)	% RH
Conditioning Background HCHO:	BLQ	ppm
Conditioning Time:	168	hours
Chamber Background HCHO:	BLQ	ppm

TEST DATA	Value	Units
Test Chamber:	3	n/a
Chamber Location:	Reston	n/a
Test Chamber Volume :	2.31	ft <sup>3</sup>
Loading Ratio (ft <sup>2</sup> /ft <sup>3</sup> ) :	0.64	ft <sup>2</sup> /ft <sup>3</sup>
# of Specimens in Test:	4	n/a
Sample Size:	6 1/8" x 8.68"	inches
Total Surfaces Exposed:	4	surfaces (core)
Edges Sealed:	Yes	n/a
Test Temperature: (range):	77.7;(79.1-77.5)	°F
Relative Humidity: (range):	45.7;(49.5-44.1)	% RH
Air Change Rate:	4	AC/h
Sample Flow Rate:	1.00	L/min
Sample Collection Time:	60	Min.
TEST RESULT: (At Test Conditions)	0.04	ppm
<b>TEST RESULT: (Corrected to 77°F &amp; 50%RH)</b>	<b>0.05</b>	<b>ppm</b>
UNCERTAINTY (+/-):		n/a

NOTES:
(including any deviations from the ASTM procedure or sample defects)

The CARB SOP for Finished Good Specimen Preparation was followed to expose the core MDF/HDF panel beneath the laminate surface.

*Josh Hosen*

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Senior Manager - Certification Programs

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