

Test Report

No. SHAHG1908714901

Date: 14 May 2019

Page 1 of 4

TWELVE OAKS FOREST PRODUCT INC.
201 WHITEHALL DR. UNIT 2 MARKHAM, ON L3R 9Y3

The following sample(s) was/were submitted and identified on behalf of the clients as : MULTI-LAYER ENGINEERED WOOD FLOORING

SGS Job No. : SHHL1904019285CB - SH
Date of Sample Received : 29 Apr 2019
Testing Period : 29 Apr 2019 - 14 May 2019
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
Final Regulation Order – Airborne Toxic Control Measure to Reduce Formaldehyde emissions from Composite Wood Product (CARB ATCM), title 17, California Code of Regulation, section 93120.2 (a) and Table 1-Formaldehyde Emission	See Results

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



Jenny Yao
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA19-087149.001	Neutral colored plywood

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Final Regulation Order – Airborne Toxic Control Measure to Reduce Formaldehyde emissions from Composite Wood Product (CARB ATCM), title 17, California Code of Regulation, section 93120.2 (a) and Table 1-Formaldehyde Emission

Test Method : With reference to ASTM D6007-2014, analysis was performed by UV-Vis.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>001</u>
Formaldehyde Emission	★	ppm	0.01	0.02

Notes :

- (1) The scope of CARB ATCM is applicable for composite wood, but not for other wood products.
- (2) Formaldehyde emission test is one of the conformity criteria under CARB ATCM. Full conformity of a composite wood product happens provided that this composite wood fulfill all the requirement as stated in CARB ATCM title 17 section 93120 to 93120.12.
- (3) ppm = parts of formaldehyde per million parts air
- (4) ★ = See Table 1
- (5) Test result is only for reference



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Reference Limit:
Maximum Permissible Limit according to Section 93120.2, Title 17, California Code of Regulation:

Table 1: Phase 1 and Phase 2 Formaldehyde Emission Standards for Hardwood Plywood(HWPW), Particleboard(PB), and Medium Density Fiberboard(MDF)					
Effective Date	Phase 1(P1) and Phase 2(P2) Emission Standards(ppm)				
	HWPW-VC	HWPW-CC	PB	MDF	Thin MDF
1-1-2009	P1:0.08	-----	P1:0.18	P1:0.21	P1:0.21
7-1-2009	-----	P1:0.08	-----	-----	-----
1-1-2010	P2:0.05	-----	-----	-----	-----
1-1-2011	-----	-----	P2:0.09	P2:0.11	-----
1-1-2012	-----	-----	-----	-----	P2:0.13
7-1-2012	-----	P2:0.05	-----	-----	-----

HWPW-VC = Veneer Core; HWPW-CC = Composite Core.

Sample Conditioning / Parameters			
Average Temperature (°C)	(24±3)	Average Relative Humidity (%)	(50±5)
Sampling Time (hour)	168	Formaldehyde background (ppm)	< 0.1
Chamber Dimensions (m)	1.578 x 0.8 x 0.8 or 1.56 x 0.8 x 0.8(Nominal)		
Chamber Volume (m³)	1.0	Chamber Load Ratio (m²/m³)	0.6399 (Particleboard, Hardwood Plywood Panels) / 0.3937 (MDF) / 1.4259 (Hardwood Plywood Wall Paneling) / 0.1968 (Particleboard Door Core)
Chamber Q/A Ratio (±2%)	1.172 (Particleboard, Hardwood Plywood Panels) / 1.905 (MDF) / 0.526 (Hardwood Plywood Wall Paneling) / 3.811 (Particleboard Door Core)		
Sample Size	32.3 cm x 33 cm (Particleboard, Hardwood Plywood Panels) / 25.6 cm x 25.6 cm 0.3937 (MDF) / 35 cm x 68 cm (Hardwood Plywood Wall Paneling) / 18.1 cm x 18.1 cm (Particleboard Door Core)		
Number of Samples	3	Number of Exposed Surfaces	6
Sampling Parameters			
Average Temperature (°C)	(25±1)	Average Relative Humidity (%)	(50±4)
Sampling Time (min)	240	Formaldehyde background (ppm)	< 0.01
Air-sampling Rate (L/min)	12.5		



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