



Material Emissions Report

Prepared For

Auswood International Pty Ltd

Report No. J 2104281r2

31 May 2021

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J 2104281r2

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PROJECT Building Material Emissions

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REPORT DATE 31 May 2021



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BACKGROUND

Auswood International manufacture and supply timber products to the Australian market including; formwork components and accessories, formply, structural plywood, non-structural plywood, flooring, decorative timber wall panels.

Auswood International requested BELL Laboratories to determine emissions of volatile organic compounds and carbonyl compounds from two (2) wall panel samples for certification purposes.

Auswood has advised that these products are intended to be used as feature wall covering and requested that the modelling show the maximum % wall coverage at which the product satisfies the Maximum Allowable Concentration (MAC).

The products were tested according to the California Department of Public Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2”.

CDPH-IAQ V1.2 2017 is intended for the evaluation of volatile organic chemical emissions in mass per unit volume ($\mu\text{g}/\text{m}^3$). The method has been used in this instance to evaluate odour emissions to determine the potential for nuisance odours to be generated in the prescribed indoor environments. A maximum allowable odour concentration of 10 ou (odour units) has been adopted for this purpose.

SAMPLE DETAILS & TEST OUTCOME

Product details, custody dates, room model details as well as the test outcome are summarised in the table below.

Manufacturer	Auswood International	Auswood International
Test Item	Elevate, Peppercorn	Elevate, Peppercorn
Product type	Interior wood wall panels	Interior wood wall panels
Batch/Lot No.	SJ19AW09	SJ21AW03
Date received	28/04/2021	28/04/2021
Date test started	29/04/2021	29/04/2021
Date test ended	13/05/2021	13/05/2021
Test Method	CDPH-IAQ V1.2 2017	CDPH-IAQ V1.2 2017
Emission surface	Walls	Walls
Test outcome	Classroom: Pass 100% wall coverage Private office: Pass 50% wall coverage Single family residence: Pass 20% wall coverage	Classroom: Pass 100% wall coverage Private office: Pass 50% wall coverage Single family residence: Pass 20% wall coverage

MAXIMUM ALLOWABLE CONCENTRATIONS

Adopted odour threshold

No.	Compound	CAS No.	MAC
1	Odour	N/A	10 ou

TEST METHODS

The following tests were performed by BELL Laboratories in accordance with requirements of the methods indicated.

20L whole air samples were collected into Teflon bags for odour analysis.

Parameter	Test Method	Detection Limit
Odour	AS 4323.3	4 ou

AS – Australian Standard

MODEL SCENARIOS

Scenario	Classroom	Private Office	Single Residence
Volume, m ³	231	30.6	547
Outdoor Air, m ³ /min	191	20.7	127
Air Change Rate, per hour	0.82	0.68	0.23
Occupancy	27	1	4
Floor Area, m ²	89.3	11.2	211
Ceiling Area, m ²	89.3	11.2	211
Wall Area, m ²	94.8	36.8	562

PHOTOGRAPHS – TEST ITEMS



Elevate wall panels – as received



Elevate wall panels – unpacked

TABULATED RESULTS

Classroom (100% wall coverage)

Odour	SJ19AW09				SJ21AW03			
	Chamber Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Classroom ou	Test Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Classroom ou
Odour - Test 1	25	9.9	6.3	3.1	27	11	6.8	3.3
Odour - Test 2	23	9.1	5.8	2.8	31	12	7.8	3.8

Private Office (50% wall coverage)

Odour	SJ19AW09				SJ21AW03			
	Chamber Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Private Office ou	Test Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Private Office ou
Odour - Test 1	25	9.9	6.3	8.8	27	11	6.8	9.5
Odour - Test 2	23	9.1	5.8	8.1	31	12	7.8	11

Single Family Residence (20% wall coverage)

Odour	SJ19AW09				SJ21AW03			
	Chamber Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Single Residence ou	Test Conc ou	Emission Factor ou.m/h	Emission Rate ou.m ³ /h	Single Residence ou
Odour - Test 1	25	9.9	6.3	8.8	27	11	6.8	9.5
Odour - Test 2	23	9.1	5.8	8.1	31	12	7.8	11

ENVIRONMENTAL CHAMBER DETAILS

Report	J 2104281	Client	Auswood International	Location	Revesby
Chamber ID	ECH 4	Project type	Building Material Emissions	State	NSW
Rec'd date	28/04/21	Test method	CDPH		
Test date	29/04/21	Sample ID	0	Sample type	Interior wall panels
Analyst	WA	Test details	Test 1: SJ19AW09 Test 2: SJ21AW03		

Test Details	Chamber	Sample
Length, cm	65	121
Width, cm	55	13
Height, cm	70	0.5
Area, m ²	0.4	0.157
Volume, L	250	0.787
Loading factor and area-specific flow rate	0.628	1.590

Test Parameters	Test 1	Test 2
Temperature, °C	22.5	22.8
Relative humidity, %	51.7	51.2
Barometric pressure, kPa	100.5	100.3
Static pressure, Pa	5.0	3.0
Chamber pressure, kPa	100.5	100.3
Gas Parameters		
Moisture content, %	1.4	1.4
Gas molecular weight, g/g mole	28.8 (wet)	29.0 (dry)
Gas density at 23°C, kg/m ³	1.19 (wet)	1.19 (dry)

QUALITY ASSURANCE

BELL Laboratories operates to ISO 17025 – General Requirements for the Competence of Testing and Calibration Laboratories. ISO 17025 requires that laboratories have an ISO 9002 compliant quality system, suitable equipment and instrumentation, as well as laboratory staff with the training and technical competence to perform the analytical/test procedures.

BELL Laboratories quality control program includes field sampling activities as well as laboratory analyses. The program is designed to check sampling reproducibility as well as analytical precision & accuracy.

STATEMENT OF LIMITATIONS

This report has been prepared in accordance with the agreement between BELL Laboratories Pty Ltd and the client. Within the limitations of the agreed scope of services, this work has been performed in a professional manner, in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by members of its profession and consulting practice. No other warranty, expressed or implied, is made.

Any reliance on this report by a third party shall be at such party's sole risk. The report may not contain sufficient information for the purposes of a third party or for other uses.

This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval is provided by BELL Laboratories.

DEFINITIONS

The following symbols and abbreviations may be used in this test report:

<	Less than
NA	Not applicable
NS	Not specified
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASTM	American Society of Testing & Materials
CDPH	California Department of Public Health
USEPA	United States Environmental Protection Agency
TSP	Total suspended particulate matter
PM ₁₀	Particulate matter less than 10 micron
RH	Relative humidity
CO	Carbon monoxide
CO ₂	Carbon dioxide
BP	Barometric pressure
MAC	Maximum Allowable Concentration
OU	Odour units
µg/m ³	Micrograms per cubic metre
mg/m ³	Milligrams per cubic metre
ppb	Parts per billion
ppm	Parts per million
µm	Micrometre
hPa	Hectopascals