

# TEST REPORT: S08CHM03873-LCL

Date: 25 JUL 2008

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## SUBJECT

Emission Rate Tests for "Fibre-Cement" Board Sample

## CLIENT

Framework Materials Pte Ltd  
2 Aljunied Avenue 1  
Singapore 389977

Attn: Ms Yvonne Liu

## DESCRIPTION OF SAMPLE

Two pieces of the board sample labelled as "SHERA Fibre-Cement Board" were received on 18 Jul 2008.

## DATE OF ANALYSIS

21 Jul 2008 – 25 Jul 2008

## METHOD OF TEST

The following emission tests were conducted according to ASTM D5116-06 – *Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products*, as reference.

### A) Emission Test

- 1) Total Volatile Organic Compounds (TVOC) Emission Rate
- 2) Formaldehyde Emission Rate
- 3) 4-Phenylcyclohexene Emission Rate
- 4) Total Phthalates Emission
  - Dibutyl Phthalate (DBP)
  - Diethyl Phthalate (DEP)
  - Di-octyl Phthalate (DOP)
  - Diethylhexyl Phthalate (DEHP)
  - Butylbenzyl Phthalate (BBP)
  - Dimethyl Phthalate (DMP)
- 5) Total Particles Emission

### B) Emission Test Condition

- 1) Chamber Volume : about 1m<sup>3</sup>
- 2) Temperature : 23°C
- 3) Relative Humidity : 50%
- 4) Air Exchange Rate : n=1 (air change rate per hour in the chamber)
- 5) Chamber Loading Ratio : 0.4m<sup>2</sup>/m<sup>3</sup> (total exposed surface area of the test specimen divided by the net air volume of the emission test chamber)
- 6) Air Velocity : 0.1m/s to 0.3m/s (over the surface of the test specimen)



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**RESULTS**

**Table 1. Total Volatile Organic Compounds (TVOC) Emission Rate Test Result**

Sample	Test Result (After 24 hours)	Criteria for Singapore Green Label Product	Conclusion
SHERA Fibre-Cement Board	0.16 mg per m <sup>3</sup> per hour	0.25 mg per m <sup>3</sup> per hour or less	Pass

**Table 2. Formaldehyde Emission Rate Test Result**

Sample	Test Result (After 48 hours)	Criteria for Singapore Green Label Product	Conclusion
SHERA Fibre-Cement Board	<0.01 mg per m <sup>3</sup> per hour	0.02 mg per m <sup>3</sup> per hour or less	Pass

**Table 3. 4-Phenylcyclohexene Emission Rate Test Result**

Sample	Test Result (After 48 hours)	Criteria for Singapore Green Label Product	Conclusion
SHERA Fibre-Cement Board	Not Detected*	0.0065 mg per m <sup>3</sup> per hour or less	Pass

\*The method detection limit was 0.002 mg per m<sup>3</sup>

**Table 4. Total Phthalate Emission Test Result**

Sample	Test Result	Criteria for Singapore Green Label Product	Conclusion
SHERA Fibre-Cement Board	< 0.003 mg per m <sup>3</sup>	< 0.01 mg per m <sup>3</sup>	Pass

**Table 5. Total Particles Emission Test Result**

Sample	Test Result	Criteria for Singapore Green Label Product	Conclusion
SHERA Fibre-Cement Board	0.01 mg per m <sup>3</sup>	< 0.02 mg per m <sup>3</sup>	Pass

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