

California: Formaldehyde Emission Requirements to be Lowered for Composite Wood Products

The Airborne Toxic Control Measure (ATCM) to control formaldehyde emissions from composite wood products drafted by California Air Resource Board (CARB) was approved on April 18, 2008 by the Office of Administrative Law. The first emission standards will be effective on January 1, 2009.

The airborne toxic control measure establishes new standards to reduce formaldehyde (HCHO) emissions from composite wood products, and finished goods that contain composite wood products that are sold, offered for sale, supplied, used or manufactured for sale in California¹. This regulation applies to manufacturers, distributors, importers, fabricators and retailers. The composite wood products covered are hardwood plywood, particleboard, and medium density fiberboard. The standard requirements will be implemented in a 2-phase system. Phase 1 will be effective on January 1, 2009 and Phase 2 will be 2010 – 2012 (Table 1).

Phase 1 and Phase 2 Formaldehyde Emission Standards for Hardwood Plywood (HWPW), Particleboard (PB), and Medium Density Fiberboard (MDF)							
Phase (P)	Method	HWPW-VC (ppm)	HWPW-CC (ppm)	PB (ppm)	MDF (ppm)	Thin MDP (ppm)	Effective Date
1	Primary ASTM E1333-96 (2002)	0.08		0.18	0.21	0.21	Jan 1, 2009
			0.08				July 1, 2009
2	or Secondary ASTM D6007-002	0.05					Jan 1, 2010
				0.09	0.11		Jan 1, 2011
						0.13	Jan 1, 2012
			0.05				July 1, 2012

Table 1. P1 and P2 formaldehyde Emission Standards for HWPW, PB and MDF

¹'Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products', § 93120-93120.12, Title 17, California Code of Regulations; <http://www.arb.ca.gov/toxics/compwood/compwood.htm> and references therein

There are provisions for manufacturers of HWPW, PB and MDF with ultra-low emitting formaldehyde (ULEF) resins. For HWPW to qualify for approval to test less frequently, formaldehyde emissions must be no higher than the Phase 2 standards (Table 1) subject to certain conditions. For PB and MDF, all data must be no higher than the ULEF-cap values (Table 2), again under certain conditions.

Ultra-Low Emitting Formaldehyde (ULEF) Resin Emission Target and Cap Values (ppm) for Particleboard (PB) and Medium Density Fiberboard (MDF) ²			
	PB (ppm)	MDF (ppm)	Thin MDF (ppm)
ULEF-Target	0.05	0.06	0.08
ULEF-cap	0.08	0.09	0.11

Table 2. ULEF value resin emission targets and cap values for PB and MDF

Products meeting the above emission limits must be certified by a CARB approved third party certification program unless they are approved Ultra Low Emission Formaldehyde (ULEF) or No Added Formaldehyde (NAF) products.

There are specific exemptions allowed from ATCM. Some of the key exemptions include,

- products sold outside California,,
- products used in manufactured homes that are subject to Federal HUD requirements,
- goods purchased outside California and moved to California as part of household move,
- specific product exemption for finger joint lumber, certain hardwood and plywood items meeting applicable ANSI and ASTM standards,
- windows containing less than 5% composites.

Note

Abbreviation	Remark
HWPW-VC	Hardwood Plywood – Veneer Core
HWPW-CC	Hardwood Plywood – Composite Core
PB	Particleboard
MDF	Medium Density Board
Thin MDF	Thin Medium Density Board with a maximum thickness of 8 mm
ULEF Resins	Ultra-Low-Emitting Formaldehyde Resins are resins formulated such that average formaldehyde emissions are consistently below the Phase 2 emission standards



Sell-through provisions and dates are provided for Manufacturers, Distributors, Importers, Fabricators and Retailers not meeting the formaldehyde emission standards in P1 or P2. For US retailers of HWPW, PB and MDF, the sell through provision allows up to 12 months to clear inventory without penalty. For US retailers of finished goods containing HWPW-VC, HWPW-CC, PB, MDF or thin MDF, the sell through provision allows up to 18 months to clear inventory.

Throughout our global network of laboratories, we are able to provide a range of services, including analytical testing and consultancy for the emission of formaldehyde. Our laboratories in Hong Kong, Guangzhou and Shanghai have applied for certification as a the third party certification laboratory for the ATCM³. Please do not hesitate to contact us for further information.

² Concentrations must be based on correlations with the primary or secondary test method

³ <http://www.arb.ca.gov/toxics/compwood/tpc.pdf>

FREQUENTLY ASKED QUESTIONS

What services will SGS provide to their clients?

- Expert advice regarding CARB TPC (third party certification) services,
- Evaluation as to how the regulation can effect them,
- Having their overseas or domestic materials suppliers certified,
- Having their product tested as a final check before distribution.

What products and materials are covered by CARB?

All products that contain the following materials to be sold in the state of California:

- Medium Density Fiberboard (MDF) products, examples include
 - Furniture
 - Household products
 - Toys and juvenile furniture
 - Construction products
- Plywood
- Particleboard

It is important to note that only the materials (i.e., MDF board) are tested and certified. The finished product (i.e., table or chair) are not evaluated. A finished product may be composed of several materials that require CARB certification. It will be important for retailers/fabricators to check carefully to ensure that all listed materials are in compliance.

What is involved in certification?

- Testing
 - Large Chamber (ASTM E1333)
 - Small chamber (ASTM D6007)
- Field Services
 - Audit
 - Inspection for mill testing
- Record Keeping
- Labeling

The testing, performed initially in large chambers, is designed to record the formaldehyde emissions of the manufactured material. Once the material has passed, testing must be repeated quarterly to keep the certification current. This will allow the manufacturer to label the product as meeting the current CARB

emission requirements for formaldehyde. The third party certification agency (TPC) will be required to audit the manufacturers QA records and to assist the manufacturer with record keeping of all CARB related QA activities.

How will I know that a product/material is certified?

- Labels
- Record Keeping

All listed and certified materials should be labeled as such; however, the best way to ensure compliance will be through checking records that are sent with each shipment of materials to the fabricator. CARB requires that a chain of custody be maintained through final sale of the product containing listed materials.

What if there is a question concerning certification of a finished product?

This is a grey area that will be worked out over time. CARB does not have a current procedure to test a finished product to check for compliance. The current thinking is that there will be a method for stripping and testing the product in total as opposed to disassembling the product and testing the individual components. We will keep all of our clients informed as to the progress of this procedure.

FOR ENQUIRIES:

Global Competences Support Centre: gpsc@sgs.com
HingWo Tsang + 852 2774 7420 or: HingWo.Tsang@sgs.com

Asia – Hong Kong. Tel: +852 2334 4481 Fax: +852 2144 7001 mktg.hk@sgs.com
Australasia _ Perth. Tel: +61 (0) 3 9790 3418 Fax: +61 (0) 3 9701 0988 au.cts@sgs.com
Europe – London —UK. Tel: +44(0) 20 8991 3410 Fax: +44 (0) 20 8991 3417 gb.cts.sales@sgs.com
Africa & Middle East – Turkey. Tel: +90 212 225 0024 Fax: +90 212 296 47 82 sgs.turkey@sgs.com
Americas – USA. Tel: +1 973 575 5252 Fax: +1 973 575 1193 Marketing.CTS.US@sgs.com

www.sgs.com Global Competences Support Centre: gpsc@sgs.com
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