

Implementation Status & Possible Amendments – California’s Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products

Composite Panel Association
Annual Fall Meeting
Arlington, Virginia

September 26, 2011

Lynn Baker
Stationary Source Division

*California Environmental Protection Agency
Air Resources Board*

Overview

- Background and Implementation Status
- Possible Amendments Being Considered to the Composite Wood Products ATCM
- Next Steps
- Questions

Background

- In 2007, CARB developed airborne toxic control measure (ATCM) to reduce formaldehyde emissions from composite wood products: hardwood plywood (HWPW), particleboard (PB), medium density fiberboard (MDF) panels
- ATCM applies to products sold, supplied, used, or manufactured for sale in California
- Requires finished goods to be made from compliant PB, MDF, and HWPW panels
- CPA has been and continues to be a key industry stakeholder

Background

Comparison of ATCM Standards*

Effective Date	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	-----	-----	-----

* Based on ASTM E1333-96 (2002) in parts per million; P1=Phase 1 and P2=Phase 2
HWPW-VC=hardwood plywood veneer core; HWPW-CC= hardwood plywood composite core;
MDF=medium density fiberboard; PB=particleboard

Background

continued

- Requires panel manufacturers to be third party certified by CARB-approved certifiers
- NAF/ULEF Program
 - Exemption from third party certification or reduced testing frequency

Implementation Status

- Third Party Certification (TPC) Program
 - TPCs provide two main services:
 - Formaldehyde emission testing certification
 - Product certification
 - ATCM resulted in worldwide infrastructure for independent certification of composite wood products
 - TPCs are required to participate in interlaboratory comparison every 2 years

Implementation Status

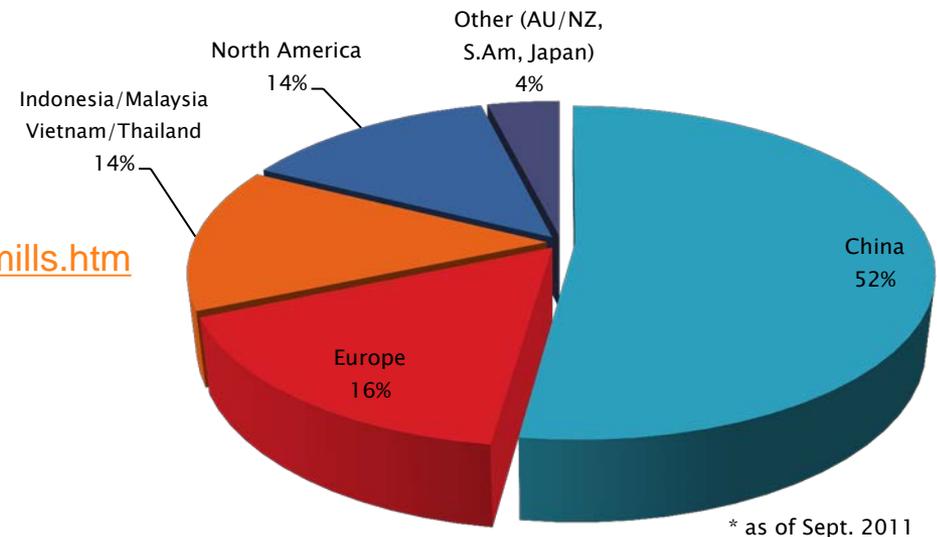
continued

- Third Party Certification Program

- 36 CARB-approved TPCs worldwide*
(North America, Europe, Asia)
- Over 900 certified mills
- CARB website featuring certified mills:

<http://www.arb.ca.gov/toxics/compwood/tpc/listofmills.htm>

Certified Mills Worldwide*



Implementation Status

continued

- NAF/ULEF Program
 - ATCM allows TPC exemption for manufacturers using no-added formaldehyde (NAF) or ultra-low-emitting formaldehyde (ULEF) resin systems
 - 102 CARB approved manufacturers (49 NAF, 53 ULEF)

Implementation Status

continued

- Sell-through Provisions
 - Many sectors had backed up inventories due to slow economy
 - Regulatory advisories provided additional time for transition to Phase 1 and Phase 2 standards
 - CARB staff will continue monitoring sell-through periods

Implementation Status

continued

- Enforcement Update
 - Inspections conducted at panel retailers and distributors, and retailers of finished goods
 - Initial focus on increasing awareness of regulatory requirements for labeling and evidence of taking reasonable prudent precautions (chain of custody records)
 - Samples collected for analysis
 - Sample preparation procedures for finished goods being finalized
 - CARB's enforcement testing results will include the uncertainty associated with sample preparation and emission testing
 - Status of enforcement cases

Implementation Status

continued

- CARB's implementation experience has led to possible amendments to improve ATCM
- Coordination with U.S. EPA
 - CARB staff is working with U.S. EPA to attempt to align the federal and State programs as much as possible

Overview of Possible Amendments

- Applicability
- Clarifications/Corrections
- NAF/ULEF Requirements
- Updates to Referenced Materials and Sell-Through Dates
- Quality Control Requirements for Manufacturers
- Third Party Certification Requirements

Possible Amendments for Hardwood Plywood (HWPW)

- **Consider requiring HWPW panels made with lumber core or special core materials to be subject to the HWPW-CC requirements**
 - Expanding to include lumber core/special core materials would make standards consistent with ANSI/HPVA HP-1
- **Consider including bamboo & cork as types of hardwood plywood subject to ATCM**
 - Bamboo and corkboard increasingly used in interior applications
 - “Woody grass” specified in ANSI/HPVA HP-1
- **Consider requiring certified core in HWPW-CC panels**
 - Core must be certified in laminated products, but not in HWPW-CC panels

Possible Amendments for Hardboard, Medium Density Fiberboard (MDF) Products and Oriented Strand Board (OSB)

- **Need to be able to distinguish hardboard from MDF**
- **Consider MDF made by wet-forming to meet the MDF emission standards**
 - Some manufacturers use wet-forming process
- **Clarify that MDF includes low, medium and high density fiberboard**
- **Consider requiring OSB products not certified to PS-2 to be subject to HWPW requirements**
 - Addresses emissions from OSB not made for exterior applications

Possible Amendments for Curved Plywood Products

- **At time of original ATCM development, emissions data not available for curved plywood products**
- **Staff committed to evaluate emissions**
 - CARB staff testing products
 - Request data/products from manufacturers/fabricators
- **Consider establishing emission standards for curved plywood products if emissions data warrants inclusion**

Possible Amendments for Laminated Products

- **Laminated products consisting of wood veneer affixed to a certified platform are similar to HWPW-CC products**
- **Regulatory requirements for “laminated products” and HWPW-CC are different and a source of confusion**
 - Laminated products must have certified core
 - HWPW-CC core does not have to be certified but entire product must be certified
- **CARB staff are testing emissions of various laminated products**
 - Cooperative test study being developed in conjunction with AHFA
 - Completion expected in early 2012
- **Based on results, re-evaluate requirements and identify if amendments necessary**

Possible Clarifications/Corrections

- **Clarify that packaging materials (e.g., pallets, crates, spools, dunnage, etc.) are not subject to the ATCM**
 - Consistent with FAQ
- **Labeling requirements for finished goods**
 - Clarify use of bar codes - cannot be sole form of label
 - Provide more specificity on labeling requirements
 - i.e., CARB Phase 1 Compliant, CARB Phase 2 Compliant, CARB NAF Approved, CARB ULEF Approved

Possible Amendments to NAF/ULEF Requirements

- **Consider allowing for longer renewal times for NAF and ULEF applications**
- **Identify additional data and information necessary for CARB evaluation of NAF/ULEF applications and renewals**
 - “Attachment C” of NAF/ULEF application

Updates to Referenced Materials and Sell-Through Dates

- **Sell-through provisions**
 - Update sell-through periods (i.e., passed dates, extensions) to reflect regulatory advisories
- **Incorporate updated ANSI and ASTM documents**
- **Include approved alternative quality control methods in the list of approved small scale test methods/alternate secondary test methods**
 - EN 120, EN 717-2, JIS A 1460, Dynamic Microchamber

Possible Amendments to Quality Control Requirements for Manufacturers

- **To improve reliability at the mills, consider:**
 - Background formaldehyde concentration to be measured, and data recorded and reported
 - Require sample selection for QC test done as specified in the QC manual
 - i.e., if products should be tested immediately out of the press or cold
 - New correlation and linear regression established if data indicate variation from previously used correlation

Possible Amendments to Quality Control Requirements for Manufacturers

continued

- **To ensure timely application and implementation of the Quality Control Limit (QCL) consider:**
 - Require the QCL to be based on testing data collected no longer than 30 days after production
 - In the event of exceedence of QCL, consider requiring manufacturers to examine possible causes and increase the frequency of QC tests for a given amount of time

Possible Amendments to the Third Party Certification (TPC) Program

- **Extensive experience gained with overseeing TPC program**
- **Numerous discussions with TPCs**
- **Staff reviewed TPC annual reports**
- **Identified areas for improvement:**
 - Program management
 - Reporting and recordkeeping
 - Proficiency requirements
 - TPC procedures
 - Test methods

Possible Amendments to the TPC Program

Program Management

- **Adjustments to improve and streamline program management:**
 - Consider requiring TPCs “evidence” of product certification agency accreditation to be based on ISO Guide 65 or international equivalent
 - Consider conflict of interest criteria to preclude manufacturer/fabricator from being a TPC
 - Consider extending duration of TPC approval to three years if acceptable performance maintained
 - Consider including reciprocity for certifiers approved under the U.S. EPA program

Possible Amendments to the TPC Program

Reporting and Recordkeeping

- **To improve strength of TPC program and ARB's ability to evaluate TPC performance, consider requiring:**
 - TPCs to report what steps are taken in event test exceedance occurs
 - Keep records including:
 - Background concentrations of formaldehyde in the conditioning area and the primary and/or secondary method test chamber
 - Linear regression equation used to calculate the mill's QCL
 - Annual report include:
 - Evidence of current product certification agency, inspection body, and testing laboratory accreditations
 - Secondary test method equivalence data (as applicable)
 - Quarterly primary or secondary test results and dates of mill audits
 - TPCs to notify CARB of changes to certified mills (e.g., monthly)

Possible Amendments to the TPC Program

Proficiency Requirements

- **Consider increasing frequency of participation in inter-laboratory comparison from every two years to annual**
- **Consider establishing proficiency criteria for performance in the interlaboratory comparison**
 - TPCs and their subcontract laboratories deemed proficient when their primary and/or secondary method test results are within a specified range, e.g., 1 SD of the comparison mean
 - TPCs and/or subcontract laboratories that are not deemed proficient are required to participate in a follow-up comparison
 - Failure to achieve proficiency in the follow-up comparison will result in further investigation (i.e, program audit by CARB)

Possible Amendments to the TPC Program

TPC Procedures

- **Equivalence**

- Consider decreased frequency from once per year to every two years
 - Evaluate possible need to tighten equivalence criteria
 - Separate demonstrations of equivalence are not required for identical size secondary method test systems
- Eliminate testing products in the “upper-range”

- **Secondary Test Method**

- Nine specimens representing a panel may be tested individually or in groups of three

Possible Amendments to the TPC Program *Test Methods*

- **To improve accuracy and reproducibility at lower formaldehyde levels, consider requiring:**
 - Leak check chambers with inlet and outlet flow meters
 - Flow through testing chambers, temperature and relative humidity all must be constant and accurately measured
 - Require lower background formaldehyde (e.g., 0.01 - 0.02 ppm) in conditioning area and testing chambers than currently allowed under ASTM methods, due to measurement of much lower concentrations
 - Specify frequency of duplicate analyses and level of variation between duplicates that triggers prompt corrective action
 - Identify additional procedures for using desiccator and chromotropic acid for low emitting products
 - Other suggestions?

Next Steps

- Collect information on identified products for possible inclusion in ATCM
- Meet with stakeholders upon request
- Coordinate with U.S. EPA to avoid conflicts between federal and State programs
- Finalize testing SOPs – fall 2011
- Interlaboratory TPC comparison – fall 2011
- Laminated products emissions testing – fall 2011
- Curved plywood emission testing – fall/winter 2011/12
- Tentative schedule for possible amendments
 - Additional public workshop(s) – first half of 2012
 - CARB public hearing to consider possible amendments - late 2012

Questions



Contacts

- Lynn Baker, Staff Air Pollution Specialist
916-324-6997 or lbaker@arb.ca.gov
- Peggy Taricco, Manager, Technical Analysis Section
916-323-4882 or ptaricco@arb.ca.gov
- Composite Wood Products ATCM Website:
<http://www.arb.ca.gov/toxics/compwood/compwood.htm>