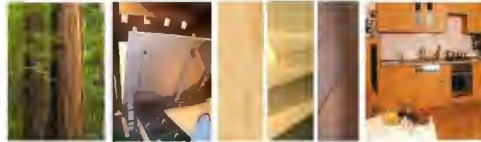


**Public Workshop to Discuss Proposed Amendments
to the Airborne Toxic Control Measure to Reduce
Formaldehyde Emissions from
Composite Wood Products**



*May 10, 2012
Coastal Hearing Room
Cal/EPA Headquarters, Sacramento*

California Environmental Protection Agency



Overview

- Background
- Draft proposed amendments
- Additional regulatory concepts for discussion
- Next steps
- Open discussion



BACKGROUND



3



Airborne Toxic Control Measure (ATCM)

- Established formaldehyde emission limits for composite wood products: particleboard (PB), medium density fiberboard (MDF), and hardwood plywood (HWPW) panels
- 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
- Includes sell-through provisions

4



Airborne Toxic Control Measure (ATCM) (Cont)

- Enforcement
 - Chain of custody
 - Emissions testing
- Requires panel manufacturers to be third party certified by ARB-approved certifiers
- NAF/ULEF Program
 - Exemption from third party certification or reduced testing frequency

5



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	-----	-----	-----

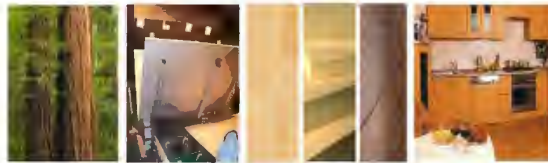
* Based on ASTM E1333-96 (2002) in parts per million; P1=Phase 1 and P2=Phase 2
 HWPW-VC=hardwood plywood veneer core; HWPW-CC= hardwood plywood composite core;
 MDF=medium density fiberboard; PB=particleboard

6



DRAFT PROPOSED AMENDMENTS

Title 17, California Code of Regulations,
Section 93120



7



Objectives

- Clarify requirements and applicability
- Improve enforceability
- Optimize program
- Streamline requirements
- Reflect updated reference materials, advisories, and FAQs

8



Proposed Amendments to Exemptions

- Consolidate exemptions and place in section 93120(d)
- Retain exemption for curved plywood
 - Represents small portion of products used in homes and offices
- Exempt hardwood plywood with lumber core or special core material
 - Consistent with FAQ

9



Proposed Amendments to Exemptions (cont)

- Exempt packaging materials and dunnage
 - Pallets, crates, etc., and loose packing material
 - Consistent with FAQ
- Exempt inventories of replacement component parts
 - Provided comply with Phase 1 and made prior to Phase 2 effective date
 - Typically are from obsolete manufacturing lines

10



Proposed Amendments to Definitions (Added or Revised)

- Composite wood products
- Curved plywood
- Dunnage
- Molded products
- Packaging materials
- Replacement parts
- Veneer
- Hardwood Plywood
- MDF
- Particleboard
- Platform
- Softwood
- Special back material
- Ultimate purchaser
- Used good
- Woody grass

11



Proposed Amendments to Applicability

- Require platforms used to make HWPW-CC to meet applicable Phase 2 emission standard
 - Improves enforceability of finished goods
 - Most manufacturers currently using compliant platforms
- Require HWPW with bamboo or cork veneer to comply with the ATCM

12



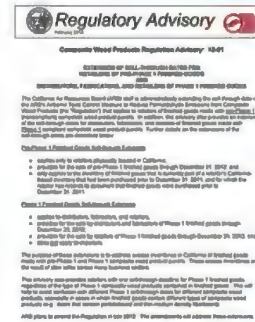
Proposed Amendments to Labeling Requirements

- Require manufacturers to label each panel produced
- Clarify that bar codes cannot be sole form of label
- Require fabrication date to be month/year format
- Require finished goods made with NAF or ULEF resins to be labeled as such



Proposed Amendments to Reference Documents and Sell-Through Dates

- Update sell-through periods to reflect regulatory advisories
- Incorporate updated ANSI and ASTM documents
 - e.g., ANSI/HPVA HP-1-2009 for HWPW;
 - ANSI A208.2-2009 for MDF



Proposed Amendments to NAF/ULEF Requirements

- Allow 3 years renewal period for NAF and ULEF executive orders
- Require additional information in application/renewal request (currently specified in “Attachment C” of NAF/ULEF application)
 - Results of one or two primary/secondary method test reports
 - Copies of resin purchases for 6-months preceding the expiration of the Executive Order
 - NAF/ULEF resin chemical formulation
 - Production data for 6-months preceding the expiration of the Executive Order
 - Signed affirmations of exclusive use of resin

15



Proposed Amendments to Manufacturer Quality Control (QC) Requirements

- To improve reliability of QC testing at the mills, require:
 - Background formaldehyde concentration measurement
 - Sample selection for QC test as specified in the QC manual
 - i.e., if products should be tested immediately out of the press or cold
 - Obtain QC results before shipment of products
 - Require QC limit be based on testing data collected no longer than 30 days after production
 - If QC limit exceedance, manufacturers to examine possible causes and increase QC test frequency

16



Proposed Amendments to TPC Program Management

- Adjustments to improve and streamline program management:
 - Require TPCs “evidence” of product certification agency accreditation to be based on ISO Guide 65 or international equivalent
 - Include conflict of interest criteria to preclude manufacturer/fabricator from being a TPC
 - Extend duration of TPC approval to 3 years if acceptable performance maintained

17



Proposed Amendments to TPC Reporting and Recordkeeping

- To improve strength of TPC program and ARB’s ability to evaluate TPC performance require:
 - TPCs to report steps taken if exceedance occurs
 - Keep records including:
 - Background concentrations of formaldehyde measurements
 - Linear regression equation used to calculate the mill’s QC limit
 - 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 and outcome of mill audits
 - TPCs to notify ARB of changes to certified mills (within 30 days of change)

18



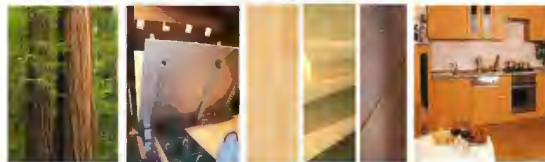
Proposed Amendments to TPC Procedures

- Equivalence - secondary test method
 - Decrease frequency from once a year to every two years
 - Separate demonstrations of equivalence are not required for identical size secondary method test systems
 - Restate ranges for determining equivalence
- Secondary Test Method
 - Nine specimens representing a panel may be tested individually or in groups of 3

19



ADDITIONAL REGULATORY CONCEPTS FOR DISCUSSION



20



Additional Regulatory Concepts

- ARB staff continues to investigate need for additional amendments to the ATCM
 - Collecting additional information/data
 - Waiting for U.S. EPA proposal - goal is to align to extent feasible with federal program
- Areas under consideration
 - De minimus use exemption
 - Hardboard
 - Requirements for two-ply HWPW
 - Laminated products
 - Finished goods labeling
 - Increased interlaboratory comparison studies and proficiency requirements
 - “Best practices” for emission testing of low emitting products

21



Additional Regulatory Concepts De minimus Exemption

- Federal law (SB 1660) requires U.S. EPA to establish exemption for de minimus use
- ARB staff agrees in concept with de minimus use exemption
- Will evaluate U.S. EPA proposal and determine if appropriate to include similar exemption in ATCM
 - Public health benefits of ATCM need to be upheld
 - Enforceability

22



Additional Regulatory Concepts Hardboard

- Hardboard made by 3 processes (wet, semi-dry, dry)
- Some hardboard is made with UF resin, appears similar to MDF; similar uses
- Wet-process hardboard distinguishable from dry-process

Option:

Exempt wet-process hardboard; require dry and semi-dry process hardboard to meet MDF standard



Hardboard



Wet-process hardboard



Thin MDF

23



Additional Regulatory Concepts Two-Ply Hardwood Plywood

- Original intent was to require two-ply HWPW meet the HWPW-VC emission limits
- Literal interpretation of HWPW-VC definition does not include two-ply HWPW because it does not contain a “core”
- Considerable amount of two-ply HWPW products made (i.e., door skins)

Option:

- Clarify that two-ply HWPW is a type of HWPW-VC

24



Additional Regulatory Concepts Laminated Products

- Laminated products consist of wood veneer or synthetic laminate affixed to certified platform
 - Appearance similar to HWPW-CC in finished goods, making enforcement difficult
- ARB staff committed to evaluate emissions from laminated products and determine if current regulatory approach is adequate
- Testing of laminated products also provides information regarding finished goods testing



25



Additional Regulatory Concepts Laminated Products - Testing

- ARB staff tested 13 different types of laminated products from 10 manufacturers; >30 panels
- Testing consisted of duplicate or triplicate specimens from each panel:
 - as received
 - used sander to remove finish/partial veneer and varying depths below glue line or surface of panels



26



Laminated Products Testing - Using a Drum Sander in ARB's Enforcement Facility



27



Additional Regulatory Concepts Laminated Products - Findings

- Products with UF resin emitted formaldehyde in excess of Phase 2 standards
 - 12 of 22 panels consisting of veneer affixed with UF resin to core exceeded Phase 2 HWPW standard
 - Highest was maple veneer affixed with UF resin to Phase 1 MDF or PB core; emitted up to 1.3 ppm
 - Same product with finish applied to veneer emitted 0.30-0.45 ppm
 - AHFA got similar results for split samples
 - Synthetic laminates (e.g., melamine) also reduce emissions (e.g., 0.03 ppm vs. 0.11 ppm raw PB)
- Deconstructed products emitted similar to raw panel
 - 0.01-0.02 inches removed below veneer and glue line
- Findings suggest the need for change in regulatory approach

28



Additional Regulatory Concepts Laminated Products - Options to Consider

- Require low-formaldehyde-emitting resin use (i.e., those used in NAF/ULEF products, such as soy, PVA, MDI) and require recordkeeping of resins used to affix laminates
- Require that emissions of laminated products not exceed:
 - Level tied to the allowable emissions of the platform; or
 - One standard for all laminated products

29



Additional Regulatory Concepts Labeling of Finished Goods

- Labels critical component of enforceability and public transparency
- ATCM requires fabricators to label either finished good(s) or box(es) containing finished good(s)
- Lack of labels creates uncertainty for retailers, consumers and enforcement



Option:

- Require both the finished goods and box containing finished goods to be labeled and
- Require distributors, importers, and retailers to retain labels as received from suppliers

30



Additional Regulatory Concepts Interlaboratory Comparisons

- Valuable tool for assessing TPC and laboratory proficiency
- Carrying out interlaboratory comparison is a comprehensive task
 - planning, coordination, sample preparation, data analysis, report preparation

Options:

- Increase the frequency of participation in interlaboratory comparisons from every two years to annual
- Consider ARB coordination of the interlaboratory comparisons every year or alternate every other year (e.g., even-numbered years) by requiring certifiers to coordinate their own comparisons (odd-numbered years)

31



Additional Regulatory Concepts TPC Proficiency Criteria

- Currently no criteria specified for TPC/contract lab performance in interlaboratory comparisons
 - Integrity of the TPC program is critical to ensuring compliant products manufactured world-wide

Options:

- Consider establishing proficiency criteria for evaluating interlaboratory comparisons
 - Laboratories proficient when their primary and/or secondary method test results are within a specified standard deviation or numerical value
 - Laboratories not deemed proficient required to participate in follow-up study
 - Failure to achieve proficiency in the follow-up study will result in further investigation (i.e., program audit by ARB)
 - Termination of Executive Orders

32



Best Practices for Emission Testing of Low Formaldehyde Levels

- Testing at low formaldehyde levels is challenging
- Need to identify testing procedures to enhance the quality of low formaldehyde emissions testing
- ARB staff recommends work group be established to identify “best practices”
- “Best practices” will be available for laboratories to use as needed - will not be a regulatory requirement

33



Next Steps

- Additional data collection
- Evaluate U.S. EPA's proposal
- Public workshop
 - Additional Workshop #3 - tentative, contingent on complexity of issues and coordination efforts with U.S. EPA
- ARB Board consideration late 2012 or early 2013

34



Contacts



Angela Csondes, Air Pollution Specialist
916-445-4448 or acsondes@arb.ca.gov

Lynn Baker, Staff Air Pollution Specialist
916-324-6997 or lbaker@arb.ca.gov

Brent Takemoto, Ph.D., Staff Air Pollution Specialist
916-327-5615 or btakemot@arb.ca.gov

Peggy Taricco, Manager
916-323-4882 or ptaricco@arb.ca.gov

Composite Wood Products ATCM Website:
<http://www.arb.ca.gov/toxics/compwood/compwood.htm>



OPEN DISCUSSION

