



CARB Compliance Toolbox *for the Furniture Industry*



American Home Furnishings Alliance
PO Box HP-7, High Point, NC 27261
(336) 884-5000 • www.ahfa.us

*"It is only through labor and painful effort, by grim energy and resolute courage,
that we move on to better things." -- Teddy Roosevelt*



CARB Guidance Documents Workgroup

Scott Baranowski
Brown and Caldwell

Barry Branscome
Vaughan Bassett Furniture

David Burkhart
Thomasville Furniture

Carlton Craig
Stanley Furniture

David Davis
Hooker Furniture

Jim Laughlin
Brown and Caldwell

Dave Maddox
Stanley Furniture

Alan McConnell
Kilpatrick-Stockton

Donna Musick
Hickory Chair

Eddie Pitts
Bernhardt Furniture

Mike Zimmerman
Sauder Woodworking Company

CARB TOOL BOX

CARB TOOL BOX

Report Limitations

This document was prepared solely for American Home Furnishings Alliance (AHFA) in accordance with professional standards at the time the services were performed and in accordance with the contract between AHFA and Brown and Caldwell dated September 25, 2006. This document is governed by the specific scope of work authorized by AHFA; it is not intended to be relied upon by any other party. We have relied on information or instructions provided by AHFA and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information. This document does not provide, and should not be construed to provide, legal advice by AHFA or Brown and Caldwell. For legal advice regarding your company's compliance status, please consult your legal counsel.

TABLE OF CONTENTS

Report Limitations	i
1. DEFINITIONS – (SECTION 93120.1)	1-1
2. ACRONYMS – (SECTION 93120.1)	2-1
3. SUMMARY OF RULE	3-1
Executive Summary	3-1
General Summary	3-1
Applicable Requirements – (Section 93120 (c))	3-2
Exceptions to the Rule – (Section 93120.2 (b) and 93120.7 (b)).....	3-3
4. RESPONSIBILITIES FOR EACH ENTITY	4-1
Manufacturers Flowchart – (Section 93120.3).....	4-2
Distributors Flowchart – (Section 93120.5)	4-3
Importers Flowchart -1 Component Parts – (Section 93120.6)	4-4
Importers Flowchart -2 Finished Goods – (Section 93120.6)	4-5
Fabricators Flowchart – (Section 93120.7).....	4-6
Retailers Flowchart – (Section 93120.8)	4-7
5. CHAIN OF CUSTODY REQUIREMENTS.....	5-1
Reasonable Prudent Precautions Section – (Section 93120.3 and Appendix 2).....	5-1
Verification Testing	5-1
Chain of Custody Checklist for Retailers – (Appendix 2 and Appendix 3).....	5-1
6. FREQUENTLY ASKED QUESTIONS.....	6-1
7. EMISSIONS STANDARDS	7-1
Phase 1 and Phase 2 Formaldehyde Emission Standards and Sell through Dates – (Section 93120.2, Table 1 and Appendix 1).....	7-2
8. LABELING REQUIREMENTS.....	8-1
Manufacturers – (Section 93120.3(e)).....	8-1
Distributors – (Section 93120.5(c)).....	8-1
Importers – (Section 93120.6(c)).....	8-2
Fabricators – (Section 93120.7 (c))	8-2
Retailers – (Section 93120.8 (c)).....	8-3
Bar Coding	8-3
9. RECORDKEEPING.....	9-1
Manufacturers – (Section 93120.3 (g)).....	9-1
Distributors – (Section 93120.5 (b)).....	9-3
Importers – (Section 93120.6 (b)).....	9-3
Fabricators – (Section 93120.7 (d)).....	9-3

Retailers – (Section 93120.8 (b))	9-4
Test Data (Quarterly) – (Appendix 2)	9-4
QA/QC Data	9-4
Appendix 2	9-4
10. ENFORCEMENT	10-1
Manufacturers – (Section 93120.3)	10-2
Distributors – (Section 93120.5)	10-3
Importers – (Section 93120.6)	10-4
Fabricators (Domestic) – (Section 93120.7)	10-5
Fabricators (Off-Shore) – (Section 93120.7)	10-6
Retailers – (Section 93120.8)	10-7
11. RESOURCES	11-1
Internet Links	11-1
12. NO-ADDED FORMALDEHYDE BASED RESINS RESINS- (SECTION 93120.3(C))	12-1
13. ULTRA-LOW EMITTING FORMALDEHYDE RESINS- (SECTION 93120.3(D))	13-1
Less Frequent Testing	13-1
Third Party Exemption	13-2
14. QUALITY ASSURANCE REQUIREMENTS	14-1
Manufacturers Requirements – (Appendix 2)	14-1
Testing Methods	14-2
Correlation Testing	14-2
Quarterly Chamber Test	14-3
Failure of Tests	14-3
QC Tests	14-4
HWPW	14-4
PB and MDF Composite Wood Products	14-4
Non-complying Lots	14-5
Shipping QCL	14-5
15. THIRD PARTY CERTIFIERS	15-1
Summary Guidance – (Section 93120.4 and Appendix 3)	15-1
Initial Plant Certification	15-2
Primary or Secondary Test Methods	15-2
Inspections	15-3
CARB Approved Certifiers	15-4
APPENDIX A: VENDOR ATCM NOTIFICATION LETTER (EXAMPLE)	A
APPENDIX B: COPY OF RULE	B
APPENDIX C: ASTM TESTING	C
Primary Test Method for Manufacturers (ASTM E 1333-96) – (Section 93120.9)	C-1
Secondary Test Method (ASTM D 6007-02) – (Section 93120.9)	C-1

Equivalence Test Methods C-1
Field and Laboratory Emission Cell (FLEC) C-2
APPENDIX D: LABELING D
REFERENCES 1

CARB TOOL BOX

1. DEFINITIONS – (SECTION 93120.1)

Batch – the amount of composite wood product manufactured during a shift (8-12 hours), plus or minus 1 hour of production.

Component Part – a fabricated part that contains one or more composite wood products and is used in the assembly of finished goods.

Composite Core – a platform for making hardwood plywood or laminated products that consist of particleboard and/or medium density fiberboard, or combination core.

Composite Wood Products – hardwood plywood (HWPW), particleboard (PB), and medium density fiberboard (MDF). Composite wood products does not include hardboard, structural plywood as specified in the Voluntary Product Standard – Structural Plywood (PS 1-07) structural panels as specified in the Voluntary Product Standard – Performance Standard for Wood-Based Structural-Use Panels (PS 2-04), structural composite lumber as specified in “Standard Specification for Evaluation of Structural composite Lumber Products” (ASTM D 5456-06), orientated strand board, glued laminated timber as specified in “Structural Glued Laminated Timber” (ANSI A 190.1-2002), prefabricated wood I-joists as specified in “Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists” (ASTM D 5055-05), finger-jointed lumber, or composite wood products used inside new vehicles as defined in section 430 of the California Vehicle Code (excluding recreational vehicles), rail cars, boats, aerospace craft, or aircraft.

Distributor – any person to whom a composite wood product or finished good is sold or supplied for purposes of resale or distribution in commerce, except that manufacturers and retailers are not distributors.

Door – a finished good used to close off a room, closet, or entrance. A door moves on hinges, slides or rotates, and consists of a movable panel or combination of panels, and may include component parts.

Fabricator – any person that uses composite wood products to make finished goods. Fabricator includes producers of laminated products.

Facility – any site where composite wood products or finished goods are manufactured tested, used, supplied or offered for sale, or sold in California. Facility includes but is not limited to manufacturing plants, testing laboratories, distribution centers, fabricator shops, warehouses, and retail stores.

Finished Goods – any good or product, other than a panel, containing hardwood plywood, particleboard, or medium density fiberboard. Component parts are not “finished goods,” although they are used in the assembly of finished goods. Finished goods do not include used goods such as antiques or second-hand furniture. For the purposes of this subsection, a “used good” means a “finished good” that has previously been sold or supplied to the ultimate purchaser. “Ultimate purchaser” means the first person who in good faith purchases or acquires a “finished good” for purposes other than resale.

Formaldehyde – a colorless gas at room temperature that at elevated concentrations has a strong, pungent odor and can be irritating to the eyes, nose, and lungs (i.e., CAS No. 50-00-0).

Hardwood – wood of a deciduous broad-leafed tree. Examples include aspen, birch, and oak.

Hardwood Plywood (HWPW) - a panel composed of an assembly of 1) hardwood layers or plies of veneer or 2) veneers in combination with a platform consisting of lumber core, composite core, a special core material, or special back material, joined with an adhesive. The face veneer may be composed of a hardwood or decorative softwood species. (ANSI/HPVA HP-1-2004). Hardwood plywood includes wall paneling, industrial panels, and hardwood plywood panels used in making flooring. Hardwood plywood does not include laminated products, military specified plywood, or curved plywood.

Hardwood Plywood – Composite Core (HWPW-CC) - Hardwood plywood with composite core.

Hardwood Plywood – Veneer Core (HWPW-VC) - Hardwood plywood with a core made of a sheet or sheets of veneer

Importer - the person primarily liable for the payment of any duties on the merchandise, or an authorized agent acting on his behalf. The importer may be:

- a. The consignee, or
- b. The importer of record, or
- c. The actual owner of the merchandise, if an actual owner's declaration and superseding bond has been filed, and
- d. The transferee of the merchandise, if the right to withdraw merchandise in a bonded warehouse has been transferred.

Laminate – a veneer or other material affixed as a decorative surface to a platform.

Laminated Product – a finished good or component part of a finished good made by a fabricator in which a laminate or laminates are affixed to a platform. If the platform consists of a composite wood product, the platform must comply with the applicable emission standards.

Lot – the volume of a product type produced either: (a) from the beginning of a production run until the first quality control test; or (b) between one quality control test and the next one; or (c) from the last quality control test to the end of a production run.

Manufacturer - any person who manufactures or produces a composite wood product.

Medium Density Fiberboard (MDF) – a panel, or molding composed of cellulosic fibers (usually wood) made by dry forming and pressing of a resinated fiber mat.

No-added formaldehyde based resins – resins formulated with no-added formaldehyde as part of the resin cross linking structure for making hardwood plywood, particleboard, or medium density fiberboard. No-added formaldehyde based resins include, but are not limited to, resins made from soy, polyvinyl acetate, or methylene diisocyanate.

Non-complying lot - any lot that has a test value in excess of the applicable standard.

Panel – any particleboard, medium density fiberboard, or hardwood plywood board produced for sale, supply, or distribution by a composite wood product manufacturer.

Particleboard – A panel composed of cellulosic material (usually wood) in the form of discrete particles (as distinguished from fibers, flake, or strands) that are pressed together with resin. (ANSI A208.1-1999)

Platform – veneer core, composite core, combination core, lumber core, or special core material used in the manufacture of hardwood plywood or lamination products.

Plywood – A panel product consisting of layers of wood veneers in combination with a platform, pressed together with resin. Plywood includes panel products made by either hot or cold pressing (with resin) veneers to a platform.

Product type – a type of composite wood product that differs from another based on composition, thickness, number of plies (if hardwood plywood), and resin to distinguish one composite wood product from another made by the same manufacturer.

Retailer – means any person or entity that sells, offers for sale, or supplies directly to consumers composite wood products or finished goods that contain composite wood products.

Thin MDF – medium density fiberboard that has a maximum thickness of 8 millimeters.

Third Party Certifier – an organization or entity approved by the Executive Officer that (a) verifies the accuracy of the emission test procedures and facilities used by manufacturers to conduct formaldehyde emission tests, (b) monitors manufacturer quality assurance programs, and (c) provides independent audits and inspections.

Ultra-low emitting formaldehyde (ULEF) resins – resins formulated such that average formaldehyde emissions are consistently below the Phase 2 emission standards.

Veneer – thin sheets of wood peeled or sliced from logs for use in the manufacture of wood products such as plywood, laminated veneer lumber, laminated products, or other products.

Veneer Core – a core material for making plywood that consists of veneer.

Window – a finished good consisting of a frame in which are set panes of glass, for the admission of air or light, or both, into an opening in the wall of a building. The frame includes jambs, stiles, sashes, and rails, and excludes sills, window headers and window seats.

CARB TOOL BOX

2. ACRONYMS – (SECTION 93120.1)

ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ATCM	Airborne Toxic Control Measure
CARB	California Air Resources Board
CC	Composite Core
CPA	Composite Panel Association
FLEC	Field and Laboratory Emission Cell
HWPW	Hardwood Plywood
HWPC-CC	Hardwood Plywood Composite Core
HWPC-VC	Hardwood Plywood Veneer Core
ILAC Arrangement	International Laboratory Accreditation Cooperation Mutual Recognition
MDF	Medium Density Fiberboard
NOV	Notice of Violation
PB	Particleboard
PPB	Parts per billion
PPM	Parts per million
QC	Quality Control
QCL	Quality Control Limit
QCM	Quality Control Manual
TPC	Third Party Certifier
tMDF	Thin medium density fiberboard
ULEF	Ultra-low emitting formaldehyde
VC	Veneer Core



3. SUMMARY OF RULE

Executive Summary

The purpose of this toolbox is to assist AHFA members in identifying the compliance requirements for the formaldehyde emission standards regarding composite wood products in the state of California. This rule is also known as the Airborne Toxic Control Measure (ATCM). The California Air Resources Board (CARB) has established formaldehyde emissions standards for the following composite wood products (1) hardwood plywood with a veneer core (HWPW-VC), (2) hardwood plywood with a composite core (HWPW-CC), (3) particle board (PB), (4) medium density fiberboard (MDF) and (5) thin medium density fiberboard (tMDF). The emission standards have two phases. Phase 1 requirements start January 1, 2009 depending on the product. Phase 2 requirements start on January 1, 2010 depending on the product. There are also sell through time periods which will allow each entity an allotted amount of time to use the current inventory. Both phases are applicable to those composite wood products that are sold, offered for sale, supplied, used or manufactured for sale in California.

This toolbox is structured so that each entity in the commercial chain (manufacturer, importer, distributor, fabricator, or retailer) can easily determine compliance requirements. The appendices in the toolbox include additional guidance including sample letters and the testing methods for the composite wood products.

General Summary

The ATCM to reduce formaldehyde emissions from composite wood products was promulgated based upon the toxic human health effects found from exposures to formaldehyde emissions. In 1992, CARB identified formaldehyde as a toxic air contaminant. The California Office of Environmental Health Hazard Assessment determined there was no safe exposure threshold level for formaldehyde. Formaldehyde emissions were evaluated in the state of California and formaldehyde emissions due to resins from composite wood products were found to be significant. Each year about 2.5 billion square feet of composite wood products are sold in the state of California. This results in about 900 tons of formaldehyde emissions from composite wood products per year. Due to this significant amount of emissions from wood products sold in California, composite wood products became a focus for CARB.

Formaldehyde emissions from composite wood products are not regulated except for a voluntary standard established by the U.S. Department of Housing and Urban Development (HUD). CARB did not identify a safe exposure level for formaldehyde so CARB decided to limit formaldehyde emissions from three wood products (1) hardwood plywood (HWPW), (2) particleboard (PB), and (3) medium density fiberboard (MDF). Based on the research conducted, these three products are made with urea formaldehyde resins and have the highest formaldehyde emission rates.

Formaldehyde is usually contained in the resin that binds wood materials together and emissions from wood products are released from chemical degradation over time. Hardwood plywood is made by gluing hardwood plies together. Particleboard is made by gluing wood fragments together. Medium density fiberboard is made of wood fibers glued together. These composite wood products are used to make various items including cabinets and furniture. There are many options for manufacturers to reduce formaldehyde emissions including using alternative resin systems. Included in the standards are less stringent requirements for manufacturers using ultra low emitting based resins and no-formaldehyde based resins.

CARB divided the standards into two phases to allow manufacturers, importers, distributors, fabricators, and retailer's ample time to comply. Phase 1 standards become effective on different dates from January 1, 2009 through July 1, 2009 depending on the type of composite wood product. Phase 2 standards become effective on different dates from January 1, 2010 through July 1, 2012 depending on the type of composite wood product. The sell through period will allow each entity an allotted time to turn the current inventory of finished goods. Both phases apply to those composite wood products that are sold, offered for sale, supplied, used or manufactured for sale in California. CARB believes this formaldehyde standard will reduce the public exposures to formaldehyde for humans. The estimated annual reduction of formaldehyde emissions is about 180 tons per year for the Phase 1 standards and 500 tons per year from Phase 2. References appear in parentheses after each section. The sections referenced in this toolbox are primarily from CARB Final Regulation Order, Title 17, California Code of Regulations sections 93120-93120.12 as indicated in the reference section.

Applicable Requirements – (Section 93120 (c))

The ATCM is intended to control the amount of airborne emissions by reducing the amount of formaldehyde that is used to manufacture composite wood products. The wood products included in this rule include (1) hardwood plywood with a veneer core (HWPW-VC), (2) hardwood plywood with a composite core (HWPW-CC), (3) particle board (PB), (4) medium density fiberboard (MDF) and (5) thin medium density fiberboard (tMDF) that are manufactured, sold, offered for sale, or supplied for use in the state of California.

- Manufacturer means “any person who manufactures or produces a composite wood product”.
- Distributor means “any person to whom a composite wood product or finished good is sold or supplied for purposes of resale or distribution in commerce, except that manufacturers and retailers are not distributors”.
- Importer means “the person primarily liable for the payment of any duties on the merchandise, or an authorized agent acting on his behalf. The importer may be:
 - a. The consignee, or
 - b. The importer of record, or
 - c. The actual owner of the merchandise, if an actual owner's declaration and superseding bond has been filed, or
 - d. The transferee of the merchandise, if the right to withdraw merchandise in a bonded warehouse has been transferred.”
- Fabricator means “any person that uses composite wood products to make finished goods. Fabricator includes producers of laminated products.”

Important issues for fabricators include:

- Those that produce laminated products do not need to comply with the manufacturer requirements for third party certification.
- If the platform used by a fabricator to produce a laminated product consists of a composite wood product, the platform must comply with the formaldehyde emission standards.
- Fabricators manufacturing composite wood products only for use by the fabricator in making finished goods must comply with all the requirements for manufacturers except for labeling.
- Retailer means “any person who sells, offers for sale, or supplies directly to consumers composite wood products or finished goods that contain composite wood products.”

Exceptions to the Rule – (Section 93120.2 (b) and 93120.7 (b))

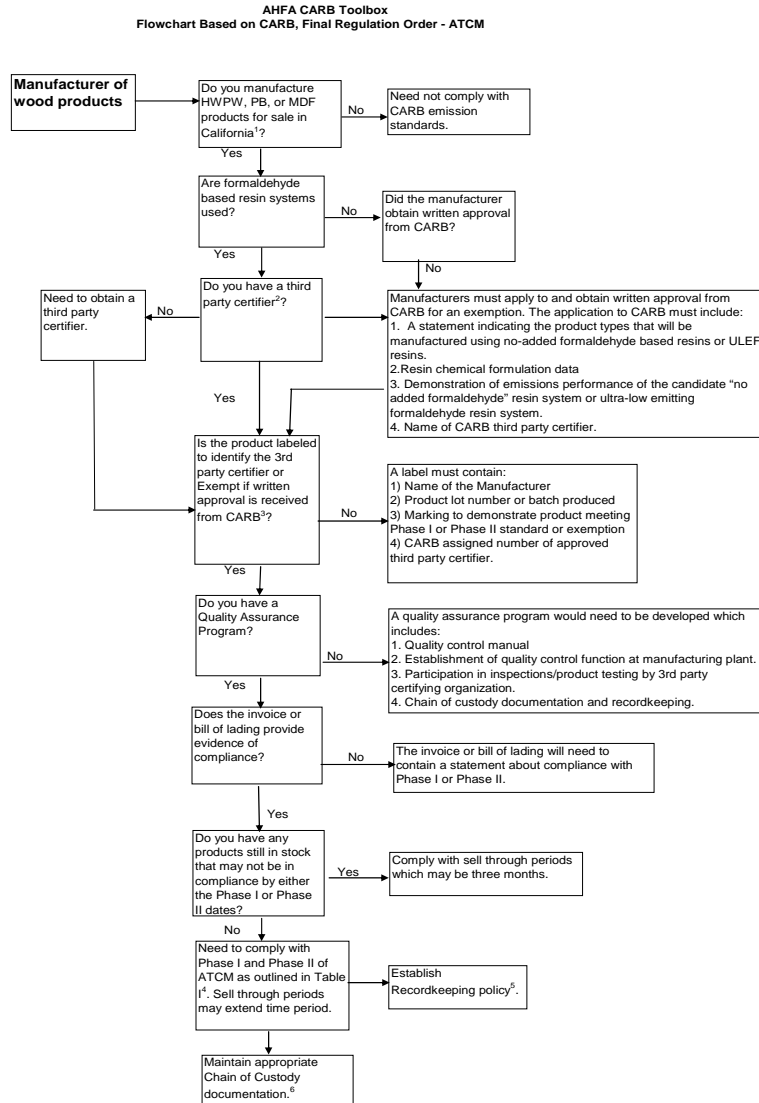
The emission standards do not apply in the following cases:

- a. Products that are manufactured, sold, offered for sale, or supplied for shipment and use outside the state of California.
- b. Hardwood plywood and particleboard materials manufactured, sold, supplied for installation, or installed in manufactured homes subject to the United States Department of Housing and Urban Development regulations as specified in 24 Code of Federal Regulations (CFR) § 3280.308.
- c. Windows that contain composite wood products are exempt if they contain less than five percent by volume of HWPW, PB, or MDF combined in relation to total volume of finished window product.
- d. Exterior doors and garage doors that contain composite wood products are exempt if:
 - a. The doors are made from composite wood products manufactured with no-added formaldehyde based resins or ULEF resins
 - b. The doors contain less than three percent by volume of HWPW, PB, or MDF combined in relation to the total volume of the finished exterior door or garage door.
- e. School districts and local government agencies do not need to comply with recordkeeping or product labeling requirements unless the finished goods are being sold, offered for sale, or manufactured for sale in California.
- f. Hardwood plywood that consists of curved plywood, laminated products, and military specified plywood.

4. RESPONSIBILITIES FOR EACH ENTITY

This section of the toolbox contains flowcharts for assistance in determining what applies to each entity. These flowcharts contain the basic information necessary to comply with the requirements and each section of the toolbox should be reviewed. The requirements for each entity in the commercial chain (manufacturer, distributor, importer, fabricator, and retailer) involve a variety of steps to ensure compliance with the ATCM. Acronyms and definitions that are found in the flowcharts are identified in Sections 1 and 2.

Manufacturers Flowchart – (Section 93120.3)



¹ Exceptions: See Section 3 of CARB Toolbox

² Those using no-added and ultra-low emitting formaldehyde resin systems may receive an exemption for third party certification

³ Assumes that exempt manufacturers of third party certifiers will still be required to contain a label

⁴ Table 1. Phase I and Phase II Standards for HWPW, PB and MDF in (parts per million (ppm))

Effective Date	HWPW-VC	HWPW-CC	PB	MDF	tMDF
01/01/09	P1: 0.08	---	P1: 0.18	P1: 0.21	P1: 0.21
07/01/09	---	P1: 0.08	---	---	---
01/01/10	P2: 0.05	---	---	---	---
01/01/11	---	---	P2: 0.09	P2: 0.11	---
01/01/12	---	---	---	---	P2: 0.13
07/01/12	---	P2: 0.05	---	---	---

Source: CARB, Final Regulation Order of Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions
7-Mar-08

⁵ Records required to be kept for a minimum of two years.

Records that need to be kept include 1) Tracking information for each product produced by lot number or batch produced

2) Product information (description, date of manufacture, lot/batch number)

3) Purchaser information including: name, contact person, address, phone number, PO # or invoice #, and amount purchased

4) Product transporter information

5) Identification of CARB approved third-party certifier

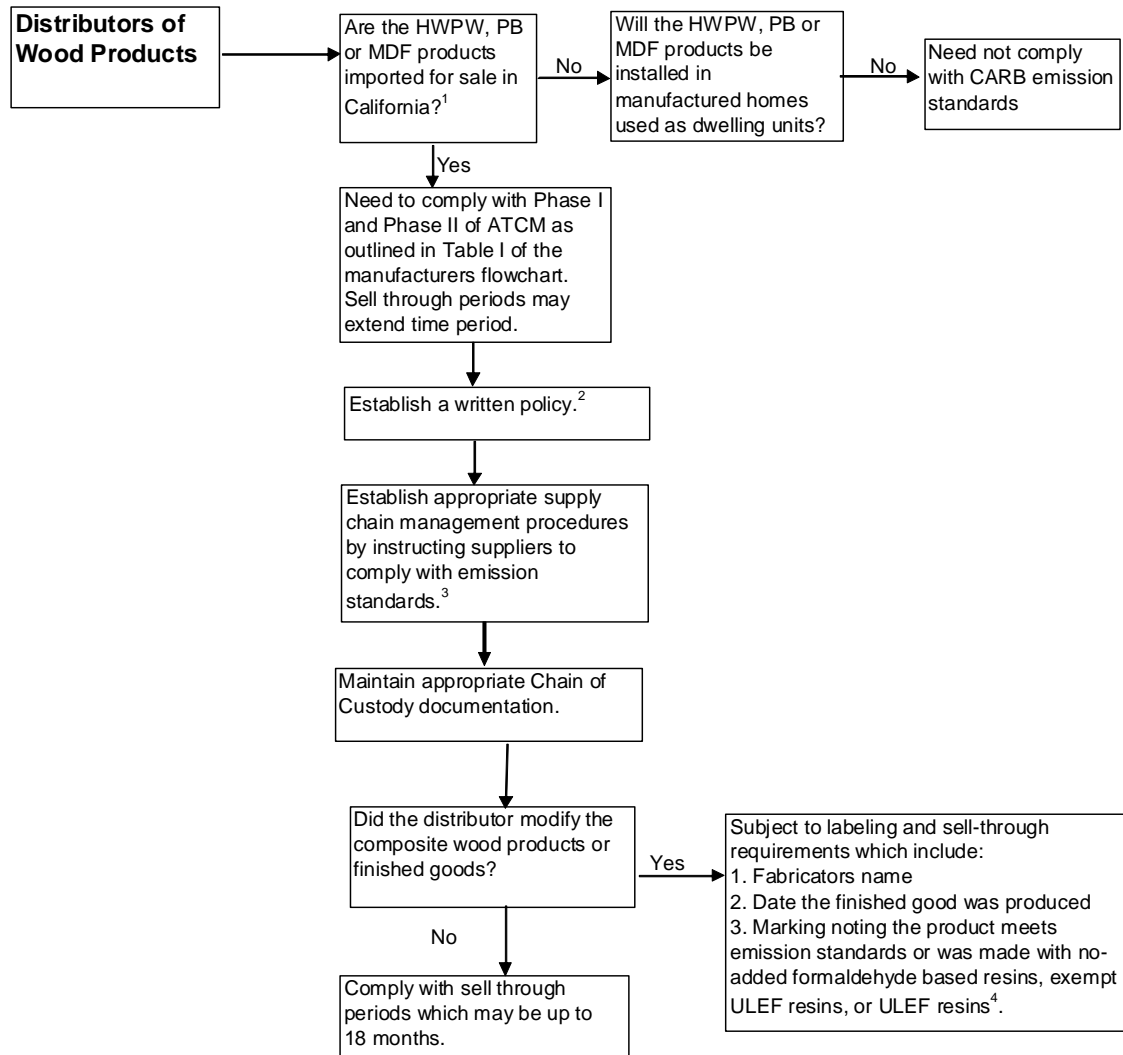
6) Those using no-added based resins, exempt ULEF resins, or ULEF resins must keep additional records.

⁶ Facility Inspections may be conducted by CARB or local air district personnel



Distributors Flowchart – (Section 93120.5)

AHFA CARB Toolbox
Flowchart Based on CARB, Final Regulation Order - ATCM



¹ Exceptions: See Section 3 of CARB Toolbox

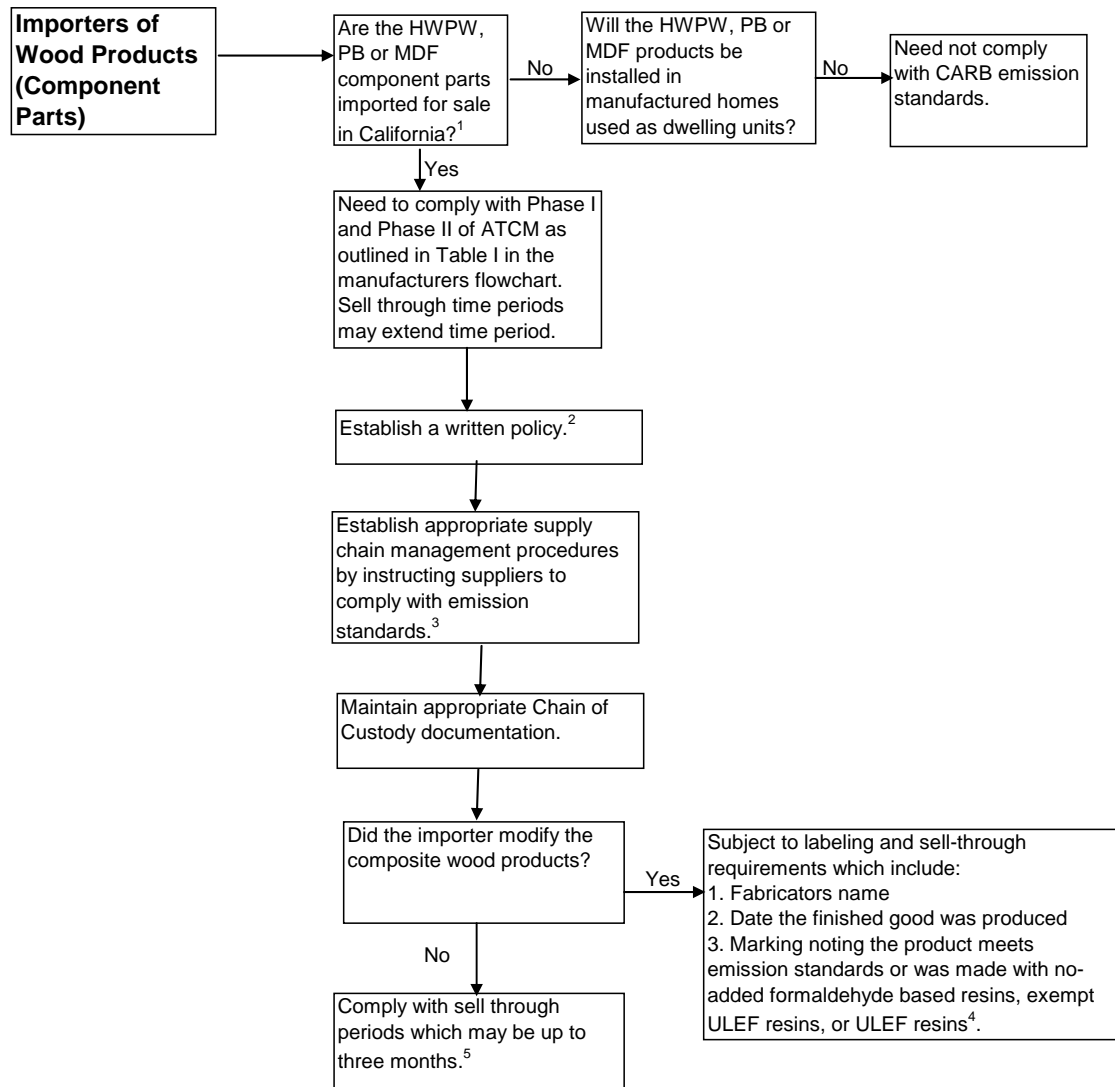
²Records required to be kept for a minimum of two years
 Records that need to be kept include 1) date of purchase 2) name of suppliers and 3) precautions taken to ensure products comply with emission standards.

³ Facility Inspections may be conducted by CARB or local air district personnel

⁴Labeling can be done by either 1) stamp 2) tag 3) sticker or 4) bar code

Importers Flowchart -1 Component Parts – (Section 93120.6)

AHFA CARB Toolbox
Flowchart Based on CARB, Final Regulation Order - ATCM



¹ Exceptions: See Section 3 of CARB Toolbox

² Records required to be kept for a minimum of two years
 Records that need to be kept include 1) date of purchase 2) name of suppliers and 3) precautions taken to ensure products comply with emission standards

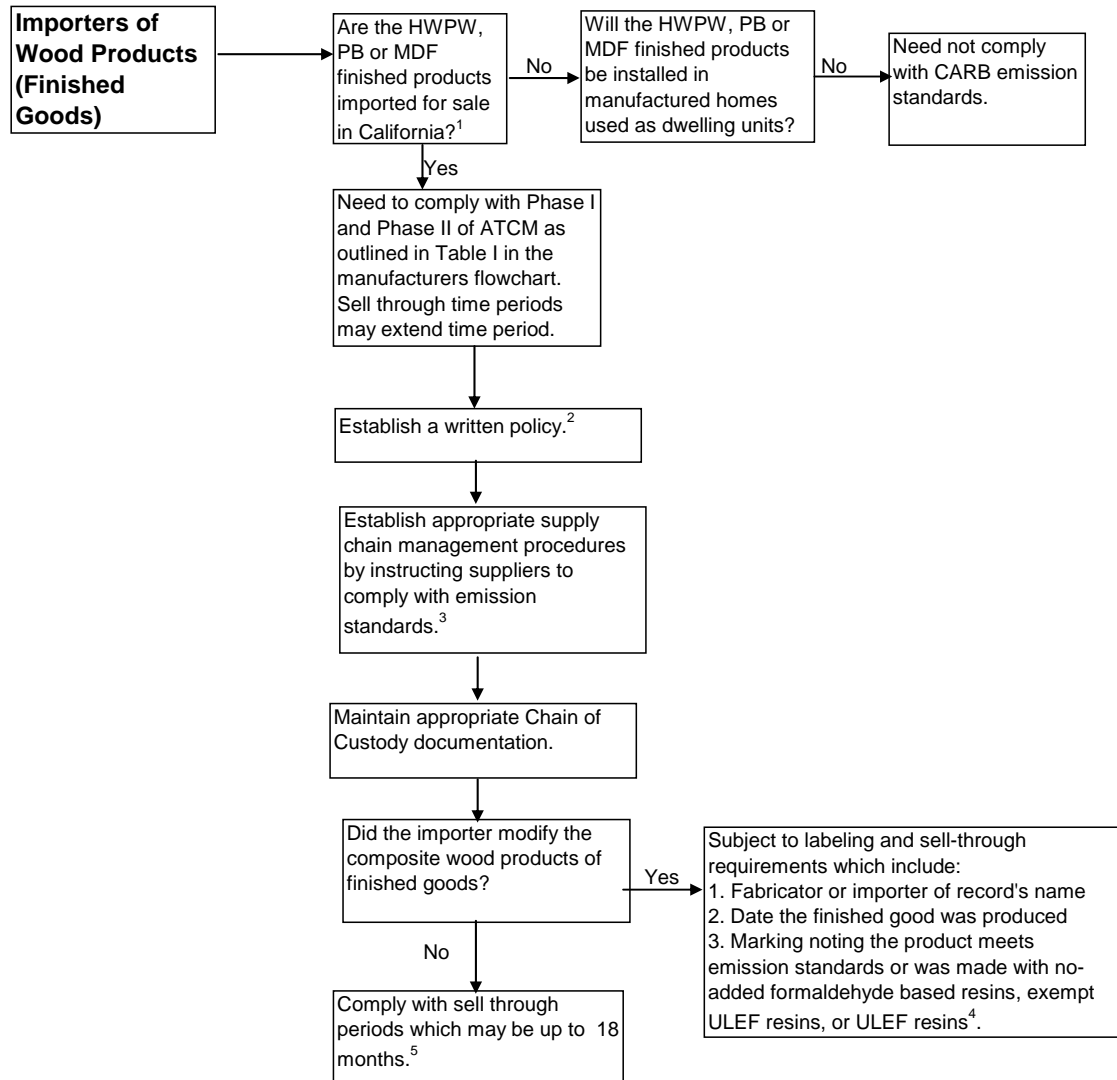
³ Facility Inspections may be conducted by CARB or local air district personnel

⁴ Labeling can be done by either 1) stamp 2) tag 3) sticker or 4) bar code

⁵ Labeling of finished goods and language for Bill of Lading or Invoice will need to be verified

Importers Flowchart -2 Finished Goods – (Section 93120.6)

AHFA CARB Toolbox
Flowchart Based on CARB, Final Regulation Order - ATCM



¹ Exceptions: See Section 3 of CARB Toolbox

² Records required to be kept for a minimum of two years
 Records that need to be kept include 1) date of purchase 2) name of suppliers and 3) precautions taken to ensure products comply with emission standards

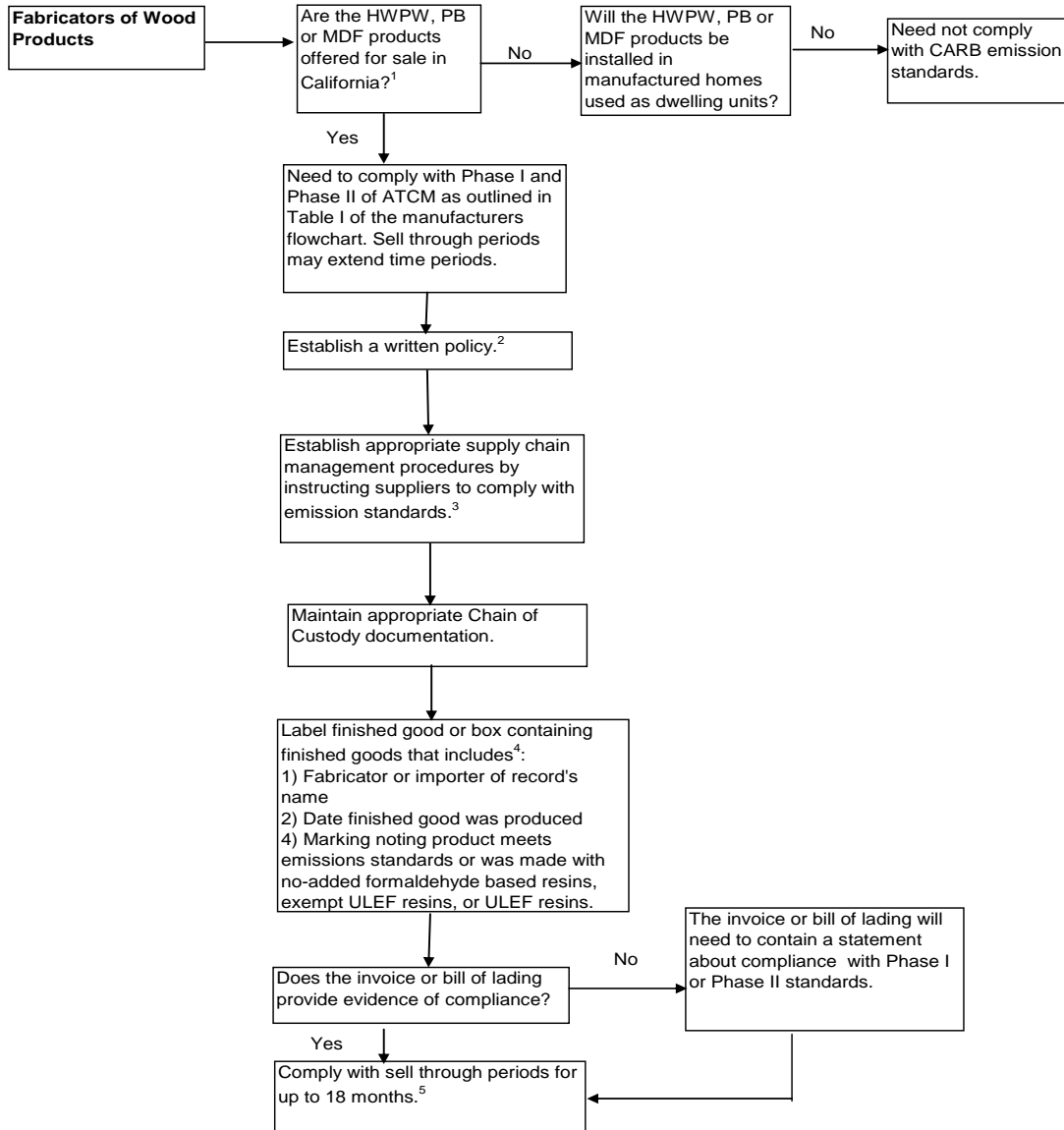
³ Facility Inspections may be conducted by CARB or local air district personnel

⁴ Labeling can be done by either 1) stamp 2) tag 3) sticker or 4) bar code

⁵ Labeling of finished goods and language for Bill of Lading or Invoice will need to be verified

Fabricators Flowchart – (Section 93120.7)

AHFA CARB Toolbox
Flowchart Based on CARB, Final Regulation Order - ATCM



¹ Exceptions: See Section 3 of CARB Toolbox

²Records required to be kept for a minimum of two years
 Records that need to be kept include 1) date of purchase 2) name of suppliers and 3) precautions to ensure products comply with emission standards

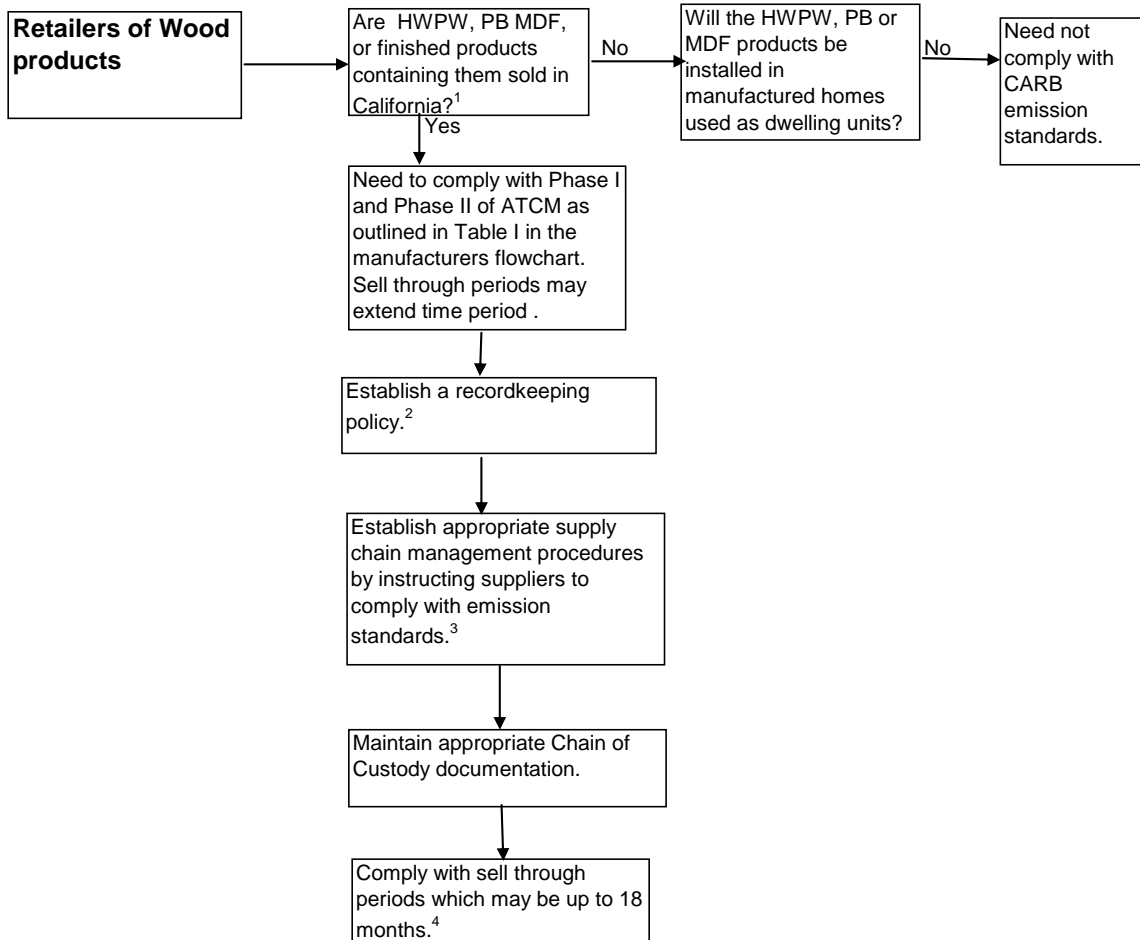
³ Facility Inspections may be conducted by CARB or local air district personnel

⁴Labeling can be done by either 1) stamp 2) tag 3) sticker or 4) bar code

⁵Labeling of finished goods and language for Bill of Lading or Invoice will need to be verified

Retailers Flowchart – (Section 93120.8)

AHFA CARB Toolbox
Flowchart Based on CARB, Final Regulation Order - ATCM



¹ Exceptions: See Section 3 of CARB Toolbox

² Records required to be kept for a minimum of two years.
 Records that need to be kept include 1) date of purchase 2) name of suppliers and 3) precautions to ensure products comply with emission standards

³ Facility Inspections may be conducted by CARB or local air district personnel.

⁴ Labeling of finished goods and language for Bill of Lading or Invoice will need to be verified

5. CHAIN OF CUSTODY REQUIREMENTS

Reasonable Prudent Precautions Section – (Section 93120.3 and Appendix 2)

Verification Testing

Verification testing will usually be conducted at the retail level by two different methods:

- a. Field and Laboratory Emission Cell (FLEC) Test
- b. Deconstructive Test

The FLEC test will be a screening tool to determine formaldehyde emissions that may be present in the composite wood product or finished piece. The result of the FLEC test will trigger a more thorough review of the documentation for the composite wood product. If a composite wood product does not pass the FLEC test and indicates emission standards above the allowable limit at the time of the test, CARB personnel will take additional steps including reviewing chain of custody documentation.

Deconstructive testing will be a tool to determine compliance verification. CARB personnel or other personnel acting on behalf of CARB will purchase a piece of furniture containing composite wood products. The wood product will be deconstructed. Panels will be identified. Testing will be conducted on panels with a secondary test method (Small chamber testing). If the panel fails, a review of the documentation including the chain of custody will be initiated. Enforcement will be conducted to determine which level in the commercial chain was not compliant with the formaldehyde emission standards.

Chain of Custody Checklist for Retailers – (Appendix 2 and Appendix 3)

The chain of custody is vital to ensure that composite wood products have been properly tested and certified to comply with the emission standards. Each retailer will need to retain a copy of the chain of custody. Accurate and readily available documentation will assist when CARB or third party certifiers visit the retailer to verify compliance with the ATCM for composite wood products. The following represents a checklist for retailers:

- a. Ensure each composite wood product piece is properly labeled with either P1 (Phase 1) or P2 (Phase 2) by either a:
 - i. Stamp
 - ii. Tag
 - iii. Sticker
 - iv. Barcode

- b. Retain the Bill of Lading or Invoice.
- c. Create a file for each vendor/supplier that supplies goods. Each file should contain enough information that can be used to contact the vendor that supplied the composite wood products.
- d. Product information including product number(s) for composite wood products.
- e. Records showing date of purchase.
- f. Records showing the steps taken by the retailer to ensure the composite wood products comply with emission standards.

Airborne Toxic Control Measure (ATCM) Example Chain of Custody Checklist

Product Lot # or Batch _____ Type of Product _____ Thickness _____

Section A. Laboratory

Mark Box if Verified **Initials/Date**

- _____ Is Laboratory registered by a third party and have documentation?
- _____ Certification Letter from Third Party and documentation
- _____ Lab Data and Date
- _____ QA/QC Data and Date

Section B. Manufacturer

- _____ CARB Number for third party certifier
- _____ CARB approval letter for those exempt²
- _____ Certification Letter from Third Party and documentation
- _____ Statement of Compliance³

Section C. Importer

Mark box if Verified **Initials**

- _____ Statement of Compliance
- _____ Obtained written documentation that composite wood products comply with emission standards

Section D. Distributor

- _____ Statement of Compliance
- _____ Obtained written documentation that composite wood products comply with emission standards

Section E. Fabricator

- _____ Statement of Compliance
- _____ Obtained written documentation that composite wood products comply with emission standards

Section F. Retailer

- _____ Statement of Compliance
- _____ Obtained written documentation that composite wood products comply with emission standards

¹It is intended that each entity in the supply chain will retain documentation as required by the ATCM requirements

² Letter of exemption is issued by CARB if any of the following are used:

- (1) No-added formaldehyde based resins
- (2) Ultra-low emitting formaldehyde resins

³Statement of Compliance is a statement indicating that the composite wood products comply with the appropriate Phase 1 or Phase 2 emission standards





6. FREQUENTLY ASKED QUESTIONS

These questions and answers were developed prior to the ATCM requirements becoming effective and are subject to change.

- a. **On the table for the Phase I and Phase II schedule for emissions standards what does the --- indicated in the block?**

The --- indicates that there does not exist a more stringent standard for this time period and the previous time period emission standard is still in effect.

- b. **What is the difference between HWPC-CC and HWPW-VC?**

HWPC-CC refers to hardwood plywood with a composite core (MDF or particle board) as the platform. HWPW-VC refers to hardwood plywood with a core made veneer and without composite core as a platform. This is used mostly in the construction of curved parts such as drawer fronts.

- c. **If a retailer shows proof that they followed procedures and the composite wood product or finished good does not pass a test, what is the next step for the retailer?**

If after the retailer has shown proper documentation that they have complied with the requirements, a next step will be to look further down the chain of custody (i.e. fabricator, importer, etc.) to determine what entity in the supply chain is responsible.

- d. **What entity in the supply chain is responsible for the testing of wood products? Are fabricators responsible for testing the wood products to ensure compliance?**

Fabricators must use board that is compliant with the formaldehyde requirements when enacted. The fabricator must also comply with the other requirements include labeling, maintaining proper chain of custody, etc but not for testing. The manufacturer of the board is responsible for testing the wood products.

- e. **For manufacturers producing finished goods that contain plywood board/particle board, does complying with California new standard mean all product of every collection/group be tested per ASTM E1333-96 or ASTM D 6007-02?**

Manufacturers must use compliant wood products in the finished goods or case goods to be sold in California and the board must be tested using the above ASTM standards. The manufacturer will need to ensure there is a proper chain of custody that the wood products meet the requirements, proper QA/QC exists for the manufacturer, and the lab for the testing is certified and approved by CARB.

- f. **If the furniture contains two different wood products, which standard should apply?**

All the standards will need to apply. If a piece of furniture has both HWPW-VC and MDF, each wood product will need to be compliant based upon the emission limit and compliance date for each wood product.

- g. **What is the anticipated penalty if a retailer is found to be selling wood products that are not compliant?**

If non compliance is found:

- a. Retailer will be required to fix the problem
 - b. Possible fines for the non-compliance
 - c. Possibly prohibited from selling wood products
8. **How does somebody know if the third party testing facility is approved?**
A list of third party certifiers will be provided on CARB website.

CARB website contains a listing of Frequently Asked Questions. The list is located at:
<http://www.arb.ca.gov/toxics/compwood/implementation/faq.htm>

7. EMISSIONS STANDARDS

The Phase 1 and Phase 2 emission standard dates vary depending on the composite wood type. The sell-through dates for composite wood products already in stock also differ between each entity. Distributors, importers and retailers have two separate sell through dates for composite wood products and finished goods.

Effective dates are the dates the emission standards take effect.

Sell-through dates are the dates the entity (manufacturer, importer, distributor, fabricator, and retailer) has to sell, supply or offer for sale non-compliant composite wood products.

Manufacturers have up to 3 months after each effective date to sell the remaining non-compliant composite wood products.

Distributors have up to 5 months after each effective date to sell the remaining non-compliant composite wood products and 18 months for finished goods.

Importers have up to 3 months after each effective date to sell the remaining non-compliant composite wood products and 18 months for finished goods.

Fabricators have up to 18 months after each effective date to sell the remaining non-compliant composite wood products.

Retailers have up to 12 months after each effective date to sell the remaining non-compliant composite wood products and 18 months for finished goods.

Compliance dates are the dates the composite wood product must comply with the Phase 1 or Phase 2 standards regardless of the date the products were manufactured.

Phase 1 and Phase 2 Formaldehyde Emission Standards and Sell through Dates – (Section 93120.2, Table 1 and Appendix 1)

Table 7-1. Phase 1 Dates for Composite Wood Products							
Phase 1			Sell through dates				
Product	Emission Standard (ppm)	Effective Date	Manufacturer ¹	Distributor ¹	Importer ¹	Fabricator ¹	Retailer ¹
Hardwood Plywood Composite Core (HWPW-CC)	0.08	07-01-2009	09-30-2009	11-30-2009	09-30-2009	12-31-2010	06-30-2010
Hardwood Plywood Veneer Core (HWPW-VC)	0.08	01-01-2009	03-31-2009	05-31-2009	03-31-2009	06-30-2010	12-31-2009
Particleboard (PB)	0.18	01-01-2009	03-31-2009	05-31-2009	03-31-2009	06-30-2010	12-31-2009
Medium Density Fiberboard	0.21	01-01-2009	03-31-2009	05-31-2009	03-31-2009	06-30-2010	12-31-2009
Thin Medium Density Fiberboard	0.21	01-01-2009	03-31-2009	05-31-2009	03-31-2009	06-30-2010	12-31-2009

¹ The compliance date is one (1) day after the sell through date

Table 7-2. Phase 1 Dates for Finished Goods						
Phase 1			Sell through dates			
Product	Emission Standard (ppm)	Effective Date	Distributor ¹	Importer ¹	Fabricator ¹	Retailer ¹
Hardwood Plywood Composite Core (HWPW-CC)	0.08	07-01-2009	12-31-2010	12-31-2010	12-31-2010	12-31-2010
Hardwood Plywood Veneer Core (HWPW-VC)	0.08	01-01-2009	06-30-2010	06-30-2010	06-30-2010	06-30-2010
Particleboard (PB)	0.18	01-01-2009	06-30-2010	06-30-2010	06-30-2010	06-30-2010
Medium Density Fiberboard	0.21	01-01-2009	06-30-2010	06-30-2010	06-30-2010	06-30-2010
Thin Medium Density Fiberboard	0.21	01-01-2009	06-30-2010	06-30-2010	06-30-2010	06-30-2010

¹ The compliance date is one (1) day after the sell through date

Table 7-3. Phase 2 Dates for Composite Wood Products

Table 7-3. Phase 2 Dates for Composite Wood Products							
Phase 2			Sell through dates				
Product	Emission Standard (ppm)	Effective Date	Manufacturer ¹	Distributor ¹	Importer ¹	Fabricator ¹	Retailer ¹
Hardwood Plywood Composite Core (HWPW-CC)	0.05	07-01-2012	09-30-2012	11-30-2012	09-30-2012	12-31-2013	06-30-2013
Hardwood Plywood Veneer Core (HWPW-VC)	0.05	01-01-2010	03-31-2010	05-31-2010	03-31-2010	06-30-2011	12-31-2010
Particleboard (PB)	0.09	01-01-2011	03-31-2011	05-31-2011	03-31-2011	06-30-2012	12-31-2011
Medium Density Fiberboard	0.11	01-01-2011	03-31-2011	05-31-2011	03-31-2011	06-30-2012	12-31-2011
Thin Medium Density Fiberboard	0.13	01-01-2012	03-31-2012	05-31-2012	03-31-2012	06-30-2013	12-31-2012

¹ The compliance date is one (1) day after the sell through date

Table 7-4. Phase 2 Dates for Finished Goods

Table 7-4. Phase 2 Dates for Finished Goods						
Phase 2			Sell through dates			
Product	Emission Standard (ppm)	Effective Date	Distributor ¹	Importer ¹	Fabricator ¹	Retailer ¹
Hardwood Plywood Composite Core (HWPW-CC)	0.05	07-01-2012	12-31-2013	12-31-2013	12-31-2013	06-30-2013
Hardwood Plywood Veneer Core (HWPW-VC)	0.05	01-01-2010	06-30-2011	06-30-2011	06-30-2011	06-30-2011
Particleboard (PB)	0.09	01-01-2011	06-30-2012	06-30-2012	06-30-2012	06-30-2012
Medium Density Fiberboard	0.11	01-01-2011	06-30-2012	06-30-2012	06-30-2012	06-30-2012
Thin Medium Density Fiberboard	0.13	01-01-2012	06-30-2013	06-30-2013	06-30-2013	06-30-2013

¹ The compliance date is one (1) day after the sell through date

8. LABELING REQUIREMENTS

Manufacturers – (Section 93120.3(e))

Manufacturers will need to clearly label each panel or bundle (lot) of wood products to indicate compliance with the standards. A panel is a flat, usually rectangular piece of individual board and includes any particleboard, medium density fiberboard, or hardwood plywood board. A lot is the volume of a product type either (a) from the beginning of a production run until the first quality control test; or (b) between one quality control test and the next one; or (c) from the last quality control test to the end of a production run. If the manufacturer cuts to size, each panel will also need to be labeled.

Labels shall contain:

- a. Manufacturer name
- b. Product lot number or batch produced
- c. Marking to denote composite wood product complies with emission standards (Phase 1 or 2) or was made using no-added formaldehyde based resins or ultra-low-emitting formaldehyde (ULEF) resins.
- d. A CARB number assigned for the third party certifier unless the manufacturer has an exemption letter from CARB. (Using no-added formaldehyde based resins or ULEF resins) Exceptions based on ULEF are described in Section 11 and exceptions for no-added formaldehyde based resins are described in Section 10.

Distributors – (Section 93120.5(c))

Distributors that do not modify wood products have no labeling requirements. CARB did not provide a definition for “modify” in the ATCM. However, any change no matter how minor may be considered a modification. Distributors that modify the composite wood products need to label their products. The date the finished good was produced indicates the manufacture date and will be used to determine the sell-through dates on the product label.

Labels shall contain:

- a. Fabricator or importer of record
- b. Date the finished good was produced
- c. Marking to indicate the product meets emission standards or was made with no-added formaldehyde based resins or ULEF resins.

The options for the labeling include:

- a. Stamp
- b. Tag
- c. Sticker

- d. Bar code

Importers – (Section 93120.6(c))

Importers that do not modify the wood products have no labeling requirements. Importers that do modify the composite wood products need to label their products. The date the finished good was produced indicates the date of manufacture and will be used to determine the sell-through dates on the product label.

Labels shall contain:

- a. Fabricator or importer of record
- b. Date the finished good was produced
- c. Marking indicating the product meets emission standards or was made with no-added formaldehyde based resins or ULEF resins.

The options for the labeling include:

- a. Stamp
- b. Tag
- c. Sticker
- d. Bar code

Fabricators – (Section 93120.7 (c))

Fabricators must label:

- a. Finished goods or
- b. Every box containing finished goods of composite wood products for sale or supply in California.
- c. The date the finished goods were produced indicates the manufacture date and will be used to determine the sell-through date on the product label. The finished goods shall be labeled as having been made with no-added formaldehyde based resins or ULEF resins if applicable for all HWPW, PB, or MDF used in fabricating the finished goods.

Labels shall contain:

- a. Fabricator name
- b. Date the finished good was produced
- c. Marking indicating the product meets emission standards or was made with no-added formaldehyde based resins or ULEF resins.

The options for the labeling include:

- a. Stamp
- b. Tag
- c. Sticker
- d. Bar code

Retailers – (Section 93120.8 (c))

Retailers are not required to label any composite wood products. The date the finished good was produced indicates the manufacture date and will be used to determine the sell-through dates that are on the product label.

Bar Coding

Bar coding is one method that may be utilized for labeling composite wood products. AHFA developed a Bar Code standard that was published in 1994. This standard can be found at the following link:

<http://www.ahfa.us/focus/technology.asp#barcode>

Guidelines for Inventory Management have been provided by AHFA and can be used to assist manufacturers with the composite wood products inventory. These are summarized at the following link:

<http://www.ahfa.us/focus/technology.asp#inventory>

Guidelines for Serialized Labeling of furniture have been provided by AHFA that can be used to assist with labeling including UPC codes. These are summarized at the following link:

<http://www.ahfa.us/focus/technology.asp#seriallabeling>

9. RECORDKEEPING

Manufacturers – (Section 93120.3 (g))

Manufacturers are required to keep records in electronic or hard copy for a period of at least 2 years. The records should be kept at production facilities for products produced for sale in California. The records should prove:

- a. Quality Assurance emissions test data for each product including:
 - a. Tracking information to allow each product produced to be traced to a specific lot number or batch produced.
 - b. Product information (description, date of manufacture, lot/batch number)
 - c. Purchaser information including:
 - Purchaser's name
 - Contact person
 - Address
 - Phone number
 - Purchase order or invoice number
 - Amount purchased
 - d. Product transporter information including:
 - Delivery company name
 - Contact person
 - Address
 - Phone number
 - Shipping invoice number
 - e. Identification of CARB approved third-party certifier including:
 - Company name
 - Contact person
 - Phone number
 - Mailing address
 - E-mail address
 - f. Manufacturers using no-added formaldehyde based resins or ULEF resins must retain the following records on an ongoing basis:
 - CARB approval letter
 - Amount of resin use (volume and weight)
 - Production volume reported as square feet per product type

- Resin trade name, resin manufacturer contact information, and resin supplier contact information
- Changes in press time by more than 20 percent for any product type
- Changes in formulation of the no-added formaldehyde based resins or ULEF resins

Manufacturers should keep records on the disposition of non-complying lots or batches of wood products including:

- Product type
- Amount of composite wood products affected
- Lot or batch numbers
- Measures taken to mitigate non-compliant wood products
- Retesting results
- Final disposition of lots or batches of wood products

Manufacturers will maintain product data reports for each plant, production line, and product type and submit copies to the third party certifier at least monthly. The reports shall include a data sheet for each specific product with test and product information and a quality control graph containing the following:

- Quality Control Limit (QCL)
- Excursion limit (deviation from the limit)
- Shipping QCL (if applicable)
- Results of quality control tests; and
- Retest values

Additional recordkeeping requirements include:

- Small scale test results, including testing frequency
- Production sequence
- Changes in the resin percentage for any product type, from levels set by the Quality Control (QC) Manager by more than 10 percent (calculated on the basis of resin solids and oven dry wood weight of the face and core furnish, adjusted proportionately)
- Increases in the formaldehyde/urea mole ratio of the resin
- Changes in press time by more than 20 percent for any product from the levels set in the plant QC manual;
- Testing of QC employees
- Disposition of non-conforming products
- Calibration of on-site primary or secondary test methods (if any),
- Other records required by the third party certifier at certifier's discretion

On the bill of lading or invoice include:

- a. A statement that the composite wood product complies with the ATCM.

All approvals from the third party certifier on reduced testing frequency from small scale quality control tests.

Distributors – (Section 93120.5 (b))

Distributors are required to keep records in electronic or hard copy for a period of at least 2 years. It is recommended the records should be kept in a secure location where they can readily be accessed by the Distributor. The records should prove:

- a. Date of purchase.
- b. Name of supplier(s) for wood products.
- c. Precautions taken to ensure wood products comply with emission standards.

On the bill of lading or invoice include:

- a. A statement that the composite wood product complies with the ATCM.

Distributors must take reasonable precautions to ensure the composite wood products and products contained in finished goods comply with the emission standards. These precautions include:

- a. Instructing suppliers that goods they supply must comply with the emission standards.
- b. Obtain written documentation showing the suppliers have taken these precautions.

Importers – (Section 93120.6 (b))

Importers are required to keep records in electronic or hard copy for a period of at least 2 years. It is recommended that the records be kept in a secure location where they can readily be accessed by the Importer. The records should prove:

- a. Date of purchase.
- b. Name of suppliers of wood products.
- c. Precautions taken to ensure wood products comply with emission standards.

On the bill of lading or invoice include:

- a. A statement that the composite wood product complies with the ATCM.

Importers must take reasonable precautions to ensure the wood products and products contained in finished goods comply with the emission standards. These precautions include:

- a. Instructing suppliers that goods they supply must comply with the emission standards.
- b. Obtain written documentation proving the suppliers have taken these precautions.

Fabricators – (Section 93120.7 (d))

Fabricators are required to keep records in electronic or hard copy for a period of at least 2 years. It is recommended that the records be kept in a secure location where they can readily be accessed by the fabricator. The records should prove:

- a. Date of purchase.
- b. Name of suppliers of wood products.

- c. Precautions taken to ensure wood products comply with emission standards.

On the bill of lading or invoice include:

- a. A statement that the composite wood product complies with the ATCM.

Fabricators must take reasonable precautions to ensure the products contained in finished goods comply with the emission standards. These precautions include:

- a. Instructing suppliers that goods they supply comply with the emission standards.
- b. Obtain written documentation proving the suppliers have taken these precautions.

Retailers – (Section 93120.8 (b))

Retailers are required to keep records in electronic or hard copy for a period of at least 2 years. It is recommended that the records be kept in a secure location where they can readily be accessed by the Retailer. The records should prove:

- a. Date of purchase.
- b. Name of suppliers of wood products.
- c. Precautions taken to ensure wood products comply with emission standards.

Retailers must take reasonable precautions to ensure the products contained in finished goods comply with the emission standards. These precautions include:

- a. Instructing suppliers that goods they supply comply with the emission standards.
- b. Obtain written documentation proving the suppliers have taken these precautions.

Test Data (Quarterly) – (Appendix 2)

Quarterly test data will be kept on the primary or secondary method tests conducted on the samples. This test data should be kept by the manufacturer and provided to the third party certifier or others as necessary.

QA/QC Data

Appendix 2

Quality Assurance (QA) and QC data will be kept by the manufacturer and provided to the third party certifier or others as necessary. These data may be used to determine whether proper procedures have been followed by the manufacturer and third party certifier.

10. ENFORCEMENT

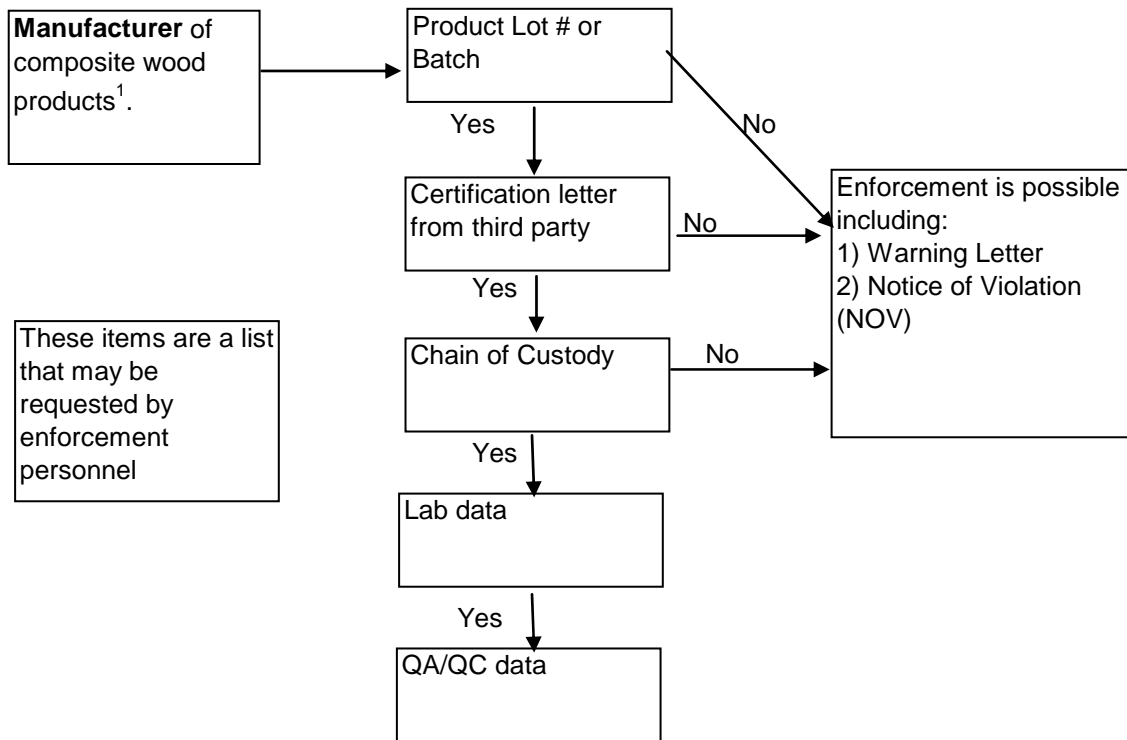
Enforcement begins on the retail floor or at the port of origin. CARB may inspect composite wood products or finished goods containing composite wood products arriving to the state of California by container ship or other modes of transportation. It is vital that those entities involved in the commercial chain of composite wood products keep documentation readily available including, but not limited to, the chain of custody that is used to ensure proper steps are taken for compliance with the ATCM. CARB personnel will hold each entity in the commercial chain responsible for composite wood product that they manufactured, supplied, used, offered for sale or sold in California. The testing of samples will be conducted using a primary method, secondary method or alternative secondary test method. These test methods are described in more detail in Appendix D. Each flowchart is intended to show the documentation that may be requested by CARB personnel to demonstrate compliance with the ATCM. These flowcharts show only one possible scenario that may occur when CARB or other enforcement personnel verify compliance with the standards. CARB will be performing field screening with a portable Field and Laboratory Emission Cell (FLEC) unit.

Manufacturers – (Section 93120.3)

A **possible** enforcement scenario for a manufacturer is shown below. CARB has not published specific enforcement guidelines but the requirements that CARB personnel may examine if enforcing at a manufacturer level are contained below.

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for a Manufacturer

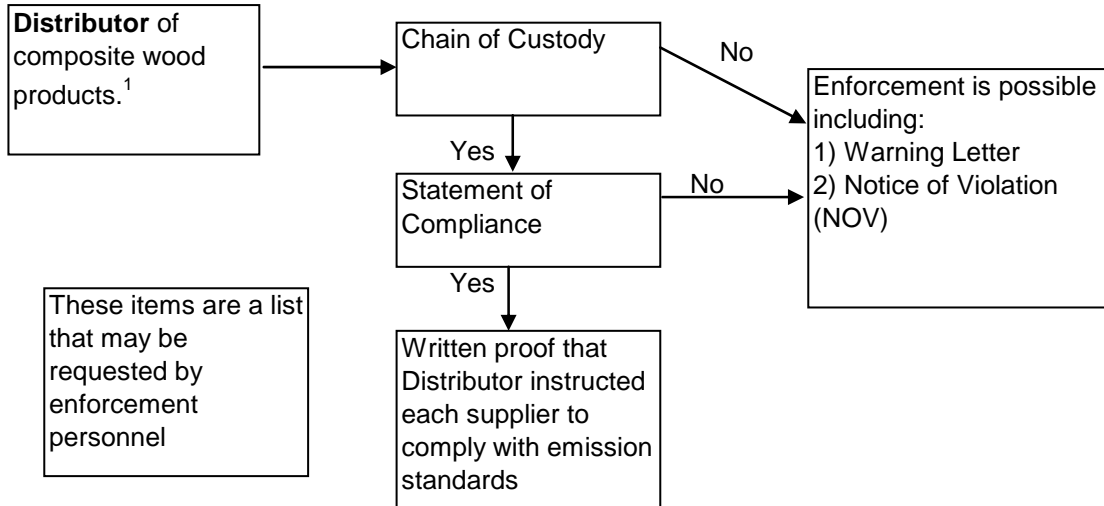


¹ This is just one example of a possible enforcement scenario

Distributors – (Section 93120.5)

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for a Distributor

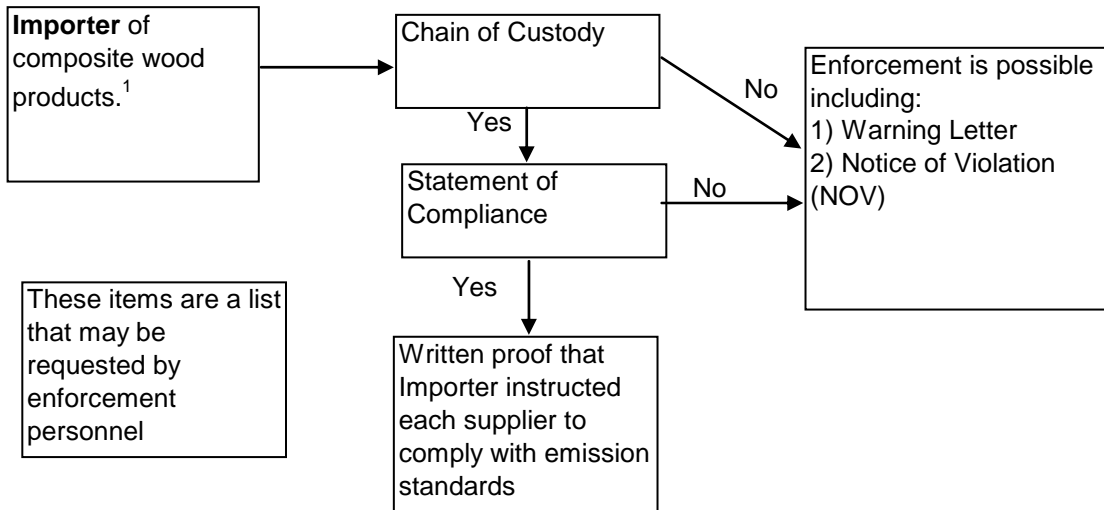


¹ This is just one example of a possible enforcement scenario

Importers - (Section 93120.6)

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for an Importer

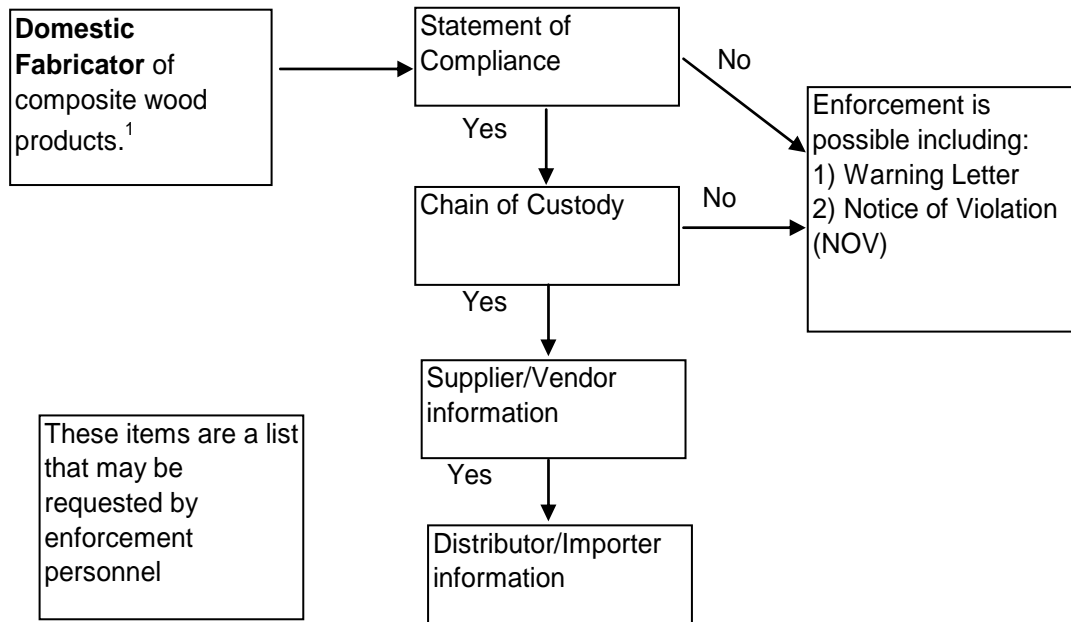


¹ This is just one example of a possible enforcement scenario

Fabricators (Domestic) – (Section 93120.7)

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for a Domestic Fabricator

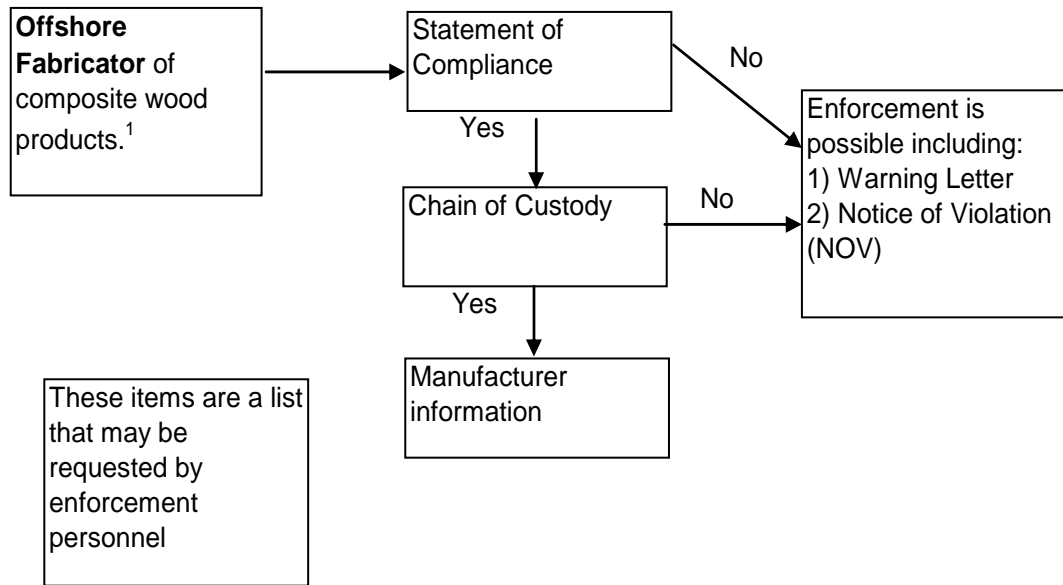


¹ This is just one example of a **possible** enforcement scenario

Fabricators (Off-Shore) – (Section 93120.7)

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for an Offshore Fabricator



¹ This is just one example of a **possible** enforcement scenario

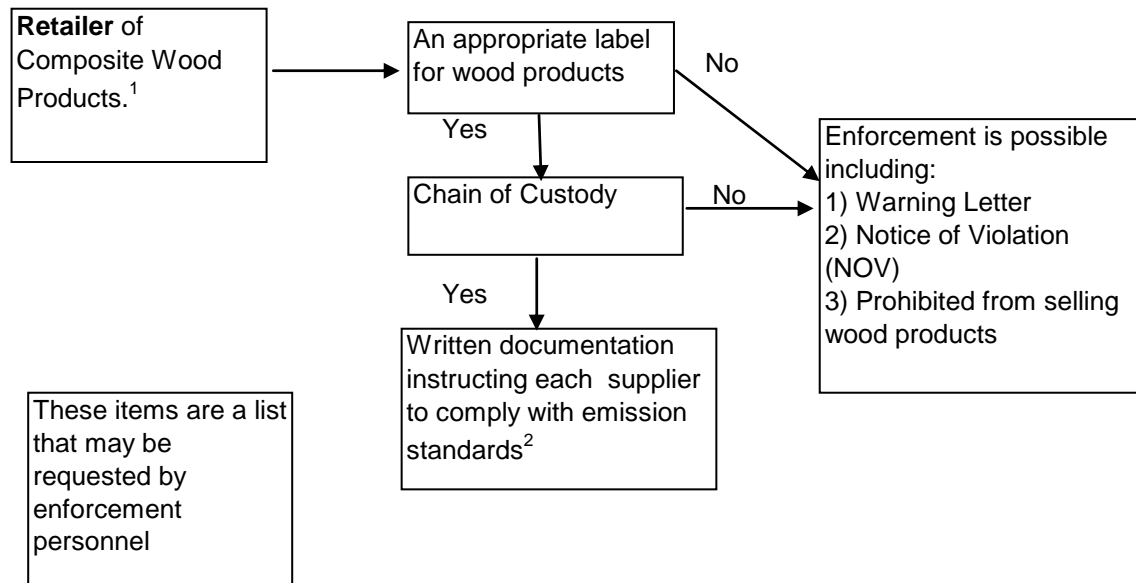
Retailers – (Section 93120.8)

Enforcement at the retail level may consist of CARB personnel visiting a retail location and testing finished products or composite wood products. If the product does not pass the FLEC or equivalent test, the following is a possible scenario:

- CARB may retest the finished product
 - CARB will purchase the product in question
 - CARB may conduct deconstructive finished product testing to determine compliance of each individual composite wood product identified
- CARB may issue warning letter to the retailer
- CARB may issue a notice of violation (NOV) or fine.

Airborne Toxic Control Measure (ATCM) for Composite Wood Products

Possible Enforcement Scenario for a Retailer



¹ This is just one example of a possible enforcement scenario

² Supplier contact information should be kept to provide to enforcement personnel as needed

CARB TOOL BOX

11. RESOURCES

Internet Links

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

ASTM Testing Standards: http://www.astm.org/cgi-bin/SoftCart.exe/NEWSITE_JAVASCRIPT/index.shtml?L+mystore+mzll1272

FLEC: <http://www.flec.com/?page=295>

EPA - Plywood and Composite Wood Products Manufacturer:
<http://www.epa.gov/ttn/atw/plypart/plypart.html>

Formaldehyde information from the National Cancer Institute:
<http://cancerweb.ncl.ac.uk/cancernet/600038.html>

EPA - Indoor Air Quality information: <http://www.epa.gov/iaq/formalde.html>

Formaldehyde Fact Sheet by the Professional House Doctors, Inc.
<http://prohousedr.com/formfact.htm>

12. NO-ADDED FORMALDEHYDE BASED RESINS RESINS- (SECTION 93120.3(C))

Manufacturers using no-added formaldehyde based resin systems may qualify for an exemption to third party testing for composite wood products. To apply for third party exemption the following must be submitted to CARB for approval:

- a. Statement indicating which product type(s) will be manufactured with non UF resins.
- b. The chemical formulation of the no-added formaldehyde based resins, including base resins, catalysts, and other additives used in the manufacturing process.
- c. Name of CARB approved third party certifier.
- d. Data on emissions performance of the no-added formaldehyde based resin system.

The data will need to include:

- a. Three months of Quality Control (QC) testing data for either the primary or secondary testing method.
- b. The correlation of the routine QC testing data to primary or secondary method testing data.
- c. Results of one test from either the primary or secondary method.

The routine QC testing data will need to comply with the following:

- a. Ninety percent of data no higher than 0.04 ppm.
- b. HWPW products – All data no higher than 0.05 ppm.
- c. PB, MDF, and thin MDF products - All data no higher than 0.06 ppm.

13. ULTRA-LOW EMITTING FORMALDEHYDE RESINS-
(SECTION 93120.3(D))

Manufacturers using ULEF resin systems that can demonstrate consistent average emissions below Phase 2 standards may qualify for an exemption or less frequent testing. To apply for the less stringent testing the following must be submitted to CARB for approval:

- a. Statement indicating which product types will be manufactured with ULEF resins.
- b. The chemical formulation of the ULEF resins.
- c. Data on emissions performance of ULEF resins. The data will need to prove that can achieve the following:
 - a. HWPW products – Phase 2 emission standards.
 - b. PB and MDF products – Emission standards in Table 13.1.

The data will need to include:

- a. Six months of routine QC testing data for either the primary or secondary test method.
- b. Correlation coefficient of the routine QC testing data for the primary or secondary test method.
- c. Results of two quarterly tests for either of these methods.

Table 13.1. ULEF Resin Emission Target and Cap Values (ppm) for PB and MDF

	PB	MDF	Thin MDF
ULEF-target	0.05	0.06	0.08
ULEF-cap	0.08	0.09	0.11

Less Frequent Testing

HWPW products –

- a. Six months of routine QC data no higher than Phase 2 emission standards.
- b. Two quarterly primary or secondary method tests must be no higher than Phase 2 emission standards.

PB and MDF products –

- a. Ninety percent of the 6 months of routine QC testing data is no higher than the ULEF-target value listed in Table 13.1
- b. Two quarterly primary or secondary method tests are no higher than the ULEF-target value listed in Table 13.1.

Third Party Exemption

To apply for third party exemption the following must be submitted to CARB for approval:

- a. Statement indicating which product types will be manufactured with ULEF resins.
- b. The chemical formulation of the ULEF resins.
- c. Data on emissions performance of ULEF resins. The data will need to prove that can achieve the following:
 - a. Ninety percent of 6 months of routine QC testing data and two quarterly primary or secondary method tests must be no higher than a ULEF-target value of 0.04 ppm.
 - b. HWPW products- must be below the cap value of 0.05 ppm.
 - c. PB and MDF and thin MDF products - must be below the cap value of 0.06 ppm.

If at any time, the manufacturer changes the resins used, CARB will need to be notified in advance and will be required to apply for a new CARB approval.

14. QUALITY ASSURANCE REQUIREMENTS

Manufacturers Requirements – (Appendix 2)

Manufacturers will need to comply with quality assurance requirements which include third party certification and other specific requirements as described in this section. Those manufacturers who have a CARB exemption letter due to using no-added formaldehyde based resins or ULEF resins are exempt from the quality assurance requirements.

The requirements should ensure that unfinished, including sanded, composite wood products meet applicable emission standards. Panels should be tested in an unfinished condition, prior to the application of a finish or topcoat. A quality assurance program includes:

- a. Written Quality Control Manual (QCM) consisting of at least the following:
 - Organizational structures of a quality control department.
 - Sampling procedures.
 - Method of handling samples.
 - Frequency of small scale quality control testing.
 - Procedures to identify changes in formaldehyde emissions resulting from production changes. These changes may include (1) increase in percentage of resin used (2) increase in formaldehyde/urea molar ratio in the resin, or (3) decrease in press time.
 - Provisions for additional testing.
 - Recordkeeping requirements.
 - Average percentage of resin and press time for each product type.
- b. Establish a quality control function at the manufacturing plant including:
 - Testing equipment.
 - Designated quality control personnel.

Manufacturing facilities or other areas designated by manufacturers must be properly maintained as a quality control facility and those that may have more than one plant will need to have the appropriate equipment to test composite wood samples. It is recommended that each piece of equipment have standard operating procedures to ensure quality control and proper maintenance. .

The quality control personnel should include a Quality Control (QC) Manager and QC employees for assuring composite wood products comply with emission standards. The QC Manager will:

- Report directly to the Plant Manager.
- Be identified to the third party certifier (within 10 days of any changes to the QC Manager).
- Review and approve all reports of routine small scale testing conducted by the plant.

- Be responsible for monitoring, collecting, packaging, and shipping in accordance with the QCM. The QC Manager will also monitor results for testing conducted using a testing facility outside of the manufacturing plant.
- Notify the outside testing facility (if used) immediately of any changes in production that require re-inspections. The notification can be accomplished in writing, by e-mail, letter, fax or e-mail.

The QC Employees must be:

- Properly trained to conduct chemical quantitative analytical tests.
- Certified annually by a third party certifier for operation of the quality control test method.

Each QC employee will be required to be certified by the QC Manager. This will be done by both a duplicate analysis test and blind sample test as specified in Appendix 2 of the emissions standard guidance.

Testing Methods

- a. Primary test method – large chamber test method.
- b. Secondary test method –small chamber test method.

Two test methods are intended to offer flexibility for the manufacturer in certifying composite wood products. The primary test method utilizes large chambers of at least 22,000 liters. Small chamber testing methods are less costly and utilize smaller chambers, as small as 20 liters. The laboratory operating the chamber will need to be accredited by an accreditation body that is a signatory to the ILAC. The formaldehyde test methods used by the laboratory must be written in the scope of accreditation.

Each product type, from each production line, of each plant, must be tested in either one of the testing chamber methods. If multiple product types have similar emission characteristics the manufacturer may group them together for testing purposes. This would need to be approved by the third party certifier. If there is a test failure by the similar products, the certification will lapse for all the represented products even if the failure may be the result of one specific product. CARB revised the rule to “similar products” rather than statistically equivalent similar emission characteristics to allow more flexibility for the manufacturer and third party certifier in testing multiple products together.

Additional information regarding the testing methods and equivalence are found in Appendix D.

Correlation Testing

Manufacturers and third party certifiers desiring to use the secondary test method will need to prove the results are equivalent to the primary test method. A correlation must be established between the primary and secondary test method for each product type and production line to ensure consistency with the test methods. This correlation will be calculated by the manufacturer and based on the primary test method (large chamber) data from the third party certifier. The correlation must be based on a minimum of five data pairs. Additional guidance regarding correlation is provided in Appendix D and will be provided by CARB.

Quarterly Chamber Test

To ensure composite wood products meet the emission standards, quarterly chamber testing must be performed. Samples should be randomly selected as determined by the third party certifier by either a primary or secondary test method. For HWPW, samples should also be taken from a randomly selected set as determined from the third party certifier after review of routine weekly QC data that have the highest potential to emit formaldehyde. If multiple product types have similar emission characteristics the manufacturer may group them together for testing purposes. This would need to be approved by the third party certifier. But if there is a test failure by the similar products, the certification will lapse for all the represented products even if the failure may be the result of one specific product. Those manufacturers that have an approval letter to use ULEF resins are allowed to reduce the quarterly tests to one time every 6 months.

Manufacturers must coordinate with third party certifiers to establish:

- a. Quality Control Limit (QCL)
- b. Excursion Limit

A QCL will be set at each manufacturing plant for each product type and production line. QCL is the value for any approved small scale quality control test based on the correlative equivalent to the value in a primary or secondary test method permitted by the standard.

An excursion limit shall be established to account for process and testing variation to keep the product's emissions from exceeding the standard. The third party certifier will be promptly notified if product lots are produced that consistently exceed the QCL based on the established criteria.

Manufacturers will need to submit each month of quality control testing data to the third party certifier for verification that the QCL or shipping QCL (if applicable) reflects an accurate correlation between the primary or secondary method and the plant's quality control tests.

Failure of Tests

If the formaldehyde emissions are exceeded during a verifying test by a primary or secondary test method, the certification of the composite wood product will need to be suspended until re-qualification can occur. The third party certifier will notify the manufacturer and CARB of the failure.

Each month of QC testing data from the manufacturer must be submitted to the third party certifier to verify that the QCL or shipping QCL (if applicable) reflects an accurate correlation between the primary and secondary method and the plant's quality control tests.

A primary or secondary test method will be conducted on the product in order to re-qualify the product. The test method must be conducted on the same product type for which the failure occurred.

The failed lot may still be used if the manufacturer can show to the third party certifier that:

- Each panel is treated with a scavenger or handled by other means of reducing formaldehyde emissions (e.g. aging); and
- Panels randomly selected from the treated panels are tested and pass the primary or secondary test method within 6 weeks of the initial determination of a failed lot.

If the primary or secondary method and small scale test results on the same product differ, the primary or secondary method will be considered the benchmark value.

QC Tests

Each manufacturer will be required to conduct small scale quality control tests for each product and product line to verify compliance with the emission standards. Alternatively, quality control tests may be conducted by a contract laboratory or a laboratory operated by an approved third party certifier. Each lot of each product being validated at each plant will be tested. The results will be reported to the third party certifier.

There are two approved small scale test methods:

- a. Desiccator test (ASTM D 5582-00)
- b. Small Chamber test (ASTM D 6007-02)

An alternative test that can be shown to correlate with the primary or secondary test method and is approved by CARB may be used.

The tests, along with any alternative one, will need to correlate to primary or secondary test results based on a minimum sample size of five data pairs. If any variation is found from a previously used correlation, the manufacturer must work with the certifier to evaluate the data to determine if a significant change has occurred. If any changes have occurred, a new correlation curve must be established for the manufacturer by the certifier.

The testing frequency for the small scale quality control test will be determined by the type of composite wood products.

HWPW

Quality control tests must be conducted for each product type and product line based on the production in the plant. The testing frequency must be done by the limits set forth in Table 14.1.

Weekly production (square feet)	Minimum number of routine tests/week per product type and product line
Less than 200,000	1
200,000 – 400,000	2
Greater than 400,000	4

The manufacturer's QCM must specify the time period for the tests to avoid distribution of any non-complying lots.

PB and MDF Composite Wood Products

QC tests must be conducted once per shift (8 or 12 hours) plus or minus 1 hour of production for each production line for each product type. Manufacturers that have an approval letter to use ULEF resins are allowed to reduce the testing frequency to one time each week for each production line for each product type. QC samples shall be analyzed within a time period specified in the manufacturer's QCM to avoid the circulation of non-complying lots.

When the plant or production line can demonstrate consistent operations and low variability of test values to the third party certifier, based on the certifier's criteria, the testing frequency may be reduced to no less than a 48-hour production period. The third party certifier will need to provide this written approval prior to the reduced testing frequency.

A QC test must also be conducted when:

- a. Production ends prior to reaching 8 hours of production;
- b. The resin formulation is changed so that the formaldehyde to urea ratio is increased;
- c. There is an increase by more than 10 percent in the amount of urea formaldehyde resin used;
- d. There is a decrease in the designated press time by more than 20 percent; or
- e. When the QC Manager or QC employee has reason to believe the panel being produced may not meet the requirements for the standards.

Non-complying Lots

If a lot is found to be non-compliant, it must be isolated from certified lots and the third party certified must be notified. A non-complying lot is any lot that has a test value in excess of the applicable standard. In order for the lot to be recertified, a retest for certification is required if each panel is treated with a scavenger or handled by other means of reducing formaldehyde emissions (e.g. aging).

Once retesting is conducted the following criteria apply:

- a. At least three test panels shall be selected from three separate bundles and be a representative of the entire lot. Each panel shall be tested by the plant's small scale quality control test.
- b. Test samples should not be selected from the top or bottom panels of a bundle.
- c. The average of three representative samples must test at or below the QCL or shipping QCL.
- d. If a non-complying lot cannot be certified, the third party certifier shall be informed promptly in writing.

If the manufacturer decides not to be certify the lot, or the lot is unable to be certified, it must NOT be labeled for sale in California.

Shipping QCL

If desired, a manufacturer may desire to establish a Shipping QCL in coordination with the third party certifier. A Shipping QCL is the value (prior to shipment) for any approved small scale quality control test based on the equivalent to the value in a primary or secondary method test. If a shipping QCL is developed and lots do not comply with the shipping QCL, non-complying lots will be required to undergo the same retesting as those found to be non-compliant after testing as explained in the non-complying lots section.

Plants will need to maintain QC documentation as indicated in the recordkeeping section.

15. THIRD PARTY CERTIFIERS

Summary Guidance – (Section 93120.4 and Appendix 3)

Third party certifiers are responsible for certifying composite wood products to ensure they conform to CARB formaldehyde emission standards. A manufacturer will be required to obtain a third party certifier that is approved by CARB. Third party certifiers will certify QA policies, employees, and testing by the manufacturers. Inspections will also be conducted by third party certifiers on a random basis. The duration of third party certification approval by CARB will be 2 years with an option to apply for re-approval by submitting an updated application to CARB. The general responsibilities of third party certifiers will be to:

- a. Verify that manufacturers comply with the quality assurance requirements.
- b. Verify that manufacturer small scale test results correlate to primary or secondary method results.
- c. Work with manufacturers to establish quality control, excursion, and if applicable, shipping QCLs for each product type and production line. Third party certifiers will inform manufacturers of criteria that will be used to determine if product lots are consistently exceeding applicable QCLs and of criteria the certifier will use to allow a reduction in testing frequency for PB and MDF.
- d. Provide independent inspections and audits of manufacturers and records.
- e. Provide manufacturers with their CARB approved third party certifier number.
- f. Ensure testing methods and laboratories are certified by an accreditation body that is a signatory to the ILAC. Each laboratory will:
 - a. Be recertified annually
 - b. Participate in an inter-laboratory testing comparison with laboratories using similar primary or secondary methods for the same composite wood products
 - c. Participate in an inter-laboratory comparison during the first year the laboratory is used by a third party certifier, followed by participation in inter-laboratory comparisons every 2 years.
- g. Maintain records for 2 years for review by CARB upon request. The records include:
 - a. Manufacturers that have been certified (identification codes if applicable)
 - b. Results of inspections and tests conducted for each manufacturer
 - c. List of certified laboratories and test methods utilized by the third party certifier including test conditions, conditioning time, test results, and types of composite wood products used to establish equivalence of a secondary method.
 - d. Correlations between small scale test results and primary or secondary method results by manufacturer

- e. Manufacturers of PB and MDF composite wood products that were allowed to reduce their testing frequency
- f. CARB approval letter for the third party certifier
- h. On or before March 1 of each year, provide an annual report to CARB for the previous calendar year that includes:
 - a. Manufacturers certified during the previous year calendar year including resins used by manufacturers and average and range in formaldehyde emission by resin and product type.
 - b. A list of non-complying events by a manufacturer
 - c. Certified laboratories and test methods utilized by the third party certifier; and
 - d. Results of inter-laboratory testing comparisons for laboratories used by the third party certifier

The approval processes for third party certifiers consist of submitting the following in writing to CARB:

1. Evidence of actual field experience in the verification of laboratories to demonstrate how applicants will be able to conform to the applicable requirements.
2. Capability to properly train and supervisor inspectors.
3. Evidence of a current product certification agency accreditation issued by a signatory to the ILAC.
4. A list of composite wood products that the applicant is applying to verify and evidence that the applicant is qualified to verify these products.

CARB will notify the third party certifier within 90 days after the application is completed to either approve or disapprove the application. CARB may review and for good cause modify or revoke the third party certification at any time.

Initial Plant Certification

Initial plant certification requirements include:

- Written QCM approved by the third party certifier.
- QC facilities and personnel approved by the third party certifier.
- Passed a primary or secondary qualifying test.
- Routine small scale quality control test(s) approved by the third party certifier.
- A procedure for selecting samples approved by the third party certifier.
- Correlation values between the routine small scale quality control test(s) and the primary or secondary method test(s) that are approved by the third party certifier.

Primary or Secondary Test Methods

The third party certifier will ensure that:

- Samples are randomly chosen from a single lot that is ready for shipment. The top or bottom samples of composite wood products of a bundle shall not be selected.
- Samples will be dead-stacked or air-tight wrapped between the time the sample is selected and the start of the test conditioning.

- Samples will be promptly labeled, signed by the third party certifier, bundled air tight, wrapped in polyethylene, protected by cover sheets, and promptly shipped to the primary or secondary method testing facility.
- Conditioning shall begin as soon as possible and within 30 days after production. If desired by the plant, a second sample set may be selected, (reserve set) handled and shipped in the same manner as the original.
- Additional primary or secondary testing may take place as soon as possible if the third party certifier determines additional testing needs to occur to ensure compliance with standards.
- The conditioning area will be reviewed in terms of temperature, humidity, and ambient formaldehyde concentrations to ensure these conditions did not exceed the limits specified in the primary or secondary method during the conditioning period.

Third party certifiers have the option to witness primary or secondary testing at a certified laboratory instead of performing the test at its laboratory. Air samples will be taken to analyze formaldehyde emissions. This sampling can be conducted by either the third party certifier or the primary or secondary method under the third party certifier's supervision. A second set of air samples may be conducted to confirm a questionable test value. This second test will need to be taken within the time parameters of the primary or secondary method.

If the second air test value is within the range of concentrations - the two sets of values will be averaged. If the second air test value is not within the range of concentrations - the initial primary or secondary test method should be null and void.

Inspections

Third party certifiers will conduct periodic on-site inspections of the plant and production line where each certified product type is produced to ensure compliance with the QA and QC Manager and other practices. These inspections will be paid for by the manufacturer. CARB personnel may also conduct on-site inspections at the manufacturer to verify compliance. The inspection frequency by the third party certifier will be at least once a quarter. During the inspection, the certifier shall consider confidential any observations of equipment, process, technique, or other matters known by the certifier to be considered proprietary by the manufacturer. The inspection procedures will consist of:

- Reviewing formaldehyde emission quality control records.
- Reviewing production records for press times and urea-formaldehyde resin usage.
- Examining formaldehyde emission quality control procedures.
- Selection of sample panels for emission testing.
- Interviewing and testing of quality control employees, and the QC Manager involved in the formaldehyde certification.

While on-site during an inspection, the third party certifier may conduct a small scale test. A panel of composite wood product to be certified shall be selected for a single test. The results of the test shall be entered in the record of test values maintained by the manufacturer. If this test indicates the panel is non-compliant, the entire lot shall be isolated and handled in accordance with non-complying lots as indicated in Section 14, Non-Complying Lots.

The third party certifier shall review the inspection results with the QC Manager or Plant Manger, if possible. The third party certifier shall provide a written report to the plant with the test results and advise the plant of any deficiencies that must be corrected to maintain certification.

If the manufacturer produces product lots that consistently exceed the applicable QCL, the certifier shall be notified promptly. The third party certifier may re-inspect or audit the plant at least one time per month for 3 months, prior to returning to the prior inspection frequency. The third party certifier may also require the manufacturer to comply with the requirements of initial plan qualification.

CARB Approved Certifiers

To find out the most current list of third party certifiers, visit CARB website at:
<http://www.arb.ca.gov/toxics/compwood/compwood.htm>

APPENDIX A: VENDOR ATCM NOTIFICATION LETTER (EXAMPLE)

Dear (insert vendor name):

By January 1, 2009, _____ Furniture Company (the “Company”) must comply with the Phase 1 requirements (section 93120.2(a)) of the Airborne Toxic Control Measure for Formaldehyde Emissions From Composite Wood Products (“ATCM”) recently enacted by the California Air Resources Board (“CARB”) at 93120-93120.12, Title 17 California Code of Regulations. A copy of these requirements is available for review at the CARB website located at <http://www.arb.ca.gov/toxics/compwood/carb1.pdf>. These requirements apply to composite wood products (“CWP”) such as MDF, particleboard and plywood, as well as finished goods that contain CWP, that are sold, offered for sale, supplied, used, or manufactured for sale in California.

In order to comply with these requirements, _____ Furniture Company must ensure that, in its various roles as a distributor, importer, fabricator and retailer of CWP and finished goods that contain CWP, that all CWP and finished goods containing CWP received by the Company meet the requirements of the new ATCM. To that end, the Company must instruct each supplier and/or vendor of CWP and finished goods that contain CWP that these materials must comply with the applicable emission standards. Finally, under the ATCM _____ Furniture Company is required to obtain from each supplier/vendor a signed statement of compliance that all CEP and finished goods containing CWP sold to the Company meet the requirements of the ATCM.

The purpose of this letter is to advise your company that meeting these requirements is a condition of conducting business with _____ Furniture Company, and to obtain your company’s agreement that your company, as a vendor and/or supplier to _____ Furniture Company, will meet these requirements by _____, 2008.

Please note that all CWP and finished goods containing CWP supplied to the Company must be properly labeled by each vendor and/or supplier in accordance with the ATCM. If you are not required by the ATCM to label the product you supply to the Company, you are required to ensure that the product is properly labeled by your supplier. Effective on _____, 2008, all invoices and bills of lading presented by your company to _____ Furniture Company must include a statement that the CWP or finishing goods containing CWP comply with the Phase 1 requirements of the ATCM.

Please be advised that this letter does not provide legal advice to your company and should not be construed as providing legal advice. Therefore, I strongly encourage you, or legal counsel for your company, to carefully review the provisions of the ATCM and this letter to determine which of these particular requirements apply to your company.

Please confirm by your signature below that on and after _____, 2008, you company will comply with the requirements of the ATCM with regard to all CWP and finished products containing CWP supplied to _____ Furniture Company.

Agreed that _____ day of _____, 2008 by

Supplier Representative

Official Position or Title.

Sincerely yours,

Furniture Company.

APPENDIX B: COPY OF RULE

A copy of Title 17 of the California Code of Regulations §93120 Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products is located at:

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

APPENDIX C: ASTM TESTING

Primary Test Method for Manufacturers (ASTM E 1333-96) – (Section 93120.9)

The primary test method was the original test method utilized to test formaldehyde emissions for composite wood products. This test method also known as large chamber testing, involves a test chamber of at least 22,000 liters in size for testing. Due to the expense and size of the large chamber testing, CARB has allowed the use of a secondary testing method. Equivalence between the primary and secondary test methods are explained in the Secondary Test Method section.

Secondary Test Method (ASTM D 6007-02) – (Section 93120.9)

The secondary test method was introduced as another method to test formaldehyde emissions for composite wood products. This test method, also known as small chamber testing, involves a test chamber as small as 20 liters, which can be conducted in smaller spaces, more quickly, and is less expensive.

When using the secondary test method nine testing panels representing evenly distributed portions should be used. The nine specimens shall be tested in groups of three specimens, resulting in three test results, which shall be averaged to represent one data point for the panel. This test will be used for manufacturers and enforcement purposes.

Equivalence Test Methods

At least yearly, equivalence between the secondary method and primary method must be established by the third party certifier for each testing laboratory used. For an equivalence determination, a minimum of ten comparison sample sets will need to be completed and the following must be met in the comparison:

- a. Primary method – Each sample shall consist of the results of simultaneously testing an appropriate number of panels (factoring in the loading rate) from the same batch of panels tested by the secondary method.
- b. Secondary method – Each sample shall consist of nine specimens representing evenly distributed portions of the entire panel. The nine specimens shall be tested in groups of three specimens (factoring in the loading rate), resulting in three test results which shall be averaged to represent one data point for the panel, and matched to their respective primary method comparison sample result.
- c. A minimum of five sample sets must be obtained in each of at least two of the following ranges of formaldehyde concentrations, as measured by the primary standard:
 1. Lower range: less than 0.07 ppm
 2. Intermediate range: 0.07 to less than 0.15 ppm
 3. Upper range: 0.15 to 0.25 ppm
- d. The average and standard deviation will need to be calculated. The secondary method shall be considered equivalent to the primary method if the average \bar{x} is: $\bar{x}_{avg} + 0.88S \leq C$

C is equal to:



- 0.026 – lower range
- 0.038 – intermediate range
- 0.052 – upper range

Equivalence must be established between the two test methods to represent the range in emissions based on the emission standards in Section 7 of the toolbox.

Alternatively, another chamber test method may be used if the test meets the equivalence requirement described in the equivalence test method section. CARB must approve the alternate testing method with the following submitted to CARB:

1. Description of test method used to quantify product emissions including:
 - a. Procedures used
 - b. Precision and reproducibility
 - c. Criteria used to demonstrate validity of test method
2. Results from the alternate secondary test method and corresponding equivalent emissions.

If an alternative test method is approved, CARB will issue an Executive Order certifying that the test is equivalent to the primary test method and approved for use.

Field and Laboratory Emission Cell (FLEC)

FLEC is small portable field screening method that may be used to field screen the amount of formaldehyde a piece of furniture or wood product may have. The FLEC will be operated in connection with a portable formaldehyde detector. Since FLEC can be used in the field for non-destructive testing, samples may be taken without damage. By using FLEC, there will be no damage to the product and cross contamination of wood products will be eliminated. Pictures of various FLEC instruments and more information can be found at the following site:

<http://www.flec.com/?page=295>

APPENDIX D: LABELING

Example **Statement of Compliance** to be included on the Bill of Lading or Invoice to comply with the labeling requirements of the ATCM.

Seller (insert name) confirms the composite wood product meets (specify Phase 1 or Phase 2, or is made with no – added formaldehyde or ULEF) emission standard requirements of the Airborne Toxic Control Measure for Formaldehyde Emissions from Composite Wood Products (ATCM) specified in the California Air Resources Board regulation section 93120.2(a).

Example Label:



REFERENCES

CARB, 2008. Title 17 California Code of Regulations §03120 Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from

Code of Federal Regulations, Title 19, 2007. Customs Duties, Chapter I Bureau of Customs and Border Protection, Part 101 General Provisions, Title 19, 2007.



