COMPOSITE PANEL ASSOCIATION

ECO-CERTIFIED COMPOSITE (ECC) SUSTAINABILITY STANDARD CPA 4-11

VOLUNTARY STANDARD SPONSORED BY THE COMPOSITE PANEL ASSOCIATION (CPA)

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COMPOSITE PANEL ASSOCIATION ECO-CERTIFIED COMPOSITE STANDARD CPA 4-11 AND GRADEMARK CERTIFICATION PROGRAM

INTRODUCTION AND PURPOSE

The Composite Panel Association (CPA) Eco-Certified Composite Standard ("ECCS") and corresponding Grademark Certification Programs ("Program") have been developed to provide independent certification of composite panel manufacturing plants and secondary manufacturers that demonstrate compliance with specific environmentally responsible practices.

The ECCS is comprised of two parts: Part A delineates the requirements for manufacturers of unfinished composite panels; Part B delineates the requirements for finished products (including components and laminated panels) made with composite panels.

ECC STANDARD PART A – UNFINISHED PANELS

Participant Categories and Eligibility

Part A of the ECCS applies to manufacturers of particleboard, medium density fiberboard (MDF), hardboard, engineered wood siding and engineered wood trim for all applications. It defines the applicable composite panels, establishes maximum formaldehyde emission limits and identifies the environmental criteria that must be met to qualify for ECC certification.

The following requirements shall be verified and documented by Program representatives at least annually for a composite panel manufacturing plant to be certified to produce ECC-compliant panels. Each qualifying manufacturing plant shall sign a license agreement regarding the use of the ECC logo and/or other identifying mark and associated responsibilities, with a requirement to notify CPA if compliance circumstances change. Compliance shall be demonstrated on an individual plant basis.

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Panels identified as ECC-compliant shall be certified to the California Air Resources Board (CARB) Airborne Toxic Control Measure by a third party certifier for formaldehyde emissions, or be recognized by CARB as achieving Ultra Low Emitting Formaldehyde (ULEF) or No Added Formaldehyde (NAF) characteristics. Hardboard, engineered wood siding and engineered wood trim products not exempt by product definition from the CARB regulation shall be certified for formaldehyde emissions in accordance with ANSI A208.2-2009 Medium Density Fiberboard (MDF) for Interior Applications to the applicable CARB MDF emission limit based on panel thickness.

If a manufacturing plant elects to produce and sell products above the CARB Phase 2 emission limit, such products are not eligible to be certified ECC-compliant under the Program and may not use the ECC logo.

Environmental Requirements

In addition to the CARB compliant pre-requisite, a manufacturing plant shall demonstrate compliance with at least three (3) of the five (5) following environmental requirements.

- (1) Carbon Footprint. The plant shall demonstrate that the panel's carbon store offsets its cradle-to-gate carbon footprint as determined in kg-CO₂ equivalents of greenhouse gas (GHG) emissions. Each plant shall use the CPA Carbon Calculator to determine if a panel performs as a carbon sink resulting in overall net carbon storage.
- (2) Local and Renewable Resource. At least 85% of total annual wood fiber used shall be sourced within 250 miles (402 km) of the manufacturing plant.
- (3) Recycled/Recovered. Use of a minimum of 75% recycled or recovered fiber; OR at least 50% recycled or recovered fiber AND a minimum of 5% post-consumer fiber. Percentages shall be calculated on a weight basis as measured in bone dry tons (bdt).
- (4) Sustainability. The plant shall document that greater than 97% of its fiber furnish brought on-site to manufacture panels is either converted into panels or other non-waste products. The percentage shall be calculated on a weight basis as measured in bone dry tons (bdt). Disposed products include fiber residuals shipped to a landfill, material

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hauled away for a tipping fee as waste material, or boiler ash waste not sold.

(5) Wood Sourcing. To ensure that its fiber sourcing program is environmentally responsible, the plant shall hold a valid assessment and certificate. This documentation shall conform to programs such as the Forest Stewardship Council (FSC-Controlled Wood Standard or Chain of Custody Standard) or the Sustainable Forest Initiative (SFI – Fiber Sourcing Standard). A current list of acceptable programs is available from CPA. These certifications must encompass assessment of 100% of the plant's wood fiber furnish.

Non-wood fiber is defined as a by-product of an agricultural crop where the cellulose is other than woody biomass, and may be considered to meet requirements (1) through (4) above.

DEFINITIONS

The following section shall be updated by erratum reports when new or revised reference standards are published.

Basic Hardboard

Hardboard is a panel manufactured primarily from inter-felted lignocellulosic fibers consolidated under heat and pressure in a hot press to a density of 500 kg/m³ (31 lbs/ft³) or greater by:

- (A) a wet process; or
- (B) a dry process that uses
 - (1) a phenolic resin, or
 - (2) a resin system in which there is no added formaldehyde as part of the resin cross-linking structure; or
- (C) a wet formed/dry pressed process.

Other materials may be added to improve certain properties, such as stiffness, hardness, finishing properties, resistance to abrasion and moisture, as well as to increase strength, durability and utility.

Reference: ANSI A135.4-2012 (Approved June 8, 2012), Basic Hardboard.

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Engineered Wood Siding and Engineered Wood Trim

Engineered Wood Siding and Engineered Wood Trim are categories of composite panels that have been designed and manufactured to perform in interior and exterior exposure applications with the appearance of traditional wood.

Reference: ANSI A135.6-2012 (Approved June 5, 2012) Engineered Wood Siding and ANSI A135.7-2012 (Approved July 17, 2012) Engineered Wood Trim.

Prefinished Hardboard Paneling

This ECCS covers requirements and methods of testing for the dimensions, squareness, edge straightness, and moisture content of prefinished hardboard paneling and for the finish of the paneling. The hardboard paneling substrate shall be manufactured primarily of interfelted lignocellulosic fibers which are consolidated under heat and pressure in a hot-press to a density of 500kg/m³ (31 pounds per cubic foot) or greater. The finished product when tested shall have the properties of one of the classes listed in the American National Standard A135.4-2012, and shall have the physical properties specified therein when tested in accordance with the applicable test methods in Part B of ASTM D1037-06a.

Reference: ANSI A135.5-2012 (Approved March 29, 2012), Prefinished Hardboard Paneling.

Medium Density Fiberboard

"A composite panel product composed primarily of cellulosic fibers and a bonding system cured under heat and pressure. MDF density is typically between 500 kg/m³ (31 lbs/ft³) and 1000 kg/m³ (62 lbs/ft³)."

Reference: ANSI A208.2–2009 (Approved February 2, 2009) Medium Density Fiberboard (MDF) for Interior Applications.

Reutilized Materials and Disposed Materials

For Criteria No. 4, Sustainability, examples of reutilized materials include, but are not limited to, packaging material, dunnage, fuel for

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energy, mulch or compost. Disposed materials are defined as fiber residuals shipped to a landfill, material hauled away for a tipping fee as waste or boiler ash waste not sold.

<u>Particleboard</u>

"A generic term for a composite panel primarily composed of cellulosic materials (usually wood), generally in a form of discrete pieces or particles, as distinguished from fibers, bonded together with a bonding system, and which may contain additives."

Reference: ANSI A208.1–2009 (Approved February 2, 2009) Particleboard.

COMPLIANCE EXPLANATIONS

The following is intended to explain and clarify certain compliance requirements.

Carbon Footprint

Plants shall complete the CPA Carbon Calculator. The Calculator shows outputs in units of Carbon Equivalent (CO_2e) of cradle to gate greenhouse gas emissions, for each of the following units: fossil carbon emissions, biogenic carbon emissions, carbon stored in panels and net carbon emissions. To earn the Carbon Footprint credit, a manufacturing plant must demonstrate that its carbon balance results in negative net carbon emissions.

Local and Renewable Resource

A bill of lading or similar documentation shall be produced to verify that at least 85% of the total wood fiber is sourced within a 250 miles (402 km) radius from the plant.

Recycled/Recovered

Use of a minimum of 75% recycled or recovered fiber; OR at least 50% recycled or recovered fiber AND a minimum of 5% post-consumer fiber. The ECCS recognizes the environmental benefits of utilizing the variety of fiber

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sources available, which include both wood and non-wood based cellulose fiber.

The following fiber classifications represent the acceptable fiber types covered by the ECCS as used in the manufacture of composite panel products seeking to qualify for the recycled/recovered requirement:

(1) Recycled Fiber

Pre-Consumer Recycled includes fiber, such as scrap, trimmings and cuttings, generated as a by-product from manufacturing and converting processes of primary wood products. Examples of this category include planer shavings, plytrim, sawdust, fines, chips and bagasse.

Post-Consumer Recycled includes fiber from products that have completed their life as a consumer item and have been diverted or recovered from the solid waste stream after having been used and/or disposed of by the consumer following their intended use. Examples of this category include used pallets, recycled furniture and cabinet waste, construction waste and demolition waste.

(2) Recovered Fiber

Fiber in this category has been recovered as a by-product of an agricultural crop or public/private tree maintenance program where the fiber generated is used on a secondary basis not related to the original agricultural or ornamental function. For definitional purposes, this fiber has been subcategorized as wood and non-wood.

Wood Fiber is generated from the removal of woody biomass from both urban and non-urban sources as part of a management prescription, maintenance or hazard tree program, pre-commercial thinning or salvage operation where the removal of such fiber does not adversely affect soil nutrient or structure. Examples of this category include fruit tree prunings, park tree removal, logging slash and culled timber.

Non-Wood Fiber is generated as a by-product of an agricultural crop where the cellulose is other than woody biomass. Removal of this fiber must not adversely affect soil nutrients or structure. Examples of

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this category include straw from wheat, rice, barley or from other cereal/grain operations.

Furnish ineligible for consideration as recycled or recovered for this ECCS includes fiber generated from the harvest of commercial timber for the sole purpose of converting that timber into chips, shavings or sawdust to then be used in the manufacture of composite panel products. Commercial timber is defined as timber that can be used to produce lumber or plywood. This restriction only applies to the main bole of the tree and does not include the slash or other recoverable by-product resulting from timber harvesting.

<u>Sustainability</u>

A manufacturing plant shall account for the weight of all wood fiber that is brought on-site and determine the percentage by weight that is utilized as furnish to manufacture panels or other non-waste products. Weight shall be measured in bone dry tons (bdt). See also definitions of reutilized materials and disposed materials.

These percentage calculations shall be used to determine the plant's compliance with the sustainability requirement - i.e., by weight, 97% or greater of the fiber furnish brought on-site to manufacture panels shall be either converted into panels or re-utilized as other products.

Wood Sourcing

A manufacturing plant shall produce a valid assessment and certificate showing conformity to either the Forest Stewardship Council (FSC-Controlled Wood Standard FSC-STD-40-005 (V2-1) EN (approved January 2008), or Chain of Custody Standard FSC-STD-40-004 (V2-0) EN (approved January 2008), or Sustainable Forest Initiative (SFI – Fiber Sourcing requirements: Section 2-SFI 2010-2014 Standard; Objectives 8-20 (approved March 2011) for wood fiber used as panel furnish.

ECC STANDARD PART B - FINISHED PRODUCTS (INCLUDING COMPONENTS AND LAMINATED PANELS)

Participant Categories and Eligibility

Part B of the ECCS applies to manufacturers of finished products (including components and laminated panels), as follows:

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(1) ECC Fabricator

An ECC Fabricator purchases laminated or un-laminated ECC-compliant panels originating from ECC-certified plants to process into finished products or components. A fabricating facility is defined as an operation that utilizes ECC-compliant panels, within the Program guidelines, to produce finished products (including components and laminated panels).

(2) ECC Laminator

An ECC Laminator laminates ECC-compliant panels. A laminating facility/line is defined as an operation that affixes a wood veneer, synthetic overlay (including paper and paper-based laminates), powder coating or wet finish to an ECC-compliant panel.

(3) ECC Composite Panel Producer with Co-Located Laminating Line

An ECC-certified composite panel producer with a co-located laminating line converts ECC-compliant panels into laminated panels. The laminating line must operate within the same corporate family as the ECC-certified panel producer. A co-located laminating facility is defined as onsite or within a radius of 10 miles (16 km) from the ECC-certified manufacturing plant.

Non-Eligible Categories

Distributors, cut-to-size, wholesale and re-bundling operations are not eligible for ECC certification at this time. These business groups play an important role in "passing through" ECC certification commercial documents, such as an invoice or bill of lading, similar to the chain of custody pass-through provisions of the CARB regulation referenced in this ECCS.

Environmental Requirements

Only manufacturers that demonstrate conformance to both requirements below may carry the ECC-certified logo and/or other identifying mark on their qualifying products.

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Requirement #1

Finished products (including components and laminated panels) shall contain at least 50% ECC-compliant composite panels from ECCcertified plants, as measured by total volume or weight. This total shall account for all materials including but not limited to laminates, fasteners, hinges, solid lumber and wet finishes. Packaging materials are not included in this total. Evidence of compliance shall be provided by means of a written material list for each individual item that is finished and ready for sale, and that carries the ECC-certified logo and/or other identifying mark. Composite panels are defined as particleboard, medium density fiberboard (MDF), hardboard, engineered wood siding and engineered wood trim; AND

Requirement #2

Of the total particleboard, MDF, hardboard, engineered wood siding and engineered wood trim contained in the finished products (including components or laminated panels), a minimum of 95% of those composite panels, by volume, shall be ECC-compliant. Evidence of compliance shall be provided by means of an internal tracking system for each individual item that is ready for sale and that carries the ECC-certified logo and/or other identifying mark. The tracking system shall account for the amount of ECC-compliant panels used for each production run of an individual item, but does not need to account for the quantity of ECC-compliant panels in a single piece of an individual item. This tracking is not required if the manufacturer demonstrates that it purchases 100% ECC-compliant panels.

Glossary of Terms

- Assembly Line. Operation that produces a finished product (including components and laminated panels).
- Co-Located Laminating Line. A co-located laminating line is onsite or within a radius of 10 miles (16 km) from an ECC-certified panel manufacturing plant. The laminating line shall operate within the same corporate family as the ECC-certified panel manufacturer.
- Component. Item that contains ECC-compliant panels but is not a finished product ready for sale to an end consumer. An example of a component is a drawer front that is produced by a facility and subsequently used by another facility to make a finished cabinet.

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- Facility. Site with one or more laminating or assembly lines that process particleboard, medium density fiberboard (MDF), hardboard, engineered wood siding or engineered wood trim.
- Finished Product. Item ready for sale to an end consumer, or a component or laminated panel.
- Individual Item. An item ready for sale to an end consumer with a
 unique model number/type/SKU from others of the manufacturer. For
 purposes of this Standard, an individual item is not a suite, family or
 grouping of items. For example, a suite of furniture that may include
 a desk, bookcase, filing cabinet, etc., with a matching style or theme is
 not an individual item.
- Laminated Product. Particleboard, medium density fiberboard (MDF), hardboard, engineered wood siding or engineered wood trim that has had a wood veneer, synthetic overlay (including paper and paperbased laminates), powder coating or wet finish applied to one or both surfaces. A laminated product also includes ECC-compliant panel(s) affixed to the surface of a core material such as softwood plywood.
- Material List. Inventory of every component contained in a finished product that includes a description of each component along with either its volume or weight.
- Production Run. Items produced over a continuous period of time using the same raw materials. A production run can include a "one-off" custom item.

ECCS HISTORY

- CPA 4-11 Approved September 19, 2011; effective October 3, 2011
- CPA 4-11 Amended April 30, 2012; effective May 1, 2012
- CPA 4-11 Re-issued October 1, 2012 to supersede all previous versions

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(Informative Appendix)

<u>Development of CPA Carbon Calculator</u>

CPA contracted with Bowyer & Associates, Inc., in 2010 to develop the CPA Carbon Calculator used in the ECCS for North American composite panel manufacturing plants. The lead consultant was Dr. Jim Bowyer, Professor Emeritus and former department head, University of Minnesota Department of Bioproducts and Biosystems Engineering, and an Elected Fellow of the International Academy of Wood Science. Dr. Bowyer has also served as President of the Forest Products Society; President of the Society of Wood Science and Technology; Chairman of the Tropical Forest Foundation; and Vice President of the Consortium for Research on Renewable Industrial Materials (CORRIM). He has degrees in Forest Management (BS) from Oklahoma State University, Forest Products (MS) from Michigan State University, and Wood Science and Technology (PhD) from the University of Minnesota.

Calculations used in the Carbon Calculator model are derived from a variety of sources, including the following:

- The Consortium for Research on Renewable Industrial Materials (CORRIM)
- U.S. Environmental Protection Agency (USEPA) eGridweb
- US Energy Information Administration (EIA), Voluntary Reporting of Greenhouse Gases Program
- Environment Canada, GreenHouse Gas Emissions Quantification Guidance
- Canada Electricity Association, Electricity Generation in Canada by Province and Fuel Type, Statistics Canada, Survey 2151, 2009
- National Center for Air and Stream Improvement (NCASI), Forest Industry Carbon Assessment Tool (FICAT)

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