

DIVISION 06 00 00. WOOD, PLASTICS, AND COMPOSITES

06 00 00 - Wood, Plastics, and Composites

Contractor shall review construction documents and provide carpentry work as required in said documents and as specified in applicable building codes.

06 05 73 – Wood Treatment

SPECIFIER NOTE:

resource management: Some species of wood are natural elements while others are resistant to termite attack. The heartwood is commonly recognized by the building codes: cedar, and black walnut. Redwood and Eastern red cedar

toxicity/IEQ: Lumber, timber, wood structural panels, pile structures are often required by building codes to be preservative treated. Requirements of an applicable American Wood-Preserve species, product, preservative and end use.

There are three broad classes of wood preservatives: (1) inorganic preservatives, such as copper naphthenate, generally used for utility poles, lam construction; and, (3) waterborne preservatives which include ammoniacal copper arsenate (ACA), alkaline copper quat (ACQ), ammoniacal copper zinc arsenate (ACZA), chromated copper arsenate (CCA-A and CA-B), and copper naphthenate, sodium borate, and borax. In use, wood preservatives are usually of fairly low volatility and their emissions rates are not large and they do not generally pose health hazards. CCA has been found to contain arsenic by December 31, 2003, in favor of preservative-treated wood for pilings, permanent wood formwork, and other uses. As of January 1, 2004, EPA will not allow CCA to be used for these residential uses. This decision on CCA, however, does not affect the use of preservative-treated wood for pilings, permanent wood formwork, and other uses.

performance: Wood preservatives are used to make wood resistant to termite attack. Most building codes require that structural wood be naturally durable wood or preservative-treated wood. If preservative-treated wood or systems are used, a variance from the building department may be required. Do not specify wood furnishings or finishes that require preservative treatment. Comfort standards typically allow humidity to fluctuate between 30% and 60% relative humidity.

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SCAQMD #1113; carpet with the C Label Plus; carpet cushion with CF composite wood and agrifiber product formaldehyde.

As per USGBC published Credit Interpretation adding that low emitting materials are directed toward (non-prefabricated) products. Verify product products.

Both the Adhesive and Sealant Categories are indicated that low VOC adhesives and sealants at extreme temperature and humidity Green Seal, an independent, non-profit organization products using internationally recognized Green Seal certification meets the environmental standards for ecolabeling by the International Organization for Standardization (ISO) and the Agency's criteria for third-party certification products; and the criteria for bona fide ecolabeling Ecolabeling Network.

Engineered wood products manufactured to meet standards are also available. For example, the CPMA's (CPA's) Standard for Engineered Wood Products for maximum formaldehyde emissions, ANSI A208.2, the Composite Panel Standard covers MDF for interior applications and specifies an emission level for different grades

2. VOC data:

a. Adhesives:

1. Submit manufacturer's product data sheet and limits of the product. Submit data sheet on a basis for certification.
2. Submit Green Seal Certification for certification.
3. **[Submit manufacturer's certification with SCAQMD #1168.] [Specify that products comply with SCAQMD #1168. In conditions do exist or direct submit manufacturer's certification with Bay Area AQMD Reg. 8, Part 801 and with California Air Resources Board containers 16 oz or less.]**

b. Engineered Wood Products: Provide information on composite wood and agrifiber products **[are third-party certified to meet standard requirements for formaldehyde emissions and added urea-formaldehyde resins]**

1. ANSI A208.1 - 1999, Part 801
2. ANSI A208.2 - 2002, Medium Density Fiberboard for Interior Applications

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SPECIFIER NOTE:

Green building rating systems sustainably harvested wood includes credit for use of wood under Forest Stewardship Council (FSC) v2.2, a minimum of 50 percent of products incorporated into the system in accordance with the Forest Stewardship Council Green Globes-US also products originate from certified sources. Forest Stewardship Council, Sustainable Forest Management Program

- B. Letter of Certification(s) for Sustainable Forestry:
 - 1. Forest Stewardship Council (FSC): Provide letter of certification from supplier. Indicate compliance with FSC "Forest Management" and identify certifying organization.
 - a. Submit FSC certification numbers; line-item basis.
 - b. Submit copies of invoices bearing certification numbers; line-item basis.
 - 2. Sustainable Forestry Board: Provide letter of certification from supplier. Indicate compliance with the Sustainable Forestry Initiative (SFI) and identify certifying organization.
 - a. Submit SFI certification numbers; line-item basis.
 - b. Submit copies of invoices bearing certification numbers; line-item basis.
 - 3. Canadian Standards Association (CSA): Provide letter of certification from lumber supplier. Indicate compliance with the Canadian Standards Association organization.
 - a. Submit CSA certification numbers; line-item basis.
 - b. Submit copies of invoices bearing certification numbers; line-item basis.
- C. Letter of Certification for Pressure Treatment: Submit letter of certification stating chemicals and process used and net amount of preservative. Indicate conformance with specified standards.

PART 2 - PRODUCTS

SPECIFIER NOTE:

EO 13423 includes requirements for Federal Agencies to disclose hazardous chemicals and materials acquired, used, or disposed of. EO 13423 includes requirements for Federal Agencies to disclose hazardous practices, including acquisition of biobased, environmentally preferred, efficient, and recycled-content products"

Specifically, for USDA-designated biobased products, Federal Agencies meeting or exceeding USDA's biobased content recommendations should use biobased products made from rapidly renewable resource products.

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And, under the Sustainable Building requirements per Green Building Environmental Quality, EO13423 directs Federal agencies to reduce low pollutant emissions, including adhesives, sealants, p

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2.1 MATERIALS

A. Preservative Pressure Treatment:

1. Toxicity/IEQ: Products containing chromium and/or arsenic containing arsenic will not be permitted.
2. Waterborne Wood Preservatives:
 - a. Wood products shall be treated with preservatives conforming to AWPA Standards P1 and P3 for arsenic and/or chromium.
 - b. Pressure treatment of wood products shall conform to AWPA Standards U1 and T1.
 - c. Retention of preservatives:
 1. Moderate service conditions: minimum 0.15 pounds per cubic foot (oxide basis).
 2. Severe conditions (constant wetting): minimum 0.25 pounds per cubic foot (oxide basis).

SPECIFIER NOTE:

Some preservatives are not to be used in direct contact with ground or water. For example, borates for use in exposed direct precipitation water.

3. Borate-based preservative:
 - a. Impregnate lumber with preservative conforming to AWPA Standard P18.

B. Fire Retardant Treatment:

1. Toxicity/IEQ: Fire-retardant-treated wood products containing sulfates, ammonium phosphate and formaldehyde will not be permitted.
2. Fire Retardant Formulations:
 - a. Wood products shall be treated with preservatives conforming to AWPA Standard P17.
 - b. Fire retardant treatment of wood products shall conform to requirements of AWPA Standard U1 and T1, Section 8.8.

C. Natural Decay and Insect Resistant Wood:

1. Resource Management: Provide sustainable wood products in accordance with [FSC] [SFI] [CSA] [xxx]. Heartwood is the heartwood of the following species and a piece with corner sapwood is permitted if the side on which it occurs is heartwood. Acc
 - a. Decay resistant. Redwood, South black locust and black walnut.



b. Termite resistant. Redwood and E

PART 3 - EXECUTION

3.X SITE ENVIRONMENTAL PROCEDURES

A. As specified in Division 01 (1) and Section 06 10

06 10 00 - Rough Carpentry

Lumber shall be of live, sound stock and properly dried. where any lumber shall come into contact with concrete as support members for decks, porches or balconies. L **maximum 12** percent moisture content, **for dry climates** adequate bracing and shoring during the construction pr plumbing and/or wiring shall be reinforced by adding me strengthen member back to original capacity and mainta not be larger than 1/3 the depth and not closer than 2" to

Wood Species: #2 Southern Yellow Pine, Douglas Fir,

SPECIFIER NOTE:

resource management: Wood is a renewable resource. F benefits, including: habitats, potential sources for medic sources of sustainably harvested wood are available. No produce soil erosion, pollutant runoff, increased levels of warming, and habitat loss.

Forest Certification Standards in North America include:

- The American Tree Farm System developed by t to www.treefarmssystem.org/aboutfarming/whatis.
- Canada's National Sustainable Forest Managem certifiedwood.csa.ca
- ISO 14001 developed by the International Organi a forest-specific standard, ISO offers a special te to forestry and assists with implementation of ISO
- The Principles for Natural Forest Management de Council; for Canada visit www.fsccanada.org, for
- The Sustainable Forestry Initiative® created thro Association and currently managed by the Sustai entity established to manage SFI); refer to www.afandpa.org/Content/NavigationMenu/Envir

Most trees in the United States are referred to as either " trees are deciduous trees that, with a few exceptions, los Softwood forest types are conifers and evergreens such Wood that is used in construction of buildings is primarily

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Much of America's hardwoods, such as oaks, are found in the West and South. Douglas-fir is the most common Southern pine, such as loblolly and shortleaf, are the most common. Quaking aspen, a hardwood, is the most widely distributed

The term "Engineered Wood Product" (EWP) refers to a design properties assigned to it. EWPs are often manufactured from pieces of wood that together create larger high strength products. Engineered wood components include: plywood, oriented strand panels, glue laminated beams, structural composite lumber, and parallel strand lumber, as well as I-joists and metal plate. An additional sub-component of structural composite lumber is structural lumber. Finger-jointed lumber, which is interchangeable with solid-sawn members of the same species, is considered an EWP. Finger-jointed lumber or end-jointed lumber is marked "STUD USE ONLY" or "NAIL LIMITED TO USE WHERE ANY BENDING OR TENSION STRESSES ARE APPLIED". Engineered wood products are typically prefabricated, not custom made. Engineered wood products are frequently more efficient than solid sawn lumber due to the lower coefficient of variance of EWP. EWP is more resource efficient than assemblies constructed of solid

toxicity/IEQ: Adhesive binders used in engineered wood products and resins that pose varying degrees of human health risks. See Wood Treatment for information regarding treated wood.

performance: Wood is a natural and efficient building material. The characteristics of wood change over time as a result of construction factors. These changes in structural design values of various grades through a in-grade testing program of lumber and published in the National Design Specification© (NDS©) for Wood Construction. For efficient resource use of solid sawn lumber, it is recommended that the grade of lumber be specified to suit the purpose. As an alternative, reclaimed lumber can be used since it performs comparably to a grading agency in accordance with American Lumber Standard. Further, the use of engineered wood products can result in savings expected of conventional lumber/timber construction. However, it might be more difficult to recycle than standard, solid sawn lumber. The manufacture of the engineered wood product.

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes:
 - 1. Framing with dimension lumber.
 - 2. Engineered wood products.
 - 3. Wood furring, grounds, nailers, and blocking.
- B. Related Sections:

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labor. USGBC-LEED™ v2.2 include extracted/harvested and manufactured at project site. Green Globes-US also provides products manufactured.

2. Local/Regional Materials:
 - a. Sourcing location(s): Indicate local recovery; indicate distance between and the project site.
 - b. Manufacturing location(s): Indicate indicate distance between manufa
 - c. Product Value: Indicate dollar valu materials; include materials cost o
 - d. Product Component(s) Value: Who manufactured in separate location component. Indicate the percentag unit of product.

SPECIFIER NOTE:

Green building rating systems may materials. USGBC-LEED™ v2.2, f emitting materials, including: adhe coatings, carpets, and composite v LEED™ v2.2, adhesives and seals. South Coast Air Quality Managem adhesives are to comply with Gree paints are to comply with Green S comply with Green Seal GS-03; cl SCAQMD #1113; carpet with the C Label Plus; carpet cushion with CF composite wood and agrifiber proo formaldehyde.

As per USGBC published Credit I emitting materials are directed tow prefabricated) products. Verify pro products.

Both the Adhesive and Sealant Co indicated that low VOC adhesives extreme temperature and humidity Green Seal, an independent, non-products using internationally reco Green Seal certification meets the environmental standards for ecola Organization for Standardization (I Agency's criteria for third-party cer products; and the criteria for bona Ecolabeling Network.

Engineered wood products manufa standards are also available. For e

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Association's (CPA's) Standard for maximum formaldehyde emissions ANSI A208.2, the Composite Panel covers MDF for interior application emission level for different grades

3. VOC data:
 - a. Adhesives:
 1. Submit manufacturer's product limits of the product. Submit
 2. Submit Green Seal Certificate basis for certification.
 3. **[Submit manufacturer's certificate with SCAQMD #1168.] [State that products comply with exposure to freeze/thaw and moisture will not occur. If conditions do exist or direct submit manufacturer's certificate Bay Area AQMD Reg. 8, 16 oz and with California Air containers 16 oz or less.]**
 - b. Engineered Wood Products: Provide and agrifiber products **[are third-party standard requirements for formaldehyde added urea-formaldehyde resins]**
 1. ANSI A208.1 - 1999, Particulate
 2. ANSI A208.2 - 2002, Medium Interior Applications

SPECIFIER NOTE:
Green building rating system sustainably harvested wood includes credit for use of wood under Forest Stewardship Council v2.2, a minimum of 50 percent products incorporated into accordance with the Forest Green Globes-US also products originate from certified sources Council, Sustainable Forest Management Program

- B. Letter of Certification(s) for Sustainable Forestry:
 1. Forest Stewardship Council (FSC): Provide supplier. Indicate compliance with FSC "Forest Management" and identify certifying organization.
 - a. Submit FSC certification numbers; line-item basis.
 - b. Submit copies of invoices bearing

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2. Sustainable Forestry Board: Provide letter supplier. Indicate compliance with the Sustainable Forestry Initiative" (SFI) and identify certification numbers;
 - a. Submit SFI certification numbers; item basis.
 - b. Submit copies of invoices bearing certification numbers.
3. Canadian Standards Association (CSA): Provide letter from lumber supplier. Indicate compliance with certification organization.
 - a. Submit CSA certification numbers; line-item basis.
 - b. Submit copies of invoices bearing certification numbers.

1.3 QUALITY ASSURANCE

- A. Sustainably Harvested Wood: Certification Organization [Forest Stewardship Council] [Sustainable Forestry Association] [xxxxxxx].
- B. Recycled Content Materials: Where recycled lumber applications, include lumber certification and quality.
- C. Engineered Wood Products:
 1. Determine formaldehyde concentrations in conditions of temperature and relative humidity or E1333.
 2. Determine Volatile Organic Compounds from manufactured wood-based panels in accordance with ASTM E1333.

PART 2 - PRODUCTS

SPECIFIER NOTE:

EO 13423 includes requirements for Federal Agencies to use practices, including acquisition of biobased, environmentally efficient, and recycled-content products"

Specifically, under the Sustainable Building requirements per Environmental Impact of Materials, EO13423 directs Federal Agencies to "use materials with recycled content superior to or exceeding EPA's recycled content recommendations" and other products to "use materials with recycled content superior to recycled content plus one-half of the pre-consumer content (cost) of the total value of the materials in the project."

Additionally, for USDA-designated biobased products, Federal Agencies meeting or exceeding USDA's biobased content recommendations should use biobased products made from rapidly renewable resource products.

And, under the Sustainable Building requirements per Green Building Environmental Quality, EO13423 directs Federal agencies to use low pollutant emissions, including adhesives, sealants, p

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2.1 MATERIALS

A. Lumber:

1. Resource Management:

SPECIFIER NOTE:

Disallowing the use of old growth timber not recovered and cut from public lands than of this draft, two examples of viable and old growth wildland fires on public land are the 500,000 acre in SW Oregon and the 150,000 acre (10 million) Central Sierra Nevada.

- a. Virgin Lumber: **[Lumber fabricated from old growth timber is not permitted.]** Provide sustainably harvested lumber in accordance with **[FSC] [SFI] [CSA]**
- b. Salvaged Lumber: Lumber from deconstructed buildings or structures. Unless otherwise specified, delivered clean, denailed, and free of contamination.
- c. Recovered Lumber: Previously harvested and otherwise abandoned. Unless otherwise specified, delivered clean and free of contamination.

B. Engineered Wood Products:

1. Toxicity/IEQ:

- a. Products shall contain no added urea formaldehyde.

2.2 ACCESSORIES

A. Adhesive:

1. Toxicity/IEQ: Comply with applicable regulatory requirements, GS-36 for Commercial Adhesive. **[Management District Rule 1168] [Bay Area Air Quality Management District Rule 1168] [CARB] for containers larger than 16 oz and with CARB for containers 16 oz or less], and**

B. Fasteners:

1. Recycled Content: Fabricated from 100 percent recycled steel.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install as indicated and in accordance with the National Association of Home Builders (NAHB) Advanced Framing Techniques: Optimized Framing.

3.X SITE ENVIRONMENTAL PROCEDURES

A. Indoor Air Quality:

1. Temporary ventilation: Provide temporary

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- a. During and immediately after installation of wood products, and laminated wood products, provide temporary ventilation.
- B. Waste Management: As specified in Section 01 71 00 - Waste Management and as follows:
 1. Select lumber sizes to minimize waste; reuse where possible. Clearly separate scrap lumber from other materials, including: shims, bracing, and other components.
 2. Do not leave any wood, shavings, sawdust, or debris on site. Prevent saw dust and wood shavings from being blown or carried off site.
 3. Do not burn scrap lumber that has been previously treated with preservatives.
 - a. Do not send lumber treated with preservatives to incineration facilities or "waste-to-energy" facilities.

06 11 00 - Wood Framing

Floor Framing - Information below pertains to conventional wood framing. If steel trusses are used follow manufacturer's guidelines for installation. Do not be used where any lumber shall come into contact with masonry or roof blocking.

Girders: Install girders in pockets formed in the masonry. The pocket should allow a minimum of 1/2" on both sides.

Girders: solid wood, two or more 2" planks, laminated wood, or steel beams

Sills: Install single 2"x 6", 4"x 6" or double 2"x 6" horizontally on foundation. Bore holes in sills for girders.

Floor Joists: Space floor joists 12" to 16" on center. For load bearing and spanning capability, provide a minimum 1 1/2" of bearing wood or 3" of masonry on edge of sill. If joists are lapped over girder, the maximum overhang is 12". Do not lap at wood I-beam. The end of the sub-floor sheets fall directly on the bearing point using one 8d or 10d nail on each side from ends. Wood cross bridging shall be at least 2" at each end. Install one row of bridging for 12'-0" or less, install two rows of bridging.

Floor Joists: 2"x 10"s, 2"x 12"s, wood I-beam center (OC).

Exterior Walls - All exterior walls shall be constructed with wood center (OC), with single bottom plates and double top plates at mid-height of all walls. For exterior corner joints, install 2x4 blocks. Where interior partitions meet exterior walls, install 2 stud blocks approximately one foot long. One block is placed about center of the studs.

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