SECTION 061603

CERTIFIED WOOD SHEATHING

CSI 3-PART **SHORT-FORM** GUIDE SPECIFICATION:
USE FOR OUTLINE OR DD SPECIFICATION ISSUES.

EDIT TO SUIT PROJECT

PART 1 - GENERAL

1.1 SUMMARY

A. Work of this Section consists of composite wood panel sheathing and includes, but is not limited to, the following:

1. Exterior wood panel sheathing
2. Engineered wood panel products
3. Structural panels
4. Accessories including, but not limited to, metal connector plates, structural connectors, fasteners

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and DIVISION 01 General Requirements, Specification Sections, apply to this Section.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's printed descriptions of materials, components, manufacturing standards followed, prefinishes, treatment systems, adhesives, glues, resins, mechanical fastening, performance criteria, usage limitations, and installation recommendations.

Delete Shop Drawing requirement if not applicable.

B. Shop Drawings: Submit fabrication and assembly Shop Drawings indicating structural shear walls indicating materials, piece quantities and dimensions, each exposed piece surface finish and jointing, assembly configuration, specific attachments and attachment requirements.

1. Drawings for installed products indicated to comply with design loads shall include structural analysis data, signed and sealed by the qualified professional engineer responsible for their preparation.

C. Samples:

1. Initial for Selection: Submit printed color charts or sample chains indicating manufacturer’s complete range for each type of panel material finish exposed to view not yet selected by Architect or specified.
2. Final Selection: Submit a minimum 6 inch (150mm) square sample of each different profile (grain and species for clear finishes) with proposed finishes, and fasteners.

D. Quality Assurance Submittals: APA trademark Certificates, and wood treatment Test and Evaluation Reports.

NOTE: Edit LEED Requirements below to suit project.

E. Sustainable Design (USGBC LEED®) Submittals:

1. LEED Credit MR, Materials & Resources. Submit completed LEED 2009-NC v.3 Submittal Templates, product data, and other required paperwork as follows:
   a. MR 4.1, 10% Recycled Content
   b. MR 4.2, 20% Recycled Content
   c. MR 5.1, 10% Regional Materials
   d. MR 5.2, 20% Regional Materials
   e. MR 6, Rapidly Renewable Materials
   f. MR 7, FSC Certified Wood: Submit chain-of-custody certificates
2. LEED Credit IEQ, Indoor Environmental Quality. Submit completed LEED 2009-NC v.3 Submittal Templates, and required paperwork as follows:
   a. IEQ 4.1, Low Emitting Materials, Adhesives & Sealants: Submit VOC Data
   b. IEQ 4.2: Low Emitting Materials, Paints & Coatings, VOC Data
   c. IEQ 4.4: Low Emitting Materials, Indoor Composite Wood & Agrifiber, No Added Urea-Formaldehyde Content

F. Closeout Submittals: Operation and Maintenance Data, and Record Documents.

NOTE: Edit LEED Requirements below to suit project.

1. Sustainable Design Closeout Documentation: Submit completed USGBC LEED® Worksheet Templates for the following credits:
   a. MR 4.1, MR 4.2, MR 5.1, MR 5.2, MR 6, MR 7
   b. IEQ 4.1, IEQ 4.2, IEQ 4.4

1.3 QUALITY ASSURANCE

A. Regulatory Requirements

1. Engineered Wood: APA trademark
2. Provide fire retardant treatment which complies with the following regulatory requirements:
   a. FHA Minimum Property Standard #2600.
   b. HUD Materials Release 1261.
3. International Organization for Standards (ISO) 14001, 9001, and 9002 compliant.

B. Qualifications:

1. Manufacturer: A firm capable of providing Third Party Certification that composite wood materials were sourced from sustainably managed forests.
2. Testing Agency: An independent testing agency with the experience and capability to conduct the testing indicated, meeting requirements of ISO/IEC Standard 17025 or ASTM E699 and ASTM E329.
3. Engineer: Licensed by the AHJ where Project site resides.

C. Certifications: Manufactured composite wood products shall be sourced from sustainably managed forests as certified by SmartWood, SCS, SGS, BVC, SFI, ATFS, CSA, or VFF, and displaying the FSC, PEFC, PEFC member, or VFF label.

NOTE: Edit sustainability standards and certifications below to suit project.

D. Sustainability Standards and Certifications:

1. Adhesive and Sealant VOC Limits: According to South Coast Air Quality Management District Rule 1168 and GS-36 for aerosols.
2. VOC Limits: As tested using U.S. EPA Reference Test Method 24 and as defined by
   a. South Coast Air Quality Management District (SCAQMD) Rules: In areas where exposure to freeze/thaw conditions and direct exposure to moisture will not occur.

1). SCAQMD Rule 1113, Architectural Coatings
2). SCAQMD Rule 1168, Adhesive and Sealant Applications

b. Bay Area Air Quality Management District (BAAQMD) Regulation: For containers larger than 16 oz., for areas where freeze/thaw conditions do exist or direct exposure to moisture can occur.
1). BAAQMD Regulation 8, Rule 51

c. California Air Resources Board (CARB): For areas where freeze/thaw conditions do exist or direct exposure to moisture can occur.
1). CARB for containers 16 oz. or less.

d. Green Seal (GS) Standards:
1). GS-11, Low Odor or Low VOC Paint
2). GC-03, Anti-Corrosive Paints, Second Edition, January 7, 1997

3. Composite wood and agrifiber products shall contain no added urea-formaldehyde resins.
4. Certified Wood Materials: According to FSC-STD-40-004 chain-of-custody requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery, Storage and Handling per manufacturer's written recommendations, and DIVISION 01 requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS / FABRICATORS

GREEN NOTE: For the most current list of FSC Certified Products go to http://www.vtwoodnet.org/certified_wood_sources/certified_wood_sources_5.html

There are currently no Vermont manufacturers of composite wood panel products.

A. FSC Sourced Particleboard, MDF, Plywood Manufacturer/Distributor List:

1. FSC Fire-Rated Panels
   a. Panel Source International, St. Albert, AB, Canada; 780.458.1007; www.panelsource.net

2. FSC Hardboard
   a. Eucatex of North America, Inc., Alpharetta, GA; 678.624.0160; pfurlanetto@eucatex.net

3. FSC Hardwood Plywood:
   a. Mt. Baker Products, Inc, aka Mt. Baker, Bellingham, WA; 360.733.3960; www.mtbakerplywood.com

4. FSC MDF
   a. Chesapeake Plywood, LLC, Baltimore, MD; 410.244.0055; www.chesapeakeplywood.com
   b. Duratex of North America, High Point, NC; 336.885.1500; phil.kusiak@duratex-northamerica.com
   c. Eucatex of North America, Inc., Alpharetta, GA; 678.624.0160; pfurlanetto@eucatex.net
   d. Panel Source International, St. Albert, AB, Canada; 780.458.1007; www.panelsource.net

5. FSC OSB
   a. Grant Forest Products, Mississauga, Ontario, Canada; 905.858.3200; www.gfp-inc.com

6. FSC Particleboard
   a. Atlantic Plywood Corporation, Woburn, MA; 585.768.7440 ext. 201; www.atlanticplywood.com
   b. Chesapeake Plywood, LLC, Baltimore, MD; 410.244.0055; www.chesapeakeplywood.com
   c. Collins Products, Klamath Falls, OR; 541.885.3289; 800.547.1793; www.collinsco.com

d. Columbia Forest Products, Portland, OR; 800.547.4261; www.columbiaforestproducts.com
e. Fiberesin Industries, Inc. and Rodman Industries, Oconomowoc, WI; 262.567.4427; www.fiberesin.com
f. Panel Source International, St. Albert, AB, Canada; 780.458.1007; www.panelsource.net

7. FSC Plywood
   a. Atlantic Plywood Corporation, Woburn, MA; 585.768.7440 ext. 201; www.atlanticplywood.com
   b. Chesapeake Hardwood Products, Inc., West Chesapeake, VA; 757.543.1601; www.chpi.com
   c. Chesapeake Plywood, LLC, Baltimore, MD; 410.244.0055; www.chesapeakeplywood.com
   d. Columbia Forest Products, Portland, OR; 800.547.4261; www.columbiaforestproducts.com
   e. Panel Source International, St. Albert, AB, Canada; 780.458.1007; www.panelsource.net
   f. S.J. Morse Company, Capon Bridge, WV; 304.856.3423; www.sjmorse.com
   g. States Industries, Eugene, OR; 800.626.1981; www.statesind.com

8. FSC Veneer Panels
   a. Architectural Forest Products, Inc., Two Rivers, WI; 920.793.4404; www.savetheforest.com
   b. Midwest Veneer & Pressing, Inc., Wyoming, MN; 651.462.4389; www.midwestveneer.com
   c. S.J. Morse Company, Capon Bridge, WV; 304.856.3423; www.sjmorse.com

GREEN NOTE: The following CPA (Composite Panel Association) EPP and CARB (California Air Resources Board) compliant manufacturers meet stringent formaldehyde and other environmental standards.

At present no Vermont manufacturer of wood products have been accepted to the list.

B. CPA CARB compliant composite wood panel producers; Phase I (2009) formaldehyde emissions of < 0.18; Phase II (effective 2011) < 0.09 ("California 93120 Compliant for Formaldehyde" or "CARB ATCM 93120 Phase 2 / Phase 1 Certified")

NOTE: This regulation is applicable to hardwood plywood with a veneer core (HWPW-VC), hardwood plywood with a composite core (HWPW-CC), particleboard (PB), medium density fiberboard (MDF), thin tMDF (<8 mm thick), low density fiberboard (LDF), and high density fiberboard (HDF) bonded with urea formaldehyde (UF) resins.

Independent third party testing is required to prove that composite wood products are made with no-added formaldehyde (NAF), or ultra-low emitting formaldehyde (ULEF) resins.

NOT applicable to hardboard, structural (softwood) plywood and OSB bonded with phenol formaldehyde (PF) or melamine urea formaldehyde (MUF) resins.

No-added urea formaldehyde

Highest physical properties

100% recycled wood fiber or 100% post consumer recycled wood waste

FSC mixed credit certified

LEED® credit support: MR 4.1, 4.2, 5.1, 5.2, 7 & IEQ 4.4

CARB ATCM 93120 Phase 2 Certified

Third party certification - SCS, EPP

CHPS compliant - California section 01350 approved

1. Hardwood plywood
   a. PureBond® by Columbia Forest Products
   b. Classic Core® by Columbia Forest Products
   c. GreenT™ by Timber Products Co.
   d. SkyPly FSC by Roseburg
   e. SkyPly FSC CFC Veneer Core by Roseburg
2. Particleboard
   a. EVR™ Panels by ATC Panels
   b. Boise Evergreen™ by Boise Cascade
   c. Collins Pine FreeForm™ by Collins Products
   d. VESTA by Flakeboard
   e. SkyBlend FSC by Roseburg
   f. Encore™ by Sierra Pine
   g. TemStock - FREE by Temple-Inland / Del
   h. GreenT™ by Timber Products Co.
3. MDF
   a. MDF & HDF by Clarion Boards
   b. Extira® by CMI International
   c. VESTA MDF by Flakeboard
   d. Arreis® by Sierra Pine
   e. Medite® II by Sierra Pine
   f. Medex® by Sierra Pine
   g. Medite® 3D by Sierra Pine
   h. Medite® FR by Sierra Pine
   i. Medite® by Sierra Pine
   j. Thin MDF by Sierra Pine
   k. MDF by Sierra Pine
   l. UltraStock™ – FREE MDF by Temple-Inland / Del-Tin Fiber

C. CPA Environmentally Preferable Products (EPP); Use of recycled and/or recovered wood fiber and adherence to voluntarily lower formaldehyde emission standards than government regulations as defined by Federal Executive Order 13101.

1. EPP Particleboard
   a. ATC Panels, Inc., Franklin, VA; www.atcpanels.com
   b. Boise Cascade Corporation, Boise, ID; www.bc.com/particleboard
   c. Collins Products, LLC, Klamath Falls, OR; www.collinswood.com
   d. Flakeboard, OR, SC, LA, New Brunswick; www.flakeboard.com
   e. MASCO Builder Cabinet Group Rapid City, SD; www.merillat.com
   f. Northern Engineered Wood Products, Inc., Smithers, British Columbia; www.newpro.ca
   g. Panolam Industries International, Huntsville, Ontario; www.panolam.com
   h. Potlatch Forest Products, Post Falls, ID; www.potlatchcorp.com
   i. Roseburg, OR, MI, MT, (Russellville) SC, MS, GA; www.rfpco.com
   j. SierraPine, GA, CA, (Springfield) OR; www.sierrapine.com
   k. Tafisa Canada and Company Ltd., Lac-Megantic, Quebec; www.tafisa.ca
   l. Temple-Inland, TX, AR, AL, GA; www.temple.com
   m. Timber Products Company, Medford, OR; www.timberproducts.com
   n. Uniboard, Moncure, NC, Sayabec and Val-d'Or, Quebec; www.uniboard.com
   o. Waverly Particleboard Company, LLC, Waverly, VA; 840.834.3555
   p. Webb Furniture Enterprises, Inc., Galax, VA; www.webbfurn.com

2. EPP MDF
   a. ATC Panels, Inc., Franklin, VA; www.atcpanels.com
   b. Del-Tin Fiber, LLC, El Dorado, AR; www.temeple.com
   c. Flakeboard, OR, SC, AR, New Brunswick, Ontario; www.flakeboard.com
   d. Georgia-Pacific Corporation, Monticello, GA; www.gp.com

e. Plum Creek MDF, Inc., Columbia Falls, MT; www.plumcreek.com
f. Roseburg, Holly Hill, SC; www.rfpco.com
g. SierraPine, Medford, OR; www.sierrapine.com
h. Temple-Inland, Mt. Jewett, PA; www.temple.com
i. Uniboard, Mont-Laurier, Quebec; www.uniboard.com
j. Unilin US MDF, Mt. Gilead, NC; www.unilin.com
k. West Fraser Mills Ltd., British Columbia, Alberta; www.westfraser.com
l. (Pending) Langboard Inc., Willacoochee, GA; www.langboard.com

3. EPP Hardboard
   a. Stimson Lumber Company, Forest Grove, OR; www.stimsonlumber.com

D. Substitution Limitations: Manufacturers of equivalent products beyond those listed above shall be considered when submitted per DIVISION 01, using CSI Substitution Request Form 1.5C (During the Bidding Phase) or Form 13.1 (After the Bidding Phase.) link

E. Product Options

1. Subflooring
2. Underlayment
3. Wall Sheathing
   a. Diaphragms
   b. Shear Walls
4. Roof Sheathing
5. Plywood, face-veneers bonded to core of:
   a. Plywood, 3, 5, 7 or more plies
   b. Particleboard
   c. MDF
   d. HDF
   e. Composite cross-bands with plywood inner core

F. APA Rated Products: APA Panel Handbook & Grade Glossary; APA Technical Papers

1. APA Rated Sheathing
   a. Grade (Face-Back)
   b. Exposure Durability Bond Classification (Form TT-009) Rating
   c. Span rating
   d. Thickness
   e. Edge Joint / Treatment
   f. Glue Resin
   g. Plies: 3, 4, or 5
2. APA Rated Siding:
   a. Surface Treatment
3. APA Rated Sturd-I-Floor
4. APA Rated Sturd-I-Wall
5. Fastener:
   a. Screws: Flat head wood #8, #6, or #4
   b. Nails
6. Accessories: Clips, flashing

2.2 DESCRIPTION

A. Regulatory Requirements

1. CPA EPP Certified MDF, Particleboard and Hardboard; ≤ 0.20 ppm formaldehyde emissions per ASTM E1333.
2. No Added Urea-Formaldehyde (NAF) MDF, Particleboard and Hardboard.

3. Ultra-Low Emitting (ULEF) MDF, Particleboard and Hardboard.

B. Sustainability Characteristics

NOTE. Finger-jointed lumber provides an efficient use of the timber resource allowing mills to combine shorter pieces of wood into dimensional, structural lumber.

1. I-joists have a very high strength-to-weight ratio and provide structural support for floors and roofs using one half the amount of wood that is required for traditional solid sawn joists.
2. OSB consists of small wood chips that can be harvested from fast growing trees, as opposed to the larger dimensional timber required for the manufacture of plywood.

GREEN NOTE: Although EPS foam is derived from a limited petroleum resource, it takes only one quart of oil to create forty quarts of expanded foam, which is in effect, mostly air. EPS foam core contains no CFC's, HCFC's, or formaldehyde.

3. Structural panel systems have a core of expanded polystyrene (EPS) and OSB sheathing, these panels are structural, energy efficient and simple to erect.
4. USGBC LEED® Rating: Comply with project requirements intended to achieve the following Rating, as measured and documented according to the USGBC LEED® Green Building Rating and Version indicated:

NOTE: Each LEED Version requires a different credit total to achieve the desired LEED Rating.

NOTE. Select one of the following Ratings and edit the Version listed to suit your project:

   a. Rating: Certified, Silver, Gold, or Platinum
   b. Version: LEED 2009-NC v. 3 (New Construction)
5. Applicable LEED Credits: Performance requirements of the following LEED Categories and Credits apply to this Section and shall be met:
   a. MR: 4.1, 4.2, 5.1, 5.2, 6, 7
   b. IEQ: 4.1, 4.2, 4.4

2.3 MANUFACTURED UNITS

A. Engineered Wood Products: Provide products acceptable to AHJ, with allowable design stresses as published by manufacturer that meet or exceed those indicated.

NOTE: Engineered Lumber efficiently utilizes forest resources, however binders and glues containing Formaldehyde can prohibit recycling and contribute to poor indoor air quality.

Both ASTM D6007 or ASTM E1333 are methods to determine a glue-laden product's affect on indoor air quality (Formaldehyde specific).

ASTM D6330 is a test to determine non-formaldehyde VOC inputs.

1. Structural Plywood: Per NIST – US DoC PS 1
2. OSB or Waferboard: Per NIST – US DoC PS 2; (Used for subfloors, single floors, roof or wall sheathing including siding, rim boards, stair treads, concrete formwork, treated sheathing, foil-faced sheathing, I-joist webs and outer skins of (SIP) structural insulated panels.)
3. Particleboard (Including Chipboard, Flakeboard, Waferboard, Strandboard): Per ANSI A208.1.

NOTE: Particleboard can be can be made from wood, straw, bargasse (sugar cane), or made from 100 percent recovered & preconsumer recycled wood fiber.

4. Low, Medium and High Density Fiber Core Hardwood Plywood (LDF, MDF, HDF): Per ANSI A208.2 (article link)

NOTE: MDF & HDF can be made from wood, straw, bargasse (sugar cane), bamboo, wheat, sunflowers or made from 100 percent recovered & preconsumer recycled wood fiber.

5. Medium Density Overlay (MDO): Per NIST – US DoC PS 1, Group 1
6. High Density Overlay (HDO): Per NIST – US DoC PS 1, Group 1
7. Hardboard: Per CPA / ANSI A135.4

B. Multipurpose Construction Adhesive: Non-HAP formulation complying with ASTM D3498 that is recommended for indicated use by adhesive manufacturer.

C. Glue: Non-HAP aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

RED NOTE: The USA phased out the use of CCA (chromated-copper-arsenate) treated wood on December 31, 2003. Hexavalent chromium and arsenic pentoxide heavy-metal compounds are known toxins, carcinogens and teratogens that does harm to people, pets and the environment.

D. Decay and Insect-Resistant Wood: American Wood-Preservers Association AWPA Standards; use only chromium-free and arsenic-free materials.

RED NOTE: Avoid specifying bright chromium plated metal finishes, which contain carcinogenic hexavalent chromium in a non-recyclable arsenic heavy metal salt bath.

E. Fasteners: Of appropriate type, length and durability for wood product used to securely fasten to the substrate for the intended life and use of the unit.

PART 3 - EXECUTION

3.1 FIELD CONDITIONS

A. Do not install composite wood panels materials that are wet, moisture damaged, or mold damaged.

3.2 EXAMINATION, PREPARATION AND INSTALLATION

A. Examination, preparation and installation per manufacturer's current written instructions, industry standards, and DIVISION 01 requirements.

1. Proceed with installation only after unsatisfactory conditions have been corrected and installation area properly prepared.
2. Layout installation by marking extents of each item, and anchoring / fastening locations coordinated with blocking or other structural support.
3. Install composite wood panel sheathing per ANSI / AF&PA NDS-2005, manufacturer's written instructions, and SECTION 061003
   a. Place composite wood panels to indicated levels and lines, with surfaces plumb, aligned, cut, and fitted.
   b. Fit composite wood panels to other construction; scribe and cope as needed for accurate fit, but allowing for movement forces.
   c. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
   d. Fasten or anchor composite wood panel materials in a manner with fasteners appropriate to use and anticipated durability. Attach composite wood panel work to substrate securely by anchoring and fastening as indicated, complying with ICC Table 2304.9.1, Fastening Schedule, and ICC-ES / ESR-1539.

3.3 CLEANING, MAINTENANCE AND PROTECTION

A. Provide Progress Cleaning, Waste Management, and Provide Final Cleaning per DIVISION 01 requirements.

B. Provide Initial Maintenance per manufacturer's recommendations.

3.4 CLOSEOUT ACTIVITIES

A. Substantial Completion Requirements per DIVISION 01 requirements.

END OF SECTION

NOTE: Please **contact us** with comments, additions and deletions about this GuideSpec so we can make it better.

VERMONT SUSTAINABLE JOBS FUND

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RED NOTE: Be sure to obtain the latest version of this Guide Specification.

This Guide Specification is not a completed document ready for use. It must be edited deleting, adding, or modifying text, as required to suit project requirements.

The professional stamping and the contracting parties of the Contract Documents are responsible for the accuracy of issued project specifications, including any use of this Guide Specification.

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