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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets [] and/or specifier notes; delete optional text in final copy of specification. Specifier Notes precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate product model numbers, styles and types are used in Specifier Notes and in the specification text Article titled "Acceptable Material." Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies structural insulating sheathing board as manufactured by Berry Plastics Corporation. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

**SECTION 06 12 00
STRUCTURAL PANELS**

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: This Section specifies structural insulating sheathing board.

Specifier Note: Revise Paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

- B. Related Requirements:

Specifier Note: Include in this Paragraph only those sections and documents that directly affect the work of this section. If a reader of this section could reasonably expect to find a product or component specified in this section but it is actually specified elsewhere, then the related section number(s) should be listed in the Subparagraph below. Do not include Division 00 documents or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 documents and Division 01 sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered part of the Contract.

- 1. Section [_____].

1.02 REFERENCES

Specifier Note: Retain References Paragraph when specifying products and installation by an industry reference standard. List retained standard(s) referenced in this section alphabetically. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Contract Conditions or Section 01 42 00 - References may establish the edition date of standards. This Paragraph does not require compliance with standard(s). It is a listing of all references used in this section. Only include here standards that are referenced in the body of the specification in PARTS 1, 2 and/or 3. Do not include references to building codes at any level.

- A. Reference Standards:

- 1. Air Barrier Association of America (ABAA):
 - a. ABAA Master Specifications, Section 01410, Subsection 1.4 Performance Requirements.
- 2. ASTM International (ASTM):
 - a. ASTM D1037 Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.



- b. ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
- c. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- d. ASTM E96/E96M Standard Test Methods for Water Vapor Transmission of Materials.
- e. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- f. ASTM E2178 Standard Test Method for Air Permeance of Building Materials.
- 3. National Building Code of Canada (NBC):
 - a. NBC Chapter 3, Section R301.2.1 and Tables R301.2(2) and R301.7.
- 4. Underwriters Laboratories, Inc. (UL):
 - a. UL 723 Test for Surface Burning Characteristics of Building Materials.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this Section with work of other trades for proper time and sequence in order to avoid construction delays. Comply with Section [01 31 00 - Project Management and Coordination].
- B. Preinstallation Meetings: Conduct preinstallation meeting [one week] prior to commencing [work of this Section] [and] [onsite installations] to verify project requirements, substrate conditions and coordination with other building subtrades, and to review manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section [01 31 19 - Project Meetings].
- C. Sequencing: Sequence work of this section in accordance with Section [01 12 16 - Work Sequence] [and manufacturer's written recommendations for sequencing construction operations].
- D. Scheduling: Schedule work of this Section in accordance with Section [01 32 13 - Scheduling of Work].

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.04 ACTION SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Product Data: Submit as follows:
 - 1. Manufacturer's product data, including manufacturer's technical data sheet.
 - 2. Manufacturer's installation instructions.
 - 3. Catalog pages illustrating products to be incorporated into project.
 - 4. Material Safety Data Sheets (MSDS).

1.05 INFORMATION SUBMITTALS

Specifier Note: Specify submittal of test reports or evaluation service reports intended to document required tests without repeating the test requirements specified in Division 01.

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures].
- B. Test and Evaluation Reports:
 - 1. Certified test reports showing compliance with specified performance characteristics and physical properties.

Specifier Note: Specify submittals intended to document manufacturer installation, storage and other instructions.

- C. Manufacturer's Instructions: Submit manufacturer's [storage] [and] [] installation instructions.
- D. Source Quality Control: Submit documentation verifying that components and materials specified in this Section are from single manufacturer.

Specifier Note: Coordinate with Field Quality Control in PART 3. When manufacturer's services are specified during construction operations to verify installation, include following Paragraph for the submittal of instructions and reports. If no field inspections are required, delete the following Paragraph.

- E. Manufacturer's Reports: Manufacturer's field reports specified.
- F. Qualification Statements:
 - 1. Submit letter of verification for Manufacturer's Qualifications.
 - 2. Submit letter of verification for Installer's Qualifications.

1.06 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer:
 - a. Having [5] years experience manufacturing components similar to or exceeding requirements of project.
 - b. Having sufficient capacity to produce and deliver required materials without causing delay in work.
 - c. Capable of providing field service representation during construction.
 - 2. Installer: Acceptable to manufacturer, experienced in performing work of this section and having specialized in installation of work similar to that required for this project.

Specifier Note: Retain the following Paragraph when certification related to sustainability submittals is a project requirement.

- B. Sustainability Standards Certification: Provide certification for [_____] materials certified by [certification organization's name] in accordance with [certification organizations standard].

1.07 DELIVERY, STORAGE & HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver material in accordance with Section [01 61 00 - Common Product Requirements] and in accordance with manufacturer's written instructions.
 - 2. Deliver materials in manufacturer's original packaging with identification labels intact and in sizes to suit project.
- B. Storage and Handling Requirements:
 - 1. Store materials protected from exposure to harmful weather conditions and at temperatures recommended by manufacturer.
- C. Packaging Waste Management:

Specifier Note: The disposal of packaging waste into landfill sites demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for USGBC's LEED® construction project certification.

Specifier Note: Include the following Subparagraphs to specify information that will provide direction to the Contractor for the disposal of construction waste materials using environmentally responsible methodology other than use of landfill resources.

- 1. Separate waste materials for [reuse] [and] [recycling] in accordance with Section [01 74 19 - Construction Waste Management and Disposal].

Specifier Note: USGBC's LEED certification includes credits for the diversion of construction waste from landfill. Diversion can be tracked by either weight or volume but must be consistent for all materials. Manufacturer may reclaim packaging and delivery materials for recycling.

- 2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
- 3. Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] packaging material [in appropriate onsite bins] for recycling.
- 4. Fold metal and plastic banding; flatten and place in designated area for recycling.

Specifier Note: Add additional Subparagraphs as necessary to include crates, padding and other packing materials that are typically associated with the specified products.

- 5. Remove:

- a. Pallets from site [and return to supplier or manufacturer].

1.08 PROJECT AMBIENT CONDITIONS

Specifier Note: Specify the ambient conditions under which the work must be performed in order for work results to provide the specified quality. Conditions can include factors such as temperature, humidity, lighting; conditions of substrates; or completion of related work.

A. Ambient Conditions:

1. Installation Location: Assemble and erect components only when temperatures are above [_____] degrees F (degrees C).

Specifier Note: Coordinate Article below with Contract Conditions and with Section 01 78 36 - Warranties.

1.09 WARRANTY

- A. Warranty: Refer to Contract Conditions and Section [01 78 36 - Warranties] for project warranty provisions.
- B. Manufacturer's Warranty: Submit for Owner's acceptance manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under other Contract Documents.
 1. Warranty Term: [_____] commencing on date of substantial completion.

PART 2 PRODUCTS

Specifier Note: Retain Article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal," "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 STRUCTURAL SHEATHING

Specifier Note: Include in the following Paragraph manufacturer's name, address, phone number, fax number, e-mail address and website URL.

- A. Manufacturer: Berry Plastics Corporation.
 1. Contact: 25 Forge Parkway, Franklin, MA 02038; Telephone: (800) 345-8881; E-mail: patpresdorf@berryplastics.com; website: www.berryplasticsbpg.com.
- B. Single Source Responsibility: Provide components and materials specified in this section from one manufacturer.

Specifier Note: Substitution procedures must appear either in the Contract Conditions or in Section 01 25 00 - Substitution Procedures. Do not include substitution procedures here.

C. Substitution Limitations:

1. Substitutions: In accordance with [Contract Conditions] [Section 01 25 00 - Substitution Procedures] [No substitutions permitted].

Specifier Note: Include an overall description of the system, assembly, product or material. Include required properties or characteristics that do not obviously belong under other titles. Examples: Configuration, size and color.

D. Description:

1. Square-edged, wood fiber based structural insulating sheathing board made from 97% recycled material.
2. Compatibility:
 - a. Ensure components and materials are compatible with specified accessories and adjacent materials.

E. Materials:

1. Core Material: Wood fiber based, 97% recycled material, pressure-laminated with fibrated, treated plies bonded together with water-resistant adhesive.

Specifier Note: Select outer facing to suit project requirements.

2. Outer Facings: [Reflective aluminum] [Polyethylene] [Kraft/polyethylene/kraft] laminated [on both sides].

Specifier Note: Panels are also available in lengths and widths greater than those specified below. Specify custom dimensions to suit project requirements.

3. Panel Sizes:
 - a. 48 inches x 96 inches (1219 x 2438 mm).
 - b. 48.75 inches x 96 inches (1238 x 2438 mm).
 - c. 48 inches x 108 inches (1219 x 2743 mm).
 - d. 48.75 inches x 108 inches (1238 x 2743 mm).
 - e. [_____].

Specifier Note: Thermo-Ply is available in three grades. Thermo-Ply Blue is the trade name for Grade 1, which is the most rigid of the three grades and demonstrates the highest values in other physical properties, i.e., lateral shear and transverse wind load. All grades contribute points toward LEED certification, and all products are Energy Star approved.

- F. Grade 1: Structural square edge sheathing, thickness 0.135 inch (3.43 mm) for 16 inches (406.4 mm) o.c. stud spacing.
 1. Lateral Shear: Tested in accordance with ASTM E72, Section 14:
 - a. Allowable Design Load, Safety Factor of 2: 428 plf (6.25 kN/m), with 0.5 inch (12.7 mm) gypsum installed on interior.
 2. Thermal Resistance, R-Value 0.02 (RSI 0.0035).
 3. Wind Load Design (Transverse Wind Load Resistance) in accordance with NBC. Tested to ASTM E72.
 - a. Negative Wind Load Resistance: 52.6 psf (2.52 kPa).
 - b. Positive Wind Load Resistance: 49.2 psf (2.36 kPa).
 4. Water Vapor Transmission Rate, ASTM E96, Procedure A: 3.0 g/m²/24 hours.
 5. Water Absorption, ASTM D1037: 15% in 24 hours maximum.
 6. Fire Characteristics, ASTM E84, UL 723:
 - a. Flamespread: 132.69.
 - b. Smoke Developed: 19.22.
 7. Weight: 0.510 psf (24.48 Pa).
 8. Approval Air Barrier in accordance with ABAA Master, Section 01410, subsection 1.4, Performance Requirements:
 - a. ASTM E2178: 0.005 cfm/ft² (0.0008 L/s/m²).
 - b. ASTM E283: Air leakage at 10 mph (4.47 m/s) = 0.011 cfm/ft² (0.016 L/s/m²).
 9. Acceptable Material: Berry Plastics Corporation, Thermo Ply Blue.
- G. Grade 2: Structural square-edge sheathing, thickness 0.113 inch (2.87 mm) for 16 inch (406.4 mm) o.c. stud spacing.
 1. Lateral Shear: Tested in accordance with ASTM E72, Section 14.
 - a. Allowable Design Load, Safety Factor of 2: 408 plf (5.95 kN/m) with 0.5 inch (12.7 mm) gypsum installed on interior.
 2. Thermal Resistance, 0.18 R (0.032 RSI).
 3. Wind Load Design: Transverse Wind Load Resistance in accordance with NBC. Tested to ASTM E72.
 - a. Negative Wind Load Resistance: 48.4 psf (2.32 kPa).
 - b. Positive Wind Load Resistance: 48 psf (2.30 kPa).
 4. Water Vapor Transmission Rate, ASTM E96, Procedure A: 0.33 ounces/ft²/24 hours (2.87 g/m²/24 hours).
 5. Water Absorption, ASTM D1037: 15% in 24 hours, maximum.
 6. Fire Characteristics, ASTM E84, UL 723:

- 1) Flamespread: 120.
- 2) Smoke Developed: 30.
7. Weight: 0.414 psf (0.1 kPa).
8. Approval Air Barrier, ASTM E283 (Assembly): Air leakage at 10 mph = 0.011 cfm/ft².
9. Acceptable Material: Berry Plastics Corporation, Thermo Ply Red.

Specifier Note: Thermo Ply Green is a lightweight sheathing available for structural application only in accordance with manufacturer's instructions.

- H. Grade 3: Square edge, lightweight grade sheathing, 0.078 inch (1.98 mm) thick.
 1. Thermal Resistance, 0.13 R (0.023 RSI).
 2. Wind Load Design: Transverse Wind Load Resistance in accordance with NBC. Tested to ASTM E72.
 - a. Negative Wind Load Resistance: 38.7 psf (1.86 kPa).
 - b. Positive Wind Load Resistance: 38 psf (1.82 kPa).
 3. Water Vapor Transmission Rate, ASTM E96, Procedure A: 0.19 ounces/ft²/24 hours (1.68 g/m²/24 hours).
 4. Water Absorption:
 - a. Maximum: 15% in 24 hours.
 5. Weight: 0.286 psf (13.73 kPa).
 6. Acceptable Material: Berry Plastics Corporation, Thermo Ply Green.

2.02 ACCESSORIES

- A. Roofing Nails: Galvanized 0.12 inch (11 gauge) (3.40 mm), 1.25 inches (31.75 mm) [] in length, minimum, as required to penetrate 0.75 inch (19.05 mm) wood framing.
- B. Staples: Corrosion resistant 1 inch (25.4 mm) wide, 0.065 inch (16 gauge) (1.65 mm) crown with 1.25 inches (31.75 mm) leg length.
- C. Screws: Corrosion resistant 0.11 inch x 1.25 inch (2.82 x 31.75 mm) long, drill point, bugle head.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrates previously installed under other sections or contracts are acceptable for product installation in accordance with manufacturer's instructions prior to structural insulating sheathing installation.
 1. Inform [Owner] [Architect] [Consultant] of unacceptable conditions immediately upon discovery.
 2. Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval from [Owner] [Architect] [Consultant]].

Specifier Note: Specify actions required to prepare the surface, area or site for incorporation of the section's primary products. Describe requirements for exposure or removal of existing assemblies, components, products or materials.

3.02 PREPARATION

Specifier Note: Specify preparatory work required prior to installation/application/erection of primary products.

- A. Ensure structure or substrate is adequate to support structural sheathing.
- B. Surface Preparation: Prepare surface in accordance with manufacturer's written recommendations and coordinate with Section [01 71 00 - Examination and Preparation].

3.03 STRUCTURAL SHEATHING BOARD INSTALLATION

- A. Coordinate installation of sheathing in accordance with Section [01 73 19 - Installation].
- B. Coordinate sheathing work with work of other trades for proper time and sequence in order to avoid construction delays.
- C. Install sheathing plumb and level in accordance with manufacturer's installation instructions.

1. Cut sheathing to fit window, door and other exterior wall openings.

3.04 FIELD QUALITY CONTROL

Specifier Note: Use the following Subparagraphs only when manufacturer's field services are provided and are required to verify the quality of the installed components. Establish the number and duration of periodic site visits required by manufacturer and specify below. Consult manufacturer for services required. Delete if field services are not required. Manufacturers' field reports are included under PART 1, Submittals.

A. Manufacturer Services:

Specifier Note: Use the following Subparagraphs only when manufacturer's field services are provided and are required to verify the quality of the installed components. Establish the number and duration of periodic site visits required by manufacturer and specify below. Consult manufacturer for services required. Delete if field services are not required.

1. Coordinate manufacturer's services with Section [01 45 00 - Quality Control]. Have manufacturer review work involved in handling, installation/application, protection and cleaning of product[s], and submit written reports in acceptable format to verify compliance of work with Contract.
2. Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and periodic site visits for product installation inspection in accordance with manufacturer's instructions.
3. Schedule site visits to review work at stages listed:
 - a. After delivery and storage of products, and when preparatory work on which work of this Section depends is complete, but before installation begins.
 - b. [Twice] during progress of work at [25%] and [60%] completion.
 - c. Upon completion of work, after cleaning is performed.
4. Obtain reports within [3] days of review and submit immediately to [Owner] [Architect] [Consultant].

3.05 CLEANING

- A. Perform cleanup in accordance with Section [01 74 00 - Cleaning and Waste Management] and Section [01 74 13 - Progress Cleaning].
- B. Upon completion, remove surplus materials, rubbish, tools and equipment in accordance with Section [01 74 23 - Final Cleaning].

Specifier Note: Specify special measures needed to minimize waste, collect recyclable waste and dispose of or recycle field-generated construction waste created during demolition, construction or final cleaning.

C. Waste Management:

1. Coordinate recycling of waste materials with Section [01 74 19 - Construction Waste Management and Disposal].
2. Collect recyclable waste and dispose of or recycle field generated construction waste created during demolition, construction or final cleaning.
3. Remove recycling containers and bins from site.

3.06 PROTECTION

- A. Protect installed product from damage during construction in accordance with Section [01 76 00 - Protecting Installed Construction].
- B. Repair damage to adjacent materials caused by sheathing installation.
- C. Replace damaged panels in accordance with manufacturer's instructions.

END OF SECTION