

## SECTION 061623

### SUBFLOORING

#### PART 1 GENERAL

##### 1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

##### 1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the subflooring as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:
  1. Magnesium oxide (MGO) structural panel subflooring.

##### 1.3 RELATED SECTIONS

- A. Cold-Formed Metal Framing - Section 054000.

##### 1.4 REFERENCES

- A. ASTM International (ASTM)
  1. ASTM C1280 Standard Specification for Application of Gypsum Sheathing.
  2. ASTM D6109 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastic Lumber and Related Products.
  3. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
  4. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
  5. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C
  6. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

##### 1.5 QUALITY ASSURANCE

- A. Fire Performance Requirements
  1. Fire-Rated Assemblies: Provide panels suitable for use in fire-rated assemblies in accordance with ASTM E119.
  2. Surface Burning Characteristics: When tested in accordance with ASTM E84:

- a. Flame Spread: 0, maximum.
- b. Smoke Developed: 0, maximum.

## 1.6 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications and other data needed to prove compliance with the specified requirements
- B. Manufacturer's recommended installation procedures.
- C. Manufacturer's warranty.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original undamaged containers with identification labels intact.
- B. Storage and Protection
  - 1. Store subflooring panels in a cool, dry place. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
  - 2. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect subflooring from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- C. Handling: Boards shall be carried on their side and care shall be taken to avoid damaging corners and shiplap edges.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
  - 1. Warranty Period: Two (2) years commencing on Date of Substantial Completion.

## PART 2 PRODUCTS

### 2.1 SUBFLOORING

- A. Manufacturer: Dragon Board USA, 2960 Woodbridge Avenue, Edison, NJ 08837; 732-662-6275; [info@dragonboard.com](mailto:info@dragonboard.com)
- B. Magnesium Oxide (MGO) Subflooring: Magnesium oxide with fibrous reinforcement single-floor panels.
  - 1. Size: 4 feet by 8 feet (1.2m x 2.4m).
  - 2. Nominal Thickness: 3/4 inch (18mm).
  - 3. Edges: Shiplap, ends: square or as indicated.

#### 4. Physical Characteristics

- a. Flexural Modulus: Not less than 106 psi (0.73 MPa) when tested in accordance with ASTM D6109.
- b. Flexural Strength: Not less than 1295 psi (8.93 MPa) when tested in accordance with ASTM D6109.
- c. Shear Strength: Not less than 390 psi (2.69 MPa) when tested in accordance with ASTM D6109.
- d. Fungus/Mold: Classified as non-nutrient when tested in accordance with ASTM G21.

#### C. Fasteners

1. Fasteners for Cold-Formed Steel (CFS): #8, #9 or #10 fine thread self-drilling flat head screw with ribs on the underside of the head, such as Simpson CBSDQ (winged), Grabber CGH8158LG (winged), Grabber BGCB8158SD, Buildex S-12 Rock-On 2156500, or equivalent. The drill wings on the tip prevent board uplift (for use into steel 43 mils or thicker only) while the ribs on the underside of the head allow for a flush finish. Screws must penetrate steel with at least 3 exposed threads.
2. Fasteners for Wood: High/low thread, flat head screw with ribs on the underside of the head, such as Simpson CB3BLGHL, Grabber GCB8125HL, Buildex hi-lo Rock-On 2151500, or equivalent.

### PART 3 EXECUTION

#### 3.1 INSPECTION

- A. Examine the areas and conditions where subflooring is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

#### 3.2 INSTALLATION

- A. General: Install in conformance with ASTM C1280.
- B. Placement: Place all panels in a running bond pattern with all butt joints over joists. All panels should be staggered with a 1/16" (1.6 mm) gap between boards to accommodate movement when attached to CFS and 1/8" (3.2 mm) gap when attached to wood.
- C. Board Orientation: DragonBoard is smooth on one side and rough on the other. Both surfaces are working surfaces: board may be oriented with either side up.
- D. Seams: When laying resilient flooring such as vinyl composition tile, vinyl plank or linoleum over DragonBoard, all subfloor seams shall be filled with a polyurea or modified epoxy seam filler and shaved or sanded flush to create a uniformly smooth surface to avoid telegraphing uneven joints to the wear surface.
- E. Underlayment: In certain circumstances underlayment, isolation membranes and seam bridging membranes may be "needed" or "required". Follow manufacturer's installation instructions.

- F. Fastener Spacing: Fasteners shall be placed 5/8" - 3/4" (15 mm – 18 mm) from board edge and never closer than 1/2" (12 mm). A joist flange size of 2" (50 mm) minimum is recommended to accommodate fastener edge distances. Fasteners should be placed every 8" (200 mm) on center on the perimeter and 12" (300 mm) on center in the field.
- G. Edge Support: All edges shall be supported by framing.
- H. Cutting: DragonBoard can be cut with either hand or power saws. Use blades specifically made for cement board such as Irwin 6T or Diablo PCD blades. Support both ends while cutting.
- I. Adhesives: DragonBoard shiplap seams shall have a 1/4" bead of adhesive applied before placement of the next sheet. Do not allow adhesive to skin over. Use ASTM D 3498 compliant adhesives such as:
  - 1. PEMCO 5100 non-flammable, solvent free, zero V.O.C., polyurethane adhesive.
  - 2. BOSTICH Heavy Duty Construction Adhesive.
  - 3. OSI SF450 Heavy Duty Subfloor & Construction Adhesive.
  - 4. LOCTITE PL 400 Subfloor Adhesive/ Loctite PL Premium Polyurethane Adhesive.

### 3.3 CLEANING

- A. Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION