CEM-STEEL Roof / Floor Panels
---------- Architectural Specifications ----------
Division 3- 03500 Cementitious Decks and Underlayment
Last Updated 03/16/2012

I. General:
The work under this Section is subject to the provisions of the Contract and the Contract Documents, which in any way affect the work herein specified.

II. Scope of Work:
A. Furnish and install all fiber reinforced cement board roof or floor panels as shown on the drawings and as herein specified.
B. Coordinate this Section with interfacing and adjoining work for proper sequencing of installation.

III. Work in Other Sections:
A. Roof framing and floor framing.
B. Insulation.
C. Roof surfacing and floor finishes.

IV. Materials:
A. General: All cement board roof and floor panels shall comply with ASTM C-1186-08, standard specification for flat non-asbestos fiber-cement sheets, Type A, Grade 1; and shall be installed according to the manufacturer's most current instructions published at https://architecturalproducts.com Materials shall be CEM-STEEL or STEEL-CEM manufactured from base product of Plycem Fiber Reinforced Cement Board, as supplied by U.S. Architectural Products, Inc., North Providence, Rhode Island (800-243-6677), or equal.

B. Roof and Floor Panels:
1. All CEM-STEEL or STEEL-CEM roof and floor panels are to be of proper thickness required to carry the design live loads over maximum 24" on center support spacing while limiting deflection to L/240. Select proper thickness panels from manufacturer's load tables. Use 17mm minimum. Cement board panels shall be factory silicone impregnated.

2. Panels shall have the following minimum mechanical properties (in dry condition):

2.a. Modulus of Elasticity perpendicular to fibers (per ASTM C120) 775,000 psi
2.b. Modulus of Rupture perpendicular to fiber (per ASTM C120) 1,820 psi
2.c. Shear Strength (per ASTM D732) 1,180 psi
2.d. Tensile Strength perpendicular to fibers (per ASTM D209) 690 psi
2.e. Compressive Strength perpendicular to surface (per ASTM C170) 3,860 psi

V. Samples and Submittals:
A. Submit two 4" x 6" pieces of panel in thickness selected.
B. Submit two copies of specifications, installation instructions and general recommendations of the manufacturer.

VI. Fire Resistance Properties:
A. Plycem Fiber Reinforced Cement Board base panels from which CEM-STEEL or STEEL-CEM roof or floor panels are manufactured, shall be noncombustible according to ASTM E136. Panels shall be rated zero flame spread and zero smoke development per ASTM E84.

VII. Delivery and Storage:
A. Panels are normally delivered to site in factory crates that are bound with plastic sheet protection, wooden edge protection and wooden dunnage to facilitate forklift handling. When transporting loose panels by truck, they must be laid flat and fully protected against edge damage and protected from weather with waterproof covering. When hand carrying single panels, they must be carried on edge with the short side held vertically.
B. Deliver, store and handle materials to prevent breakage, warping or damage by water.
C. Acclimatize materials by storing on site not less than three days before installation.
D. Materials to be stored indoors on leveled dunnage not exceeding 32" on centers. If temporarily stored outdoors, boards must be elevated above ground, and protected from the weather with waterproof covering.
E. Panels to be stored flat and not on edges.

VIII. Installation:
A. Tools: Use standard carpentry tools to cut and install panels.
B. Installation:
1. Use minimum 17mm (5/8") thickness panel for floors OR select CEM-STEEL in proper panel thickness from manufacturer's load tables to carry design live load over 24" on center maximum support spacing. Install CemSteel panels with the steel laminate side down against support framing. Screw fasteners to be 12" on center maximum fastener spacing at panel perimeters and in field of panel. Use #8 diameter minimum with self-drilling point, self-countersinking head and corrosion resistant coating. Do not use black phosphate screws. Maintain centerline of fasteners a minimum of 3/4" from all edges of panels. Maintain minimum 2" distance from all corners and avoid 45-degree fastener placement in corners. Do not overdrive screw heads. Seat screw heads flush with board surface.
2. Install panels with long dimension across supports.
3. Comply with applicable building codes for wind, seismic and other load requirements.
4. Application of Roofing Shingles: use galvanized roofing nails of sufficient length to penetrate the back of the CEM-STEEL or STEEL-CEM panel. Use pneumatically operated nailing guns for nailing roofing shingles onto panels – do not hand drive nails into panels when installing roofing shingles. Follow shingle manufacturer's recommendation for number of fasteners and spacings.
5. All floor panels are to receive a wear surfacing finish. Cement board floor panels are to be installed as a sub-floor, not as a finished wear floor surface. Use trowel applied, acrylic based floor-leveling compound for correcting minor unevenness of the cement board floor joints prior to the application of the finish flooring materials. Vinyl tiles and/or ceramic tiles should be applied onto a tile backer board (such as Durock or Wonderboard) installed over the panels. Do not install vinyl or ceramic tiles directly onto panels.
6. Prior to application of any floor finish materials, the building must be closed to the weather and the installed CEM-STEEL or STEEL-CEM panels must be allowed to acclimatize for a minimum of 48 hours in the stabilized building environment.
7. Never install panels while wet or damp. During on-site installations that are open to weather, panels must be kept dry until project is closed to the weather.

--- END OF SECTION ---