Standard Specifications for Installation of OMNIROC® for Roofs

SECTION 06100

1. GENERAL

1.01 SUMMARY OF WORK

A. Materials shall be OMNIROC® cement board panel as manufactured by Omniroc, Inc., and supplied by an authorized distributor.

B. All OMNIROC® panels shall be selected from the manufacturers' load tables to carry the project live load design over a maximum of 24″ on center support spacing while limiting deflection to a maximum of L/240 as determined by project architect and engineer.

C. OMNIROC® panels to be of minimum 5/8″ (16mm) thickness, and 4´x8´ (1220mm x 2440mm) dimension. Product shall be factory sealed on all sides and fabricated with tongue & groove edges on the long 8´ dimensions of panels for structural, load bearing applications.

D. Compliance with applicable building codes for wind, snow, seismic, uniformly distributed live-loads and other loading requirements shall be determined by the project architect and engineer.

E. OMNIROC® panels shall have the following minimum mechanical properties:

1. Density: ±89.6 lbs/ft³
2. Modulus of Elasticity: > 1,509,400 psi
3. Shear Strength: > 5,375 psi
4. Tensile Strength (parallel to surface): > 1,067 psi
5. Compressive Strength: > 4,770 psi

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 05200, Metal Joists
B. Section 05400, Cold-Formed Metal Framing
C. Section 06100, Rough Carpentry
D. Section 09100, Metal Support Assemblies
E. Section 07300, Underlayment, Shingles, Tile
F. Section 07400, Roofing Panels

1.03 DESCRIPTION OF OMNIROC

A. OMNIROC® panel is a structural cement board that is mechanically fastened to the top of roof framing members as a substrate.

B. OMNIROC® panel is load-bearing and shall have a finished roof applied over it.

1.04 PERFORMANCE REQUIREMENTS

A. Surface burning characteristics: OMNIROC® panels shall be Class A in accordance with ASTM E84 / UL 723 having achieved 0 flame spread and 0 smoke development indices in laboratory test samples.
B. OMNIROC® must have passed the ASTM E136 test for a minimum duration of ten minutes.

1.05 SUBMITTALS

A. Submit to the project architect or design professional a copy of OMNIROC® Panel product and installation specifications and one product sample measuring 3″ x 5″ minimum.

1.06 QUALITY ASSURANCE

A. Contractor shall have successfully installed roof-sheathing products of a similar type as this project. These past projects shall have resulted in construction with a record of successful in-service performance.
B. At frequent intervals during construction, the job site will be visited by the owner's representative, general contractor or construction manager to confirm that OMNIROC® panels are being installed per this specification.

1.07 DELIVERY, STORAGE, AND HANDLING

A. OMNIROC® panels are supplied by authorized distributors of Omniroc, Inc. and normally delivered to site on factory pallets bound with plastic sheet protection, and edge protection, to facilitate forklift handling.
B. OMNIROC® panel shall be stored indoors on leveled surfaces with supports not to exceed 32″ on centers. If temporarily stored outdoors boards must be elevated above ground and protected from the weather with waterproof covering. Stacking of pallets should always be on solid stable base and never be stacked higher than 5 pallets high.
C. Acclimatize OMNIROC® panel by storing on site not less than three days prior to installation
D. All materials supplied by others shall be delivered and stored according to their instructions.
E. Deliver, store & handle materials to prevent breakage, warping or stain damage caused by moisture.
F. When transporting loose OMNIROC® panel panels by truck they must be laid flat and fully protected against edge damage and protected from weather with waterproof covering.
G. When hand carrying single OMNIROC® panels, they must be carried on edge with the short side held vertically.
H. Damaged or deteriorated materials shall be removed from the premises.
I. Material Safety Data Sheets shall be available for all materials.

1.08 PROJECT CONDITIONS

A. Steel framing to receive OMNIROC® panel shall be structurally sound, free from bows, twists or other malformations and in general compliance with local building code requirements. Damaged framing shall be replaced before installation of OMNIROC® panel.
B. During installation of OMNIROC® panel the temperature shall be at least 0º F during installation if mechanically fastened. If adhesive is being used temperature shall be at least 40º F and remain at this temperature or higher for at least 24 hours after installation, unless the adhesive manufacturer will permit the use of its product at a lower temperature. Finished roofing shall not be applied over OMNIROC® panel that is wet, frozen or contains frost.

1.09 SEQUENCE AND SCHEDULING

A. Sequence the installation of OMNIROC® panel with related work specified in other sections to ensure that the roof assemblies are protected against damage or abuse during and after construction.
B. Provide sufficient labor and equipment to properly install all materials.

1.10 PRODUCT WARRANTY

A. OMNIROC® panel is warranted by the manufacturer for a period of 10-years from date of material purchase to be free from defects in workmanship and materials under normal use. Refer to product warranty for complete terms.

2. PRODUCTS

2.01 MATERIALS

A. Roof Framing: Cold formed steel with minimum G-40 galvanized coating, minimum 20 gauge meeting ANSI and ASTM specifications and requirements for use in a structural roof system. Follow steel framing manufacturers' installation instructions.
B. Roof Sheathing: For applications where OMNIROC® panel is designed as the structural load bearing roof deck:
    a. With a roof slope of 4/12 or greater select a minimum 5/8˝ (16mm) thickness OMNIROC® panel.
    b. With a roof slope less than 4/12 select a minimum 3/4˝ (19mm) thickness OMNIROC® panel.
    c. Panels shall be 4´x 8´ dimension, sealed on all sides, and fabricated with tongue & groove edges on the long 8´ dimension.
C. For applications where OMNIROC® panel is installed over an existing structural decking such as corrugated metal decking or plywood, acting solely as a nail-base, select a minimum 5/8˝ (16mm) thickness OMNIROC® panel in 4´x 8´ (1220mm x 2440mm) dimension, as distributed by Omniroc, Inc. unless

otherwise noted.

C. Adhesives: Use PEMCO 5100 non-flammable, solvent free, zero V.O.C., polyurethane adhesive as manufactured by Alpha Systems, Inc., Elkhart, IN or equal. Follow manufacturer's installation instructions.

C. Fasteners: Use corrosion resistant self-countersinking head screws such as Grabber Part No. CHS8200JBW, or equal. Fasteners to be minimum #8 diameter with self-drilling points. Length of fastener to equal 2-1/2 to 3 times the board thickness. Follow manufacturers' installation instructions.

3. EXECUTION

3.01 FRAMING

A. Roof trusses, joists and/or other roof framing components must be designed to meet the strength and deflection criteria as determined by project architect and engineer and specified in the contract documents.

B. The attachment flange or bearing edge shall be a minimum 1 1/2″ wide, or doubled up at OMNIROC® panel board edges.

C. Metal framing shall be spaced a maximum of 24″ on centers.

D. All blocking or bridging must be installed prior to the installation of OMNIROC® panels.

E. Framing must be of good quality, free of bows, twists or other malformations.

3.02 STRUCTURAL PANEL SHEATHING APPLICATION

A. Panels shall be cut to size with a circular saw equipped with cement cutting blade and a dry dust collection device or a water-dispensing device that limits the amount of airborne dust. Wear safety glasses and a NIOSH approved dust mask when cutting the panel. Collected dust shall be disposed in a safe manner and in compliance with local, state and federal ordinances.

B. OMNIROC® panels shall be installed with the long edges perpendicular to the framing. Panels may be installed with either surface against the framing.

C. Plan the layout so first and last panel rows are a minimum 24″ wide. Place each panel across three or more supports. Cut panel to length as needed to ensure butt ends are centered on the framing member.

D. Use of adhesive at all board joints is recommended for all roofing applications where OMNIROC® panel is designed as the structural load bearing roof deck with a slope less than 4/12 to enhance the connection strength of adjacent OMNIROC® panels. Use of adhesive remains optional for:

1. Applications where OMNIROC® panel is designed as the structural load-bearing roof deck with a slope of 4/12 or greater and
2. All non-structural applications. Follow adhesive manufacturers' product and Installation instructions. Carefully apply a 1/4″ to 3/8″ diameter bead of adhesive to the joint of the installed panel. Only apply enough adhesive to bond the edges of the panels being joined.

D. Fasten each panel to framing members after it has been placed using the Following fastening schedule:
    1. Fastener placement shall be a maximum of 12″ on center along all Supports at panel joints and edges.
    2. Fastener placement shall be a maximum of 16″ on center along all Supports in the field of the panel.
    3. Fastener placement shall be a minimum 1/2″ from all panel edges.
    4. Fastener placement shall be a minimum 2″ from all panel corners. Off-set fasteners to avoid 45 degree fastener placement at board corners.
    5. Begin fastening at one end and fan out across the panel. Do not fasten all the corners first.
    6. Drive fasteners so the heads are flush with the surface of the board.

F. After installing one complete row of panels begin the next row. Install all rows in a running bond pattern so that end joints fall over the center of the framing members and are staggered by at least two supports from where the end joints fall in the adjacent rows. For applications using panels fabricated with tongue & groove edges, slide panels together so that the tongue of the panel being installed fits into the groove of the installed panel.

G. Cutouts in the panels should be made before installing the panel whenever possible. If a cutout is required after the panel is installed, set the depth of the saw blade to ensure that the framing is not scored. Continuous structural perimeter support such as blocking, bracing and bridging is required at all cutouts and/or penetrations larger than 4″ in either direction.

3.03 CLEAN-UP

A. Left over material shall be removed from the job site.
B. Remove foreign material from roof surface, including dust.

3.04 SAFETY

A. Avoid concentrated point loads on OMNIROC® panel by referring to concentrated load tables and as determined by project architect & engineer. Pay close attention to stored building materials and/or equipment such as masonry units, hoists, framing members, sheet goods, ladders, scaffolding, etc.

B. Measures shall be taken to distribute concentrated and point loads on the deck system during construction such as the utilization of pallets, dunnage, and/or structural building panels such as plywood or OSB laid over multiple spans.

C. Workers must take extra care to avoid impacts such as dropped masonry units, framing members, scrap material, tools, equipment, etc. Such impacts can cause deforming marks or even penetrations if dropped onto the sheathing surface of these panels and will need repair.

3.05 ROOF FINISH

A. Before the application of roof finish materials, ensure that all panels are

properly installed with the fastener head driven flush or slightly below the surface of the panels. Fill all voids and depressions with compatible patching compounds.

B. Roofing underlayment(s) and accessories such as flashing, vents, etc. shall be installed in accordance with each manufacturers' installation instructions.

C. All materials coming into contact with OMNIROC® panel including finishes, fasteners, flashing, vents, clips, accessories, etc. must be compatible with Portland cement and treated for corrosion resistance.

D. Weight of roof finishing products and accessories must be considered when designing your OMNIROC® panel application, as determined by an architect and/or engineer.

E. Roofing Shingles:

1. Structural Decking with Roofing Nails: Use of galvanized roofing nails is acceptable for roofing shingle attachment in applications where a minimum 3/4″ (19mm) OMNIROC® panel in 4´x 8´ dimension fabricated with tongue and groove edges on long edges of the panel is designed as the structural roof sheathing.
2. Structural Decking with Roofing Staples: Use of corrosion resistant, wide crown roofing staples is acceptable for roofing shingle attachment in applications where a minimum 5/8″ (16mm) thickness OMNIROC® panel in 4´x 8´ dimension fabricated with tongue and groove edges on the long edges of the panel is designed as the structural roof. Wide crown roofing staples shall be formed from a minimum 16 gauge wire with corrosive resistant coating. Staples shall not penetrate the backside of the OMNIROC® panel and there shall be a 1/8″ allowance between the tips of the staple and the bottom face of the OMNIROC® panel following penetration. For example, when applying a single layer of asphalt shingles to 5/8″ (16mm) thickness OMNIROC® panel use 1/2″ long x 1″ wide crown staple fasteners.
3. Non-Structural Nail-Base: For applications where a minimum 5/8″ (16mm) thickness OMNIROC® panel in 4´x 8´ dimension is installed over existing structural decking such as corrugated metal decking or plywood, acting solely as a nail-base, use of wide-crown staple fasteners and/or galvanized roofing nails is acceptable. Install in accordance with the specifications described in **3.05.E.1** & **3.05.E.2**.

4. Follow the shingle manufacturer's installation instructions for number and placement of fasteners per shingle.
5. Attach shingles using pneumatically operated tools and following tool manufacturer's instructions for operation.
6. Do not overdrive fasteners.

F. For all other roofing systems, follow manufacturers' installation instructions and contact your local representative for questions.

END OF SECTION