



OMNIROC®
FIRE RESISTANT STRUCTURAL PANELS

INSTALLATION GUIDELINES

OMNIROC, INC. 1-888-333-6478

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OMNIROC® INSTALLATION GUIDELINES

GENERAL

OMNIROC is freeze/thaw resistant after 50 cycles and is dimensionally stable after 30 days of immersion in water. Extreme moisture and weather conditions of an open jobsite do not affect the installation of OMNIROC.

APPLICATIONS AND USES

Wall Construction

OMNIROC can function as a non-combustible structural substrate in prefabricated modular or on-site construction, employing either steel or wood studs. It can be used in large, multi-panel units because of its strength and dimensional stability, or as individual panels. OMNIROC panels are applied to metal framing with countersinking self-drilling screws, or in the case of wood framing, with screws, automatic nailers or staplers. If a decorative coating is to be applied holes are filled with a compatible non-shrinking filler. Where multi-panel assemblies are employed, joints between the panels may be a minimum of 1/8" and filled with an elastomeric sealant.

Floor Construction

OMNIROC can be used as a non-combustible structural decking for fire-rated floor/ceiling assemblies. The standard manufacturing tolerances of ± 0.01 mm insures extreme accuracy of thickness and is suitable for the application of sheet linoleum, vinyl flooring or thin carpet tiles. Tongue & groove edges are available on two or four sides, in thicknesses greater than 5/8", to enhance joint strength and provide optimum loading performance.

Roof Construction

OMNIROC can be used as a fire resistant structural roof deck system for sloped, flat or built-up roofing assemblies. It can be installed over wood or metal framing/trusses up to 24" o.c., or over metal decking.

Other Uses

Additional applications for OMNIROC include exterior fascias, soffits, balcony panels, floors and canopies, parapet walls, wall re-cladding, sheathing installed behind brick or masonry veneer, or in the construction of structural insulated panel systems (SIPS). Many agricultural uses include barns, paddocks, or stalls where fire resistance and durability are important considerations.

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FRAMING CONSIDERATIONS

General

Wall framing assemblies are generally designed for a maximum allowable deflection of L/240 for cementitious and elastomeric coatings. Maximum allowable deflection of L/360 or less is common for ceramic, quarry, and stone tile as well as for thin brick. Where greater load resistance is required by local building codes or unique project conditions, structural criteria should be established by a qualified engineer.

Steel Framing

Steel framing shall be a minimum of 20 gauge and be spaced a maximum of 24" on centers depending upon the wind load requirements and the thickness of the OMNIROC board selected. At panel joints, studs must have a minimum flange width of 2" or use double studs at all panel joints to accommodate the 1/8" minimum space between panels and the fastening requirements specific to OMNIROC. Minimum requirements of metal framing must be in accordance with ASTM C-645 "Specification for Non-Load Bearing Steel Stud Runners and Rigid Furring Channels in Screw Application", and have a minimum of G40 galvanized coating per ASTM A-525 and A-586. Framing shall meet ANSI A108.3 for uniform dimension and be fabricated from steel conforming to ASTM A-446.

Wood Framing

Wood framing shall be a minimum of 2" x 4" (nominal) and be spaced a maximum of 24" on centers depending on wind load requirements and the thickness of the OMNIROC panel selected. At vertical panel joints, use double studs at all vertical panel joints to accommodate the 1/8" minimum space between panels and the fastening requirements specific to OMNIROC panels. Framing shall be installed in conformance with ANSI 108.3 specification and bear the mark of a registered grading agency.

Wind Loads

When OMNIROC panels are installed as exterior wall sheathing, the maximum allowable wind loads in mph are limited to a deflection of L/360 are approximated for exterior walls, under indicated weather conditions, as listed in the table below.

Thickness	16" o.c. Supports	24" o.c. Supports
10 mm (3/8")	120 mph	75 mph
12mm (1/2")	150 mph	90 mph
16mm (5/8")	150+ mph	120 mph
19mm (3/4")	150+ mph	150 mph

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FASTENING

General

OMNIROC panels do not require any pre-drilling when using electric or pneumatic powered screw driving guns and self-drilling screws. Screws should be seated flush with the surface. Never overdrive screws. Fasteners must be positioned as shown in the Fastener Placement diagram below.

FASTENER PLACEMENT

Note A: First fastener in from the corner must be minimum 1-1/2" in from the edge.

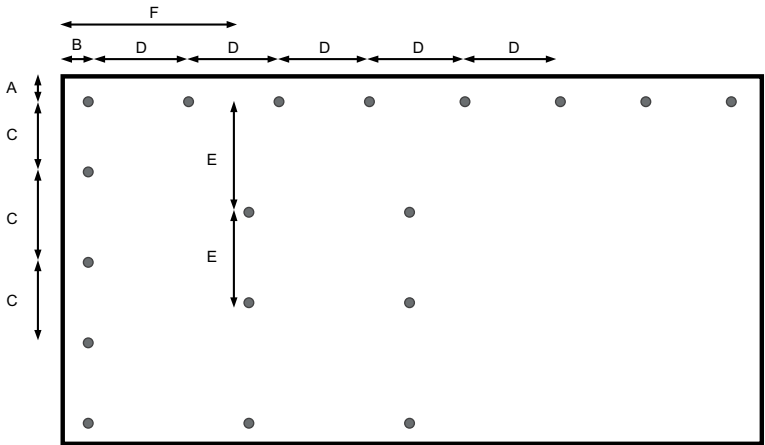
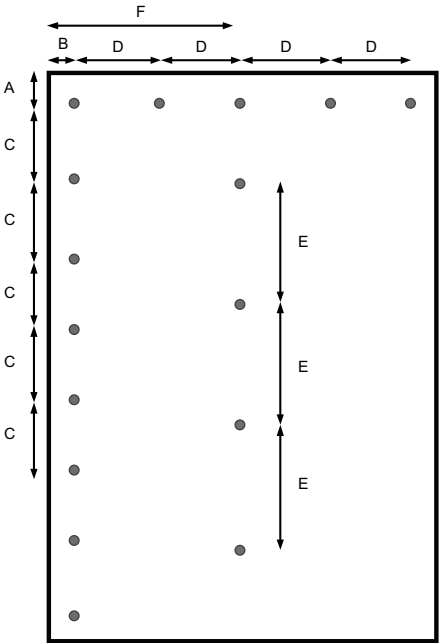


Figure 1
Viewed with Long Edge
Perpendicular to Joist or Stud

Figure 2
Viewed with Long Edge
Parallel to Joist or Stud

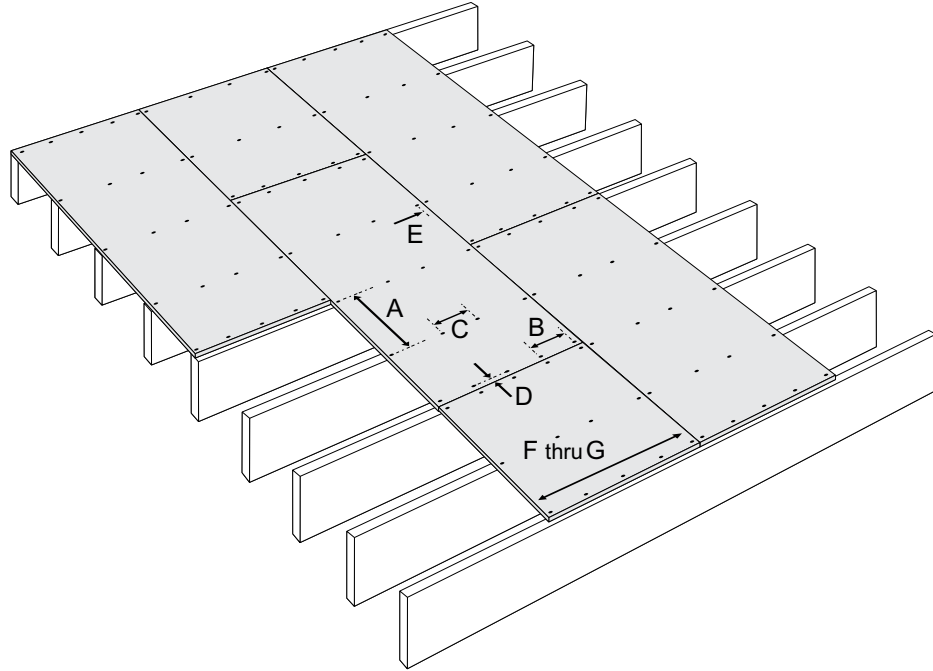


Thickness OMNIROC® (Inches)	Centers In Inches					
	No Less Than		No More Than			
	A	B	C	D	E	F
5/16" - 1/2"	1-5/8"	5/8"	8"	8"	12"	16"
5/8" - 1"	1-5/8"	5/8"	12"	12"	18"	24"
1-1/8" +	1-5/8"	5/8"	16"	16"	24"	24"

Drawing Detail	A	A1	B1	C1
All thickness boards	1-1/2"	3/4"	8"	16"

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TYPICAL FASTENER LAYOUT FOR INSTALLATION OF OMNIROC FLOORS



- A = 16" or 24" (max) dependent upon support spacing determined by engineer.
- B = 12" on center at panel endings over supports.
- C = 16" on center along supports within field of panel.
- D = 3/4" from panel end joint edges.
- E = 2" from panel side joint edges.
- F thru G = Bond all board edges with non-flammable adhesive.

Recommended Fasteners

OMNIROC shall be fastened with corrosion resistant self-countersinking head screws such as, Grabber HS8158JBW, HS8158G2 or equal. Fasteners to be minimum #8 diameter with S-12 self-drilling 'TEK' points. Length should be 2 to 3 times the board thickness.

NOTE: Surface treatments should always be considered when selecting fastener types.



Self Countersinking Head



Steel Framing



Wood Framing

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ADHESIVES

General

Only alkali resistant adhesives should be used, suitable for OMNIROC PH value of 11-12 for high-quality bonding. For adhesive bonding by means of hot pressing, a board moisture content of no more than 2%-4% is required, but this should be determined with the adhesive manufacturer. When bonding to one face of OMNIROC the reverse side of sheet should always be counterbalanced with a similar facing. For large-area adhesive bonding, some pre-testing should always be carried out in cooperation with the adhesive manufacturer to ensure application quality.

Applications and Types of Adhesives

When the walls of a room are to be completely covered with ceramic tiles, such as laboratories and sanitary facilities, both front and back of the OMNIROC panel must be primed and/or sealed. This procedure is recommended to avoid any possibility of one-sided moisture absorption which might lead to distortion. For adhesive bonding to free floating floors, OMNIROC primed on both sides should be used, to avoid any one-sided absorption of moisture which could also lead to distortion.

Bonding of Tongue & Grooved Edges for Fire-Rated Assemblies

Use PEMCO 5100 nonflammable, solvent free, zero V.O.C. polyurethane adhesive as supplied by Alpha Systems, Inc., Elkhart, IN or equal. Follow manufacturer's directions for application.

Full Surface Bonding of OMNIROC to Each Other

Dry Rooms - Dispersion adhesive or one component reaction resin adhesives.

Wet Rooms - Two component resin adhesive polyurethane based or epoxy resin adhesive.

Full Surface Bonding of Laminates and Veneers

OMNIROC can be used as a substrate for the application of many decorative laminates and veneers. The smooth finish side should always be used when bonding a decorative surface to one face. The reverse of the panel must have a compensator laminate applied. When applying timber veneers, a cross band veneer is usually required. In all instances the above operations should be carried out by experienced companies specializing in bonding techniques using the input from adhesive manufacturers for bonding to cement board material.

Note: Always consult adhesive manufacturer and laminate manufacturer for technical assistance on suitability of use. Always test a small sample of the materials before application.