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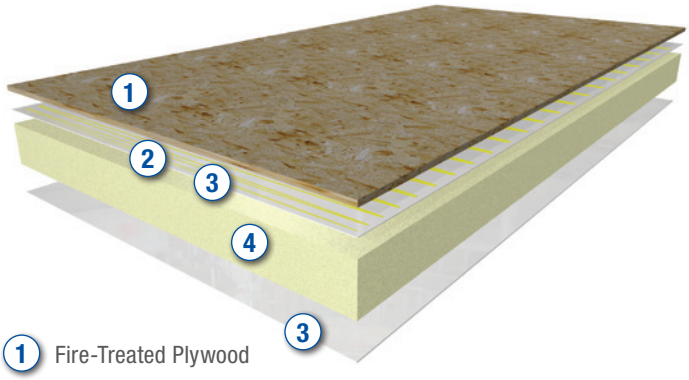
CARLISLE COATINGS & WATERPROOFING

WALL INSULATION

R2+® Base Commercial Grade Insulating Nail Base

Description

R2+ BASE is an insulating nail base designed for use in commercial construction above-grade wall applications. The product consists of a coated-glass-faced rigid polyisocyanurate insulation board of various thicknesses factory-laminated to a 5/8" or 3/4" fire-treated plywood facer. R2+ BASE is provided in 4' X 8' boards which are erected and fastened in place using common wood working tools and techniques. R2+ BASE provides continuous insulation and a cladding attachment base in one installation. The product is ideal for use under common thin-veneer cladding systems such as sheet metal, metal composite, porcelain, terra cotta, fiber cement, thin brick and cultured stone. R2+ BASE incorporates a kiln-dried, fire-treated plywood, making it a friendly surface for CCW's membrane air barriers. R2+ BASE has been fire-tested to NFPA 285 and passes this tough test in many wall assemblies. CCW provides R2+ BASE Insulating Nail Base, R2+ accessories and CCW air/vapor barrier membranes for a complete wall weatherization system.



1. Fire-Treated Plywood
2. Laminating Adhesive
3. Coated Glass Facer
4. Closed-cell Polyisocyanurate Foam Core

Features and Benefits

- Passes NFPA 285 in many wall assemblies – suitable for use in Type I, II, III and IV construction
- Cladding or furring can be fastened to the plywood – replaces high dollar engineered attachment systems.
- Incorporates APA-TECO Rated Exposure Fire-treated Plywood - provides improved dimensional stability and fire performance
- Provides exterior sheathing, cladding attachment base and continuous insulation in one installation
- High R-value per inch – enables thinner board to be used, while still meeting code requirements
- Meets wall assembly continuous insulation (ci) requirements prescribed by International Building Code
- Offered in multiple thicknesses to provide enhanced R-value
- Shear wall performance over wood studs. Replaces exterior sheathing and reduces or eliminates the need for additional bracing
- Requires no special tools or equipment for installation – cut to size and fasten boards in place with standard woodworking tools and techniques
- Manufactured in multiple plants across the U.S. – ready product availability and LEED® regionally sourced material
- Part of a full weatherization system by CCW – takes the guesswork out of installation procedures and product compatibility

Typical Properties

Property	Method	Results
Compressive Strength	ASTM D1621	20 psi*
Thermal Resistance (R-value) [units: °F•ft²•h/ Btu]	Tested at 75°F mean temp as per ASTM C 518 according to the requirements of ASTM C 1289	R-6.8 to R-26.0 depending on thickness. Consult tables in the packaging section of this document.
Surface Burning, Polyiso Foam Core	ASTM E 84/ UL 723	Flame Spread <75, Smoke Generated <450
Surface Burning, Fire-Treated Plywood	ASTM E 84/ UL 723	Flame Spread <25, Smoke Generated <450
Water Vapor Permeance (1" thickness)	ASTM E96, Desiccant Method	<1 Perm
Resistance to Mold	ASTM D 3273	Passes (10)
Water Absorption	ASTM C209	<0.1% volume
Dimensional Stability	ASTM D2126	2% linear change (7 days)
Edge	—	Square
Service Temperature	—	-100°F to 250°F

* Also available in 25 psi compressive strength

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FIRE RESIST

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SHOWN: R2+ BASE in Steel Stud Wall Assembly with Metal Composite Cladding

1. R2+ BASE (Plywood Facing Exterior)
2. CCW Membrane Air Barrier
3. Stud Cavity Insulation (Optional)
4. Interior Finish
5. Approved Fasteners and Spacing (Into Studs)
6. Metal Z or Hat Furring (Optional), Fastened to Plywood Face of R2+ BASE
7. Exterior Cladding Example Shown – MCM Panel Fastened to Metal Furring
8. Steel Stud

Installation

Install R2+ BASE in accordance with these instructions and CCW's published R2+ BASE detail drawings.

Inspection:

- Wall surfaces shall be sound, dry, plumb and free of irregularities that would prevent snug fastening of R2+ BASE to substrate.
- Studs shall be sound, dry plumb. Studs shall be spaced and braced laterally according to code and project requirements.

Erecting R2+ Base Panels:

- Provide separation of the edge of R2+ BASE from concrete at grade with pressure-treated lumber sill plate, sill gasket or non-permeable flashing material.
- Begin at base of wall from firm, permanent support.
- Fasten R2+ BASE with proper fasteners and spacing to accommodate the design. Fasten R2+ BASE to the structure using CCW approved SIPs fasteners or similar hardware driven into steel studs, wood studs, concrete or CMU substrate. Consult R2+ BASE details for information.
- Apply R2+ BASE in 4' or 8' lengths running horizontally. Offset board joints between rows at a 6" minimum (no 4-corner intersections).
- Saddle cut or L cut R2+ BASE to fit openings and projections. R2+ BASE boards can be cut with a table saw and other standard wood-working tools.
- Allow a minimum ⅛" and maximum ¼" gaps between boards (to accommodate hygric movement of wood). Fasten boards tightly to provide a flush, level surface.

Water Resistive Barrier (WRB) and Cladding:

After installation, R2+ base shall be covered with a CCW membrane air barrier, or with an approved water resistive barrier (WRB) by others. Cladding can be secured by fastening into the fire-treated plywood face of R2+ BASE.

Limitations

- Not intended as a wear-resistant or traffic-resistant surface – cover with approved cladding system.
- Combustible, not rated for permanent exposure. Must be covered with approved cladding or thermal barrier.
- Do not use on exterior side of below-grade construction, on plaza decks or or in areas where contact with ponding water is expected.
- In termite-infested areas, maintain separation of R2+ BASE from grade according to code requirements.
- Do not leave exposed to sunlight longer than 60 days without installation of WRB.
- Do not install CCW membrane air barriers over plywood surface if wood moisture content is 20% or higher.
- R2+ BASE must not be exposed to open flame.

Storage

Keep product clean and dry during storage to facilitate installation. Store R2+ BASE pallets in an area protected from moisture and direct sunlight. For outdoor storage exceeding 60 days, cover pallets with breathable, waterproof tarpaulins and elevate pallets above ground level a minimum of 4".

Packaging

R2+ BASE is provided in 4' X 8' boards with ⅝"- or ¾"-thick fire-treated plywood. CCW R2+ BASE boards are stacked on 4' X 8' pallets and double-packaged in UV-resistant polyethylene bags.

R2+ BASE 4' X 8' Boards, Coated-Glass-Faced Poliyso Foam Factory-Laminated to ⅝" Fire-Treated Plywood

Thickness			R-value*	Grade	PCS/Pallet	SQ FT/Pallet	LB/SQ FT	LB/4 X 8 BD	Weight/Pallet
ISO	PLY	TOT							
1"	0.625"	1.625"	6.8	20 or 25 psi	30	960	2.422	77.50	2,325.00
1.5"	0.625"	2.125"	9.8	20 or 25 psi	22	704	2.511	80.35	1,767.70
2"	0.625"	2.625"	12.9	20 or 25 psi	18	576	2.600	83.20	1,497.60
2.5"	0.625"	3.125"	16.1	20 or 25 psi	15	480	2.679	85.75	1,286.25
3.0"	0.625"	3.625"	19.3	20 or 25 psi	13	416	2.759	88.30	1,147.90
3.5"	0.625"	4.125"	22.5	20 or 25 psi	11	352	2.848	91.15	1,002.65
4"	0.625"	4.625"	25.8	20 or 25 psi	10	320	2.937	94.00	940.00

*R-Value tested to ASTM C518 at 75°F mean temperature according to the requirements of ASTM C1289

R2+ BASE 4' X 8' Boards, Coated-Glass-Faced Poliyso Foam Factory-Laminated to ¾" Fire-Treated Plywood

Thickness			R-value*	Grade	PCS/Pallet	SQ FT/Pallet	LB/SQ FT	LB/4 X 8 BD	Weight/Pallet
ISO	PLY	TOT							
1"	0.75"	1.75"	7.0	20 or 25 psi	28	896	2.726	87.24	2.442.7
1.5"	0.75"	2.25"	10.0	20 or 25 psi	21	672	2.813	90.03	1.890.6
2"	0.75"	2.75"	13.1	20 or 25 psi	17	544	2.902	92.85	1,578.5
2.5"	0.75"	3.25"	16.3	20 or 25 psi	15	480	2.989	95.64	1,434.6
3.0"	0.75"	3.75"	19.5	20 or 25 psi	12	384	3.076	98.43	1,181.2
3.5"	0.75"	4.25"	22.7	20 or 25 psi	11	352	3.164	101.25	1,113.8
4"	0.75"	4.75"	26.0	20 or 25 psi	10	320	3.251	104.04	1,040.4

*R-Value tested to ASTM C518 at 75°F mean temperature according to the requirements of ASTM C1289

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Codes and Compliances

- ASTM C 1289 Type V
- Numerous UL263 Fire Resistance Rated Wall Assemblies
- 2018 International Energy Conservation Code Table C402.1.3 Opaque Thermal Envelope Requirements
- International Building Code Chapter 26, Plastic Foam Insulation
- DRJ Engineering TER 1407-1. Suitable for Type I-IV construction
- DRJ Engineering TER 1910-01 Shear Wall Performance, product with max 2" thickness foam fastened to wood studs
- 2019 ASHRAE 90.1 Table 5.5-0 through Table 5.5-8 Building Envelope Requirements by Climate Zone and Section 5.4.3.1.3 Acceptable Air barrier Materials and Assemblies
- Passes NFPA 285 full wall burn test in many wall assemblies. Summary of approved assemblies appears in Engineering Evaluation no. 10123 by Priest & Consulting, Table 4

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