



WALL INSULATION

R2+® SHEATHE Foil-Faced Polyiso Insulating Sheathing

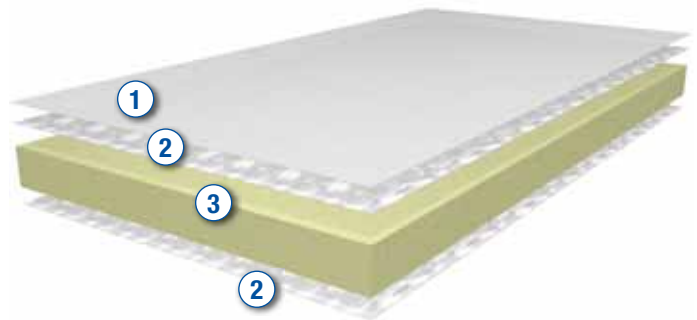
Description

R2+ SHEATHE is a rigid foam insulating sheathing board designed for use in commercial construction above-grade wall applications to provide continuous, high R-value insulation. The product is composed of a closed-cell polyisocyanurate foam core bonded on both sides to embossed aluminum foil facers. R2+ SHEATHE facers and foam core are of highly burn-resistant composition, which allows the installation of this product directly over steel studs in many wall assemblies. R2+ SHEATHE can be installed on the exterior or the interior side of the wall assembly. R2+SHEATHE is offered in different thicknesses, sizes and foam core densities. It is secured in place with fasteners, adhesive or a combination of the two. Installation technique depends on the wall assembly. R2+ SHEATHE has been fire-tested to NFPA 285 and passes this tough test in many wall assemblies. CCW provides R2+ SHEATHE Insulating Sheathing, R2+ accessories and CCW air/vapor barrier membranes for a complete wall weatherization system.

Features and Benefits

- Passes NFPA 285 in many wall assemblies, including WRB membrane and practical window details
- Provides sheathing, air barrier, vapor barrier, water resistive barrier and thermal barrier in one simple 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
- Multiple thicknesses and sizes available to provide fine-tuned R-value and easy installation
- When white side is installed to the exterior – no glare during exposure
- When silver side is installed to the exterior – provides a radiant barrier which can provide up to equivalent R-3.62 additional insulating value when facing a 1-3/4" dead air space. Ref 2010 ASHRAE 90.1 Table A9.4A
- Factory-controlled thickness and composition
- No special tools or equipment required for installation – lightweight, easy to handle, cuts with a knife or saw

- Manufactured in multiple plants across the USA – 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
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- 1 Non-Reflective White Coating
- 2 Embossed Aluminum Foil Facer
- 3 Closed-cell Polyisocyanurate Foam Core

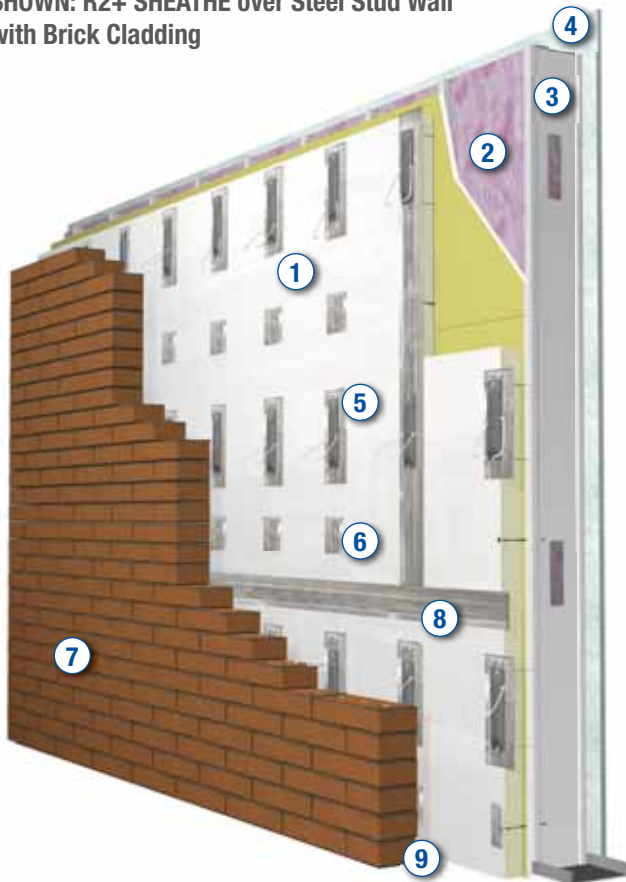
Installation

Consult the R2+ Installation Guide for detailed information about installation of this product in various wall assemblies.

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SHOWN: R2+ SHEATHE over Steel Stud Wall with Brick Cladding



- ① R2+ Sheathe Insulating Sheathing
- ② Stud Cavity Insulation
- ③ Steel Stud
- ④ Interior Finish
- ⑤ Veneer Anchor Fastened to Stud Through Insulation
- ⑥ Approved Fasteners and Spacing
- ⑦ Brick or Other Approved Cladding
- ⑧ CCW FOIL-GRIP 1402 Tape at Sheathing Joints and Under Tie Plates
- ⑨ Air Space

Limitations

- R2+ SHEATHE is not a structural sheathing and cannot be used for bracing or adding shear strength to walls.
- Not for use as a nail base.
- Weight of the cladding must be supported by attachment to the structure – DO NOT rely on the insulation core or facer to support cladding weight.
- Combustible, not rated for permanent exposure on either the exterior or the interior side of the wall assembly. R2+ SHEATHE must be covered with approved cladding or thermal barrier.
- Not intended as a wear resistant or traffic resistant surface – cover with approved cladding system.
- Do not use on exterior side of below-grade construction, on plaza decks or in areas where direct exposure to ponding water is expected.
- In termite-infested areas, maintain separation of R2+ SHEATHE from grade according to code requirements.
- Do not leave exposed longer than 60 days unless joints, terminations and penetrations are protected.
- Maximum exposure time of system with fully protected joints, terminations and penetrations is 180 days.

Storage

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

Packaging

R2+ SHEATHE is provided in 16" X 8' boards, 24" X 8' boards and 4' X 8' boards. Custom sizes are available on special order. CCW R2+ SHEATHE boards are stacked on 4' X 8' pallets and double-packaged in a UV-resistant polyethylene bag.

R2+ SHEATHE

Board Properties			16" X 8'	24" X 8'	4' X 8'	Pallet		
Thickness	R-Value	Grade	PCS/Pallet	PCS/Pallet	PCS/Pallet	SQ FT/Pallet	BD FT/Pallet	Weight/Pallet
1"	6.3	25 psi	144	96	48	1,536	1,536	332
1.2"	7.6	25 psi	114	76	38	1,216	1,459	299
1.5"	9.5	25 psi	96	64	32	1,024	1,536	303
1.6"	10.1	25 psi	90	60	30	960	1,536	299
1.8"	11.4	25 psi	75	50	25	800	1,440	277
2"	12.6	25 psi	72	48	24	768	1,536	296
2.1"	13.3	25 psi	63	42	21	672	1,411	266
2.5"	15.8	25 psi	57	38	19	608	1,520	283
3"	18.9	25 psi	48	32	16	512	1,536	280
3.1"	19.5	25 psi	45	30	15	480	1,488	272

CCW FOIL-GRIP™ 1402 Tape

Pressure-Sensitive Tape for sealing R2+ SHEATHE board joints and brick-tie penetrations.

Part Number	Roll Size	Rolls/ Carton
304095	4" x 100'	12
304096	6" x 100'	8

NOTE: For certain assemblies, portable can foam sealant by others can be used in place of CCW FOIL-GRIP 1402 Tape to seal between boards of R2+ SHEATHE insulation. Consult R2+ Installation Manual for more information.

Aluma-Grip™ 701 Self-Adhered Flashing

Heat- and UV-resistant 30-mil butyl/foil flashing for wrapping R2+ SHEATHE corners and openings.

Part Number	Roll Size	Rolls/ Carton
304221	4" x 50'	12
304223	6" x 50'	8
319525	9" x 50'	4
304225	12" x 50'	4

NOTE: Foil-Grip 1402 and Aluma-Grip 701 are only required if R2+ SHEATHE will be installed as an air/water-resistive barrier.

LM-800XL

Solvent-based synthetic rubber adhesive/mastic for bonding R2+ SHEATHE to CCW membrane air barrier or to substrate. Can also be used for sealing R2+ SHEATHE gaps at terminations and penetrations.

Part Number	Package	Units/Carton
305261	29 fl. oz. cartridge	12
305263	5-gal pail	N/A

Flashing/Tape Primers

To promote adhesion of CCW FOIL-GRIP 1402 and Aluma-Grip 701.

Part Number	Product	Description	Packaging
305363	CCW-702	Solvent-based contact adhesive	5-gal pail
316148	CCW-702 LV*	VOC-compliant, solvent-based contact adhesive	5-gal pail
315109	CCW-702 WB	Water-based contact adhesive	5-gal pail
308599	Travel-Tack	Solvent-based aerosol contact adhesive	15 oz. spray can, 12/carton
305432	CAV-GRIP™	Solvent-based aerosol contact adhesive	40# pressurized cylinder filled with 30 lb. of adhesive
307490	CAV-GRIP Spray Gun	Pistol-grip gun with spray tip	1/box
304302	CAV-GRIP 6' Hose	Hose with fittings, 6' length	1/box
304303	CAV-GRIP 12' Hose	Hose with fittings, 12' length	1/box
304304	CAV-GRIP 18' Hose	Hose with fittings, 18' length	1/box

NOTE: CAV-GRIP or Travel-Tack can be used to tack R2+ SHEATHE in place during installation.

Fasteners

Use capped screws by others as recommended by CCW to secure R2+ SHEATHE. Consult the R2+ Installation Manual for detailed information about recommended fasteners and installation techniques.

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Codes and Compliances

- ASTM C 1289 Type 1, Class 1 Grade 3 (25 psi)
- 2012 International Energy Conservation Code Table C402.2 Opaque Thermal Envelope Requirements and Section C402.4.1.2.1 Air Barrier Materials
- International Building Code Chapter 26, Plastic Foam Insulation
- 2010 ASHRAE 90.1 Table 5.5.1 through Table 5.5.8 Building Envelope Requirements by Climate Zone and Section 5.4.3.1.3 Acceptable Air barrier Materials and Assemblies
- Passed NFPA 285 full wall burn tests. Summary of approved assemblies, based on this test, appears in Figure 3 and Table 1
- UL Classified
- DRJ Engineering TER 1407-2. Suitable for Type I-IV construction. Air barrier and water resistive barrier code compliance.

Typical Properties

Property	Method	Results – Grade 3
Compressive Strength	ASTM D1621	25 psi
Thermal Resistance (R-value) [units: °F•ft²•h/ Btu]	ASTM C518*	1" – 6.3 1.2" – 7.6 1.5" – 9.5 1.6" – 10.1 1.8" – 11.4 2" – 12.6 2.1" – 13.3 2.5" – 15.8 3" – 18.9 3.1" – 19.5
Flame Spread Index	ASTM E84	<25
Smoke Developed Index	ASTM E84	<450
Water Vapor Permeance	ASTM E96	<0.04 Perm
Water Absorption	ASTM C209	<0.05% volume
Air Permeance	ASTM E2178	0.0038 L/s•m²@ 75 Pa [0.00076 CFM/ft²@ 1.57 PSF]
Water Resistance	ICC-ES AC-71/ ASTM E331	No leaking after 2 hr at -6.24 PSF
Wind Loading	ASTM E330	No damage after static, gust and cyclic loading. Max deformation 0.34".
Air Leakage through Assembly	ASTM E2357	Max leakage after loading sequence 0.0087 L/s•m²@ 75 Pa [0.0017 CFM/ft²@ 1.57 PSF]
Dimensional Stability	ASTM D2126	2% linear change (7 days)
Mold Resistance	ASTM D3273	Passed (10)
Edge	—	Square
Service Temperature	—	-100°F to 250°F

ASTM E96 and ASTM E2178 testing performed on 1"-thick R2+ SHEATHE.

ASTM E330, E331 and E2357 testing performed on 1"-thick R2+ SHEATHE, installed over open studs 16" o.c. with approved fasteners and flashing tapes. Consult CCW Wall Systems Installation Guide.

Figure 3

R2+ SHEATHE NFPA 285 Wall Assemblies

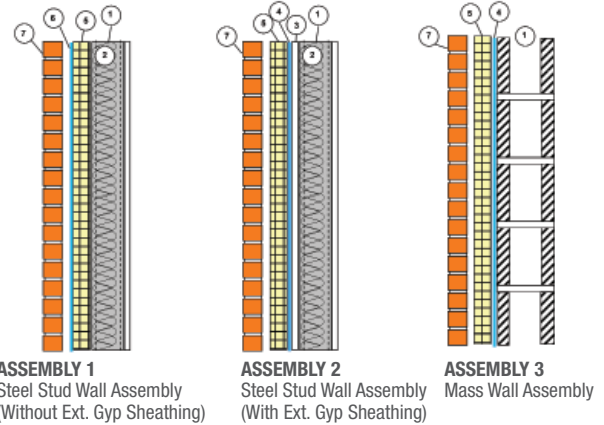


Table 1

NFPA 285 Walls: R2+ SHEATHE

Layer	Assembly 1	Assembly 2	Assembly 3
1. Base Wall System	Steel studs 16" or 24" o.c. 5/8" type X gypsum wallboard on interior		Concrete (tilt-up or cast-in-place) or concrete masonry unit (CMU)
2. Stud Cavity Insulation	Fiber glass, mineral wool or none	Fiber glass, mineral wool, Bayer EcoBay™ CC or BASF Walltite® spray foam up to depth of stud or none	N/A
3. Exterior Gypsum Sheathing	None	½" or 5/8" exterior grade gypsum	N/A
4. Membrane Air Barrier over Base Wall Assembly	N/A	CCW-705 approved only with brick, stone or stucco claddings. Fire Resist 705FR-A, Fire Resist Barritech VP, Fire-Resist Barritech NP OR none**	
5. Exterior Insulation	R2+ SHEATHE, maximum 3.1" thick*		
6. Membrane Air Barrier over Exterior Insulation	Fire Resist Barritech VP, Fire-Resist Barritech NP OR None**	N/A	
6. Exterior Cladding***	Brick veneer minimum 3 ½" thick, limestone or natural stone veneer minimum 2" thick, artificial cast stone veneer minimum 1 ½" thick, Terra Cotta cladding minimum 1 ¼" thickness, metal composite material (MCM) systems that have passed NFPA 285, sheet metal cladding, fiber cement siding, Portland cement stucco and lath minimum ¾" thickness, stone aluminum honeycomb composite panels that have passed NFPA 285		

*R2+ SHEATHE boards may be taped or sealed at joints and penetrations with CCW FOIL-GRIP 1402 Tape or with approved can foam sealant.

**For approval of WRB products by others please contact CCW.

***Maximum allowed space between cladding and insulation is 2".

NOTE: Table 1 does not contain all the approved products and materials. Full list of NFPA 285 wall assemblies and components appears in Priest & Associates Consulting LLC Engineering Evaluation. Engineering Extensions based on 13 NFPA 285 tests. Project # 10123, Rev. 8.