



# WALL INSULATION

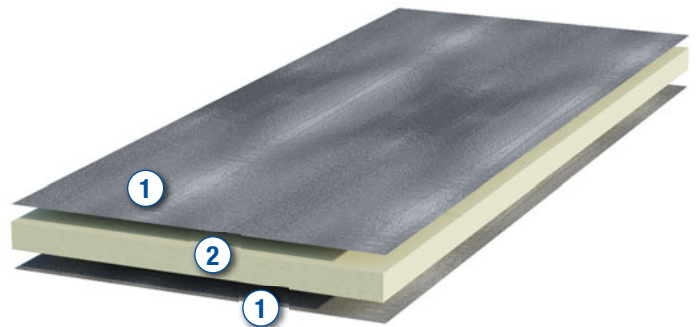
## R2+® SHEATHE Foil-Faced Polyiso Insulating Sheathing

### Description

R2+ SHEATHE is a rigid foam insulating sheathing board designed for use in commercial construction 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 glass-backed, reinforced aluminum foil facers. R2+ SHEATHE can be installed directly over steel or fire-treated wood studs in many NFPA 285 wall assemblies. R2+ SHEATHE also passes NFPA 286 testing for exposed interior use. R2+ SHEATHE is offered in different thicknesses and sizes. It is secured in place with fasteners, adhesive or a combination of the two. Installation technique depends on the wall assembly. 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 CCW air and vapor barriers, membranes and practical window details
- Tough, reinforced foil facer resists damage during construction
- Can be used in exposed interior wall or ceiling applications where aesthetics are not required
- Rigid, thin profile. Provides high R value and simplified cladding installation using furring and long screws
- Meets wall assembly continuous insulation (ci) requirements prescribed by International Building Code
- Available in R-6.3 to R-25.2, provided in a single layer installation
- 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
- Part of a full weatherization system by CCW – takes the guesswork out of installation procedures product compatibility and code compliance



- ① Glass-backed, reinforced aluminum foil facer
- ② Closed cell polyisocyanurate foam core

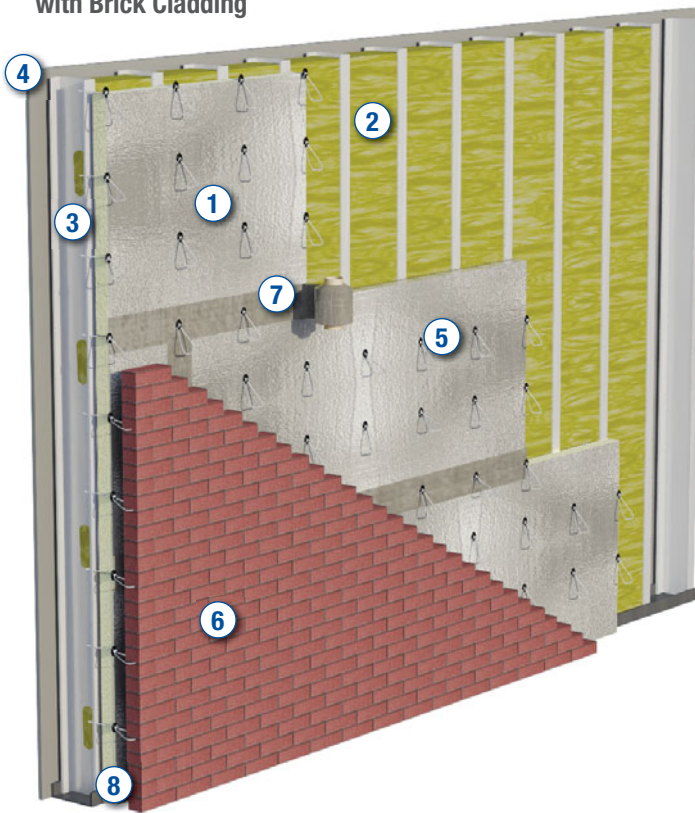
### Installation

Please consult CCW's wall polyiso details and the R2+ Field Guide. R2+ SHEATHE can be installed 3 ways, as shown in Figure 3 of this document. "AB" series details show installation of R2+ SHEATHE installed over an opaque wall assembly, with the air and water resistive barrier installed over the outboard face of R2+ SHEATHE (Example shown in Figure 3 Assembly 1). "SH" series details show R2+ SHEATHE installed over open studs, with the air and water resistive barrier installed over the outboard face of R2+ SHEATHE (Example shown in Figure 3 Assembly 2). Finally, "R2" series details show R2+ SHEATHE installed over an opaque wall assembly, with the air and water resistive barrier installed over the outboard side of the opaque wall assembly (Example shown in Figure 3 Assembly 3).

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## R2+ SHEATHE Foil-Faced Polyiso Insulating Sheathing

**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 Brick or Other Approved Cladding
- ⑦ 4" CCW FOIL-GRIP 1402 Tape or 2" width X 40 mil ribbon of Barribond/Barribond XL at Sheathing Joints
- ⑧ Air Space

### Limitations

- R2+ SHEATHE is not a structural sheathing; follow local codes for structural bracing.
- 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 for cladding attachment.
- R2+ SHEATHE is a combustible material which must be protected from open flame.
- Not intended as a wear resistant or traffic resistant surface – cover with approved cladding system.
- R2+ SHEATHE is not recommended as an aesthetic surface.
- 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 4' X 8' boards. Product can be factory cut to 24" width, 16" width or other specified width on special order. CCW R2+ SHEATHE boards are stacked on 4' X 8' pallets and double-packaged in a UV-resistant polyethylene bag. A full polyiso truckload holds 24, 4' X 8' pallets.

### 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
1"	6.3	20 psi or 25 psi	144	96	48	1,536	1,536
1.5"	9.5	20 psi or 25 psi	96	64	32	1,024	1,536
1.6"	10.1	20 psi or 25 psi	50	50	30	960	1,536
2.0"	13.0	20 psi or 25 psi	72	48	24	768	1,536
2.5"	16.0	20 psi or 25 psi	57	38	19	608	1,520
3.0"	19.0	20 psi or 25 psi	48	32	16	512	1,536
3.5"	22.0	20 psi or 25 psi	45	30	13	416	1,456
4.0"	25.2	20 psi or 25 psi	36	24	12	384	1,536

### 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.

### Insulation Adhesives & Detail Sealants

Adhesive/mastic for bonding R2+ SHEATHE to CCW membrane air barrier or to substrate.

### LM 800 XL Solvent-Based Synthetic Rubber

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

### Barribond or Barribond XL Moisture-curing Silane-terminated Polymer

High solids & low VOC. Can be used as an insulation adhesive and to seal joints and penetrations in R2+ SHEATHE installations.

Part Number	Package	Units/Carton
325918	20 fl-oz sausage	16 per carton
334575 (XL)	20 fl-oz sausage	12 per carton

### 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*	OTC-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+ details for detailed information about recommended fasteners and installation techniques.

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## R2+ SHEATHE Foil-Faced Polyiso Insulating Sheathing

### Codes and Compliances

- ASTM C 1289 Standard Specification for Polyisocyanurate Foam Board Insulation; Type I, Class 1, Grade 2 or 3
- ASTM E 330; No damage after ASTM E 2357 wind load schedule
- ICC-ES AC-71 Insulation & Water Resistive Barrier (WRB)
- International Energy Conservation Code (IECC) 2012 & 2015 "Continuous Air Barrier" and "Continuous Insulation (ci)"
- ASHRAE 90.1 2010 & 2013 "Continuous Air Barrier" and "Continuous Insulation (ci)"
- IBC 2009, 2012 and 2015 Section 2603.5 Plastic Foam Insulation for Type I, II, III and IV Construction
- Flame Spread 25 smoke 250 UL 723/ ASTM E 84
- NFPA 286 passed for exposed walls or ceilings applications
- California Bureau of Furnishings and Home Insulation
- UL Listing for Fire and Smoke BRYX.R38030
- DRJ Technical Evaluation Report 1402-01
- Numerous NFPA 285 approved assemblies
- Numerous UL 263 hourly designs UL CCVW.R38030
- Miami-Dade County Product Control Approved
- California Title 24

### Typical Properties

Property	Method	Results
Compressive Strength	ASTM D1621	20 psi (Grade 2) or 25 psi (Grade 3)
Facer	—	15-mil thickness glass-backed, reinforced aluminum foil composite
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	1" – 6.3 1.5" – 9.5 1.6" – 10.1 2" – 13.0 2.5" – 16.0 3" – 19.0 3.5" – 22.0 4" – 25.2
Flame Spread Index	ASTM E84	<25
Smoke Developed Index	ASTM E84	<250
Water Vapor Permeance	ASTM E96 A and E96 B	max. 0.002 Perm [Method A] max. 0.010 Perm [Method B]
Water Absorption	ASTM C209	<0.05% volume
Air Permeance	ASTM E2178	max 0.00012 L/s•m²@ 75 Pa [0.00024 CFM/ft²@ 1.57 PSF]
Water Resistance	ICC-ES AC-71/ ASTM E331	No leaking after 15 min at -6.24 PSF joints and penetrations sealed with Foil-Grip tape or Barribond
Wind Loading	ASTM E330	No damage after static, gust and cyclic loading. Max deformation 0.24", 10 sec load at 1440 Pa [30.09 PSF] (110 MPH wind) positive and negative direction.
Air Leakage through Assembly	ASTM E2357	Max leakage after loading sequence 0.03 L/s•m²@ 75 Pa [0.0005 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
Impact Resistance (Janka Ball Test)	ASTM D 1037	40 lb.

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

ASTM E330, E331 and E2357 testing performed on 1"-thick 25 psi grade R2+ SHEATHE, installed over open studs 16" o.c. with approved fasteners tapes and sealants. Consult CCW R2+ SHEATHE details for instruction.

Figure 3

R2+ SHEATHE NFPA 285 Wall Assemblies

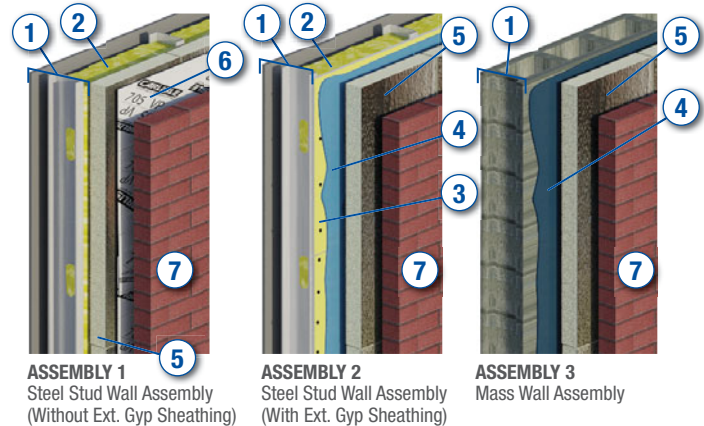


Table 1

NFPA 285 Walls: R2+ SHEATHE

Layer	Assembly 1	Assembly 2	Assembly 3
1. Base Wall System	Steel studs or FRTW minimum 2 X 4 dimension 16" or 24" o.c. ½" 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, Carlisle SealTite PRO spray polyurethane foam "SPF", other SPF as specified in EEV, or none		N/A
3. Exterior Sheathing	None	½" or ¾" exterior grade gypsum or FTRW structural panels	N/A
4. Membrane Air Barrier over Base Wall Assembly	N/A	CCW-705 approved only with brick, stone or stucco claddings. 705FR-A, Barritech VP, Barritech NP, Barrithane VP 705 VP OR none**	
5. Exterior Insulation	R2+ SHEATHE, maximum 4" behind brick, stone and stucco claddings, maximum 3.5" thick behind all others listed*		
6. Membrane Air Barrier over Exterior Insulation	Barritech VP, Barritech NP, 705 VP Barrithane VP, 705 RS OR None**		
7. 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 ½" 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, with Barribond/Barribond XL 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 EEV 10123 prepared for CCW by Priest & Associates.

FRTW = "Fire retardant treated wood"