

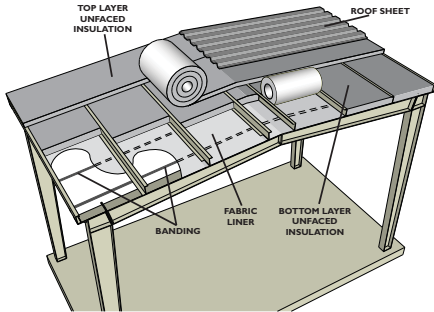


INNOVATIONS FOR LIVING®

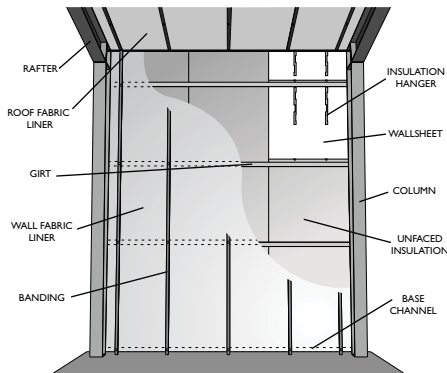
OptiLiner™ Banded Liner System

Product Data Sheet

Roof System



Wall System



Description

The OptiLiner™ Banded Liner System is the latest metal building product offering from Owens Corning that is designed to maximize the thermal performance of Owens Corning™ MBI Plus light density fiberglass insulation in metal building roof and wall applications.

The OptiLiner™ roof system uses a series of 1.0 inch galvanized steel straps to support a bright white or black polyethylene fabric that serves as the low permeance vapor retarder for the system. Fabric sections are custom fit for each bay in order to ensure a swift installation and a clean interior finished appearance. The installed banding and fabric support system allows roof cavities to be completely filled using two layers of Owens Corning™ MBI Plus metal building insulation. Completely filling

the cavity results in minimal insulation compression and maximum system thermal performance. The amount of banding installed in the OptiLiner™ system can be minimized, however **WORKERS MUST USE OSHA REQUIRED FALL PROTECTION WHEN INSTALLING THE BANDED LINER SYSTEM AT HEIGHTS. (SEE OSHA REGULATIONS AT 29 CFR 1926, SUBPART M).** Banding reduction saves time and installation cost without sacrificing excellent in place thermal performance.

The OptiLiner™ wall system uses the same basic components as the roof system. Additional materials included with the wall system are insulation hangers that are used to support unfaced insulation in the wall cavities and foam tape that is installed between the wall girts and the wall sheets in order to enhance system thermal performance. A minimum amount of 1.0" galvanized steel banding is installed after the fabric is in place to help support the insulation and to provide a consistent interior finish with the roof system. Using both the OptiLiner™ roof and wall system will provide excellent thermal, acoustic and appearance benefits for a metal building.

Uses

OptiLiner™ is a high R-Value roof and wall insulation system that can be installed in metal buildings in order to maximize system thermal performance.

Product Attributes

Excellent Thermal Performance

- Minimal insulation compression in the OptiLiner™ roof and wall systems allows for excellent thermal performance. Installing the OptiLiner™ systems will help minimize the heating

and cooling costs associated with conditioning a metal building. Further, the OptiLiner™ roof and wall system uses Owens Corning™ metal building insulation in every application. This will ensure thermal performance and minimize any potential performance variability based on the brand of insulation used in the system.

Exceptional Vapor Retarder - Custom fit fabric sections with thermally welded seams and low permeance properties provide excellent long-term vapor sealing for the system. A properly installed OptiLiner™ system will help minimize concerns with concealed condensation.

Detailed System Acoustic Testing

- The OptiLiner™ roof and wall insulation systems improve the acoustical environment both inside and outside of a metal building. Multiple roof and wall constructions have been tested to determine their Noise Reduction Coefficient (NRC), Sound Transmission Loss (STL), Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC) values. This information can be used to help design more socially responsible metal buildings.

High Recycle Content of Insulation Materials

- All Owens Corning™ metal building insulation products are third party certified to contain a minimum of 50% recycled content (20% post-consumer and 30% pre-consumer). High recycled content helps building professionals achieve LEED certification and meet other green building guidelines that are an increasingly critical measurements used in sustainable building.

Meets Model Fire Code Ratings

- Both the fabric and insulation materials have a flame spread rating



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of 25 or less and a smoke developed rating of 50 or less. This usually means that the products will be granted immediate building code approval.

Bright and Resilient Interior Finish

– The OptiLiner™ white fabric is stronger than traditional facings used in metal buildings. The bright white color has a light reflectance rating of greater than 80%, which may allow for reduced lighting loads in the design space.

GREENGUARD™ Certified

– All Owens Corning™ metal building insulation products are GREENGUARD Indoor Air Quality Certified and GREENGUARD Children and Schools Certified to ensure the product's chemical and particle emissions meet stringent indoor air quality pollutant guidelines and standards.

Cleanable Facing - A soft cloth with soap and water or non-abrasive household cleaner can be used to clean the facing. Solvent-based cleaners and abrasive pads should be avoided.

Application Recommendations

OptiLiner™ Roof System – WORKERS MUST USE OSHA REQUIRED FALL PROTECTION WHEN INSTALLING THE Banded Liner System at Heights. (SEE OSHA REGULATIONS AT 29 CFR 1926, SUBPART M).

Proper safety measures should be taken when installing the OptiLiner™ roof system. An installing contractor should employ a site specific fall protection plan.

Detailed roof and wall application recommendations can be found in the roof and wall installation guides for the OptiLiner™ system.

Technical Data - Insulation¹

Fire Resistance

ASTM E84, UL 723 or NFPA 255 Test Methods for Surface Burning Characteristics of Building Materials² – Max Flame Spread Index 25; Max Smoke Developed Index 50

Physical Properties

Property	Test Method	Value
Noncombustibility	ASTM E 136	Noncombustible
Water Vapor Sorption	ASTM C1104	< 5% by weight
Odor Emission	ASTM C1304	No objectionable odor ³
Corrosiveness	ASTM C 665	No corrosion greater than comparative item
Fungi Resistance	ASTM C1338	No growth greater than comparative item



Other Certifications

Notes

¹ MBI Plus Insulation products are not certified to the ASTM C991 standard or the NAIMA 202-96 Rev 2000 standard as these products are not designed to be post processed via lamination. Projects requiring certification to these standards should use unfaced Owens Corning Certified R Metal Building Insulation.

² The surface burning characteristics of these products have been determined in accordance with ASTM E 84, UL 723 or NFPA 255. These standards should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating

³ No odor for a minimum of 3 of 5 panel members.

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Technical Data - Facing

Material Standards

ASTM C1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation Type I - VI¹

Fire Hazard Classification – Insulation and Facing

ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials² – Max Flame Spread Index 25; Max Smoke Developed Index 50

Physical Properties

Property	Test Method	Value
Facing Permeance	ASTM E96	≤ 0.02 perms
Fungi Resistance	ASTM C1338	No growth greater than comparative item

Notes

¹ Type I-IV exception for dimensional stability. Value is < 2.0%

² The surface burning characteristics of these products have been determined in accordance with ASTM E 84, UL 723 or NFPA 255. These standards should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.

Availability¹

MBI Plus Insulation Systems

Roof Systems

Top Layer Insulation R-Value	Bottom Layer Insulation R-Value	Insulation Total R-Value
10	19	29
11	19	30
13	19	32
10	25	35
16	19	35
11	25	36
13	25	38
19	19	38
10	30	40
11	30	41
16	25	41
13	30	43
19	25	44
16	30	46
19	30	49

Wall Systems

Single Layer of Unfaced MBI Plus Insulation R-Value

19 ²
25
30

MBI Plus Insulation Thickness

R-Value	Thickness (inches)
10	3.4
11	3.7
13	4.3
16	5.3
19	6.3
25	8.0
30	9.0

Notes

¹ Owens Corning R- 7.0 Metal Building Utility Blanket is available as top layer of insulation when used in conjunction with an R-25 or R-30 bottom layer. See the Owens Corning Metal Building Utility Blanket Product Data Sheet for insulation specification compliance details.

² R19 should only be used in applications with a 6.0" wall girt or less.



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Acoustic Data

Sound Transmission Loss ^{1,2}												
Roofs	Construction Type	Clip Standoff (inches)	Top Layer Insulation R-Value	Bottom Layer Insulation R-Value	Transmission Loss - dB at Octave Band Frequencies						STC	OITC
					125	250	500	1000	2000	4000		
					125	250	500	1000	2000	4000		
	Through Fastened	NA	10	19	14	26	35	40	49	51	37	36
	Through Fastened	NA	19	30	18	32	42	50	57	57	42	41
	Standing Seam	0.25	10	19	14	26	34	44	52	53	36	36
	Standing Seam	1.25	19	30	19	32	42	56	63	58	42	41
	Standing Seam	1.75	19	30	20	32	42	56	62	58	42	42

Walls	Construction Type	Foam Tape Thickness (inches)	Single Layer Insulation R-Value	Transmission Loss - dB at Octave Band Frequencies						STC Rating	OITC Rating
				125	250	500	1000	2000	4000		
				125	250	500	1000	2000	4000		
	Through Fastened	0.125	25	15	26	35	41	50	53	37	36
	Through Fastened	0.375	30	17	29	38	45	54	54	39	38

Notes

¹ Sound Transmission Loss Tested in accordance with ASTM E90.


² Values are given for design approximations only. Production and test variabilities will alter the results.

Sound Absorption - Metal Building Roof and Wall Configurations ^{1,2}							
Insulation Total R-Value	Absorption Coefficients at Octave Band Frequencies						NRC
	125	250	500	1000	2000	4000	
25	0.59	1.09	0.83	0.59	0.31	0.11	0.70
30	0.71	1.10	0.87	0.57	0.31	0.13	0.70
35	0.80	1.10	0.90	0.56	0.30	0.14	0.70
40	0.84	1.07	0.92	0.59	0.31	0.11	0.70
44	0.68	0.98	0.92	0.58	0.31	0.13	0.70
49	0.67	1.01	0.92	0.56	0.31	0.14	0.70

Notes

¹ Sound absorption testing in accordance with ASTM C423.

² All testing conducted with the facing towards the soundfield as in actual use condition.

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