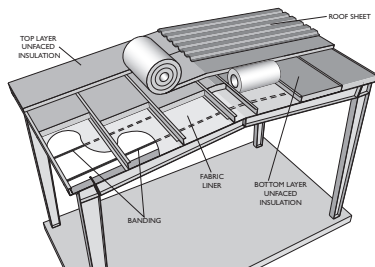
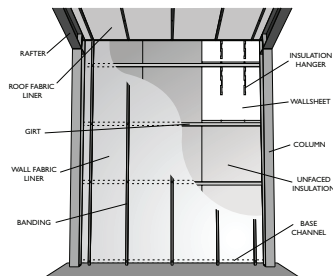




# OPTILINER® BANDED LINER SYSTEM



Roof System



Wall System

The OptiLiner® Banded Liner System is a thermal insulation and moisture control system for metal building construction. It consists of three components:

1. A polyethylene vapor retarder liner fabric, available in white or black
2. Galvanized metal support straps (bands)
3. One or two layers of EcoTouch® Certified R Metal Building Insulation

## Features

- Thermal performance - full range of insulation R-values (see "Availability" table) to meet energy conservation code requirements in all climate zones.
- Moisture control - polyethylene liner fabric provides code required vapor retarder (see water vapor permeance value on "Physical Properties" table).
- Noise control - improves the building interior environment by reducing noise transfer from both exterior and interior sources (see "Sound Absorption" and "Acoustic Data" tables).
- Durable, cleanable finish - the liner fabric is strong and highly reflective for better interior lighting efficiency (see data in Physical Properties table). It can also be easily cleaned with water and mild detergent.

## Standards, Codes Compliance

- EcoTouch® Certified R Metal Building insulation is manufactured in accordance with ASTM C991, Fibrous Glass Insulation for Metal Buildings, Type I.
- Liner fabric meets ASTM C1136, Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation Type I - VI.

## Applications

- Metal building roof assemblies
- Metal building wall assemblies

## Availability

EcoTouch® Certified R Metal Building Insulation<sup>2</sup>

| PRE-LAMINATE R-VALUE | LAMINATED R-VALUE | THICKNESS (INCHES) |
|----------------------|-------------------|--------------------|
| 10.8                 | 10                | 3.4                |
| 11.9                 | 11                | 3.7                |
| 14.1                 | 13                | 4.3                |
| 17.3                 | 16                | 5.3                |
| 20.6                 | 19                | 6.3                |
| 22.8                 | 21                | 6.7                |
| 27.1                 | 25                | 8.0                |
| 32.5                 | 30                | 9.25               |

## Physical Properties

| PROPERTY                                                                       | TEST METHOD | VALUE                                      |
|--------------------------------------------------------------------------------|-------------|--------------------------------------------|
| <b>Insulation</b>                                                              |             |                                            |
| Surface Burning Characteristics<br>Flame Spread Index<br>Smoke Developed Index | ASTM E84    | < 25<br>< 50                               |
| Combustion Characteristics                                                     | ASTM E136   | Noncombustible                             |
| Water Vapor Sorption                                                           | ASTM C1104  | ≤ 0.2% by volume                           |
| Odor Emission                                                                  | ASTM C1304  | No objectionable odor <sup>1</sup>         |
| Corrosiveness                                                                  | ASTM C665   | No corrosion greater than comparative item |
| Fungi Resistance                                                               | ASTM C1338  | No growth greater than comparative item    |
| <b>Liner Fabric</b>                                                            |             |                                            |
| Surface Burning Characteristics<br>Flame Spread Index<br>Smoke Developed Index | ASTM E84    | < 25<br>< 50                               |
| Water Vapor Permeance                                                          | ASTM E96    | ≤ 0.02 perms                               |
| Fungi Resistance                                                               | ASTM C1338  | No growth greater than comparative item    |
| Tensile Strength                                                               |             |                                            |
| Light Reflectance                                                              |             |                                            |

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

## Sound Absorption

EcoTouch® Insulation for Metal Building Roof and Wall Configurations<sup>5,6</sup>

| INSULATION<br>TOTAL R-VALUE | ABSORPTION COEFFICIENTS AT OCTAVE BAND FREQUENCIES |      |      |      |      |      |      |
|-----------------------------|----------------------------------------------------|------|------|------|------|------|------|
|                             | 125                                                | 250  | 500  | 1000 | 2000 | 4000 | NRC  |
| 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 |

5 Sound absorption testing in accordance with ASTM C423.

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

2 Manufactured in accordance with NAIMA standard 202-96 revision 2000. When installed as part of the OptiLiner Banded Liner System, use "pre-laminated" R-value.

Acoustic Data

Sound Transmission Loss<sup>3,4</sup>

| CONSTRUCTION TYPE |                  | CLIP<br>STANDOFF<br>(INCHES)       | TOP LAYER<br>INSULATION<br>R-VALUE | BOTTOM LAYER<br>INSULATION<br>R-VALUE | TRANSMISSION LOSS - DB AT OCTAVE BAND<br>FREQUENCIES |     |     |      |      |      | STC | OITC |
|-------------------|------------------|------------------------------------|------------------------------------|---------------------------------------|------------------------------------------------------|-----|-----|------|------|------|-----|------|
|                   |                  |                                    |                                    |                                       | 125                                                  | 250 | 500 | 1000 | 2000 | 4000 |     |      |
| Roofs             | 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   |
| CONSTRUCTION TYPE |                  | FOAM TAPE<br>THICKNESS<br>(INCHES) | SINGLE LAYER INSULATION R-VALUE    |                                       | TRANSMISSION LOSS - DB AT OCTAVE BAND<br>FREQUENCIES |     |     |      |      |      | STC | OITC |
|                   |                  |                                    |                                    |                                       | 125                                                  | 250 | 500 | 1000 | 2000 | 4000 |     |      |
| Walls             | 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   |

3 Sound Transmission Loss Tested in accordance with ASTM E90.  
4 Values are given for design approximations only. Production and test variabilities will alter the results.

Assembly U-factors<sup>7</sup>

| METAL BUILDING WALLS   |                        |                   |
|------------------------|------------------------|-------------------|
| INSULATION SYSTEM      | INSULATION R-VALUE     | ASSEMBLY U-FACTOR |
| Single Layer in Cavity | R25 <sup>a</sup>       | 0.059             |
|                        | R30 <sup>b</sup>       | 0.052             |
|                        | R32.5 <sup>c</sup>     | 0.044             |
|                        |                        |                   |
| Double Layer           | R25 + R10              | 0.047             |
|                        | R25 + R16              | 0.042             |
|                        | R25 + R10 <sup>d</sup> | 0.039             |
|                        | R30 + R16              | 0.039             |

(Multiple R-values are listed in order from inside to outside)  
a. A min. R-0.375 thermal spacer block or thermal break strip is required when installed without continuous insulation.  
b. A min. R-0.75 thermal spacer block or thermal break strip is required when installed without continuous insulation.  
c. A min. ½" thermal break tape is required when installed without continuous installation. 8.5" girts 5'0" on center.  
d. A minimum R-3 thermal spacer block is required.

| METAL BUILDING ROOFS                                |                    |                   |
|-----------------------------------------------------|--------------------|-------------------|
| INSULATION SYSTEM                                   | INSULATION R-VALUE | ASSEMBLY U-FACTOR |
| Standing Seam Roofs with Thermal Spacer Block       |                    |                   |
| Liner System                                        | R19 + R11          | 0.037             |
|                                                     | R25 + R8           | 0.037             |
|                                                     | R25 + R11          | 0.031             |
|                                                     | R30 + R11          | 0.029             |
|                                                     | R25 + R11 + R11    | 0.026             |
| Standing Seam Roofs without Thermal Spacer Block    |                    |                   |
| Liner System                                        | R19 + R11          | 0.040             |
| Through Fastened Roofs without Thermal Spacer Block |                    |                   |
| Liner System                                        | R19 + R11          | 0.044             |

a. A standing seam roof clip that provides a minimum 1.5 in. distance between the top of the purlins and the underside of the metal roof panels is required.  
b. A minimum R3 thermal spacer block is required.  
c. A minimum R5 thermal spacer block is required.

7 All values are from ANSI/ASHRAE/IES Standard 90.1-2016. Wall and Roof assembly U-factors are calculated using pre-laminated R-values of insulation meeting NAIMA standard 202-1996 revision 2000.

Installation Recommendations

When installed in strict compliance with the following Bi-Directional Banding instructions, OptiLiner® meets the requirements of OSHA Standard 29 CFR 1926.754(e)(3)(i) for leading edge fall prevention. Detailed roof and wall application recommendations can be found in the roof and wall installation guides for the OptiLiner® system. Any deviation from these installation instructions or substitution of any original components will nullify compliance with the OSHA standard. Other means of fall protection must be used at the perimeter of the structure during the installation of the support strapping and prior to the completed placement of the support fabric. The use of OptiLiner® Banded Liner System is only part of the overall site safety plan for the construction site.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation, and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at [www.owenscorning.com](http://www.owenscorning.com).

Certifications and Sustainable Features<sup>8</sup>

- Certified by SCS Global Services to contain a minimum of 65% recycled glass content, 18% pre-consumer and 47% post-consumer
- GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg)
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Material Health Certificate from Cradle to Cradle Products Innovation Institute

8 All certifications noted are for the EcoTouch® Certified R insulation only and do not apply to the liner fabric.



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Notes

For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via <http://sds.owenscorning.com>

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