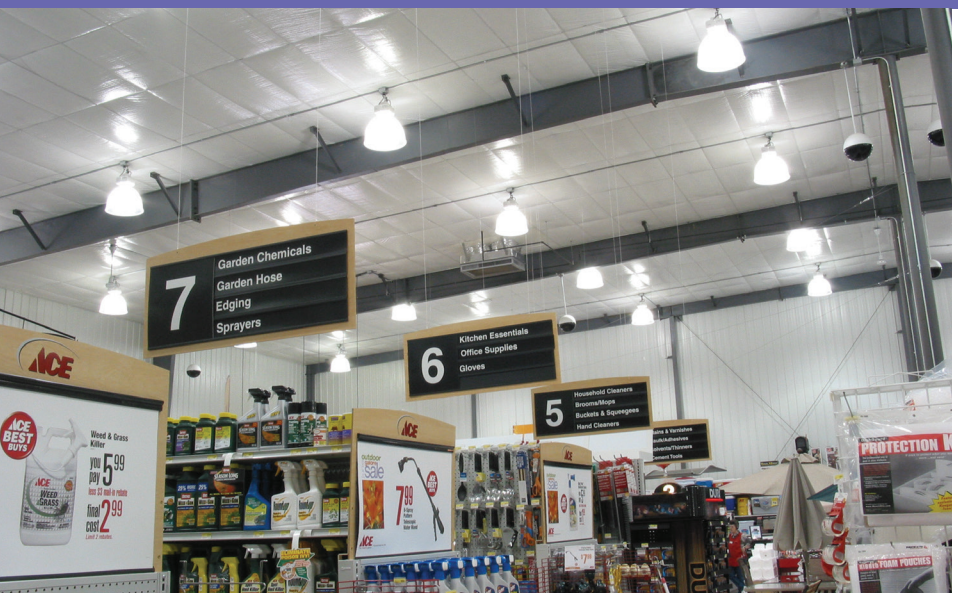
# Wisconsin Commercial Building Code (2021 IECC)

**COMPLIANCE: SEPTEMBER 1, 2025**





## Simple Saver® System

**ENERGY CODE COMPLIANT**

Thermal Design

# Wisconsin State Energy Code

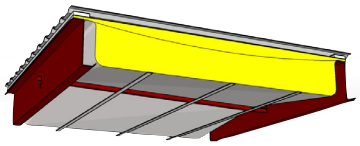
The State of Wisconsin has updated the Wisconsin Commercial Building Code (Energy Conservation), SPS Chapter 363, by adopting the 2021 IECC (International Energy Conservation Code™) with compliance as of September 1, 2025. The new energy code increases stringency requiring alternative installation and additional insulation levels for metal buildings roofs and walls. For decades, Thermal Design has been supplying insulation systems that achieve the high level of performance the State of Wisconsin is implementing today.

## Metal Building Roofs

Conditioned buildings require more than the traditional single layer or double layer of fiberglass compressed over purlins and behind girts. Traditional methods leave conductive metal purlins and girts exposed to the conditioned space.

*Exposed Purlins Do Not Meet Assembly Description*

Alternative installation methods and techniques are required in order to reach the intended thermal performance listed in the energy code.

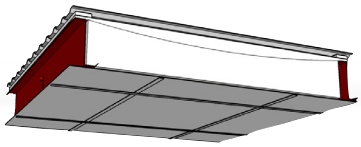


## Solution

Simple Saver liner system features a grid work of tensioned steel straps and a continuous vapor retarder installed below and uninterrupted by purlins.

**FIRST LAYER (BOTTOM):** unfaced, uncompressed fiberglass rests on top of fabric vapor retarder and placed parallel, between the purlins.

**SECOND LAYER (TOP):** unfaced fiberglass installed perpendicular atop the purlins and is compressed when the roof panels are attached.



| | |
|---|---|
| ✗ | **Continuous Vapor Retarder Membrane** ✓ |
| ✗ | **Installed Below and Uninterrupted by Purlins** ✓ |
| ✗ | **Uncompressed, Unfaced, Fiberglass Insulation** ✓ |

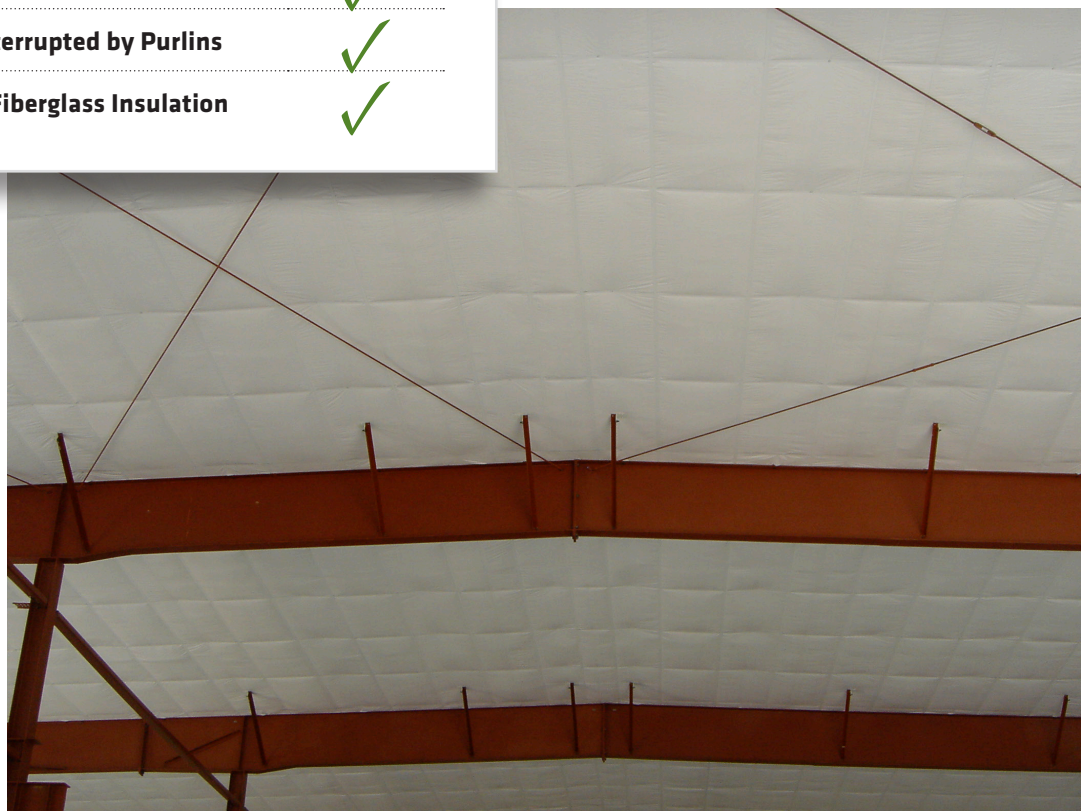
### SIMPLE SAVER® SYSTEM ROOF PERFORMANCE

| PRE-INSTALLED R-VALUE | ROOF U-FACTOR | ASSEMBLY R-VALUE |
|---|---|---|
| R-19 + R-11 | U-0.035 | R-28.6 |
| R-25 + R-11 | U-0.031 | R-32.3 |
| R-30 + R-11 | U-0.029 | R-34.5 |

Standing Seam Roofs with R-3 thermal spacer block, Purlins spaced 5' oc.

**Simple Saver System**
meets the roof descriptions and performance outlined in the 2021 IECC

Thru-Fastened Roof solutions available



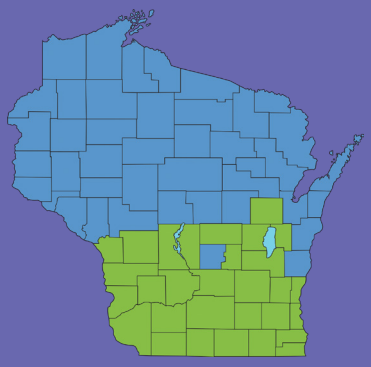
# Wisconsin Energy Code for Metal Buildings*

| ASSEMBLY | ROOF CZ5 | ROOF CZ6 | WALL CZ5, CZ6 |
|---|---|---|---|
| U-FACTOR | U-0.035 | U-0.031 | U-0.050 |
| R-VALUE | R-28.6 | R-32.3 | R-20 |
| PRESCRIBED | R19 + R11 LS | R25 + R11 LS | R13 + R14ci |

*2021 IECC prescriptive requirements for climate zones 5 and 6 are based on Table C402.1.3 and Table C402.1.4. Climate zone(s) based on 2021 IECC, Table C301.1.*

*LS: Liner System - A continuous membrane installed below the purlins and uninterrupted by framing members. Uncompressed, unfaced insulation rests on top of the membrane between the purlins.*

*ci: continuous insulation*



= CLIMATE ZONE 5 (CZ5) = CLIMATE ZONE 6 (CZ6)

## Metal Building Walls

Metal building wall assemblies found in the 2021 IECC are limited and prescriptively feature a hybrid fiberglass insulation and rigid board insulation assembly. Continuous insulation is defined as insulation that is continuous across all structural members without thermal bridges other than fasteners and service openings. Compressed fiberglass insulation between girts do not meet the assembly description or minimum thermal performance.

It's important to remember that there are other types of assemblies which are permitted using the U-factor alternative, however documented assembly performance needs to meet or exceed the code intent (U-factor).

## Solution

Simple Saver liner system features unfaced, uncompressed fiberglass insulation between girts and impaled onto Fast-R™ insulation hangers.

Similar to the roof, each piece of fabric spans the bay's width and height from column to column. The fabric liner/vapor retarder is continuous and installed on the inside plane of the wall to isolate the insulation and conductive girts from the inside conditioned air.

### ADDITIONAL BENEFITS:

+ Continuous Air Barrier
+ Instantly Finishes
+ Brightens Interiors
+ Increased Comfort
+ Sound Absorption

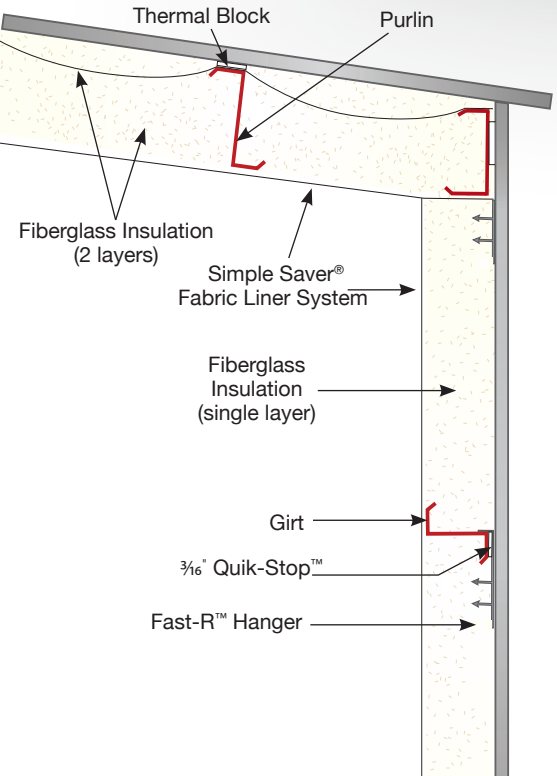
### SIMPLE SAVER® SYSTEM WALL PERFORMANCE

| PRE-INSTALLED R-VALUE | WALL U-FACTOR | ASSEMBLY R-VALUE |
|---|---|---|
| *R-25 | U-0.059 | R-16.9 |
| *R-30 | U-0.052 | R-19.2 |
| *R-32.4 | U-0.049 | R-20.4 |
| R-25+R-10 | U-0.047 | R-21.3 |
| R-30+R-10 | U-0.044 | R-22.7 |
| R-30+R-16 | U-0.039 | R-25.6 |

*Quik-Stop foam thermal break (3/16") applied to girt flange is required.
Wall performance values from ASHRAE Standard 90.1-2019 Appendix A.

**Simple Saver System**
meets code intent without continuous insulation

Installed from the inside, out of the wind and weather




## SIMPLE SAVER® SYSTEM IS THE SOLUTION

The installed performance of the Simple Saver System meets and exceeds the minimum thermal envelope and air barrier requirements (ASTM E2178) in the 2021 International Energy Conservation Code. Thermal Design has conducted hot box testing in accordance to ASTM C1363 on a variety of typically installed Simple Saver roof and wall assemblies that validates installed performance to demonstrate energy code compliance and finite element thermal modeling. Additional high R-value Simple Saver roof and wall assembly solutions are available upon request.

## CONTACT US TODAY

We will assist you with the products, technical support and compliance packages to meet and exceed the new energy code requirements in the 2021 IECC.

- Code Questions
- Technical Support
- Modeling Assistance
- COMcheck™ Assistance
- Compliance Documentation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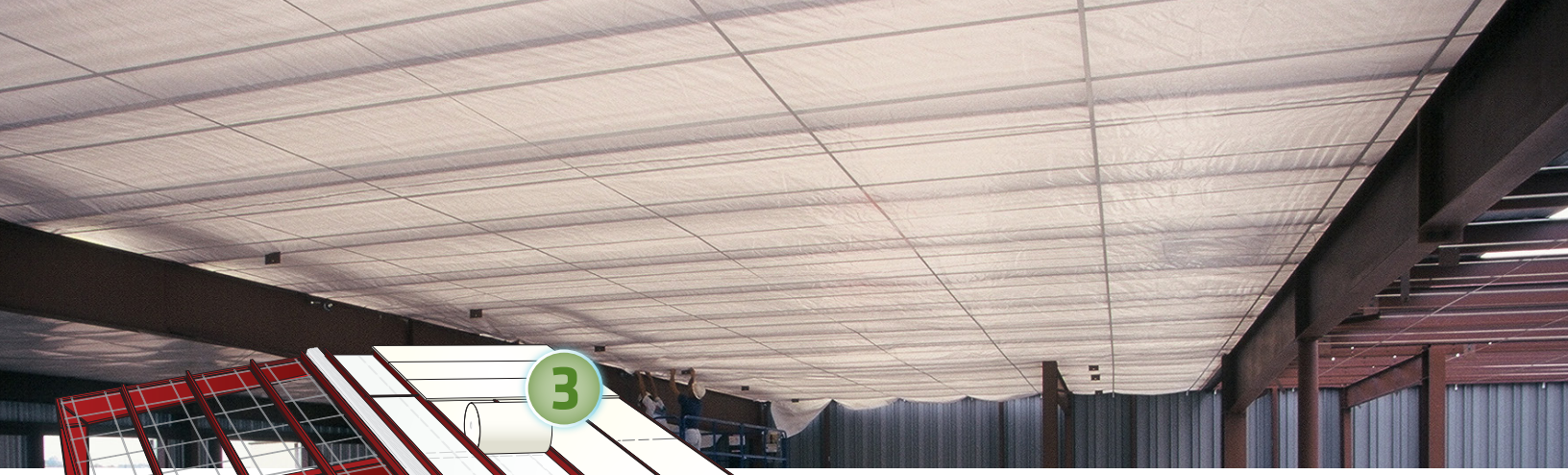

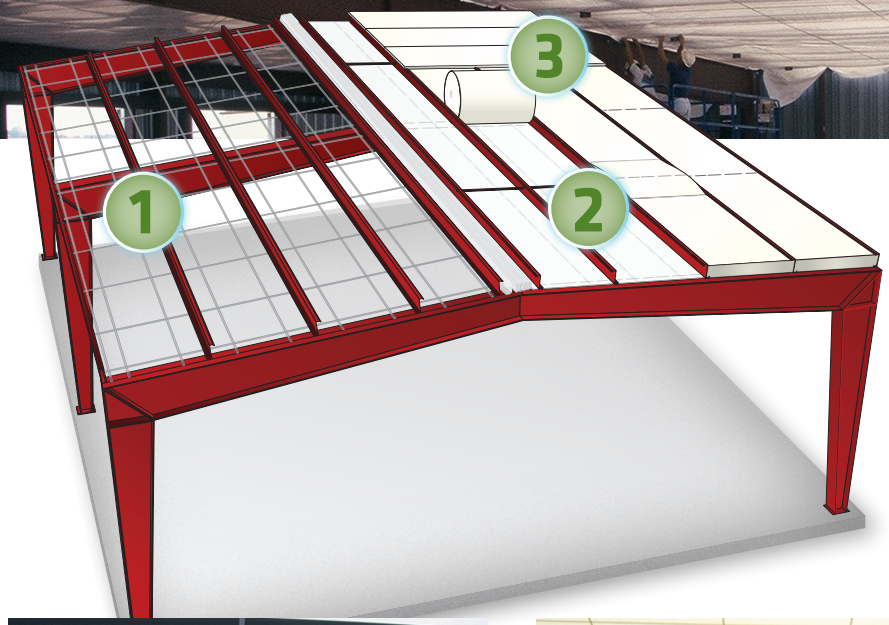


# Simple Saver® System

## OSHA COMPLIANT FALL PROTECTION

### 1 GRIDWORK OF TENSIONED STEEL STRAPS

Installed below the bottom plane of purlins and fastened at primary structural members (rafters)

- Corrosion resistant, high tensile strength (Fall Safe Grade), continuous steel strap with UVMAX™ coating color matched to fabric

### 2 LARGE CUSTOM SIZED FABRIC LINER SYSTEM

Spans entire bay and installed uninterrupted below purlins (supported by steel strap platform)

- Woven reinforced high-density polyethylene yarns/fabric with UVMAX™ coating
  PERM: 0.02 (ASTM E96)
  FIRE: CLASS A (ASTM E84)

### 3 UNCOMPRESSED, UNFACED FIBERGLASS INSULATION

First layer installed parallel and between purlins; second layer installed perpendicular and atop purlins

- Available with formaldehyde free fiber glass

The **Simple Saver® System** manufactured and marketed through Thermal Design, Inc. over the past 40+ years has become the #1 specified high R-value insulation system for metal buildings. In addition to superior insulation performance, condensation control, aesthetics and acoustics compared to "traditional" designs, the Simple Saver System is a insulation system that provides OSHA compliant fall protection to the interior of the building during the installation and roofing process.

**Thermal Design**

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