

INSULATION

METAL BUILDING INSULATION SYSTEMS

METALBUILDING
OUTLET CORP.



**INSULATION IS ESSENTIAL FOR
METAL BUILDINGS TO REGULATE
TEMPERATURE, CONTROL MOISTURE,
AND ENHANCE ENERGY EFFICIENCY
WITHIN THE BUILDING
ENVELOPE**



Follow this QR Code to visit our website and learn more

Metal conducts heat more rapidly than other building materials, making insulation crucial to prevent excessive heat gain or loss. Proper insulation helps maintain comfortable indoor temperatures, reduces energy consumption, and protects against condensation and moisture buildup, which can lead to corrosion and structural damage. Additionally, insulation in metal buildings improves soundproofing, creating a quieter and more pleasant environment.



SINGLE LAYER SYSTEMS



DOUBLE LAYER SYSTEMS

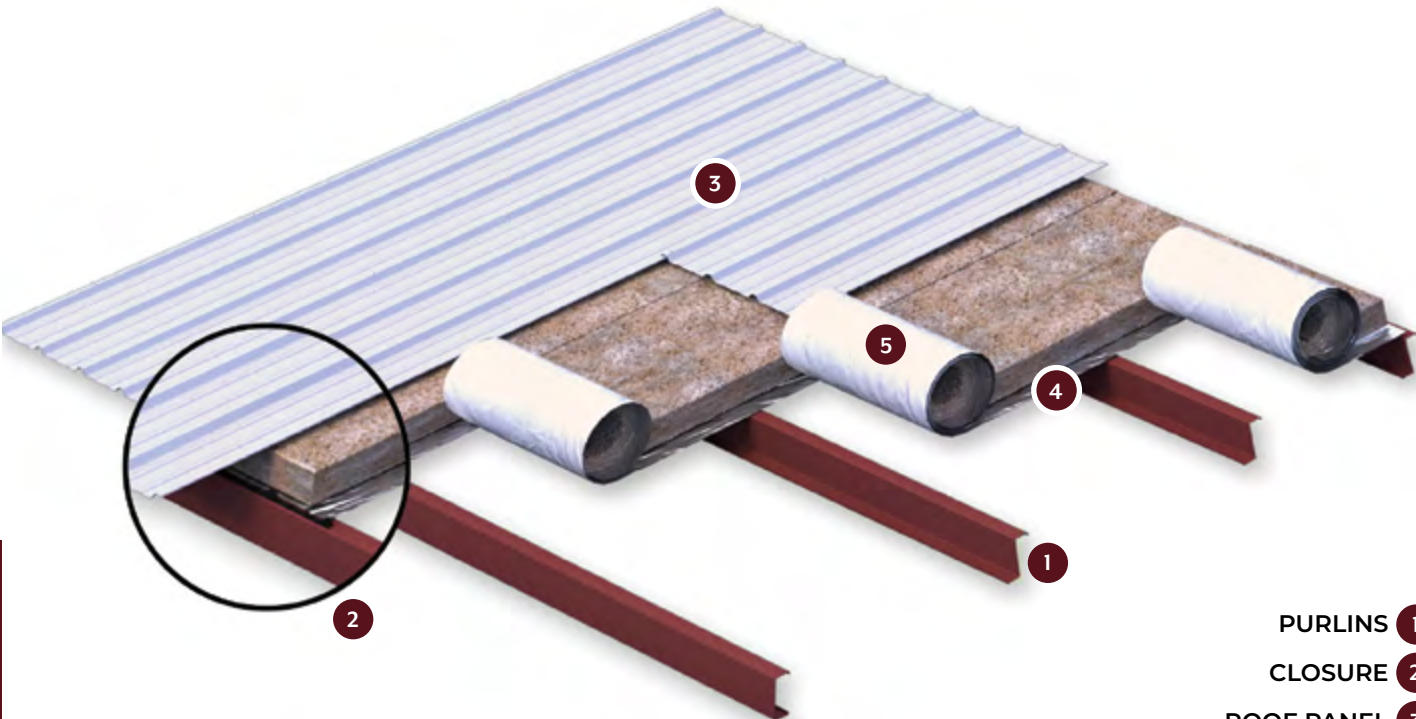


ENERGY SAVING SYSTEMS

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SINGLE LAYER INSULATION SYSTEM



PURLINS 1

CLOSURE 2

ROOF PANEL 3

6" OVERLAPPING TAB 4

FACED INSULATION OVER TOP OF PURLINS 5

SINGLE LAYER SYSTEM

2

Metal building construction commonly involves insulating the roof and walls with a single layer of insulation placed between the roof purlins or wall girts and exterior metal panels. Pre-cut fiberglass insulation blankets are used to minimize field splicing and act as a vapor retarder against moisture. These blankets, laminated with polypropylene fabric, are installed over the purlins or girts, compressing the insulation and creating a barrier between the metal sheeting and interior framing to prevent heat and cold transfer, and condensation. Single-layer systems are typically used in garages, carports, hangars, and mini-storage buildings, while buildings with regular occupancy benefit from insulation with a higher R-value for enhanced thermal performance.

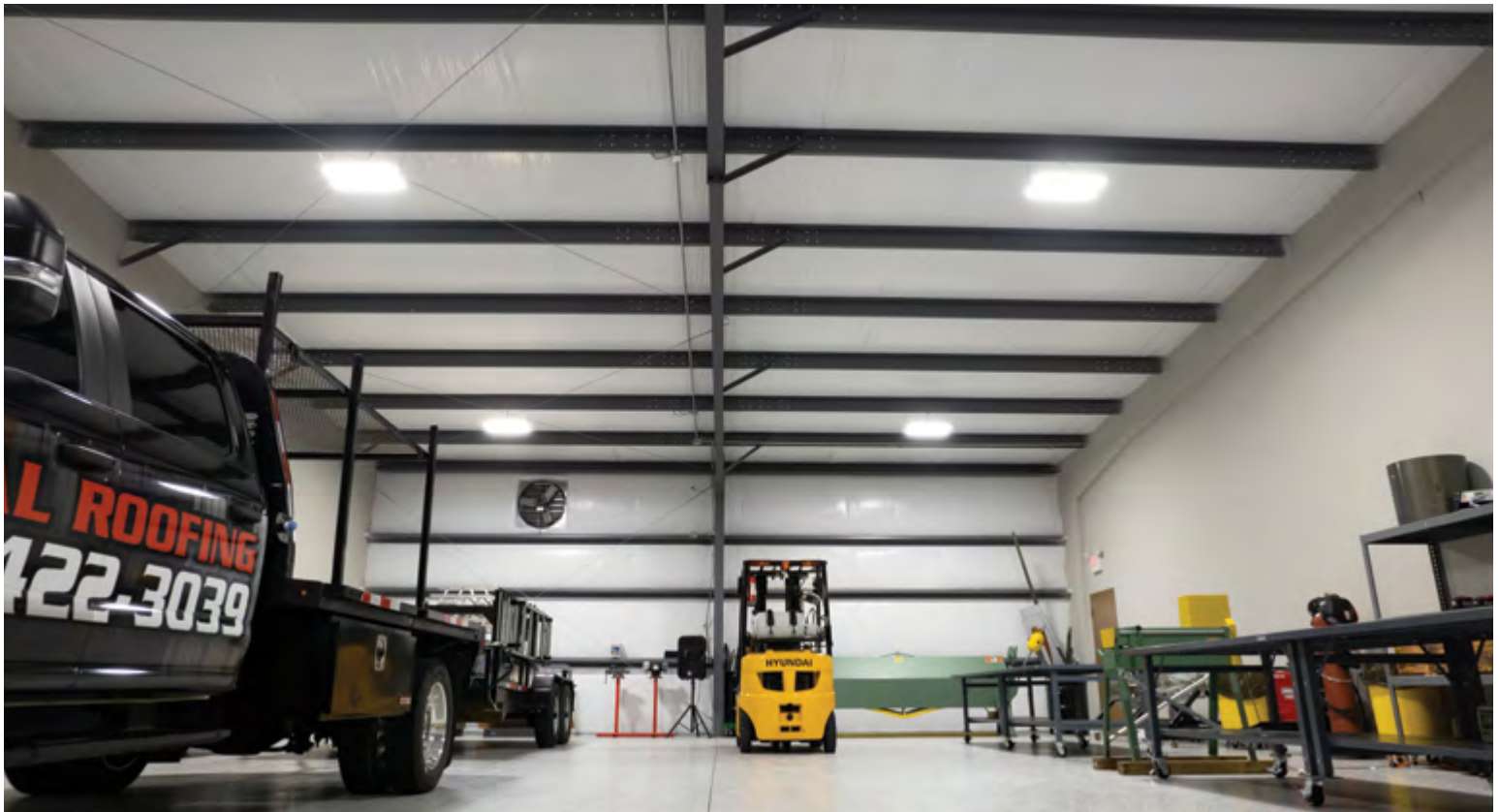
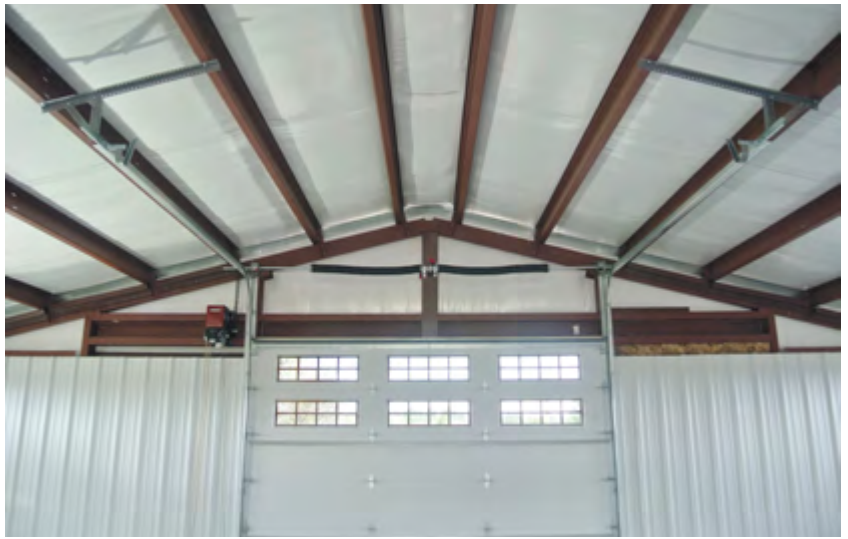
- A common application in metal building construction is single layer insulation for roofs and walls.
- Single layer insulation is sandwiched between roof purlins or wall girts and exterior metal panels.
- Fiberglass insulation blankets are pre-cut to fit the building's design, minimizing field splicing.
- A polypropylene fabric is laminated to the fiberglass roll acting as a vapor retarder.
- Single layer systems are typically used for garages, carports, hangars, and mini storage buildings.



Follow this QR code to watch our informational video about Single Layer Insulation Systems

Insulation Thickness	R-Value
2.5"	R-8
3"	R-10
3.5"	R-11
4"	R-13
6"	R-19

PLEASE NOTE THAT FOR 6" R-19 INSULATION, LONGER SCREWS ARE REQUIRED TO PREVENT BOWING OF THE PANELS.

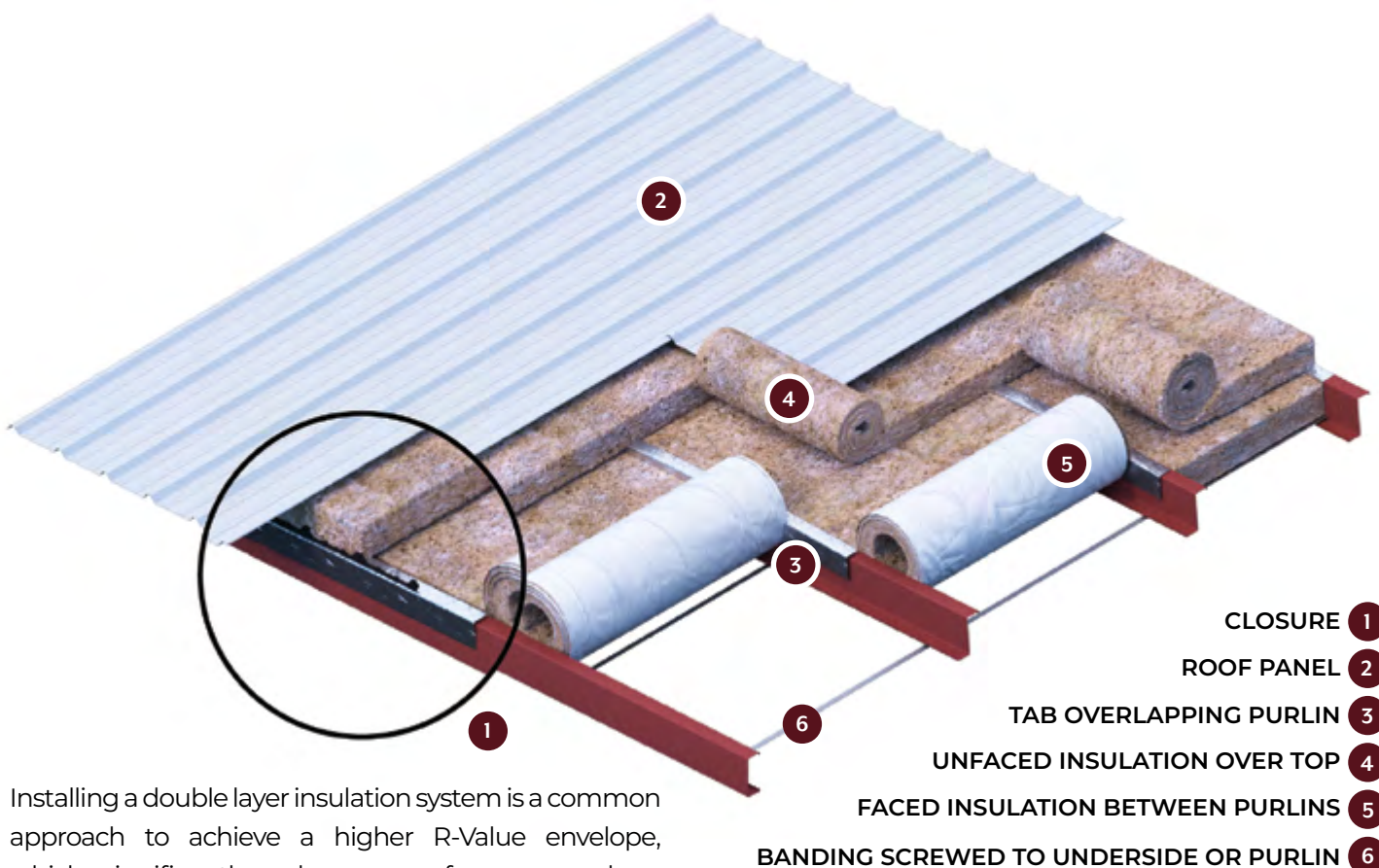


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DOUBLE LAYER INSULATION SYSTEM

DOUBLE LAYER SYSTEM



Installing a double layer insulation system is a common approach to achieve a higher R-Value envelope, which significantly enhances performance values. The insulation blankets are pre-cut to fit the roof and wall cavities and are held up with metal bands. The first layer, faced with polypropylene fabric, is installed between the roof purlins, serving as a vapor retarder and providing a reflective interior finish. A second layer of unfaced fiberglass is placed over the top, acting as a thermal spacer between the exterior panels and steel roof purlins.

Double layer systems are recommended for buildings with occupants or when energy savings are a priority. Investing in a high R-Value system upfront leads to long-term cost savings over the building's lifespan. The insulation thickness is determined by the purlin depth, ensuring the cavity is filled while a thinner layer creates a thermal barrier on top.

- Double layer systems enhance performance values by achieving a higher R-Value envelope.
- Metal bands support pre-cut insulation blankets in roof and wall cavities.
- The first layer of insulation, with polypropylene facing, offers a vapor retarder and reflective finish between purlins.
- A second layer of unfaced fiberglass acts as a thermal spacer between exterior panels and steel roof purlins or wall girts.
- Double layer systems are beneficial for occupied buildings delivering long-term cost savings.



Follow this QR code to watch our informational video about Double Layer Insulation Systems

Double Layer

3" + 6"
3.5" + 6"
4" + 6"
2.5" + 8"
3" + 8"
6" + 6"
3" + 9.25"
4" + 9.25"

High R-Value

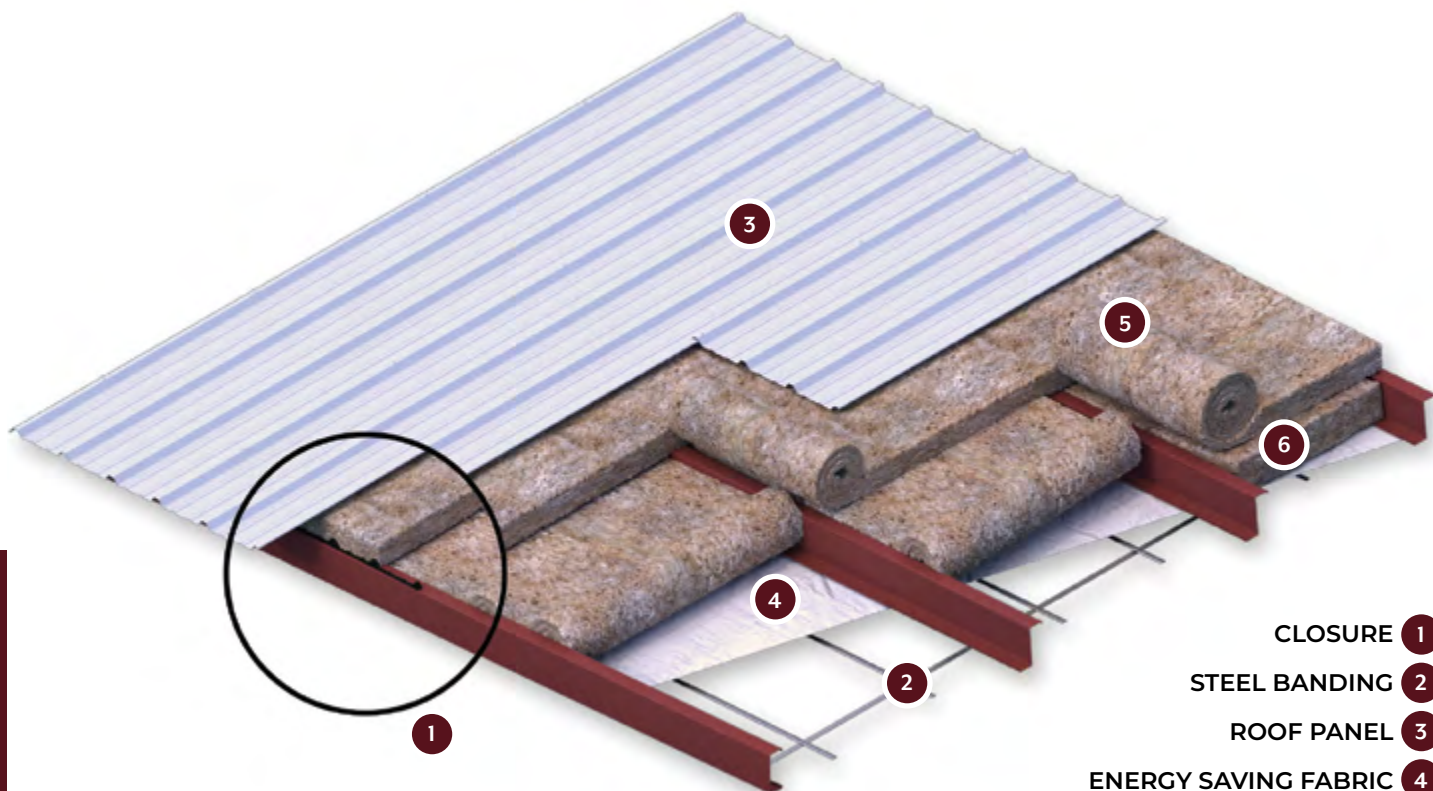
R-29
R-30
R-32
R-33
R-35
R-38
R-40
R-43



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ENERGY SAVING INSULATION SYSTEM



- CLOSURE 1
- STEEL BANDING 2
- ROOF PANEL 3
- ENERGY SAVING FABRIC 4
- UNFACED INSULATION BLANKETS OVERTOP 5
- UNFACED INSULATION BETWEEN PURLINS 6

This innovative system offers exceptional thermal performance with steel bands, unfaced insulation layers, and an energy-saving fabric. The tear-resistant fabric provides a durable and smooth finish, concealing the secondary structural steel. OSHA compliant for fall protection, it is suitable for roof and wall applications. Steel bands with fabric are installed under purlins for roofs, while InsulHold Coils secure a single layer of insulation between wall girts for walls. Thermal break tape and an energy-saving vapor retarder ensure thermal isolation and a clean white finish.

- High thermal isolation and vapor retarder rating.
- OSHA compliant for fall protection.
- Industry-leading thermal performance.
- Network of steel bands, two layers of unfaced insulation, and seamless energy saver fabric included.
- Tear-resistant fabric conceals secondary structural steel, offering durability and brightness.

ENERGY SAVING SYSTEMS CAN BE INSTALLED AS EITHER SINGLE OR DOUBLE LAYER IN WALLS, WHILE ONLY DOUBLE LAYER IS INSTALLED IN ROOF APPLICATIONS.

Single Layer

2.5"
3"
3.5"
4"
6"
8"
9.25"

R Value

R-8
R-10
R-11
R-13
R-19
R-25
R-30

Double Layer

3" + 6"
3.5" + 6"
4" + 6"
2.5" + 8"
3" + 8"
6" + 6"
3" + 9.25"
4" + 9.25"

High R-Value

R-29
R-30
R-32
R-33
R-35
R-38
R-40
R-43



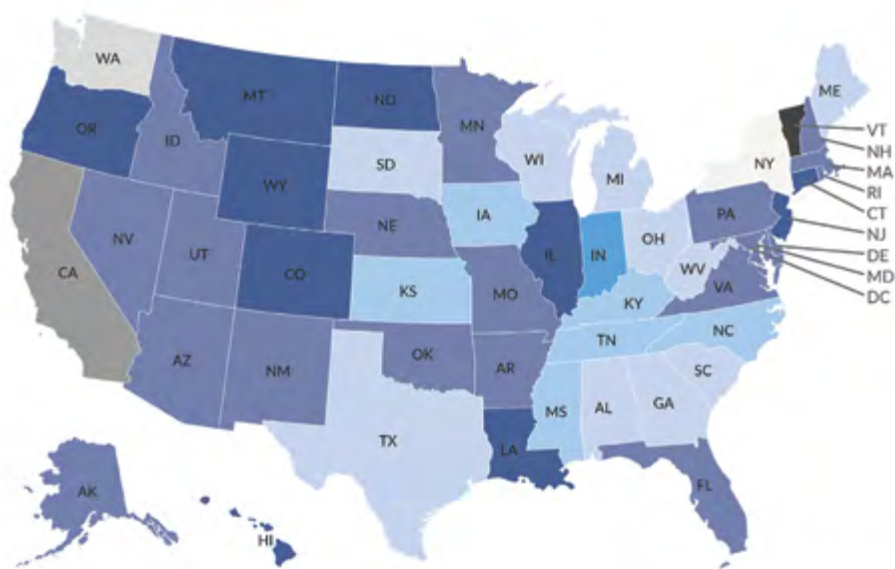
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INSULATION

ENERGY CODE COMPLIANCE

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- Ashrae 90.1 2019 IECC 2019
- Ashrae 90.1 2016 IECC 2016
- Ashrae 90.1 2013 IECC 2015
- Ashrae 90.1 2010 IECC 2012
- Ashrae 90.1 2007 IECC 2009
- NYC Energy Conservation Code
- 2019 Building Energy Efficiency Standards
- 2018 Washington State Energy Code
- 2020 Vermont Commercial Building Energy Standards

*U.S. ENERGY CODES 2023 (COVE.TOOL)

IT IS IMPORTANT THAT YOU VERIFY ENERGY CODES WITH YOUR LOCAL BUILDING DEPARTMENT.
IT IS NOT THE RESPONSIBILITY OF THE METAL BUILDING SUPPLIER TO VERIFY THE REQUIRED CODES.

UPFRONT INVESTMENT IN STEEL BUILDING INSULATION LEADS TO LOWER BILLS, EFFICIENT SYSTEMS, AND ENHANCED COMFORT

Learn about all types of steel building insulation systems from our informative video.



The U.S. Department of Energy developed COMcheck as an energy code compliance tool to determine if a building meets the requirements of the International Energy Conservation Code (IECC), ASHRAE, and state-specific codes. It provides performance requirements for commercial building envelopes and assemblies.

Our building consultants can assist in creating a customized insulation system for your project, based on your energy requests. COMcheck is a valuable tool to assist in determining the right package for your project.



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