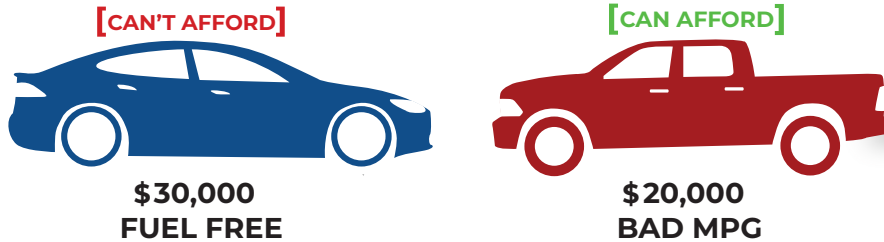


INSULATION OPTIONS

METALBUILDING
OUTLET CORP.
(303) 948-2038

COST OF OWNERSHIP



THE DIFFERENCE BETWEEN THE TWO IS \$300 A
MONTH BASED ON DRIVING ALONE.
SOMETIMES CHEAP DOESNT ALWAYS MEAN LESS EXPENSIVE.
SOMETIMES THE MORE EXPENSIVE OPTION COULD MEAN THE CHEAPEST OPTION
LONGTERM.



Both metal buildings and vehicles are fuel burners. In a large climate controlled space it easy to save \$100's of dollars in energy costs per month from a lower end insulation system to a very well insulated system.

"For every \$100 in savings per month average the savings is \$24,000 over a 20 year span!"

An additional benefit comes into the mechanical system efficiency. Have you ever been in a heated or cooled building where the fans on the mechanical unit are kicking on and off and they cannot keep up with the demand? I think we all have. The wear and tear in these situations is tremendous! With properly insulated systems the mechanical life span can exceed double over a poorly insulated space requiring inefficient run time.



Air leaks are the number one cause for energy loss. It starts with the doors or windows. Even most doors out there offer a R-7 insulation while for not much more we can get into foam filled doors with great seals and an impressive R-Value rating of R-27.



There are other additional costs savings that are often overlooked. Employees competing at the thermostat for temperature control of work spaces is one of the most common. Or workspaces where small portable heaters are located to warm the area under a desk are often left on during non-working hours? These expenses can be reduced by addressing the total building envelope. This includes proper door selection, mechanical systems, led lighting, and smart thermostats that are on a timer to adjust the temperature during non-working hours, and efficient insulation systems.



"The cost to run these little burners is tremendous, it can consume \$100's of dollars every month in energy costs and is reflected in the electric side of energy costs, this is often over looked in the analysis."

While we all know that vehicles do not run fuel free, there is a pay back point when dealing with efficiencies where it starts making you money. Saving or cutting back by not investing in an insulation system for a climate controlled space is not where you want to cut costs. Often the "I cannot afford it" turns into I cannot afford not to do with the better option" when the long term benefits are presented.

SINGLE LAYER INSULATION SYSTEM

A very common application in metal building construction is to insulate the roof and walls with a single layer of insulation. Sandwiching fiberglass insulation blankets in between the interior framing and exterior metal panels will create a thermal barrier. Placing a single layer of insulation between the roof purlins or wall girts, and exterior metal panels, has been by far the most typical practice throughout the history of new metal building construction.

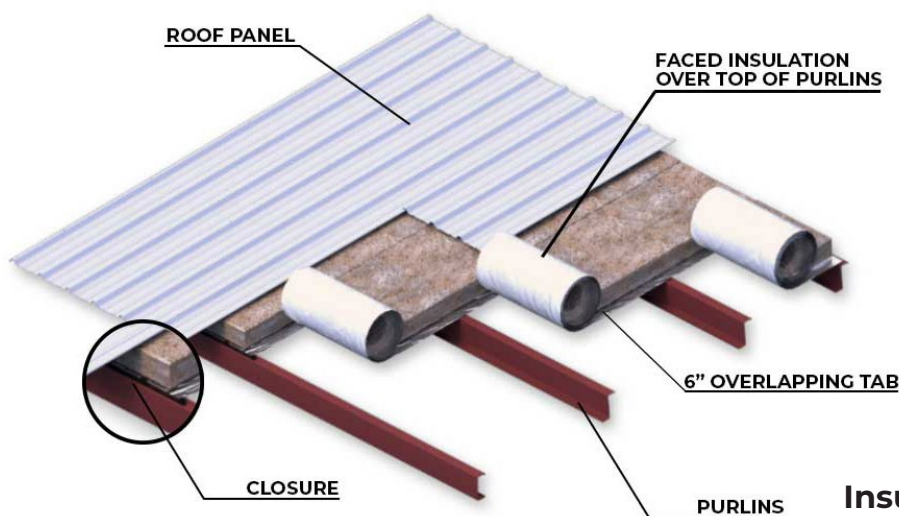
Our fiberglass insulation blankets are pre-cut specifically to fit the building's design, this helps to minimize field splicing. A polypropylene fabric is then laminated to the fiberglass roll, which provides a clean, bright white finish and also acts as a vapor retarder, helping to protect the insulation and building from moisture. The faced fiberglass insulation rolls are rolled out over the top of the purlins or girts before the metal exterior panels are installed. This compresses the insulation at each purlin location and allows the insulation to fluff out into the open cavities. This helps create a barrier between the sheeting and the interior framing to aid in the elimination of heat and cold transfer, which lead to sweating or condensation in the building.

Typically, single layer systems are used for garages, carports, hangars and mini storage buildings. If you are going to have people working or living in the building a higher r-value is recommended.

Single Layer R-Value Options

The single layer system allows for insulation blankets up to 6 inches in thickness (which equates to an R- Value of R-19) to be installed. Insulation batts thicker than 6" will cause the metal panels to oil can or wave once compressed. If a higher R-Value is desired in your building, a Double Layer System is required to avoid this.

To achieve a higher R-Value than R-19 a Double Layer System is required.



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

SINGLE LAYER INSULATION SYSTEM

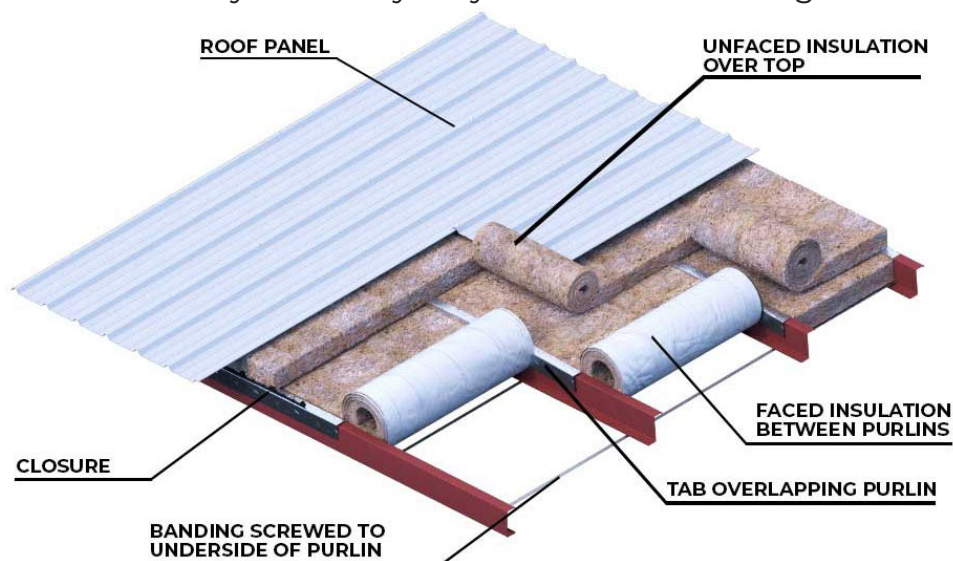


DOUBLE LAYER INSULATION SYSTEMS

It is common to install a double layer system to achieve a Higher R-Value thermal envelope. This system enables the performance values to be increased significantly and is considered an innovative new concept in the construction of metal buildings for energy savings. A high R-Value system is commonly referred to as a double layer system. Two layers of insulation are installed and held up with metal bands to achieve a High R-Value.

Steel bands are installed on the underside and perpendicular to the roof purlins. A pre-cut layer of insulation faced with polypropylene fabric is then installed in between the purlins, running the entire length of the building. This layer is exposed to the inside of your building and the polypropylene product serves as a vapor retarder while providing a bright, reflective interior finish. A second layer of unfaced fiberglass is then installed from the peak to the eave- perpendicular to the roof purlins and over the top of the first layer. This acts as a thermal spacer between the exterior panels and the steel roof purlins. The insulation blankets are pre-cut to fit into the roof and wall cavities of your building. This helps save time and money by eliminating any extra wasted material that would normally be cut off.

Double layer systems are a great choice for buildings where people will work or live, or if energy savings is important to the owner. Investing in a high R-Value system up front will save you money for years to come throughout the life span of the building.



Double Layer R-Value Options

The insulation thickness of your double layer system is determined by the depth of your purlins. It is important to fill the cavity of your purlin while installing a thinner layer of insulation over the top to create a thermal barrier.

Double Layer

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

High R

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

DOUBLE LAYER INSULATION SYSTEMS

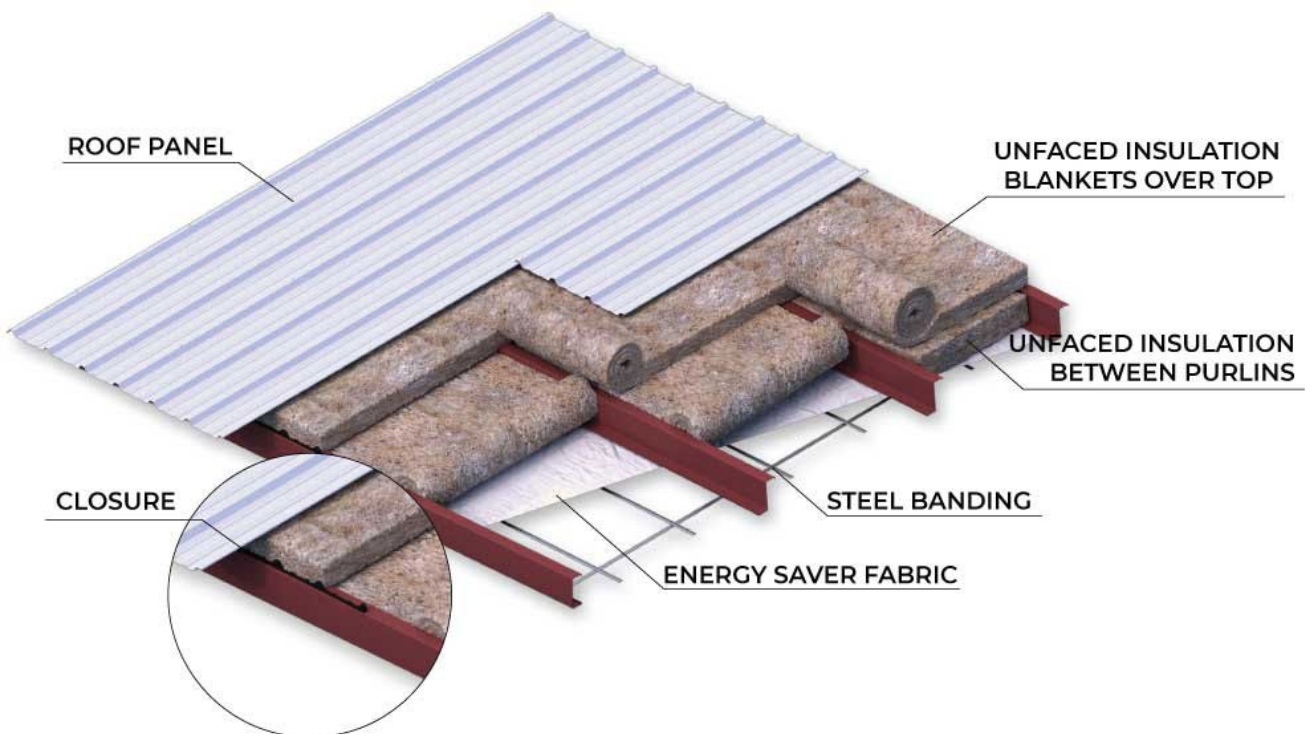


ENERGY SAVER INSULATION

This innovative system has one of the highest thermal performance results in the industry. It consists of a network of steel bands, 2 layers of unfaced insulation between and over top of the framing, and a seamless energy saver fabric that covers the insulation. The energy saver fabric resists tears and conceals the secondary structural steel providing a smooth, bright, durable finished surface. This system offers excellent thermal isolation with one of the best vapor retarder ratings available. Best of all, the fabric installed with a network of steel bands together as a “system” is tested and approved to be OSHA compliant for fall protection. This method is a new construction method that works for both roof and walls.

In roof applications, a woven network of steel bands are installed with the fabric on the underside of the purlins, concealing them. A first layer of unfaced insulation is rolled in between the purlins running the length of building. A second layer of unfaced fiberglass is installed perpendicular over the top of the purlins from peak to eave. Roof panels are then installed over the top.

In wall applications, a single layer of unfaced insulation is secured in between wall girts with the use of InsulHold Coils filling the entire cavity. Thermal break tape is then installed on the exterior of the girt framing, creating a thermal break and helping to prevent thermal loss between the exterior metal panels and interior framing before the exterior wall panels are installed. The durable energy saving vapor retarder is then installed in the interior of the building, over the top of the framing, concealing it and providing a clean, bright white and durable finish. Steel bands are installed to provide additional support to the fiberglass batts and the fabric.



ENERGY SAVER INSULATION

