

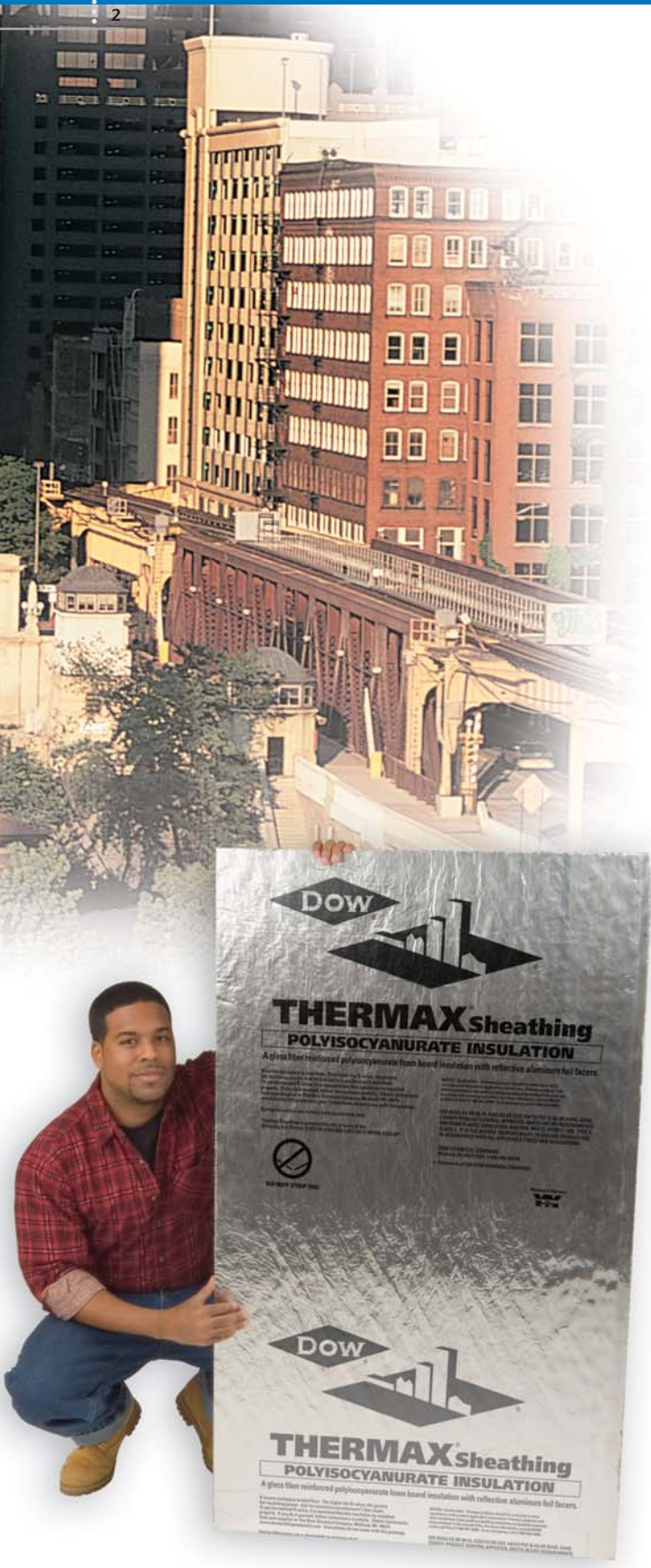


# THERMAX™ Sheathing is Your Best Front for Steel Studs.

You can design a better wall – and save energy, materials and installation costs – when you use THERMAX™ Sheathing on your steel stud walls. The unique polyisocyanurate formulation offers one of the highest R-values\* (6.5 at 1") of all rigid foam sheathings, superior fire properties and durability.

THERMAX™ Sheathing rigid insulation from Dow joins a core of glass-fiber-reinforced polyisocyanurate foam with aluminum foil facers. The insulation delivers outstanding thermal performance, reliable dimensional stability and exceptional fire performance. THERMAX Sheathing meets or exceeds building code fire performance requirements for foamed plastic insulations and can be used effectively in steel stud wall assemblies. It has passed NFPA 285 testing and can be used in commercial steel stud cavity wall applications where NFPA 285 is required. THERMAX Sheathing can also be used in different hourly rated assemblies, depending on the specific assembly requirements.

For your next steel stud project, depend on the insulation that provides the best front for steel studs: THERMAX Sheathing from Dow.



**Dow Building Solutions**

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow  
\*R means resistance to heat flow. The higher the R-value, the greater the insulating power.

# The Benefits of Using THERMAX™

There are three key reasons why using THERMAX™ Sheathing as insulation in steel stud assemblies makes good sense.

1. As seen in Design A (Non-Hourly Rated System), THERMAX Sheathing provides the option of eliminating gypsum on the exterior. In “all steel” designs, the structural contribution of wall sheathings is ignored. This “all steel” design is widely practiced and is a preferred recommendation of the Brick Industry Association (BIA). Removing gypsum from the exterior and installing THERMAX Sheathing directly to the steel stud (as opposed to installing it on top of the gypsum) helps to lower wall assembly and installation costs.
2. As seen in Design B (Hourly Rated System), THERMAX Sheathing provides value in “sheathing-braced” designs, which rely on attached sheathing like gypsum to contribute to torsional and lateral support. By specifying THERMAX

Sheathing, architects can achieve:

- Moisture management (by leaving the cavity empty)
- NFPA 285 approval
- Hourly rated approvals

Good building science supports the removal of fiberglass from the wall cavity. Thermal shorts decrease the efficiency of fiberglass batt insulation in the cavity (see ASHRAE 90.1). Cavity insulation creates a dew point in the wall cavity that can increase the potential for moisture problems. Using THERMAX Sheathing on the exterior of the stud enables you to reach specified R-values at a lower installed cost. Table 1 describes effective R-value in more detail.

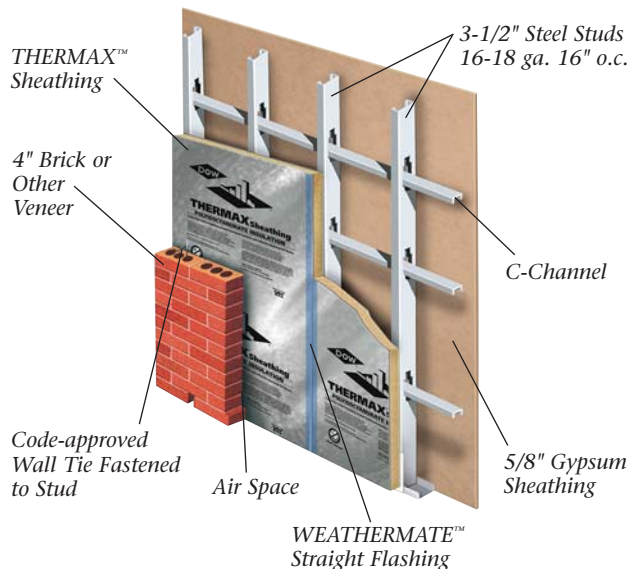
3. You can insulate on the exterior of the steel stud to dramatically reduce thermal shorts. See Figure 1 for a dramatic illustration of how thermal shorts result in significant energy loss. Thermal shorts prevent you from achieving the R-value you design for.

## A Strong Finish

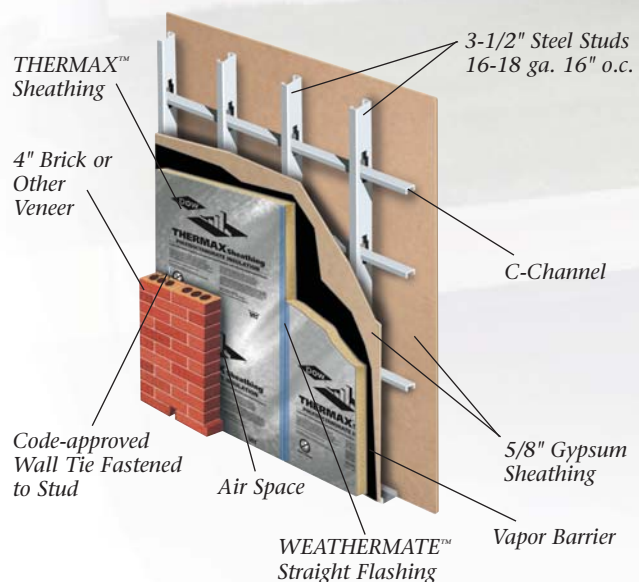
For a tear-resistant seal that resists water intrusion, Dow recommends taping THERMAX Sheathing seams with WEATHERMATE™ Straight Flashing. It combines a blue high-density polyethylene (HDPE) film facer with a butyl rubber adhesive that forms a strong mechanical and chemical bond to THERMAX Sheathing and other building materials. A polymeric-coated paper release liner provides a consistent peel.



### DESIGN A: NON-HOURLY RATED SYSTEM



### DESIGN B: HOURLY RATED SYSTEM





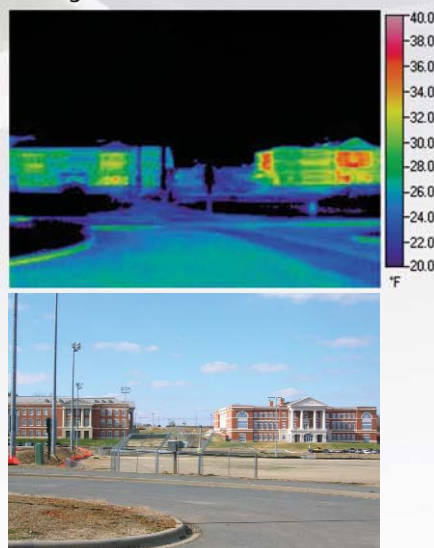
## THERMAX™ and Steel Stud Wall Systems

Steel stud construction offers superior strength and structural integrity. But steel studs transfer heat up to 10 times faster than wood studs. Thermal shorts caused by steel studs can reduce energy efficiency and increase the potential for water vapor condensation within the wall system.

Designing with THERMAX™ Sheathing on the exterior of the steel stud is a more effective method of insulation, managing moisture as well as lowering energy costs.

*THERMAX™ Sheathing is well-suited to curtain wall and load-bearing wall systems incorporating steel studs.*

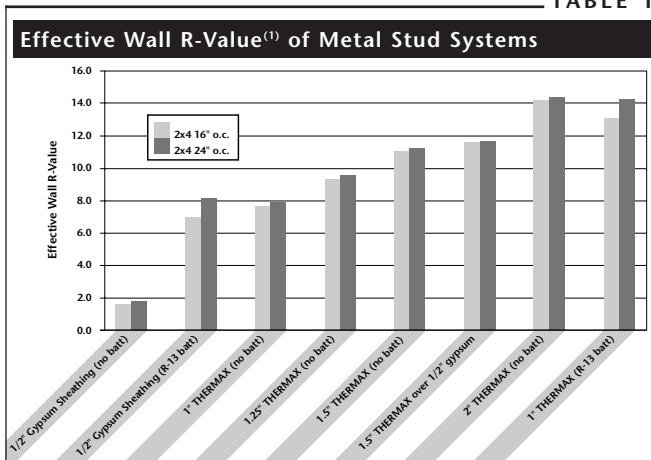
Figure 1



*The building on the left has continuous insulation (extruded polystyrene) installed directly on the steel studs without fiberglass in the cavity. The building on the right has a wall assembly with fiberglass in the cavity and gypsum on the exterior. Note the dramatic differences in energy loss between these buildings.*



TABLE 1



(1) Effective R-value calculations based on ASHRAE 90.1-2004 Table A9.2B for effective R-value of batt insulation and cavity. All cases have 1/2" interior gypsum with R-0.45 and no air films or exterior finishes.

TABLE 2

**THERMAX™ Sheathing R-Values**

Nominal Foam Thickness, in.	Stabilized R-Value <sup>(1)</sup>
0.5	3.3
0.75	5.0
1.0	6.5
1.25	8.1
1.5	9.8
1.55	10.1
1.75	11.4
2.0	13.0
2.5	15.8
3.0	19.0
3.5	22.1
4.0	25.2

(1) R-values expressed in ft<sup>2</sup>•h•°F/Btu

NOTE: Not all product thicknesses are available in all areas. For additional product sizes and lead-time requirements, please consult your local Dow representative.

TABLE 3

**Physical Properties of THERMAX™ Sheathing**

Property and Test Method	Value
Compressive Strength <sup>(1)</sup> , ASTM D1621, psi, min.	25.0
Flexural Strength, ASTM C203, psi, min.	55.0
Dimensional Stability, ASTM D2126, % linear change, max.	0.1
Water Absorption, ASTM C209, % by volume, max.	0.05
Water Vapor Permeance, ASTM E96, perms, max.	< 0.03
Maximum Use Temperature, °F	250

(1) Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first.

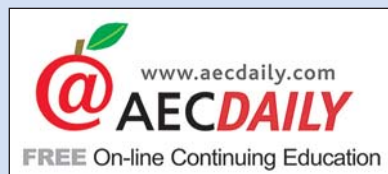
# Performance and Value in One



Steel stud construction is an increasingly popular choice for universities and other institutions – and THERMAX™ Sheathing is the best front for steel stud applications.

THERMAX™ Sheathing delivers outstanding performance and value in steel stud applications:

- Versatility – Suitable for load-bearing and non-load-bearing walls
- Code compliance – Meets all building code requirements for foamed plastic insulation
- Insulating power – R-6.5 at 1", one of the highest R-values available
- Durability – Robust facers enhance durability, moisture resistance and dimensional stability
- Ease of installation – THERMAX Sheathing can be cut and installed using common building products
- Value – Reliable insulating performance adds up to long-term energy savings and value





## Build Green With Dow

Dow supports initiatives that help preserve our environment, and we strive for environmental sensitivity in our manufacturing processes and in our products. Dow produces insulating foams that:

- contain no CFCs
- are formaldehyde-free
- are not a known food source for mold or insects
- contain post-industrial recycled content (extruded polystyrene)
- contribute to USGBC LEED credits

Ask your Dow representative for more information.

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COMBUSTIBLE: THERMAX™ products should be used only in strict accordance with product application instructions. THERMAX products, when used in a building containing combustible materials, may contribute to the spread of fire. For more information, consult MSDS and/or call Dow at 1-866-583-BLUE (2583). In an emergency, call 1-989-636-4400.

**WARNING: THERMAX™ insulation does not constitute a working walkable surface or qualify as a fall protection product.**

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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