

## THERMAX INSULATION/FINISH BOARDS

# Exposed Interior Roof Applications in Metal Buildings With Low Humidity

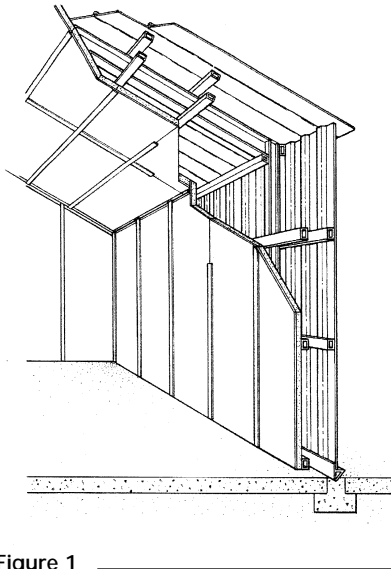


Figure 1

THERMAX\* polyisocyanurate insulation/finish boards used in exposed applications help safeguard metal building systems that have low humidity\*\* against thermal loss, moisture buildup and even fire damage.

Use THERMAX insulation/finish board products† for exposed interior roof insulation applications in agricultural, commercial and industrial buildings such as factories, warehouses, agricultural structures, cold storage structures and similar facilities.

THERMAX insulation/finish boards and THERMAX Metal Building Board provide exceptional thermal protection installed outside the metal roof framing – “C” purlin, “Z” purlin, bar joist or other frame – with the specified joint treatment to make a total insulation system.

## Products

THERMAX insulation/finish boards are designed as an insulation and interior finish (Figure 1). The boards are closed-cell products that are highly resistant to heat flow. All THERMAX insulation/finish board products feature a polyisocyanurate foam core with glass fiber reinforcement, and are surfaced with different solid aluminum foil facers. The reinforced core, plus chemical modifications, improves fire performance compared with other rigid insulation products and enhances dimensional stability.

The bonded aluminum foil facers serve as effective moisture vapor retarders. THERMAX Sheathing and Metal Building Board insulation products have aluminum foil facers on both sides. THERMAX Light Duty and Heavy Duty insulation products have an aluminum foil facer on one side with a white-coated facer on the other. This design is an aesthetically appealing decorative effect.

The products listed in Table 1 have varying thicknesses and facings, ideally suiting THERMAX insulation/finish boards for

meeting specific designs and requirements in the interior roofs of metal buildings with low humidity.

## Advantages

There are several advantages to using THERMAX insulation/finish board products:

- Excellent insulation – high R-value†† (6.5 per inch) without need for thermal barriers; can be left exposed according to building codes
- Improved fire performance – THERMAX insulation contributes minimally to the spread of flame and smoke
- Broad range of product thicknesses – allows for sizing to meet U-value/energy code requirements, allowing R-value and thickness to be tailored for design needs and minimal material cost
- Noise-dampening facers – THERMAX Metal Building Board insulation in interior roofs diminishes noise that often occurs in the metal panels when outside temperatures change
- Easy and fast installation

TABLE 1

| THERMAX Insulation/Finish Board and Sheathing Recommendations |  |
|---|--|
| Boards  | Surface Facers   |
| THERMAX Sheathing   | 1.0 mil (0.025 mm) aluminum both sides                                     |
| THERMAX Metal Building Board                                  | 1.25 mil embossed aluminum foil on both sides                              |
| THERMAX Light Duty  | 1.25 mil (0.032 mm) white embossed aluminum/<br>1.25 mil embossed aluminum |
| THERMAX Heavy Duty  | 4.0 mil (0.1 mm) white embossed aluminum/<br>1.25 mil embossed aluminum    |

\*\*Buildings in which humidity is less than 50 percent  
†THERMAX Heavy Duty Plus is not recommended for roof/ceiling applications.  
††R means resistance to heat flow. The higher the R-value, the greater the insulating power.

## Securement

Install a minimum 1" THERMAX insulation/finish board perpendicular to framing, spanning at least three framing members. The maximum span is 5'.

Penetrate separate wood and metal framing 1" with a

TABLE 2

| Recommended Fastener Lengths |                         |
|------------------------------|-------------------------|
| Board Thickness, inches      | Fastener Length, inches |
| 1/2 to 5/8                   | 1-7/16                  |
| 3/4 to 1                     | 1-7/8                   |
| 1-1/8 to 1-1/2               | 2-3/8                   |
| 1-5/8 to 2                   | 3                       |
| 2-1/4                        | 3-1/4                   |
| 2-1/2                        | 3-1/2                   |
| 3                            | 4                       |

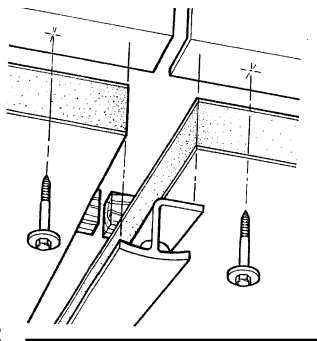
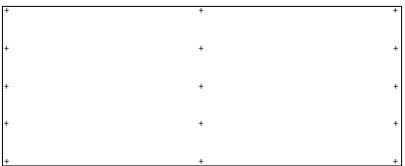


Figure 2



Note: Space fasteners 12" o.c. for wood, metal or concrete attachment.

Figure 3: Fastening Pattern

corrosion-resistant fastener and poly washer, such as Quik-Cap. When fastening to metal, Buildex Multi-Diameter Insulation Tekes or equivalent (with minimum 1-1/4" poly washers) are advised (Figure 2). Fasteners should be spaced 12" o.c. in three rows (of five fasteners) per 48" board width. See fastening pattern (Figure 3).

## Joint Treatment for Moisture Control

Even in low-humidity buildings, condensation can build up when insulation joints are left exposed. The joint treatment described here will not only help eliminate moisture buildup, but control airflow and heat flow as well.

### PVC CLIP STRIP WITH SEALANT

THERMAX White PVC Clip Strip with sealant for 1", 1-1/2", 2" and 2-1/2" thicknesses (Figure 4). The PVC Clip Strip must be caulked with a recommended sealant.<sup>5</sup> Apply continuous coverage of selected sealant to

<sup>5</sup>To produce a continuous air vapor retarder, use Vulkem 116, Sikaflex 201 or equivalent sealant.

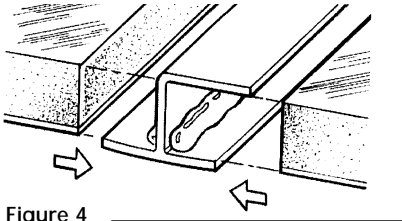


Figure 4

each flange of PVC Clip Strip; install joint closure strip at long and short edges of board. Be sure there is a good contact of THERMAX insulation/finish board with sealant. Install PVC Clip Strip on exposed joints.

## Performance Tests

Factory Mutual (FMRC Standard 4880) – Subject to the conditions of approval as Class 1 wall and ceiling panels when installed as described in the current edition of the FMRC Approval Guide. FACTORY MUTUAL SYSTEM APPROVED.

## Compliances

- BOCA: Building Officials and Code Administrators International, Inc. Research Report No. 98-25 and National Building Code Sect. 2603.0.
- ICBO: International Conference of Building Officials. Evaluation Report No. 3223 and Uniform Building Code Sect. 2602.
- SBCCI: Southern Building Code Congress International. Evaluation Report No. 9574 C and Standard Building Code Sect. 2603.

### IN THE U.S.:

- For Technical Information: 1-866-583-BLUE (2583)
- For Sales Information: 1-800-232-2436

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WARNING: THERMAX insulation/finish boards do not constitute a working walkable surface or qualify as a fall protection product.



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