# MPS No. 1023

**Subject:** Cladding Attachment

**Date:** January 2016 (Revised January 2019)

The International Building Code (IBC) and International Residential Code (IRC) have stringent requirements for the energy use of new buildings. Historically, wall insulation has primarily been cavity insulation placed between wood or steel framing members. However, the loss of energy from the framing members can be significant. Therefore, the use of continuous insulation is now specified in the latest building codes to reduce the loss of heat through walls.

Builders must understand the fastener requirements for installing cladding over foam plastic continuous insulation. The 2015 IBC and 2015 IRC address this issue for builders by providing prescriptive tables for the attachment of cladding over foam plastics, such as Tru-R insulation. The tables in this bulletin are a summary of the information contained in 2015 IBC Table 2603.12.1 and 2015 IRC Table R703.15.1. For additional detailed information, please refer to the 2015 IBC and IRC.

**CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT[a]**

| CLADDING FASTENER THROUGH FOAM SHEATHING | CLADDING FASTENER TYPE AND MINIMUM SIZE[b] | CLADDING FASTENER VERTICAL SPACING (inches) | MAXIMUM THICKNESS OF FOAM SHEATHING[c] (inches) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 16" o.c. Fastener Horizontal Spacing | | | 24" o.c. Fastener Horizontal Spacing | | |
| | | | Cladding Weight: | | | Cladding Weight: | | |
| | | | 3 psf | 11 psf | 25 psf | 3 psf | 11 psf | 25 psf |
| Wood Framing (minimum 1-1/4 inch penetration) | 0.113" diameter nail | 6 | 2 | 1 | DR | 2 | 0.75 | DR |
| | | 8 | 2 | 1 | DR | 2 | 0.5 | DR |
| | | 12 | 2 | 0.5 | DR | 2 | DR | DR |
| | 0.120" diameter nail | 6 | 3 | 1.5 | 0.5 | 3 | 0.75 | DR |
| | | 8 | 3 | 1 | DR | 3 | 0.5 | DR |
| | | 12 | 3 | 0.5 | DR | 2 | DR | DR |
| | 0.131" diameter nail | 6 | 4 | 2 | 0.75 | 4 | 1 | DR |
| | | 8 | 4 | 1.5 | 0.5 | 4 | 0.75 | DR |
| | | 12 | 4 | 0.75 | DR | 2 | 0.5 | DR |
| | 0.162" diameter nail | 6 | 4 | 4 | 1.5 | 4 | 2 | 1 |
| | | 8 | 4 | 3 | 1 | 4 | 1.5 | 0.75 |
| | | 12 | 4 | 2 | 0.75 | 4 | 1 | DR |

DR = Design Required; o.c. = on center.
a. Wood framing shall be Spruce-Pine-Fir or any wood species with a specific gravity of 0.42 or greater in accordance with AWC NDS.
b. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.
c. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C578 or ASTM C1289.

| CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT[a] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| CLADDING FASTENER THROUGH FOAM SHEATHING INTO; | CLADDING FASTENER TYPE AND MINIMUM SIZE[b] | CLADDING FASTENER VERTICAL SPACING (inches) | MAXIMUM THICKNESS OF FOAM SHEATHING[c] (inches) | | | | | |
| | | | 16" o.c. Fastener Horizontal Spacing | | | 24" o.c. Fastener Horizontal Spacing | | |
| | | | Cladding Weight: | | | Cladding Weight: | | |
| | | | 3 psf | 11 psf | 25 psf | 3 psf | 11 psf | 25 psf |
| Steel Framing (minimum penetration of steel thickness plus 3 threads) | #8 screw into 33 mil steel or thicker | 6 | 3 | 3 | 1.5 | 3 | 2 | DR |
| | | 8 | 3 | 2 | 0.5 | 3 | 1.5 | DR |
| | | 12 | 3 | 1.5 | DR | 3 | 0.75 | DR |
| | #10 screw into 33 mil steel | 6 | 4 | 3 | 2 | 4 | 3 | 0.5 |
| | | 8 | 4 | 3 | 1 | 4 | 2 | DR |
| | | 12 | 4 | 2 | DR | 3 | 1 | DR |
| | #10 screw into 43 mil steel or thicker | 6 | 4 | 4 | 3 | 4 | 4 | 2 |
| | | 8 | 4 | 4 | 2 | 4 | 3 | 1.5 |
| | | 12 | 4 | 3 | 1.5 | 4 | 3 | DR |

DR = Design Required; o.c. = on center.
a. Steel framing shall be minimum 33 ksi steel for 33 mil and 43 mil steel and 50 ksi steel for 54 mil steel or thicker.
b. Screws shall comply with the requirements of AISI S200.
c. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C578 or ASTM C1289.



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