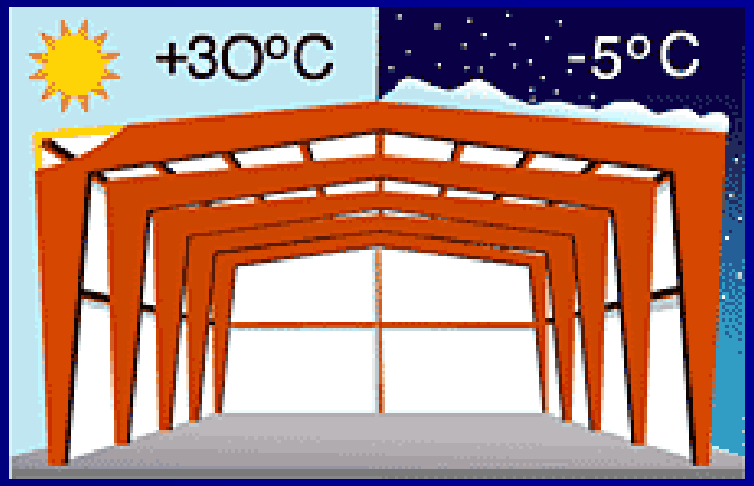
Insulation

Why Insulate? - Thermal Control

- Certified Faced Insulation acts as a barrier to slow down the movement of heat, keeping it inside the building in winter and outside in summer.

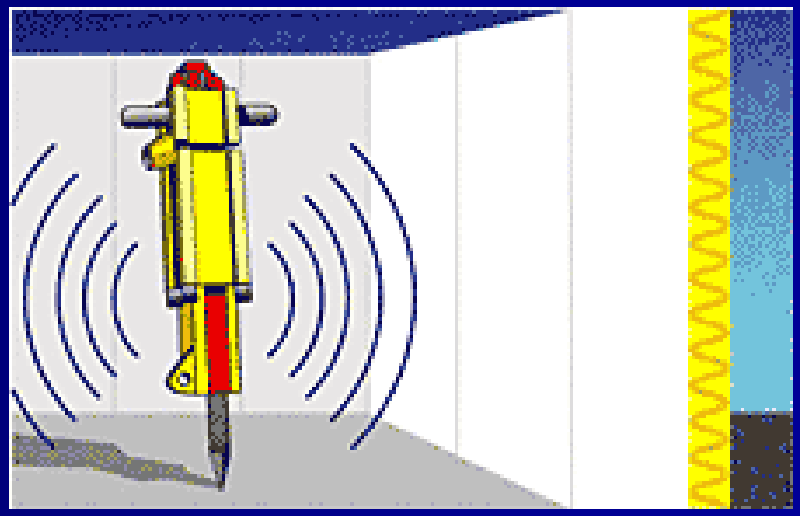


Why Insulate? - Condensation Prevention

- Certified Faced Insulation limits the passage of water vapor and prevents it from condensing within the insulation or on the cold building wall.

Why Insulate? - Noise Control

- Certified Faced Insulation reduces the level of both exterior and interior noise by preventing transmission of exterior sounds to the interior of the building, and absorbing reverberating sounds within the building.



Why Insulate? – Attractive Appearance

- The laminated facings on Certified Faced Insulation provide a bright, attractive wall and ceiling treatment that acts as a reflector to increase light efficiency. Engineered to withstand the rigors of installation, facings are fire retardant, have good tensile strength, rip-stop characteristics and puncture resistance.

The Importance of "Installed R"

Lamtec Corporation - Steel Building Insulation (link)

Design Build Opportunities

Differentiate yourself from your competitors

- Specify Installed R Values
- Specify ASHRAE 90.1 (link)
- Specify NAIMA fiberglass (link)
- Specify NIA certified laminators
- Specify Superblock (link)
  - Superblock erection guide (link)

Insulation Trends

- Energy Policy Act of 1992
- Installed R-values (ASHRAE 90.1) (link)
  - Code Enforcement
- NAIMA 202-96 / Certified Faced Insulation (link)

R-values - Clarification

- Manufactured R-values [NAIMA 202-96] (link)
- Post-Lamination R-values (Certified Faced Insulation)
- Installed R-values (ASHRAE 90.1)

As Installed tested

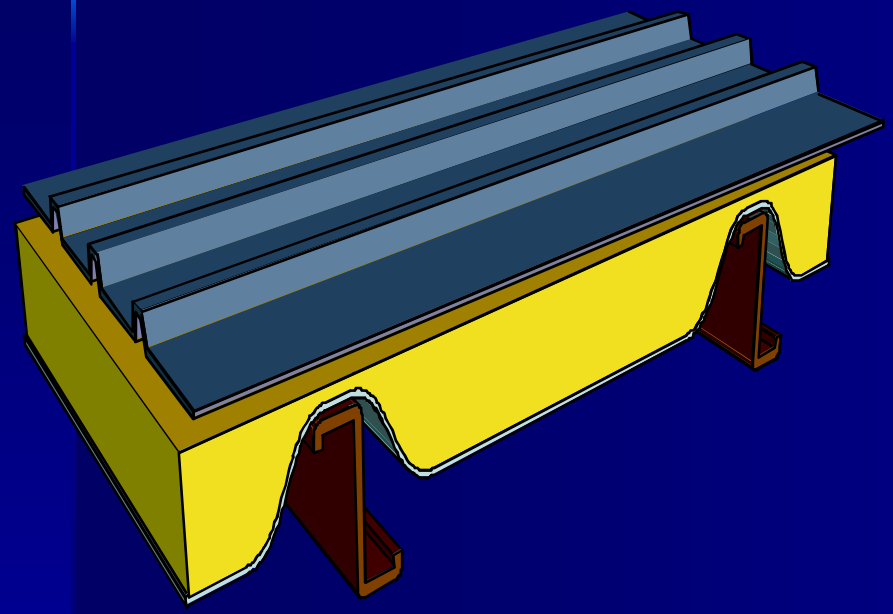
- Hot box test or calculated
- Tested as part of building assembly
- Performance temperatures of the structure

As Installed tested

Installed in roof, wall, ceiling, or floor assembly

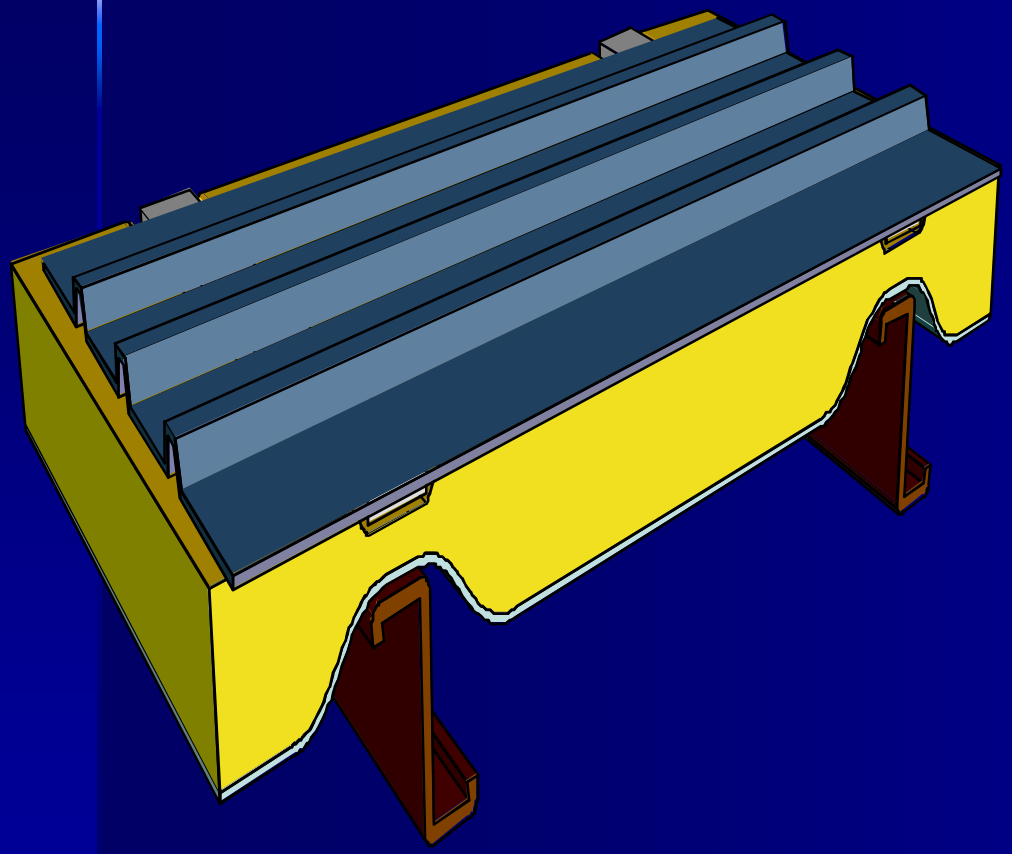
- Recognize thermal short circuits
  - Compression
  - Framing
  - Fasteners
- Conduct Tests at temperatures reflecting actual building envelope conditions

Across the Purlins Approach



Insulation R Value	Installed R Value	Installed Efficiency
10	7.5	75%
11	8.0	73%
13	8.7	67%
19	11.0	58%

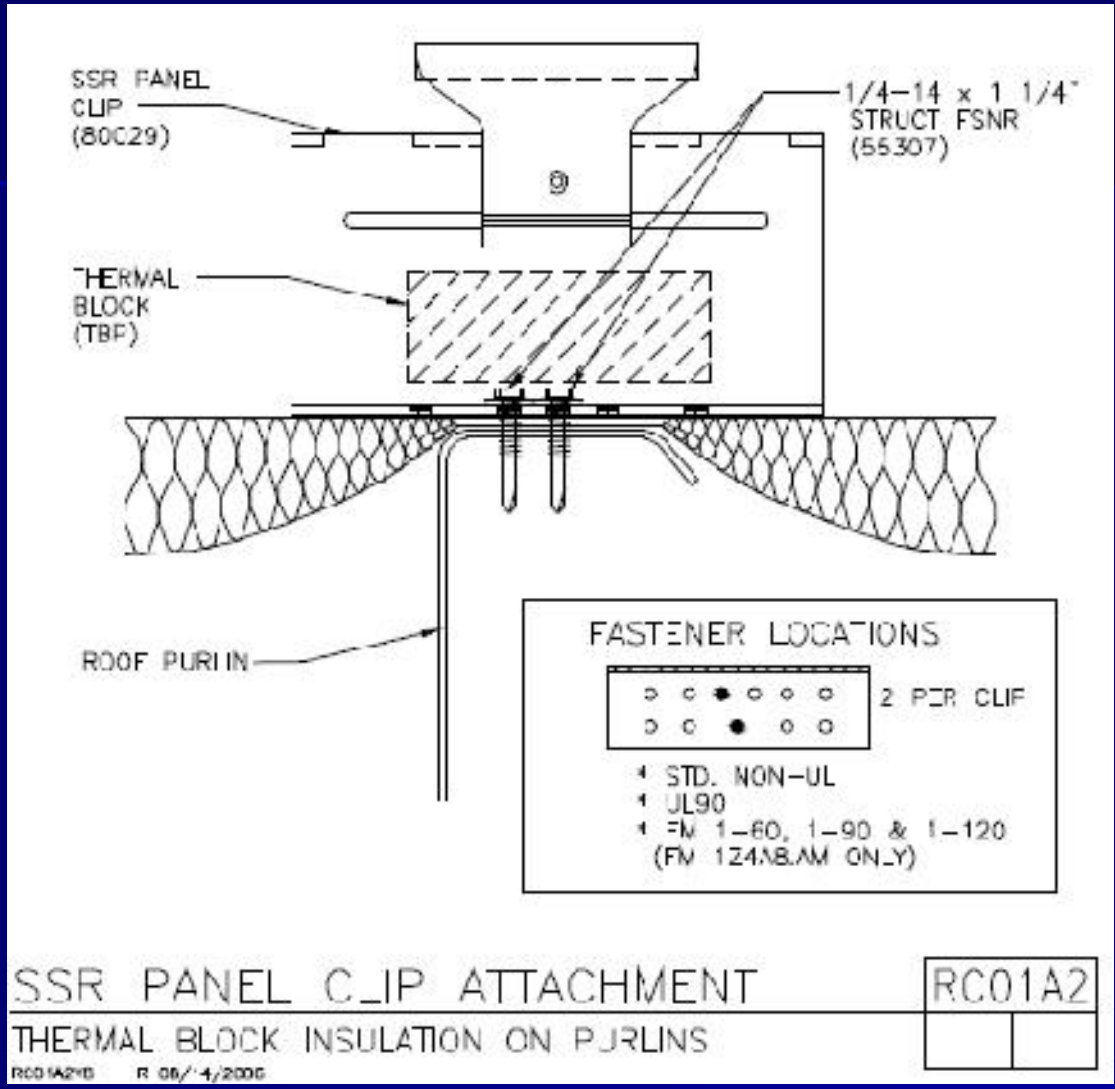
Across the Purlins with Thermal Blocks



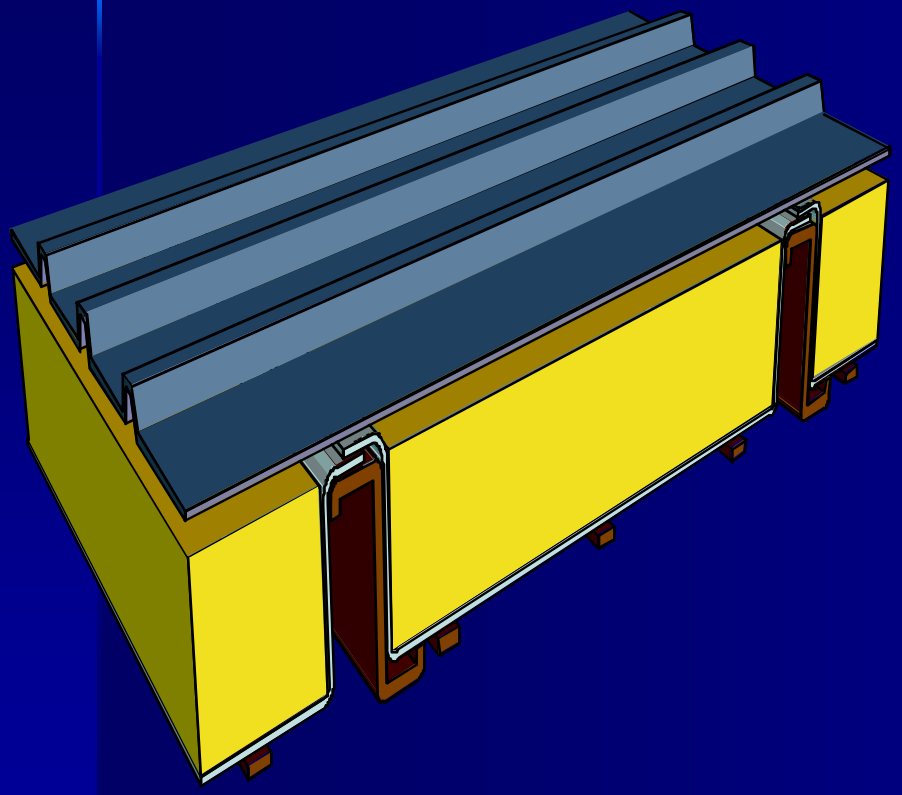
Insulation R Value	Installed R Value	Installed Efficiency
10	9.8	98%
11	10.0	96%
13	12.0	92%
19	15.3	81%

Note: Taller SSR clips are used with thermal block/super block. Adjustments may be desired in eave height input which is measured from top of purlins.

Link to P&P manual

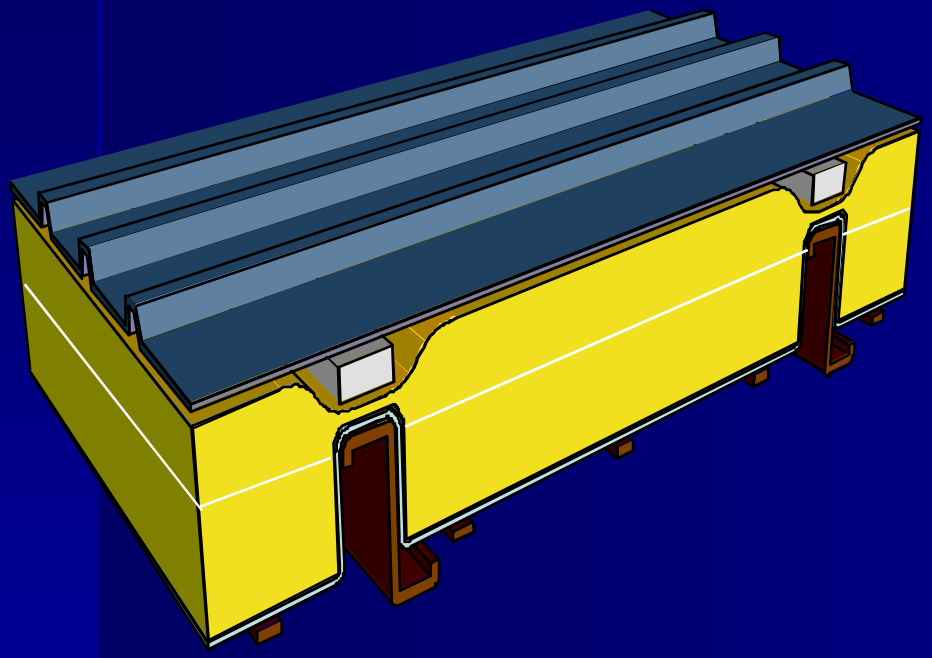


Purlin Filler Insulation



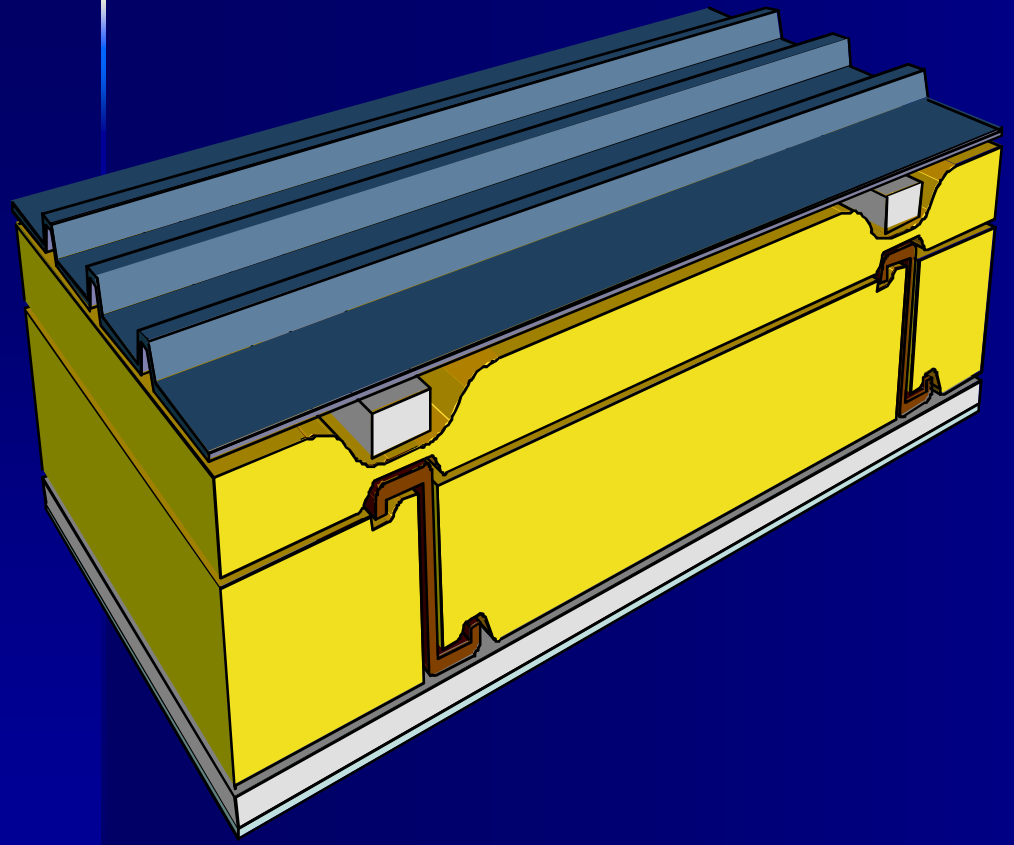
Insulation R Value	Installed R Value	Installed R Value
R10	7.6	76%
R11	8.2	75%
R13	9.3	72%
R19	12.6	66%
R30	17.4	58%

Foam & Full Blanket Insulation



Insulation R Value	Installed R Value	Installed Efficiency
R10	10.1	101%
R11	10.9	99%
R13	12.5	96%
R19	17.1	90%
R30	24.5	80%

End-to-End Insulation



Insulation R Value	Installed R Value	Installed Efficiency
36 FG Board	31.4	87%
40 Foam Board	34.1	85%

NAIMA 202-96 Certified Manufacturers

- "Minimize difference between R value stated at time of manufacture and R value after lamination process."
- Label - minimum R value (108% of R value).
- NAIMA performance standard allows specifiers, contractors, and owners to check proper insulation used. (NAIMA link)

NIA 404 Standard for Laminators

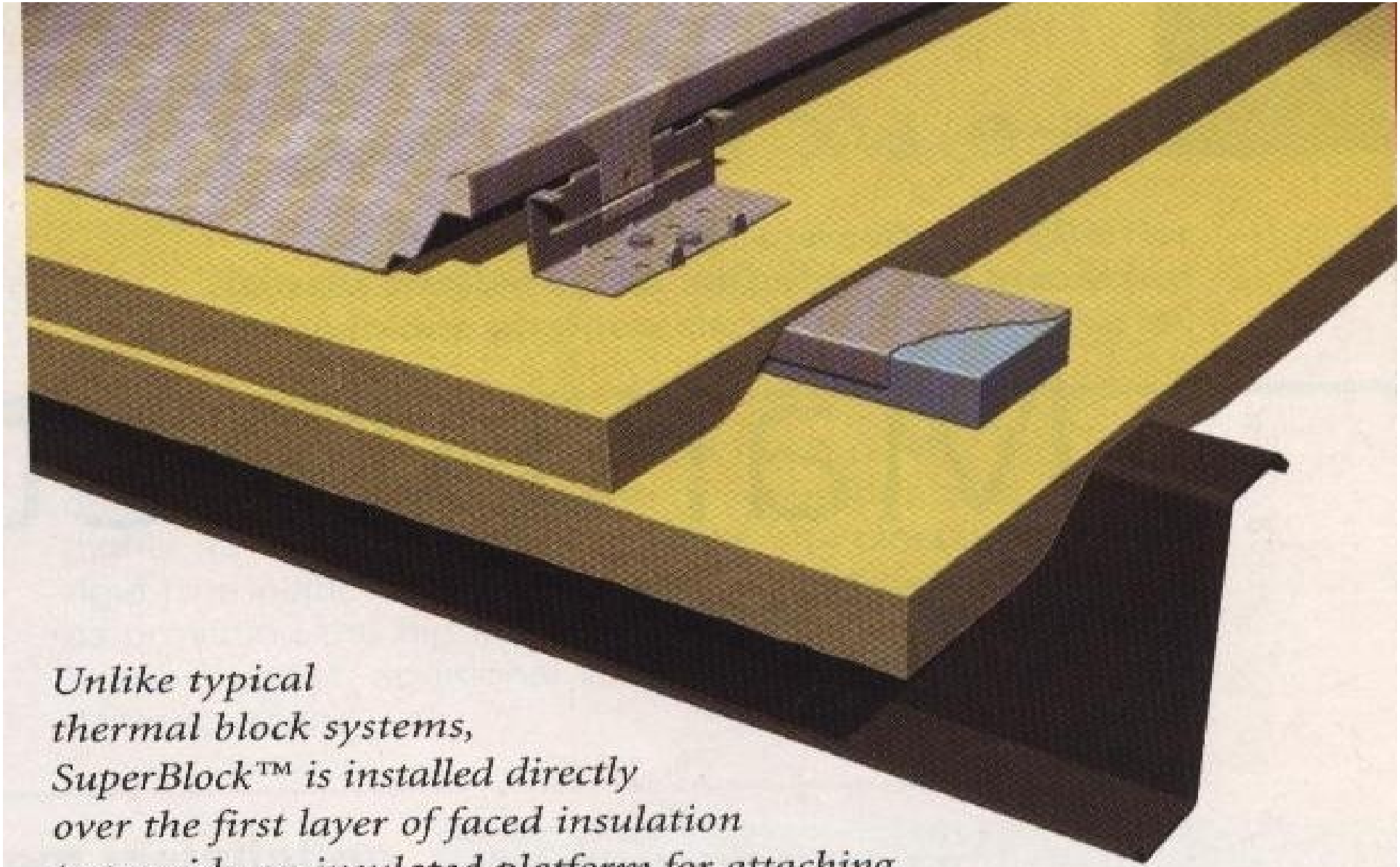
- Post and pre-lamination standard
- Certified faced insulation standard
- NAHB tested
- On site with NIA certified R-value displayed on roll
- Laminator equipment certified in compliance with NIA 404

Time for a Change

- Specifications should clearly indicate *Installed Thermal Values*
- Tested assemblies, including
  - Exterior panels
  - Purlins & girts
  - Fasteners
- Calibrated “Hot Box” tests
  - ASTM C1363
  - Thermal performance of building assemblies

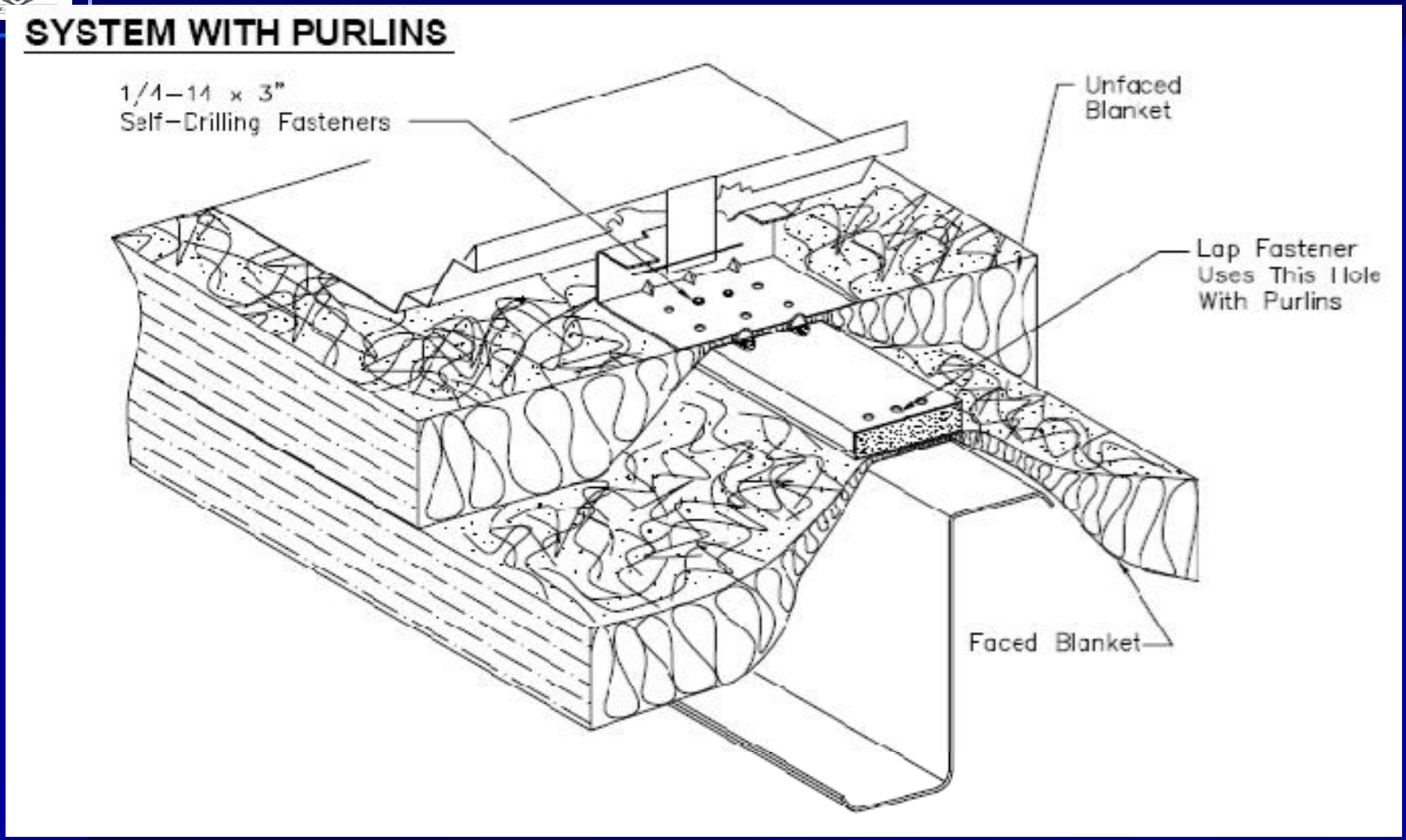
Superblock™
Insulation System

VP's best thermal protection system provides more resistance to heat flow per inch than any other VP insulation offering.

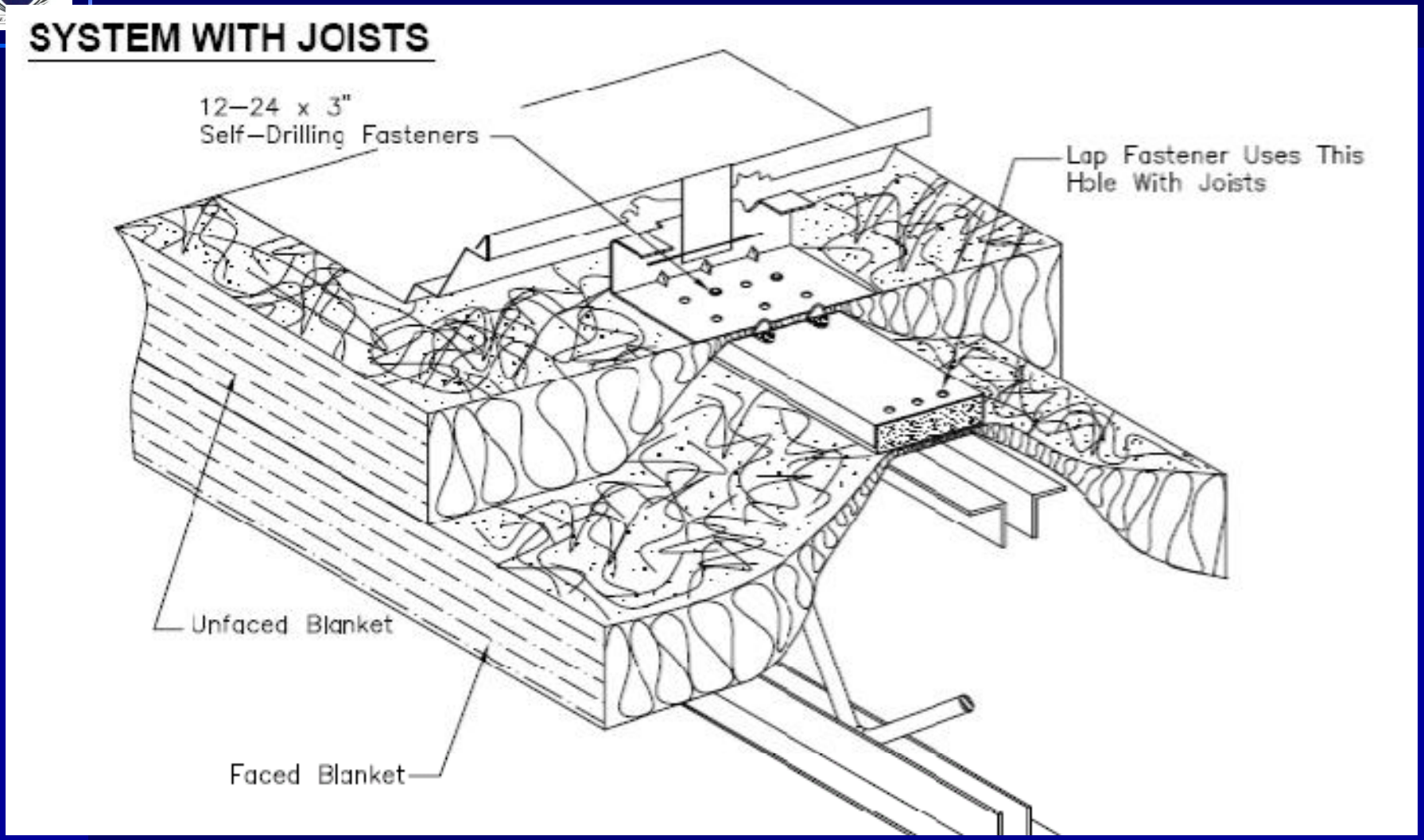


Unlike typical thermal block systems, SuperBlock™ is installed directly over the first layer of faced insulation to provide an insulated platform for attaching SSR panel clips. A second layer of unfaced insulation is placed directly over the first to create a thermal envelope that better resists heat flow per inch of fiberglass.

SuperBlock


SYSTEM WITH PURLINS
1/4–14 x 3"
Self–Drilling Fasteners
Unfaced
Blanket
Lap Fastener
Uses This Hole
With Purlins
Faced Blanket

SuperBlock


SYSTEM WITH JOISTS
12–24 x 3"
Self–Drilling Fasteners
Lap Fastener Uses This
Hole With Joists
Unfaced Blanket
Faced Blanket

FEATURES

- Easily installs from top side of roof
- ASTM-C236 Hot Box tested and verified
- Can be used over purlins or joists
- Helps maintain consistent panel modularity
- Provides U-value up to .043 using 3" unfaced layer with reflective faced 4" layer
- Provides R-value up to 23.5 using 3" unfaced layer with reflective faced 4" layer
- Economical

The Superblock™ Advantage

Thickness	System	R-Value	U-Value
6" Single layer	No Thermal Block	12.6	.079
6" Single layer	With Thermal Block	15.8	.063
6" Double layer[A]	With Superblock	18.5	.054
7" Double layer[A,B]	With Superblock	22.8	.044

(A) Based on one layer unfaced and one layer non-reflective faced insulation. Additional thermal performance may be obtained by using reflective facing. For reflective vapor barrier surfaces, add R=0.74 to the above R-values and recalculate the U-value.

(B) 4" non-reflective faced with 3" unfaced insulation

Application Systems

- Skyrider Plus
- Simple Saver®
- Sky Web II®
- HIGH RIDER Insulation Support System
- Insul Basket™ / Insul Bar™
- Bay Max
- Do-it-Yourself Banding System
- Elaminator
- Installation Services