

DEFEND-R

FLAT POLYISOCYANURATE INSULATION



Defend-R is a rigid roof insulation panel composed of a closed cell polyisocyanurate foam core manufactured on-line to fiber reinforced facers on each side (GRF). Approved for direct application to steel decks. Approved under all major roof covering systems. Manufactured using ReadyFlash® Technology, with light and dark facers. This provides the installer a choice of top side colors to better control flash-off times in fully adhered applications.

APPLICATIONS

- Standing Seam Metal Roof Systems
- Constructions requiring FM Class 1 and UL Class A ratings
- Single-Ply Roof Systems (Ballasted, Mechanically Attached, Fully Adhered)
- Modified Bitumen Systems
- Built-Up Roofing: Asphalt and Coal Tar
- To achieve optimal thermal performance, Drexel Metals recommends installation of a multilayer system with staggered joints

PANEL CHARACTERISTICS

- Manufactured with NexGen Chemistry: Contains no CFCs, HFC, HCFCs, is Zero ODP, EPA Complaint, and has virtually no GWP
- Manufactured with a light and dark side that allows for faster or slower adhesive flash-off times.
- Available in two grades of compressive strengths per ASTM C 1289 Type II, Class 1 Grade 2 (20 psi) or Grade 3 (25 psi)
- Available in 4' x 4' (1220mm x 1220mm) and 4' x 8' (1220mm x 2440mm) panels in thicknesses of 1" (25mm) to 4.5" (114mm)
- Also available as special cut products — straight cut, bevel cut, and flute fill

POTENTIAL LEED® CREDITS FOR POLYISO USE

Energy and Atmosphere

- Optimize Energy Performance

Materials & Resources

- Building Life-Cycle Impact Reduction
- Environment Product Declaration
- Material Reuse
- Recycled Content
- Construction and Demolition Waste Management

Indoor Environmental Quality

- Thermal Comfort

DEFEND-R THERMAL VALUES

Long Term Thermal Resistance Values are based on ASTM C 1289

Thickness (inches)	(mm)	LTR R-Value	Flute Spanability
1.00	25	5.7	2 5/8"
1.50	38	8.6	4 3/8"
1.80	46	10.3	4 3/8"
2.00	51	11.4	4 3/8"
2.50	64	14.4	4 3/8"
2.60	66	15.0	4 3/8"
3.00	76	17.4	4 3/8"
3.50	89	20.5	4 3/8"
3.80	97	22.3	4 3/8"
4.00	102	23.6	4 3/8"
4.30	109	25.5	4 3/8"
4.50	114	26.8	4 3/8"

CODES AND COMPLIANCES

- ASTM C 1289 Type II, Class 1 Grade 2 (20 psi) or Grade 3 (25 psi)
- International Building Code (IBC) Chapter 26
- State of Florida Product Approval Number FL 46439
- ICC-ES ESR-5453

UNDERWRITERS LABORATORIES INC CLASSIFICATIONS

- UL 1256
- Insulated Steel Deck Construction Assemblies – No. 120, 123, 292
- UL 263 Hourly Rated P Series Roof Assemblies

FACTORY MUTUAL APPROVALS

- FM 4450, FM 4470
- Approved for Class 1 insulated steel deck constructions. Refer to FM Approval’s RoofNav for details on specific systems

TYPICAL PHYSICAL PROPERTY DATA

Polyiso Foam Core Only

Physical Property	Test Method	Value
Compressive Strength	ASTM D 1621	20 psi* (138kPa, Grade 2)
Dimensional Stability	ASTM D 2126	2% linear change (7 days)
Moisture Vapor Transmission	ASTM E 96	<1 perm (57.5ng/(Pa·s·m ²))
Water Absorption	ASTM C 209	<1% perm
Flame Spread**	ASTM E 84	<75
Smoke Developed**	ASTM E 84	<450
Service Temperature		-100°F to 250°F (-73°C to 122°)

*Also available in 25 psi, Grade 3

**Meets the requirements of the IBC code. For specific Flame Spread or Smoke Developed Ratings please contact the Hunter Panels Technical Department.

WARNINGS AND LIMITATIONS

Insulation must be protected from open flame and kept dry at all times. Store above ground on pallets and cover with breathable tarpaulins. Install only as much Polyiso as can be covered the same day with the completed roofing system. Do not leave exposed. Drexel Metals will not be responsible for specific designs by others, for deficiencies in construction or workmanship, for dangerous conditions on the job site or for improper storage and handling.

INSTALLATION - SINGLE-PLY SYSTEMS

Ballasted Single-Ply Systems

Each Defend-R panel is loosely laid on the roof deck. Butt edges and stagger joints of adjacent panels. Install the roof covering according to the manufacturer’s specifications.

Mechanically Attached Single-Ply Systems

Each Defend-R panel must be secured to the roof deck. Butt edges and stagger joints of adjacent panels. Install the roof covering according to the manufacturer’s specifications.

Fully Adhered Single-Ply

Each Defend-R panel must be secured to the roof deck. Maximum 4’x4’ (1220mm x 1220mm) panels of Defend-R may be adhered to a prepared concrete deck or subsequent layers of insulation with a full mopping of hot steep asphalt, insulation adhesive or cold applied mastic. Butt edges and stagger joints of adjacent panels. Install the roof covering according to the manufacturer’s specifications.

INSTALLATION - BUILT UP, COAL TAR AND MODIFIED BITUMEN SYSTEMS (APP, SBS)

Each Defend-R panel must be secured to the roof deck. Maximum 4’x4’ (1220mm x 1220mm) panels of Defend-R may be adhered to a prepared concrete deck or subsequent layers of insulation with a full mopping of hot steep asphalt, insulation adhesive or cold applied mastic. Butt edges and stagger joints of adjacent panels. Install the roof covering according to the manufacturer’s specifications.

Review manufacturer’s specifications and details for complete installation information.

