NUDO
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Technical Data

XPS Nail Base

XPS Wall & Roof Insulation Panels

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NUDO Nail Base insulation sheathing solutions are non-structural insulation panels that are comprised of thermally efficient extruded polystyrene (XPS), polyisocyanurate (PolyIso) or expanded polystyrene (EPS) insulation boards bonded to min. 7⁄16" APA/TECO rated OSB on the top face. NUDO Nail Base insulation foams are manufactured in accordance with ASTM C578 Type IV, ASTM C578 Type X or ASTM C1289, Type V and offered in a variety of composite thicknesses, while providing long-term thermal resistance (LTTR) values ranging from 3.76 to 6.2 per inch.

Property	Test Method	Value
Thermal Resistance, R-Value (°F•ft^2•h/Btu)	ASTM C518	
@ 75°F (24°C) mean temperature		5.0 (0.88)
@ 40°F (4.4°C) mean temperature		5.4 (0.95)
@ 25°F (-3.9°C) mean temperature		5.6 (0.99)
Long-Term Thermal Resistance (LTTR), minimum R-Value @ 75 °F (24°C) mean temperature	CAN/ULC-S770-05	5.0 (0.88)
Compressive Strength, minimum psi (kPa)	ASTM D1621	15 (104)
Flexural Strength, minimum psi (kPa)	ASTM C203	40 (276)
Water Absorption, maximum % by volume	ASTM C272	0.3
Water Vapor Permeance, maximum perms (ng/Pa•s•m^2)	ASTM E96	0.2/(11.3)
Dimensional Stability, maximum % linear change	ASTM D2126	2
Flame Spread	ASTM E84	10
Smoke Developed	ASTM E84	175
Oxygen Index, minimum % by volume	ASTM D2863	24
Service Temperature, maximum °F (°C)	-	165 (74)
Linear Coefficient of Thermal Expansion, in/in/°F (mm/m/°C)	ASTM E228	(6.3 x 10^{-5})

3) Properties shown are representative values for 1-inch-thick material, unless otherwise specified. Extruded Polystyrene Insulation may exhibit different physical properties based upon thickness.

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Typical XPS & OSB R-Value

XPS & OSB			Bundle Data (8 ft) (48" x 96")		Bundle Data (9 ft) (48" x 108")		Bundle Data (10 ft) (48" x 120")		Bundle Data (12 ft) (48" x 144")		Truckload Data (8 ft)[2] (48" x 96")		Truckload Data (9 ft)[2] (48" x 108")		Truckload Data (10 ft)[2] (48" x 120")		Truckload Data (12 ft)[2] (48" x 144")	
Thickness of Panel[1] Foam & 7/16" OSB (Nominal)	R-Value[1]	Weight (lbs/sf)[1]	Pieces	Sq ft/ Pallet	Pieces	Sq ft/ Pallet	Pieces	Sq ft/ Pallet	Pieces	Sq ft/ Pallet	Bundles	Sq ft/ TRL	Bundles	Sq ft/ TRL	Bundles	Sq ft/ TRL	Bundles	Sq ft/ TRL
1.0"	3.15	1.60	44	1,408	44	1,584	44	1,760	44	2,112	20	28,160	20	31,680	16	28,160	16	33,792
1.5"	5.50	1.70	32	1,024	32	1,152	32	1,280	32	1,536	20	20,480	20	23,040	16	20,480	16	24,576
2.0"	8.00	1.80	24	768	24	864	24	960	24	1,152	20	15,360	20	17,280	16	15,360	16	18,432
2.5"	10.55	1.90	19	608	19	684	19	760	19	912	20	12,160	20	13,680	16	12,160	16	14,592
3.0"	13.00	2.00	16	512	16	576	16	640	16	768	20	10,240	20	11,520	16	10,240	16	12,288
3.5"	15.50	2.10	13	416	13	468	13	520	13	624	20	8,320	20	9,360	16	8,320	16	9,984
4.0"	18.00	2.20	12	384	12	432	12	480	12	576	20	7,680	20	8,640	16	7,680	16	9,216
4.5"	20.50	2.25	10	320	10	360	10	400	10	480	20	6,400	20	7,200	16	6,400	16	7,680
5.0"	23.00	2.40	9	288	9	324	9	360	9	432	20	5,760	20	6,480	16	5,760	16	6,912
5.5"	25.50	2.50	8	256	8	288	8	320	8	384	20	5,120	20	5,760	16	5,120	16	6,144

1) Includes XPS Foam and 7/16" OSB. 2) Full truckload. Mixed loads available, but not factored into the table.

Compliances:

- ASTM C578 Type X
- International Building Code (IBC)
- International Residential Code (IRC)
- ASHRAE 90.1
- International Energy Conservation Code (IECC)

Applications:

- Modular – Wall & Roof Residential
- Exterior wall systems requiring a continuous insulation layer with a nailable surface
- Roofing systems including asphalt shingles (limited),metal roofing, wood shakes, slate, clay, and concrete tile

Panel Construction:

- XPS rigid insulation core
- APA-rated OSB or CDX plywood nailing surface
- Standard size: 4' x [8', 9', 10', 12']
- Custom sizes available upon request

Installation: NUDO Nail Base offerings are applied to wood framing with the insulation to the interior and wood to the exterior in order to provide a continuous layer of thermal insulation and a suitable substrate for the mechanical attachment of many kinds of cladding systems available in the market today. NUDO requires mechanical attachment of NUDO Nail Base with fasteners to approved structural supports. A 1/8" separation in between panels is recommended due to expansion and contraction potential. Nailing is not a suitable attachment method for NUDO Nail Base when used in a roofing application.

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Technical Data: NUDO Nail Base insulation products are non-structural materials and must be installed on framing that is independently braced and structurally adequate to meet required construction and service loading conditions.
NUDO Nail Base insulation may be temporarily exposed to exterior conditions during normal construction cycles. During this period, some color change may occur as a result of ultraviolet (UV) exposure. Prolonged exposure may lead to minor surface degradation or dusting of the polystyrene. Best practice is to cover the product within 60 days to minimize potential degradation. Once covered, further deterioration ceases, and any effects are typically limited to the thin surface layer of the insulation; underlying cells remain fully functional. NUDO Nail Base insulation has a maximum service temperature of 165°F. Taking simple precautions during construction can help minimize potential heat-related damage. Install only NUDO Nail Base insulation when it can be covered in the same day. For horizontal applications, always install with the printed side down so the black print does not face the sun, which may act as a solar collector and increase foam temperature to unacceptable levels. Provide a final finish covering or temporary white opaque covering to avoid possible damage. This product is combustible. A protective barrier or thermal barrier is required as specified in the applicable building code. All construction should be evaluated for the necessity to provide vapor retarders. See the current ASHRAE Handbook of Fundamentals.

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