

Product: LP NovaCore™ Thermal Insulated Sheathing
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1. Basis of the product report:
 - 2021, 2018, and 2015 International Building Code (IBC): Sections 104.11 Alternative materials and 2303.1.5 Wood structural panels
 - 2012 IBC: Sections 104.11 Alternative materials and 2303.1.4 Wood structural panels
 - 2021, 2018, 2015, and 2012 International Residential Code (IRC): Sections R104.11 Alternative materials and R503.2 Wood structural panel sheathing
 - DOC PS 2-18, Performance Standard for Wood Structural Panels
 - APA Reports T2022P-06 and T2022P-13, and other qualification data

2. Product description:

LP NovaCore™ Thermal Insulated Sheathing is an insulated sheathing made by combining 7/16 Category OSB with a layer of nominal 1-inch thick, R-5 XPS rigid foam insulation laminated to the OSB with a non-structural polyvinyl acetate (PVA) adhesive. The OSB complies with DOC PS 2 in accordance with the in-plant manufacturing standard approved by APA.

LP NovaCore Thermal Insulated Sheathing is available in a net thickness of 1-7/16 inches and in 4x8-foot, 4x9-foot, and 4x10-foot nominal panel sizes with square edges. The XPS foam specification and the PVA glue bond applications are specified in the in-plant manufacturing standard but are beyond the scope of the APA certification.

3. Design properties:
 - 3.1 Intermittent Wall Bracing (WSP Method): Table 1 lists the LP NovaCore Thermal Insulated Sheathing prescriptive nailing requirements for use as the intermittent wall bracing in accordance with Section R602.10 of the IRC and Section 2308.6 of the 2021, 2018, and 2015 IBC, and Section 2308.3 of the 2012 IBC. Segments of the wall with openings shall not be counted as the length of wall bracing for the WSP intermittent wall bracing method.

 - 3.2 Engineered Shear Wall: Table 2 lists the LP NovaCore Thermal Insulated Sheathing in-plane nominal unit shear capacities for engineering design in accordance with Section 2305 of the IBC and ANSI/AWC Special Design Provisions for Wind and Seismic (SDPWS) for wood structural panel shear walls unless otherwise specified in this report. The seismic design coefficients and factors shall be in accordance with the ASCE-7 Bearing Wall Systems for light-frame wood walls sheathed with wood structural panels (Item 15) with the maximum shear wall aspect ratio of 2:1. Segments of the wall with openings shall not be counted as a shear wall.

4. Product installation:

LP NovaCore Thermal Insulated Sheathing recognized in this report shall be installed with the foam direct to studs and used in accordance with the recommendations provided by the

manufacturer (<https://lpcorp.com/resources/product-literature/installation-instructions/lp-novacore-installation-instructions>).

5. Limitations:

- a) LP NovaCore Thermal Insulated Sheathing recognized in this report shall be permitted for use as prescriptive intermittent wall bracing in Seismic Design Categories (SDC) A, B, and C (excluding townhouses in SDC C) and in regions where wind design is not required by Section R301.2.1.1 of the IRC when installed in accordance with the requirements specified in this report and the recommendations provided by the manufacturer.
- b) LP NovaCore Thermal Insulated Sheathing is limited to dry service conditions that result in the average equilibrium moisture content of sawn lumber of less than 16%.
- c) LP NovaCore Thermal Insulated Sheathing shall be covered with a water-resistive barrier on the exterior of the OSB sheathing in accordance with the code.
- d) An approved thermal barrier, such as minimum ½-inch gypsum wallboard, shall be installed on the interior side of the wall framing, opposite the LP NovaCore Thermal Insulated Sheathing, in accordance with Section R316.4 of the IRC or Section 2603.4 of the IBC.
- e) Fire resistance of LP NovaCore Thermal Insulated Sheathing is beyond the scope of this report.
- f) The 1-inch thick, R-5 XPS foam insulation is supplied by a foam manufacturer in accordance with the in-plant manufacturing standard and its certification is beyond the scope of this report.
- g) The 7/16 Category OSB sheathing is manufactured at the LP facility in Thomasville, Alabama (APA assigned plant number 520) and certified by APA.
- h) This report is subject to re-examination in one year.

6. Identification:

The NovaCore Thermal Insulated Sheathing described in this report is identified by a label bearing the manufacturer's name (Louisiana-Pacific Corporation) and/or trademark, the report number PR-N139, and a means of identifying the date of manufacture.

Table 1. Intermittent Wall Bracing Nailing Requirements for LP NovaCore Thermal Insulated Sheathing in Accordance with the 2021, 2018, 2015, and 2012 IRC (WSP Method)

Framing ^(a)		Nailing Requirement		
Nominal Stud Size (Min.)	Max. Stud Spacing (in.)	Min. Nail Size Length x Shank Dia. x Head Dia. (in.) ^(b)	Max. Nail Spacing Edge ^(c) /Field (in.)	Min. Penetration into Framing (in.)
2 x 4	24	3 x 0.131 x 0.281	4/12	1.5

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 0.454 kg, 1 psi = 6.9 kPa.

- ^(a) All panel edges must be backed by framing or blocking. Exception: When not used as bracing panels, the horizontal edges may be left unblocked.
- ^(b) Nails must be full round head of a type generally used to attach wood structural panel sheathing.
- ^(c) All panel edge nails must be located approximately 3/8 inch from panel edges except at the corner of a brace wall line, in which the recommendation by the manufacturer shall be followed.

Table 2. Nominal Unit Shear Capacities for Douglas fir-Larch Wood-Framed Shear Walls Sheathed with LP NovaCore Insulated Sheathing^(a,b,c,d,e,f)

Net Panel Thickness (in.)	Min. Nail Penetration into Framing (in.)	Nail Size Length x Shank Dia. x Head Dia. (in.)	Nail Spacing Edge/Field (in.)	Nominal Unit Shear Capacity (lbf/ft)	Apparent Shear Stiffness, G_a (kips/in.)
1-7/16	1.5	3 x 0.131 x 0.281	3/12	870	5.9
			4/12	730	5.9

For SI: 1 inch = 25.4 mm, 1lbf/ft = 14.59 N/m; 1 kips/in. = 1.216 N/m

- a) For seismic design, the allowable stress design (ASD) allowable shear capacity shall be determined by dividing the tabulated nominal shear capacity by the ASD reduction factor of 2.8 and the LRFD factored shear resistance shall be determined by multiplying the nominal shear capacity by a resistance factor, ϕ_D , of 0.50. No further increases shall be permitted.
- b) For wind design, the ASD allowable shear capacity shall be determined by dividing the tabulated nominal shear capacity by the ASD reduction factor of 2.0 and the LRFD factored shear resistance shall be determined by multiplying the nominal shear capacity by a resistance factor, ϕ_D , of 0.80. No further increases shall be permitted.
- c) Values assume Douglas fir-Larch lumber at 19% or less moisture content at time of fabrication.
- d) When species of framing lumber other than Douglas fir-Larch are used, reduce nominal unit shear capacity by multiplying the tabulated value by the Specific Gravity Adjustment Factor = $(1 - (0.50 - G)) \leq 1.0$, where G = specific gravity of the framing lumber from NDS Table 12.3.3A.
- e) All panel edges shall be backed by framing or blocking, and nails shall be located approximately 3/8 inch from panel edges except at the corner of a brace wall line, in which the recommendation by the manufacturer shall be followed.
- f) Shear wall deflection shall be determined in accordance with SDPWS using the G_a value provided in this table.

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