

Product: LP Legacy[®] Premium Sub-Flooring
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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
 - ASTM D7033, Standard Practice for Establishing Design Capacities for Oriented Strand Board (OSB) Wood-Based Structural-Use Panels
 - APA Reports T2006P-17, T2008P-99, T2008P-100, T2008P-101, T2008P-102, T2017P-29, T2019P-19, T2019P-59A, T2019P-64, T2020P-24, T2021P-22, and T2021P-56, and other qualification data
2. Product description:

LP Legacy[®] Premium Sub-Flooring is made with strands of various species and strand classifications, meeting DOC PS 2 with a floor sheathing span rating and is in accordance with the in-plant manufacturing standard approved by APA. LP Legacy Premium Sub-Flooring is available in performance categories of 19/32, 5/8, 23/32, 7/8, and 1-1/8, and in 4x8-foot nominal panel size. The 23/32 sheathing also meets the PS 2 requirements for 48/24 Structural I Sheathing and 24oc Structural I Single Floor.
3. Design properties:

Table 1 lists the panel design capacities of LP Legacy Premium Sub-Flooring. Additional design information is available from the manufacturer (www.lpcorp.com). LP Legacy Premium Sub-Flooring shall be permitted for use as floor sheathing in accordance with an approved span rating identified in the panel trademark. Table 2 provides equivalent specific gravity values for LP Legacy Premium Sub-Flooring for connection design using smooth-shank or screw-shank nails with a diameter of ¼ inch or less.
4. Product installation:

LP Legacy Premium Sub-Flooring recognized in this report shall be used in accordance with the recommendations provided by the manufacturer (see link above) and *APA Engineered Wood Construction Guide*, Form E30 (www.apawood.org/resource-library).
5. Limitations:
 - a) LP Legacy Premium Sub-Flooring recognized in this report shall be designed in accordance with the applicable engineering practices using the design properties specified in this report and shall be permitted for use as floor sheathing in accordance with an approved span rating identified in the panel trademark.
 - b) LP Legacy Premium Sub-Flooring is limited to dry service conditions that result in the average equilibrium moisture content of sawn lumber of less than 16%.
 - c) LP Legacy Premium Sub-Flooring is produced at Louisiana-Pacific Corporation facilities in the following qualified performance categories: Carthage, Texas – 23/32, Hanceville,

Alabama – 23/32, 7/8, and 1-1/8, Roxboro, North Carolina – 23/32, and Sagola, Michigan – 19/32, 5/8, and 23/32.

d) This report is subject to re-examination in one year.

6. Identification:

The LP Legacy Premium Sub-Flooring described in this report is identified by a label bearing the manufacturer's name (Louisiana-Pacific Corporation) and/or trademark, the APA assigned plant number (463 for the Carthage, TX plant, 442 for the Hanceville, AL plant, 456 for the Roxboro, NC plant, and 407 for the Sagola, MI plant), the product performance category, the APA logo, the report number PR-N127, and a means of identifying the date of manufacture.

Table 1. Panel Design Capacities for LP Legacy Premium Sub-Flooring ^(a)

Span Rating	Performance Category ^(b)	Strength Axis ^(c)	Bending Stiffness, EI ^(d) (lbf-in. ² /ft)	Bending Strength, F _b S (lbf-in./ft)	Axial Stiffness, EA (lbf/ft)	Planar Shear, F _s (lb/Q) (lbf/ft)
20 o.c.	19/32	Primary	224,390	900	5,300,000	NA
		Secondary	92,680	500	3,300,000	NA
	5/8	Primary	229,270	1,000	5,400,000	NA
		Secondary	107,320	600	3,500,000	NA
24 o.c.	23/32 ^(e)	Primary	395,120	1,300	6,100,000	385
		Secondary	160,980	750	3,700,000	385
32 o.c.	7/8	Primary	715,000	1,800	8,100,000	NA
		Secondary	258,500	1,170	5,400,000	NA
48 o.c.	1-1/8	Primary	1,265,000	3,250	9,000,000	NA
		Secondary	544,500	2,050	5,900,000	NA

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

^(a) Design capacity is a single value that represents the product of the allowable stress and corresponding section property per 1-foot width of panel for a given load condition.

^(b) Performance Category is linked to the nominal panel thickness designations used in the International Building Code (IBC) and International Residential Code (IRC).

^(c) Primary strength axis corresponds to direction parallel to the panel strength axis, which is typically the panel length direction, and the secondary strength axis corresponds to the direction perpendicular to the panel strength axis, which is typically the panel width direction.

^(d) The tabulated value is apparent EI. The total panel deflection shall be calculated as follows:

For a single-span condition:
$$\Delta = \frac{w (L_3)^4}{921.6 EI}$$

For a two-span condition:
$$\Delta = \frac{w (L_3)^4}{2220 EI}$$

For a three-span condition:
$$\Delta = \frac{w (L_3)^4}{1743 EI}$$

where:

Δ = total deflection (in.)

w = uniform load (psf)

EI = tabulated bending stiffness capacity (lbf-in.²/ft)

L₃ = clear span + SW (in.)

SW = support-width factor, equal to 0.25 in. for two-inch-nominal lumber framing and 0.625 in. for four-inch-nominal lumber framing

^(e) The 23/32 sheathing also meets the PS 2 requirements for 24 o.c. Structural I Rated Single Floor.

Table 2. Equivalent Specific Gravity (ESG) for Nailed Connections with LP Legacy Premium Sub-Flooring

Span Rating	Performance Category ^(a)	Withdrawal ^(b)	Lateral ^(b)
20 o.c.	19/32 or 5/8	0.40	0.50
24 o.c.	23/32	0.44	0.50
32 o.c.	7/8	0.40	0.50
48 o.c.	1-1/8	0.40	0.50

^(a) Performance Category is linked to the nominal panel thickness designations used in the IBC and IRC.

^(b) For smooth-shank or screw-shank nails with a diameter of 1/4 in. or less.

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