

TABLE R503.2.1.1(1)
ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANELS FOR ROOF AND
SUBFLOOR SHEATHING AND COMBINATION SUBFLOOR UNDERLAYMENT^{a, b, c}

SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inch)	ALLOWABLE LIVE LOAD (psf) ^{h, i}		MAXIMUM SPAN (inches)		LOAD (pounds per square foot, at maximum span)		MAXIMUM SPAN (inches)
		SPAN @ 16" o.c.	SPAN @ 24" o.c.	With edge support ^d	Without edge support	Total load	Live load	
Sheathing ^a				Roof ^f				Subfloor ^j
16/0	³ / ₈	30	—	16	16	40	30	0
20/0	³ / ₈	50	—	20	20	40	30	0
24/0	³ / ₈	100	30	24	20 ^g	40	30	0
24/16	⁷ / ₁₆	100	40	24	24	50	40	16
32/16	¹⁵ / ₃₂ , ¹ / ₂	180	70	32	28	40	30	16 ^h
40/20	¹⁹ / ₃₂ , ⁵ / ₈	305	130	40	32	40	30	20 ^{h, i}
48/24	²³ / ₃₂ , ³ / ₄	—	175	48	36	45	35	24
60/32	⁷ / ₈	—	305	60	48	45	35	32
Underlayment, C-C plugged, single floor ^a				Roof ^f				Combination subfloor underlayment ^k
16 o.c.	¹⁹ / ₃₂ , ⁵ / ₈	100	40	24	24	50	40	16 ⁱ
20 o.c.	¹⁹ / ₃₂ , ⁵ / ₈	150	60	32	32	40	30	20 ^{i, j}
24 o.c.	²³ / ₃₂ , ³ / ₄	240	100	48	36	35	25	24
32 o.c.	⁷ / ₈	—	185	48	40	50	40	32
48 o.c.	¹³ / ₃₂ , ¹ / ₈	—	290	60	48	50	40	48

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

a. The allowable total loads were determined using a dead load of 10 psf. If the dead load exceeds 10 psf, then the live load shall be reduced accordingly.

b. Panels continuous over two or more spans with long dimension (strength axis) perpendicular to supports. Spans shall be limited to values shown because of possible effect of concentrated loads.

c. Applies to panels 24 inches or wider.

d. Lumber blocking, panel edge clips (one midway between each support, except two equally spaced between supports when span is 48 inches), tongue-and-groove panel edges, or other approved type of edge support.

e. Includes Structural I panels in these grades.

f. Uniform load deflection limitation: $\frac{1}{180}$ of span under live load plus dead load, $\frac{1}{240}$ of span under live load only.

g. Maximum span 24 inches for $\frac{15}{32}$ - and $\frac{1}{2}$ -inch panels.

h. Maximum span 24 inches where $\frac{3}{4}$ -inch wood finish flooring is installed at right angles to joists.

i. Maximum span 24 inches where 1.5 inches of lightweight concrete or approved cellular concrete is placed over the subfloor.

j. Unsupported edges shall have tongue-and-groove joints or shall be supported with blocking unless minimum nominal $\frac{1}{4}$ -inch thick underlayment with end and edge joints offset at least 2 inches or 1.5 inches of lightweight concrete or approved cellular concrete is placed over the subfloor, or $\frac{3}{4}$ -inch wood finish flooring is installed at right angles to the supports. Allowable uniform live load at maximum span, based on deflection of $\frac{1}{360}$ of span, is 100 psf.

k. Unsupported edges shall have tongue-and-groove joints or shall be supported by blocking unless nominal $\frac{1}{4}$ -inch-thick underlayment with end and edge joints offset at least 2 inches or $\frac{3}{4}$ -inch wood finish flooring is installed at right angles to the supports. Allowable uniform live load at maximum span, based on deflection of $\frac{1}{360}$ of span, is 100 psf, except panels with a span rating of 48 on center are limited to 65 psf total uniform load at maximum span.

l. Allowable live load values at spans of 16" o.c. and 24" o.c. taken from reference standard APA E30, APA Engineered Wood Construction Guide. Refer to reference standard for allowable spans not listed in the table.

SECTION R504 PRESSURE PRESERVATIVELY TREATED-WOOD FLOORS (ON GROUND)

R504.1 General. Pressure preservatively treated-wood *basement* floors and floors on ground shall be designed to withstand axial forces and bending moments resulting from lateral soil pressures at the base of the exterior walls and floor live and dead loads. Floor framing shall be designed to meet joist deflection requirements in accordance with Section R301.

R504.1.1 Unbalanced soil loads. Unless special provision is made to resist sliding caused by unbalanced lateral soil loads, wood *basement* floors shall be limited to applica-

tions where the differential depth of fill on opposite exterior foundation walls is 2 feet (610 mm) or less.

R504.1.2 Construction. Joists in wood *basement* floors shall bear tightly against the narrow face of studs in the foundation wall or directly against a band joist that bears on the studs. Plywood subfloor shall be continuous over lapped joists or over butt joints between in-line joists. Sufficient blocking shall be provided between joists to transfer lateral forces at the base of the end walls into the floor system.

R504.1.3 Uplift and buckling. Where required, resistance to uplift or restraint against buckling shall be provided by