

TABLE 2309.3A
ALLOWABLE LOAD (psf) FOR WOOD STRUCTURAL PANEL
ROOF SHEATHING OVER TWO OR MORE SPANS AND LONG
DIMENSION PARALLEL TO SUPPORTS
(WOOD STRUCTURAL PANELS ARE OSB, COMPOSITE
AND 5-PLY, 5-LAYER UNLESS OTHERWISE NOTED)¹

PANEL GRADE	THICKNESS (in)	SPAN RATING	MAX. SPAN (in)	LOAD AT MAX. SPAN (PSF)	
				LIVE	TOTAL
Structural I Sheathing	7/16	24/0, 24/16	24 ⁴	20	30
	15/32	32/16	24	35 ²	45 ²
	1/2	32/16	24	40 ²	50 ²
	19/32, 5/8	40/20	24	70	80
	23/32, 3/4	48/24	24	90	100
Sheathing	7/16 ⁵	24/0, 24/16	16	40	50
	15/32 ⁵	32/16	24 ⁴	20	25
	1/2 ⁵	24/0, 32/16	24 ⁴	25	30
	19/32	40/20	24	40 ³	50 ³
	5/8	32/16, 40/20	24	45 ³	55 ³
	23/32, 3/4	40/20, 48/24	24	60 ³	65 ³

For SI: 1 inch = 25.4 mm, 1 psf = 4.882 kg/m².

Notes:

1. Uniform load deflection limitations: 1/180th of span under live load plus dead load, 1/240th live load only. Edges shall be blocked with lumber or other approved type of edge supports.
2. For composite and 4-ply plywood marked PS 1, load shall be reduced by 15 psf.
3. For composite and 4-ply plywood panels, load shall be reduced by 15 psf.
4. Edges shall have solid blocking for 24-inch span.
5. Composite panels shall be 19/32-inch or thicker.

2309.4 Plank-and-Beam roofs. Beams shall be supported on posts, piers or other beams and shall conform to 2307.2. Roof planks shall conform to 2307.7.

2309.5 Anchorage of roof framing to masonry walls. Wood roof construction which rests on masonry walls shall be anchored thereto in a manner equivalent to that specified in 2110.3.

2309.6 Access to attic space. Attic spaces shall be provided with an interior access opening not less than 22x36 inches (559x914 mm). Access opening shall be accessible and provided with a lid or device that may be easily removed or operated. When mechanical equipment is to be installed in the attic, it shall be installed in accordance with Section 304.4 of the Standard Mechanical Code. Access is not required when the clear height of the attic space, measured at the roof peak, is less than 24 inches (610 mm).

2309.7 Ventilation of attic space

2309.7.1 For gabled and hipped roofs, ventilation shall be provided to furnish cross ventilation of each separate attic space with weather protected vents. All vents shall be screened to protect the interior from intrusion of birds. The ratio of total net free ventilating area to the area of the ceiling shall be not less than 1/150. That ratio may be reduced to 1/300 provided:

1. A vapor retarder having a permeance not exceeding one perm is installed on the warm side of the ceiling, or
2. At least 50% of the required ventilating area is provided by ventilators located in the upper portion of the

space to be ventilated (at least 3 ft (914 mm) above eave or cornice vents) with the balance of the required ventilation provided by eave or cornice vents.

2309.7.2 For flat roofs, blocking and bridging shall be arranged so as not to interfere with the movement of air. Such roofs shall be ventilated along the overhanging eaves, with the net area of opening being not less than 1/250 of the area of the ceiling below.

2309.7.3 All openings into the attic space of any habitable building shall be covered with screening, hardware cloth or equivalent to prevent the entry of birds, squirrels, rodents, etc. The openings therein shall not exceed 1/4 inch (6.4 mm).

SECTION 2310
WOOD STRUCTURAL PANEL DIAPHRAGMS

2310.1 General

2310.1.1 Wood structural panel diaphragms may be used to resist horizontal forces in horizontal and vertical distributing or resisting elements, provided the deflection in the plane of the diaphragm, as determined by calculations, tests, or analogies drawn therefrom, does not exceed the permissible deflection of attached distributing or resisting elements.

2310.1.2 Permissible deflection shall be that deflection up to which the diaphragm and any attached distributing or resisting element will maintain its structural integrity under assumed load conditions, i.e., continue to support assumed loads without danger to occupants of the structure.

2310.1.3 Connections and anchorages capable of resisting the design forces shall be provided between the diaphragms and the resisting elements. Openings in diaphragms which materially affect their strength shall be fully detailed on the plans, and shall have their edges adequately reinforced to transfer all shearing stresses.

2310.1.4 Size and shape of diaphragms shall be limited as set forth in Table 2310.1. In buildings of wood construction where rotation is provided for, transverse shear resisting elements normal to the longitudinal element shall be provided at spacings not exceeding two times the width for wood structural panel diaphragms. In masonry or concrete buildings, wood structural panel diaphragms shall not be considered as transmitting lateral forces by rotation.

TABLE 2310.1
MAXIMUM DIAPHRAGM DIMENSION RATIOS

TYPE	HORIZONTAL DIAPHRAGMS MAXIMUM SPAN-WIDTH RATIOS	VERTICAL DIAPHRAGMS MAXIMUM HEIGHT-WIDTH RATIOS
Wood structural panel, blocking omitted at intermediate joints	4:1	2:1