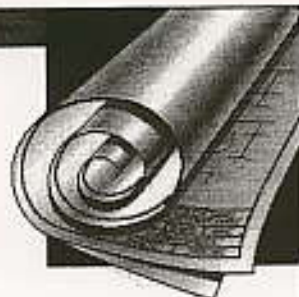


# APA STRUCTURAL-USE PANELS OVER SPACED-BOARD ROOFS



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When replacing roofing, it is often necessary to cover spaced boards with a solid roof deck. APA Rated Sheathing panels, which include plywood and oriented strand board, may be used for this purpose. When the panels are attached over the spaced boards to the rafters or trusses, the resulting roof structure will have greater resistance to wind and seismic forces than the original spaced-board roof. The spaced boards do not have to be removed or replaced, except to repair decayed, broken or warped pieces.

The recommendations in this Technical Note are consistent with ASCE 7-02 and the 2003 IBC for wind uplift capacity for design wind speeds up to 100 mph (3-second gust) and a gable-end or hip roof with a 30-foot mean height with a slope between 2/12 and 12/12 at an inland location (Exposure B). Hurricane-prone regions of the Atlantic and Gulf coasts will typically require additional fastening to resist higher wind-load forces. The existing roof sheathing boards are assumed to be 1-inch nominal boards at a maximum spacing of 12 inches o.c.

Structural requirements for the panels are usually minimal because of installation over the spaced boards. Panels 5/16 inch or thicker may be used.

Panels should be allowed to acclimatize for a few days before installing on the roof. Acclimatize panels by standing them on edge, out of the weather, with space between each for air circulation.

APA recommends that all panel end and edge joints be spaced 1/8 inch at time of installation, unless otherwise recommended by the panel manufacturer.<sup>2</sup> Cover sheathing as soon as possible with roofing felt for extra protection against moisture prior to roofing application. Attic ventilation should be verified as complying with current building code requirements and additional attic vents installed as required. Ensure that all bathroom, dryer and stove vents exhaust directly to outside air.

## METHODS

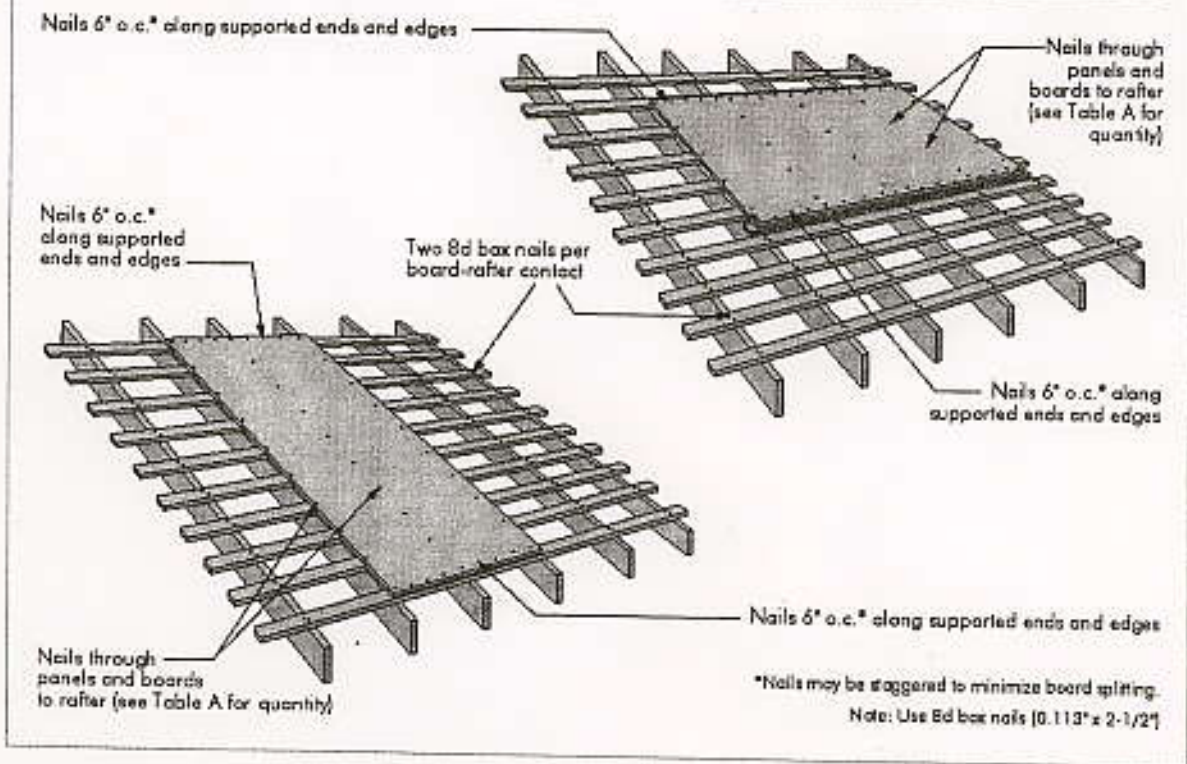
There are two basic approaches to installing structural panels over spaced boards. One is to place sheathing with panel ends or edges located over the roof framing and nail the panels to the framing through the boards. This method is recommended when such things as splits or large knots cause concern about the structural integrity of existing spaced boards. The second approach is to install the panels across the spaced boards, and nail the panels directly to the boards.

<sup>2</sup>Some manufacturers may require a space at the time of installation.

### PANELS ATTACHED TO ROOF FRAMING (THROUGH SPACED BOARDS)

Panels up to 3/4-inch thick may be attached to framing through spaced boards using 8d box nails (0.113 x 2-1/2 inches) with quantity as shown in Table A and illustrated in Figure C. Nail panels to framing at all spaced-board crossings, as shown in Figure C. Nails along edges continuously supported by boards should be spaced 6 inches o.c. Panel edges should not be cantilevered. It may be necessary to add additional boards or move existing boards to support panel edges.

FIGURE C

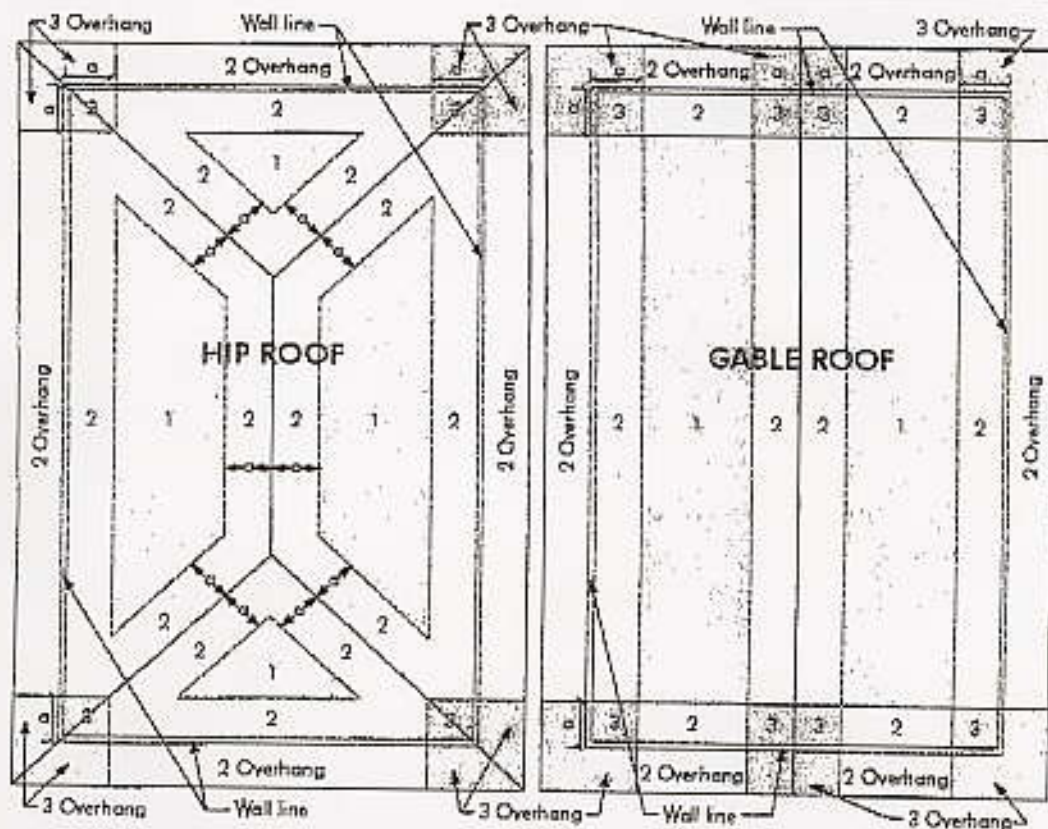




**NAILING ZONES**

FIGURE A

**MAIN ROOF ZONES**



Distance  $a = 4$  ft in most cases (10% of least building width or 0.4 times building height, whichever is smaller, but not less than other 10% of least building width or 3 ft).

- Maximum Rafter or Truss Spacing: 24" o.c.
- Box Nail (Bd): 0.113" x 2-1/2"
- Wind Speed: 100 mph (3-second gust)
- Mean Roof Height: 30 ft
- Inland Location, Exposure B, Enclosed
- Occupancy Category II

Roof Region	Roof Pitch	Zone <sup>2</sup>	Board Spacing (inches o.c.)	Number of Bd Box Nails (Min. 0.113" x 2-1/2") Per Rafter Crossing
Main Roof <sup>1</sup>	2/12 to 6/12	1 & 2	6	1
			8	
			10	
	6/12 to 12/12	1, 2, & 3	6	1
			8	1
			10	2
Overhang <sup>2</sup>	2/12 to 6/12	2 & 3	12	2
			6	1
			8	2
	6/12 to 12/12	2 & 3	6	1
			8	1
			10	2