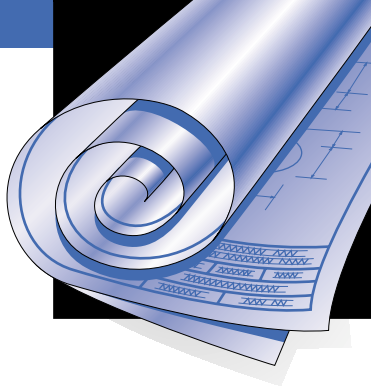


APA Structural-Use Panels Over Spaced-Board Roofs

Number P300B

March 1995

When replacing roofing, it is often necessary to cover spaced boards with a solid roof deck. APA Rated Sheathing panels, which include plywood, oriented strand board and composite panels, 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 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 7-93 for wind uplift capacity for design wind speeds up to 80 mph winds and a moderately sloped, gable-end roof with a 25-foot mean height at an inland location (not a hurricane oceanline). The existing roof is assumed to be 1-inch nominal boards at a maximum spacing of 12 inches o.c.

Structural requirements for the panel 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.

All panel end and edge joints should be spaced 1/8 inch, unless otherwise recommended by panel manufacturer. Attic ventilation should comply with building code requirements.

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

Panels Attached to Roof Framing (Through Spaced Boards)

Panels up to 3/4 inch thick may be attached to framing through spaced boards with the nail spacing and sizes shown in Table A. Nail panels to framing at all spaced board crossings, as shown in Figure A. Nails along edges continuously supported by boards should be spaced 6 inches o.c. Panel edges should not be cantilevered; structural-use-panel shims or boards may be necessary.

Panels Attached Directly to Spaced Boards

When panels are attached to spaced boards without regard to framing, the existing boards may need additional fastening prior to attaching the panels. Two

TABLE A

MINIMUM BOX NAIL SIZES – PANELS NAILED TO RAFTERS OR TRUSSES

Board* Spacing (in. o.c.)	Panel Thickness (in.)															
	3/4				5/8				1/2				3/8			
	Rafter or Truss Spacing (in. o.c.)				Rafter or Truss Spacing (in. o.c.)				Rafter or Truss Spacing (in. o.c.)				Rafter or Truss Spacing (in. o.c.)			
	24	19.2	16	12	24	19.2	16	12	24	19.2	16	12	24	19.2	16	12
12	12d	10d	8d	8d	10d	10d	8d	8d	10d	10d	8d	8d	10d	8d	8d	8d
10	10d	10d	8d	8d	10d	8d	8d	8d	10d	8d	8d	8d	10d	8d	8d	8d
8	10d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d
6	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d	8d

*Existing boards assumed to have a net thickness of 3/4 inch and have two 8d box nails per rafter contact point. Rafters or truss chords assumed to have a minimum specific gravity of 0.50 (Douglas-fir, larch or southern pine) and the boards a minimum specific gravity of 0.43 (hem-fir).

A P A

The Engineered Wood Association

© 1995 APA - The Engineered Wood Association

8d box nails are required for each spaced board at each rafter or truss support.

Attach panels, either parallel or perpendicular to the boards, with 6d box nails spaced according to Table B. Configurations that leave panel ends or edges continuously unsupported (cantilevered) should be avoided. Additional boards may be required. (See Figure B.)

TABLE B

MAXIMUM NAIL SPACING – PANELS NAILED TO BOARDS ONLY

Board* Spacing (in. o.c.)	Nail Spacing (in. o.c.)
12	4
10	4
8	6
6	8

*Existing boards assumed to have a net thickness of 3/4 inch and have two 8d box nails per rafter contact point. Rafters or truss chords assumed to have a minimum specific gravity of 0.50 (Douglas-fir, larch or southern pine) and the boards a minimum specific gravity of 0.43 (hem-fir).

FIGURE A

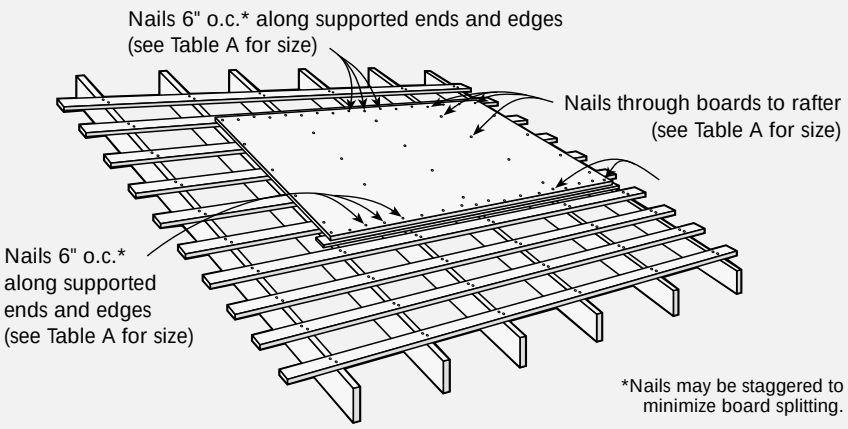
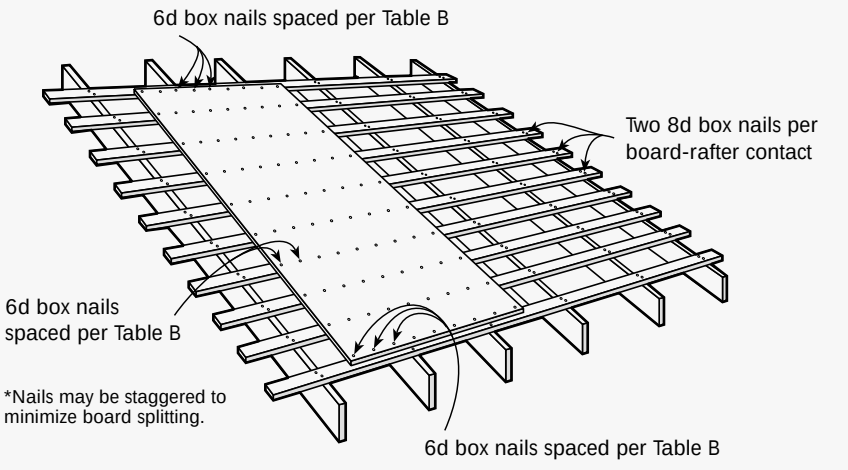


FIGURE B



We have field representatives in most major U.S. cities and in Canada who can help answer questions involving APA trademarked products. For additional assistance in specifying APA engineered wood products, get in touch with your nearest APA regional office. Call or write:

WESTERN REGION
7011 So. 19th St. ▪ P.O. Box 11700
Tacoma, Washington 98411-0700
(253) 565-6600 ▪ Fax: (253) 565-7265

EASTERN REGION
2130 Barrett Park Drive, Suite 102
Kennesaw, Georgia 30144-3681
(770) 427-9371 ▪ Fax: (770) 423-1703

U.S. HEADQUARTERS AND INTERNATIONAL MARKETING DIVISION
7011 So. 19th St. ▪ P.O. Box 11700
Tacoma, Washington 98411-0700
(253) 565-6600 ▪ Fax: (253) 565-7265

Web Address: @
www.apawood.org

PRODUCT SUPPORT HELP DESK
(253) 620-7400
E-mail Address: help@apawood.org

(Offices: Antwerp, Belgium; Bournemouth, United Kingdom; Hamburg, Germany; Mexico City, Mexico; Tokyo, Japan.) For Caribbean/Latin America, contact headquarters in Tacoma.

The product use recommendations in this publication are based on APA – The Engineered Wood Association's continuing programs of laboratory testing, product research, and comprehensive field experience. However, because the Association has no control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility for product performance or designs as actually constructed. Because engineered wood product performance requirements vary geographically, consult your local architect, engineer or design professional to assure compliance with code, construction, and performance requirements.

Form No. P300B
Revised March 1995/0100

A P A

The Engineered Wood Association

©1995 *APA – THE ENGINEERED WOOD ASSOCIATION* • ALL RIGHTS RESERVED. • ANY COPYING, MODIFICATION, DISTRIBUTION OR OTHER USE OF THIS PUBLICATION OTHER THAN AS EXPRESSLY AUTHORIZED BY APA IS PROHIBITED BY THE U.S. COPYRIGHT LAWS.