# PROPER SELECTION AND INSTALLATION of APA Plywood Underlayment



One of the keys to good performance in floors is the right combination of subfloor, underlayment and finish flooring. While APA Rated Sturd-I-Floor is an excellent base for carpet and pad, a separate layer of plywood underlayment is recommended for some types of finish flooring (see Table 1).

# 1. Selecting Underlayment.

U

R

Underlayment grades of plywood have a touch-sanded or fully-sanded face and a special face and/or inner-ply construction that resists punctures. Applied as recommended, plywood underlayment also provides excellent dimensional stability and smoothness. If a resilient floor covering such as sheet vinyl or vinyl tile is to be installed, use plywood grades recommended in Table 1. Where floors may be subject to unusual moisture, use Exterior type panels. 2. Handling Underlayment. Always protect plywood underlayment from moisture or damage prior to installation. Allow underlayment panels to adjust to atmospheric conditions by standing them on edge for several days in the rooms where they will be installed.

P

S

3. Installing Underlayment. Inspect the subfloor for evenness along joints and flatness between joists. When necessary, sand the subfloor near joints; install extra blocking and re-fasten the subfloor to flatten uneven areas. Also check the subfloor for squeaks and re-fasten as necessary before installing the underlayment. Install plywood underlayment smooth side up, on a dry subfloor. To avoid damage to the surface, install underlayment immediately before laying the finish flooring. For maximum stiffness, install underlayment with the face grain perpendicular to floor joists. Stagger end joints of underlayment panels. All joints of the underlayment panels should be offset from the joints of the subfloor panels a minimum of two inches unless otherwise recommended by the finish flooring manufacturer. Space underlayment panels 1/32 inch at ends and edges.

# 4. Fasteners and Fastening Schedules.

Recommended fasteners and schedules are given in Table 2. Begin installing fasteners at an edge and move toward the opposite edge, making sure the panel lies flat. Do not overdrive or underdrive fasteners. Overdriving can result in "telegraphing" fastener or panel joint location through resilient tile or sheet flooring, fasteners pulling through underlayment panels if later exposed to moisture, or floor squeaks due to movement between underlayment and subfloor panels. Check to insure that fastener heads are flush with, or slightly below the panel surface. Avoid gluing the underlayment to the subfloor with construction adhesives to prevent installation or appearance problems with certain types of resilient sheet flooring products.



# TYPICAL UNDERLAYMENT TRADEMARKS DELEMENT DELEMENT DUDERLAYMENT SMORD ASSOCIATION DESSOCIATION DUDERLAYMENT SMORD ASSOCIATION DESSOCIATION DESSOCIATION

# **APA** The Engineered Wood Association

Finish Flooring	Subfloor <sup>(a)</sup>	Underlayment	
Carpet & pad	APA Rated Sturd-I-Floor	Optional	
Adhered carpet	APA Rated Sturd-I-Floor or APA Rated Sheathing	Recommended grades: Underlayment with sanded face of C-C Plugged with sanded face; plywood or Com-Ply <sup>®</sup> Sturd-I- Floor (19/32" or thicker) with sanded face; Underlayment A-C; Underlayment B-C; Marine EXT; o sanded plywood marked "Plugged Crossbands Under Face," "Plugged Crossbands (or Core)," "Plugged Inner Plies," or "Meets Underlayment Requirements"	
Resilient sheet goods and tile	APA Rated Sturd-I-Floor or APA Rated Sheathing		
Ceramic tile <sup>(b)</sup>	APA Rated Sturd-I-Floor or APA Rated Sheathing (Two layers)		
Hardwood	APA Rated Sturd-I-Floor or APA Rated Sheathing	Optional	

covered with underlayment, lightweight concrete, or wood strip flooring. (b) Refer to recommendations of Tile Council of America (see APA Design/Construction Guide:

Residential and Commercial), to determine minimum requirements for subfloor and underlayment.

**5.** *Finishing and Filling*. Before installing the finish flooring, fill all edge gaps, splits and damaged areas in the underlayment with a hard, nonshrinking quick-setting filler. (This step may not be necessary under some carpet and structural flooring products – check manufacturer's recommendation).

6. Installing Finish Flooring. When resilient sheet flooring is installed, consider "loose-laid," perimeter-attached flooring products to minimize exposure of plywood underlayment to moisture from water-based adhesives used for installing flooring; or choose premiumquality flooring adhesives with higher solids content and reduced water content and allow maximum "open" time within manufacturer's recommendations before installing flooring. For other types of finish flooring, follow flooring manufacturer's recommendations for installation.

# TABLE 2

# RECOMMENDED FASTENING SCHEDULES FOR APA PLYWOOD UNDERLAYMENT<sup>(c)</sup>

			Maximum Fastener Spacing (in.) <sup>(a)(e)</sup>	
Application	Minimum Plywood Thickness (in.)	Fastener Size and Type	Panel Edges <sup>(d)</sup>	Grid Pattern
Over smooth subfloor	1/4	3d (1-1/4 in.) ring- or screw-shank nails, min. 12-1/2 gage (0.099 in.) shank dia. <sup>(b)</sup>	3	6 each way
Over lumber subfloor or uneven surfaces	11/32		6	8 each way

(a) Space fasteners so they do not penetrate framing.

(b) Use 4d (1-1/2 in.) ring- or screw-shank nails, minimum 12-1/2 gage (0.099 in.) shank diameter, for underlayment panels 19/32 in. to 3/4 in. thick.
(c) See APA Form E30 for underlayment recommendations under ceramic tile.

(d) Fasten panels 3/8 in. from panel edges.

(e) Fasteners for 5-ply plywood underlayment panels and panels greater than 1/2 in. thick may be spaced 6 inches on center at edges and 12 inches each way (grid pattern).

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 Internet 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. R340F/Revised April 2000/0010