

# DEC-TECHNICAL BULLETIN



Bulletin No: TB030 Version: v.01

Effective Date: 2019-09-01

Subject: **SUBSTRATE PREPARATION - PLYWOOD KNOTS**

- Product
- Pre-Installation
- Installation
- Repair
- Maintenance
- Other
- External
- Internal Use
- Internal Use Only

**Target Audience:** All  
**Reason for Bulletin:** Recommendations for how to deal with plywood knots.

**Details:**  
When it comes to pre-installation considerations, substrates and the use of plywood, Dec-Tec states the following:

**Recommended Plywood:**  
**Thickness:** 23/32in. (18.25mm)  
**Classification:** Exterior  
**Grade:** "T&G, B-C" grade or better  
**Species:** North American Group 1 – Douglas-Fir

"Exterior" rated plywood is made with fully waterproof adhesives and composed of C-Grade or better veneers throughout. This combination provides maximum resistance to the effects of daily cyclic variations of moisture and temperature caused by permanent exposure to weather.

**Acceptable Plywood:**  
**Thickness:** 19/32in. (15.5mm)  
**Classification:** Exposure 1  
**Grade:** T&G, "C-D" Plugged or better  
**Species:** North American Group 2 SPF (Spruce-Pine-Fir)

"Exposure 1" rated sheathing is made with the same fully waterproof adhesives as exterior rated plywood's but may include D-Grade veneers. Because of the veneer grades used, panels that are subjected to prolonged severe moisture conditions may occasionally develop limited, highly localized glue-line delamination's coincident with grade characteristics. These concerns are negated however when exposure to the outdoor elements is on the under-side only making "C-D Exposure 1" (aka CDX) rated plywood's a compatible and approved substrate.

Note: CDX is not the name of a plywood grade. C-D refers to the appearance and treatment of the veneers (faces) of the plywood. One is rated "C" grade and the other side is rated "D" grade. The letter "X" refers the rating of the adhesives used in the plywood. Where "X" = Exterior rated.

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Both types of plywood above have the potential to carry knotholes on the finished surface as outlined here:

VENEER GRADES	
<b>A</b> Smooth, paintable. Not more than 18 neatly made repairs, boat, sled, or router type, and parallel to grain, permitted. Wood or synthetic repairs permitted. May be used for natural finish in less demanding applications.	
<b>B</b> Solid surface. Shims, sled or router repairs, and tight knots to 1 inch across grain permitted. Wood or synthetic repairs permitted. Some minor splits permitted.	
<b>C</b> Plugged Improved C veneer with splits limited to 1/8-inch width and knotholes or other open defects limited to 1/4 x 1/2 inch. Wood or synthetic repairs permitted. Admits some broken grain.	
<b>C</b> Tight knots to 1-1/2 inch. Knotholes to 1 inch across grain and some to 1-1/2 inch if total width of knots and knotholes is within specified limits. Synthetic or wood repairs. Discoloration and sanding defects that do not impair strength permitted. Limited splits allowed. Stitching permitted.	
<b>D</b> Knots and knotholes to 2-1/2-inch width across grain and 1/2 inch larger within specified limits. Limited splits are permitted. Stitching permitted. Limited to Exposure 1 or Interior panels.	

No matter what the finish is, knotholes must be addressed in order to avoid any knothole bleed through and potential discoloration of the Dec-Tec membrane.

Knotholes are easily addressed.

- 1.) Where and when possible pick out the knot from the knothole using a putty knife or similar tool.
  - a. This removes the knot and prevents any kind of irregularity that will become a problem once covered with adhesive and the membrane.
  - b. If unable to pick out the knot, see #2 below.
- 2.) Where a knothole exists whether it has been picked out and or remains in place, apply Dec-Patch II over the knothole and allow to dry. Then sand to a smooth finish.
- 3.) Alternatively one could seal all darker colored knots with 2 coats of Zinsser Bin Shellac Based Primer Sealer, following appropriate application instructions on package.
- 4.) Continue with the installation of Dec-Tec.

The reason why it is important to address the knotholes is twofold:

- 1.) To prevent a loose knot from being trapped under the membrane and causing an irregularity to the finished look.
- 2.) To prevent knothole bleed through which looks like oval or round yellow/brown stains.

Knothole bleed through is a specific and direct result that sees knothole resins migrate out of the knot hole, up through the Dec-Tec adhesive, and up through the Dec-Tec membrane and the end result is typically a yellow/orange/brown discoloration seen on the Dec-Tec membrane. More specifically, it is quite common to see ring-like discoloration, and this is due to the fact that most knotholes tend to have the resins built up in a ring around the knot that telegraphs through the same way.

Example 1.) Discoloration of membrane due to exposed knothole and resin migration.



Example 2.) Transfer of resins to adhesive and to membrane. Notice no transfer where Dec-Patch II was used.



Example 3.) Discoloration in ring-like shapes due to resins at knot edges.



Dec-Patch II will act as a resin migration inhibitor and prevents the bleed through of the resins from the knotholes and thus ultimately prevent any discoloration where applied.

Dec-Tec does not warrant any discoloration due to knothole resin bleed through.

If you have any questions concerning this bulletin, please contact Skyline Building Systems Inc. at 1-866-461-3914.

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