

TECHNICAL

WATERPROOFING

ADDRESSING PLYWOOD KNOTS & DISCOLORATION IN VINYL MEMBRANES

Darker-colored plywood knots, often associated with higher resin content, can pose a significant challenge with vinyl membranes when not managed properly. In this technical bulletin, we will delve into the issues related to knots, particularly those with darker hues, and the potential for pitch and adhesive bleeding that can lead to discoloration of the vinyl membrane. We will also discuss strategies to prevent and address these issues, ensuring a durable and attractive vinyl deck surface.



Knots and Their Impact on Vinyl Membranes

Knots in wooden substrates are natural occurrences, representing the location of branches or limb scars in the tree. The resin content in these knots varies, which is why darker-colored knots are often associated with a higher concentration of resin. When constructing decks with vinyl membranes, these knots can have several adverse effects:

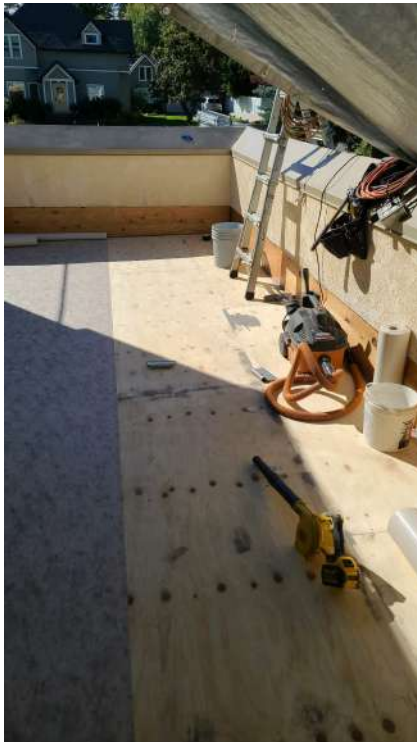
1. **Discoloration:** Darker knots, particularly when rich in resin, can cause discoloration in the vinyl membrane due to pitch and adhesive bleeding. This can create unsightly stains or dark spots on the deck surface, undermining its visual appeal.
2. **Weakened Adhesion:** The presence of resin in knots can inhibit proper adhesion between the knot and the plywood or the knot and the vinyl membrane, potentially leading to reduced appearance and structural integrity.

Issues arising from improper substrates, improper slope, substrate movement, deflection, synthetic filler plugs or plywood knots etc. are excluded from the Tuff warranty. Please refer to the written warranty for further information. The manufacturer or supplier of products not supplied by Tuff are responsible for assuring the compatibility and correctness for their use with Tuff PVC Membranes.

Preventing Discoloration and Bleeding

To prevent the discoloration of vinyl membranes caused by dark knots and the associated pitch and adhesive bleeding, consider the following preventative measures:

- 1. Recommended:** Remove the dark knots and then fill the void with Tuff Industries deck patch.
- 2. Alternate option:** Seal the knots with Tuff Industries deck patch and then paint with 2 coats of Zinsser Bin Shellac Based Primer Sealer before installing the vinyl membrane. This helps to contain (but potentially will not eliminate) leaching or bleeding into the membrane and prevent it from migrating into the vinyl.
- 3. Use the proper substrate:** These dark knots are becoming more prevalent and show up in substrates not recommended by Tuff Industries. When selecting wooden substrate materials, choose a Tuff Industries recommended substrate of either Tolko T-Ply Easy T&G, or Select Tight Face (SEL TF) T&G Douglas Fir. (See Tuff Plywood recommendations)
- 4. Proper Ventilation:** Ensure proper deck ventilation to allow for the release of volatile compounds, including those that may be emitted from knots over time. Adequate ventilation helps maintain the integrity of the vinyl membrane.
- 5. Substrate Preparation:** Before installing the vinyl membrane, thoroughly inspect the wooden substrate for knots and take the appropriate corrective measures as needed. This is crucial in preventing future issues.



Conclusion

Dark knots in wooden substrates can pose challenges as they may lead to discoloration of vinyl membranes due to pitch and adhesive bleeding. However, with proper preventive measures and timely interventions, these issues can be effectively addressed. By selecting suitable materials, sealing knots, and maintaining a vigilant approach to substrate preparation, you can ensure that vinyl decks maintain their beauty and durability over time. Remember that addressing these concerns proactively is key to preserving the appearance and functionality of vinyl membrane decks.

Installers proceed with the expectation that all elements of the building and / or deck are constructed to meet the building code and that if you choose another contractor to build, remodel or prepare the substrate, it complies to Tuff's substrate recommendations.

The responsibility for the substrate used during installation lies with the vinyl installation contractor and not Tuff Industries. If decks exhibit appearance degradation due to improper or poorly prepared substrates, it is solely the responsibility of the installation contractor. Proper substrate preparation and material selection are crucial in maintaining the quality and longevity of vinyl membrane decks. Tuff Industries is not accountable for any issues arising from substrate-related matters.