

## Technical Tip

# Freeze-Thaw Stability

During the winter months it's important to be aware of the freeze-thaw stability of Perma-Chink's products. The reason may involve shipping conditions or whether it is okay to store a product or products in an unheated shed. In any case you need to be aware of the consequences of allowing any of our products to freeze.

Without a doubt it is always best to prevent any of our finishes and sealants from freezing. They all contain water and the formation of ice crystals within the products can separate the water from the other components. In some products once this occurs it becomes impossible to regain the properties of the original formulation even after thawing and vigorous mixing. These types of products are not freeze-thaw stable.

With a few exceptions most of our products are freeze-thaw stable, however, if a product becomes frozen it needs to be thawed slowly, preferably at room temperature. Speeding up the thawing process by heating the container can seriously damage the product making it unusable. If the product is in pails or containers, once it has completely thawed it will require a thorough mixing.

Any finish or sealant that has been frozen will never completely regain all of the initial properties that it had before it was frozen, but it may still be usable. However, if a product is subjected to multiple freeze-thaw cycles each cycle will contribute to the degradation process until it is no longer suitable for use. If a product does become frozen it is better to allow it to stay frozen than it is to bring it inside to thaw and then store it where it may freeze again. It's the succession of freeze, thaw, freeze, thaw sequences that really destroys the integrity of a product. Before applying any product that's been frozen be sure to test a small amount to see if it is still usable.

To reiterate:

- It's best to protect all of our products from freezing.
- If it does get frozen, thaw it slowly at room temperature then thoroughly mix it.
- It's better to keep it frozen than to subject it to multiple freeze-thaw cycles.
- Before applying any product that's been frozen be sure to test a small amount to see if it is still usable.

Perma-Chink Systems' products that are NOT freeze-thaw stable:

- Chink Paint™
- Log End Seal™
- Oxcon™

Perma-Chink Systems' products that have limited freeze-thaw stability (5 cycles):

- LIFELINE™ Ultra 7

For information about cold weather storage of Shell-Guard® and Shell-Guard® RTU see "Storing Borate Solutions."