

Lögler Australia

LEADERS IN FLOORSANDING SUPPLIES

UNDERSTAND YOUR TIMBER FLOOR COATINGS

The most commonly used timber floor coatings (for site sanded and polished timber floors) can be broken down into four different categories: POLYURETHANES, CURING OILS AND ALKYDS, OIL-MODIFIED URETHANES, and PENETRATING OILS/WAXES. Within these categories are variances based on their chemical construction.

POLYURETHANE (SOLVENT BASED)

Polyurethanes are basically “liquid plastic” which dry and harden after being rolled out. The most common polyurethanes today are solvent, or “spirit” based. They require up to three or more coats to provide the correct amount of build, creating three separate layers of “film”. Once the layers start to wear through, total re-sanding is preferable. Lagler Australia do not recommend “re-coating” an existing coat. It is often unsuccessful as a greater degree of surface preparation is required, especially to remove surface contamination, to achieve sufficient adhesion of the additional coat.



SOLVENT BASED POLYURETHANE provides the highest gloss option for those who desire a shiny timber floor, with subdued gloss options if required. They will yellow over a period of time, which can be undesirable. Solvent-based Polyurethanes are the most durable and hard-wearing of all coating categories. Due to their strength, some two-pack Polyurethanes can “glue” the floorboards together, causing a problem known as edge-bonding. They are also susceptible to rejection or contamination from the natural oils and saps in timbers. This must be taken into account when coating exotic species such as Brush Box or Spotted Gum..

They have strong solvents and high levels of toxicity, including an isocyanate content. The contractor is required to wear protective respiratory equipment.

POLYURETHANE (WATER-BASED)

Unlike SOLVENT-BASED POLYURETHANE, the polymer is floating in a water based solution instead of chemicals. There are varied combinations within the water-based polyurethane category including acrylic-polymer blends. As per solvent-based, usually three coats are required and the durability ranges, depending on the product, from low wear to arguably as durable as solvent-based.

Some of the harder two-pack water-based polyurethanes can still cause edge-bonding, but it is less likely. They will not yellow over time, but can darken somewhat, and are considered a more natural look, while still providing a polyurethane “film-build” wear quality. They are also less susceptible to rejection or contamination from the natural saps and oils in the timber.

Edge-bonding is not an issue with this type, although some of the harder two-pack water-based polyurethanes can bond in joints and stretch when movement occurs, forming a pale line.

Of course, the main advantage of these coatings is their being a much healthier and more environmentally considerate option, having no strong chemicals or odours upon application. They are, however, a higher cost than solvent-based and this will be reflected in a contractor’s overall charges.



UNDERSTAND YOUR TIMBER FLOOR COATINGS Continued

CURING OILS AND ALKYDS

CURING OILS such as "Tung Oil" is a less common coating option these days. They combine oils with mineral turpentine or white spirits. Durability is fairly low, as is the cost. There are very few genuine curing oils that are not combined with polyurethane.

CURING ALKYDS are more like a resin-type formula, combined with a solvent/ spirit base. Depending on the product, the durability and hardness can be moderate to high. Although they dry quickly, they cure slowly, requiring more care in its early weeks. Unlike Polyurethane, each coat bonds to the other, forming a singular, hard block of film. Also known as "conversion varnishes", and also unlike Polyurethane, the film cannot be re-activated by immersion in solvents.



Brands such as SYNTEKO CLASSIC only require two coats in most cases, which makes for a more cost-effective and convenient application. They do not go yellow, although they will darken to an amber tone which, to some, adds warmth and depth. While they are a solvent-based product, the volatile organic compound (VOC) is lower than most polyurethanes. Most will look more "silky smooth" than a high-build polyurethane; not being statically charged, they do not attract dust or other imperfections.

OIL-MODIFIED URETHANES

This is a combination of curing oils and polyurethane, that is, the urethane content is replaced with oils to a certain proportion. This gives it some durability as per a film-build coating, but the flexibility and ease of application of an oil. Beware, however, of regarding these types of coatings as "oils". Oils are regarded as very natural, with low toxicity. OIL-MODIFIED URETHANES are a combination of solvent-based polyurethane and oils, and as such still contain some VOC and a polymer film. Being a compromised urethane, their durability is low, as is their cost. They will also yellow more excessively than polyurethane, and can cure very slowly in cooler weather conditions.

PENETRATING WAXES AND OILS

These penetrative coating have no polymer-like film-build content. They penetrate the grain and harden, meaning the timber itself becomes its own protective surface. The advantage of these coatings is that they are spot-repairable and easy to replenish without requiring a total re-sand to bare timber, as they are not "film-build" coatings. Hence, maintenance is simple. They are inherently natural coatings which derive from timber by-products. However, some require solvent-based hardeners (containing VOCs) to achieve curing. Others, such as Synteko Natural, have no additional chemicals, but require a mechanical process to cure and harden the surface. This process is referred to as "burnishing". Light sanding machinery massages the product into the grain, then removes the excess and heat the surface to make it cure. Synteko Natural has no VOC, although be aware that some oils do.



This kind of product generally cannot provide a gloss finish, but creates a smooth matte which is renowned for a truly warm, natural look. The product is a higher cost-per-litre than other types of coatings, and not all contractors are proficient in the burnishing process. However, only one coat is required, and the coverage rate is high, being up to 40m² per litre.