

N·A·T·U·R·A·L

F O R M A T I O N S , I N C .

Creative Custom Furnishings

ADVANTAGES OF POLYURETHANE FINISH vs. CATALYZED LACQUER FINISHES

The typical finishes used in North American and Asian wood furniture are nitrocellulose lacquers and acid catalyzed conversion varnishes, while in Italy and high-end furniture manufacturing facilities around the world, 2 component polyurethanes hold the largest share of the market. The 2 component polyurethane finishes differ dramatically from the single step, brushable polyurethanes typically sold to "do-it-yourselfers". The application of the 2 component P/U finishes is much more costly due to the necessity of "clean" rooms, and the difficulty of application by comparison to catalyzed lacquers and varnishes, which is the primary reason they are not more widely used.

Another major reason that lacquers are used in favor of polyurethane is mis-information regarding the **environmental concerns**. Italians tend to have a great emphasis on care for the environment. For example, acid cured varnishes tend to emit formaldehyde for days and even weeks after being sprayed. Formaldehyde is viewed as a significant health concern in Italy, (more recently here in the US). Polyurethane does not emit formaldehyde, but it does contain isocyanates that also cause a health concern. A key difference is the isocyanates are only present during the application process. Once a polyurethane coating hits the substrate, essentially all the isocyanate has reacted and no longer poses a health risk. In North America, misinformation causes people to fear isocyanates more than they do formaldehyde. This is, fortunately, beginning to change.

*We use polyurethane on our furniture simply because
it is state-of-the-art in commercial wood finishing,
and it will dramatically out-perform all lacquers and
conversion varnishes commonly used.*

Here are some of the advantages of polyurethane coatings:

- Resists damage and staining from common household chemicals such as rubbing alcohol, fingernail polish remover, most cleaning solvents, mustard, wine, catsup, etc. due to the strong chemical bond that is not mineral spirit based.
- Seals the furniture against moisture damage which can result in warping, delamination and discoloration such as the white rings left by beverage glasses, common to lacquer finishes. It is often used in outdoor applications.

P. 2 – Polyurethane Finishing

- Contains no harmful formaldehyde, which continues to off-gas for weeks with lacquer finishes.
- Will not discolor over time, or when exposed to sunlight.
- Higher solids content than lacquer finishes, allowing a thicker and more protective finish and requires less spraying.
- Resists heat much better than lacquer finishes.
- Used for floor coatings to be resistant against abrasion, high wear and constant abuse. Polyurethane can also be polished to a high gloss.
- Higher elastic properties resulting in better durability over time due to the natural fluctuations of solid wood.

Additional technical information will be provided upon request.