

Something Solid

What are solids? In waterbased hardwood floor coatings, solids are whatever is left on the floor after the coating cures. Solids are usually expressed as a percentage of weight, a coating with 50% solids will be half gone after it dries.

To put it simply, the higher the solids, the more coating you will have left on the floor after it dries. Keeping this in mind, let's examine three misconceptions or myths about solids.

Myth #1 – The more solids the better.

Solids can be anything that does not evaporate during the curing process. As you know, the word “anything” can apply to all sorts of stuff. You have to look at what makes up the solids and what each of them does. Merely comparing finishes by percentage of solids is not an adequate test of their capabilities and performances.

Finish solids are often a blend of several ingredients, each having a specific purpose. Many of these have nothing to do with how long a finish will last. These various ingredients help the finish resist scuffs, reduce bubbling, improve adhesion, alter clarity, regulate sheen, and last, but not least determine overall durability.

The point is, ingredients used to adjust sheen or to control bubbles may add to the solids, but they do nothing for the durability.

Myth #2 – Taber abrasion tests are always accurate.

The only scientific data less reliable than a Taber abrasion test result is what you get from your local weatherman. The American Society of Testing and material (ASTM) state the accuracy of on Taber abrasion machine compared to another that may vary up to a range of 90 to 106 percent. This is normal range and means the tests can be off by 100% and still have been considered accurate. These results can occur even when documented test procedures are used. That, in a nutshell, is why we don't value Taber abrasion test or comparisons very highly.

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Myth #3 – Pure urethane solids are best

Like the first myth, this one concerning urethane solids is also incorrectly based on the concept “if a little of something is good, than a lot much better”. Many people (and some manufacturers) think omitting acrylic will improve a water-based coating. We’ve found the opposite to be true, and we are not alone. For flooring applications urethane resins work best when blended with acrylics. This is consistent with May 9, 1994 report in the American Paint and Coating Journal.

Dr. Richard G. Coogan, James J. Bilancieri, and Gail Pollano reported benefits in blending acrylics and urethanes. They found “water borne architectural wood finishes often use urethane and acrylic physical blend”. By blending the formulator can obtain, “the best of both worlds” and “meet the specific requirements of the application”. Urethanes impart impact resistance and toughness to the finish, while acrylics promote adhesion and gloss. Acrylics also contribute strongly to proper rheology (the application and drying characteristics of liquid coating such as flow and leveling).

The authors of the study go further to stress the importance of finding the proper ratios of resins. The report said, “A key to performance of these finishes is the balance of urethane and acrylic latex concentration”.

References

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