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## Wood and Water, an Honest Discussion

Because wood is composed of cellulose, it is polar enough to absorb water to a degree. This makes wood expand when the air is moist (such as in the summertime) and contract when the air is dry (such as in the winter). Because wood has this ability to soak up water, there are occasional disagreements about how safe it is to clean a floor with a solution of water and a cleaning compound. Likewise there are some who believe that waterbased coatings are harmful to wood. This paper is intended to sort through these issues.

### Worst Case Scenario

A flood of water soaking on a wood floor for an extended period of time (either from a storm or a water pipe bursting) will cause the wood to soak up so much water that it will develop what looks like mountain ranges along every board seam. This “cupping” effect is certainly unattractive to look at, but it *can* recover all on its own just by being allowed to dry out well. Unfortunately, the time needed may be several months or more depending on the equipment used and whether there is a crawl space underneath that can be ventilated as well.

However, in order for this “disaster” to take place, the soaking water has to get to the wood in the first place. For most wood floors, there is a substantial layer of polymer protection on top of the wood protecting it from traffic, dirt and grit, and liquids. This polymer protection enables the housekeeping staff to clean the gym on a regular basis without worrying about the water and cleaning compound damaging the wood. Of course, this assumes that the housekeeping staff doesn't soak the floor.

### Daily Cleaning

If a wood floor is cleaned with a mop and bucket, the operator should wring out the mop well before placing it on the floor. If a wood floor is cleaned with an autoscrubber, the squeegee and vacuum should be used right from the start. This minimizes the potential of a long soak time.

### New Installations

For new installations, the boards have not yet been filled with polymer protection. These floors should be cleaned with even more attention to the contact time of the cleaning solution. Misting a thin film of a cleaning compound on a large terry cloth towel and then “tacking” the floor with a push broom is certainly one way to extract dirt from the floor without introducing much water. Damp mopping with a very well wrung out mop head is also capable of transporting the dirt to a drain

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without getting the floor soaked. In short, it doesn't matter which process you use, as long as you're focused on avoiding a long soak time. While walkoff mats and routine dust mopping are critical to maintaining *any* floor, nothing does a better job at removing grit and contaminants than wet cleaning!

#### Water-based Wood Coatings

For most gymnasiums, the amount of polymer protection on the floor is heavy enough that during the process of preparing the floor to be recoated, the cleaning solution never reaches the wood itself. This enables the crew the option of doing a dry prep (and cope with clouds of dust in the air for days to come) or to do a wet prep (which may not create any dust, but does introduce water that has to be correctly managed). Just as routine maintenance of any wood floor requires the crew to be aware of how much water they are putting down and how long it is remaining wet, during a wet prep prior to recoating also requires the crew to work in small sections in order to avoid excessively long soak times. This is easy to do, but still it begs the question, "How do I know if I have enough polymer protection in place to do a wet prep without risking damage to the boards?"

The answer is actually quite simple. If the floor was installed within the last two years, it is still filling in and a wet prep should be avoided. Otherwise there should be enough polymer present in the seams between the boards to avoid damage to the wood. There are occasions when the floor hasn't been finished enough to withstand the abuse of foot traffic. The protective coating may be worn out to the point that in some high traffic areas the wood itself is exposed. This calls for a judgment call on the part of the staff. If there is a desire that the floor be absolutely beautiful when finished, then the floor will need to be completely sanded down to bare wood, sealed, painted, and finished. If the budget isn't there to do a complete sand down, then the staff has to be prepared for the floor to have a somewhat spotty look after it is finished.

Those areas where the finish has worn off will not develop shine as quickly as the rest of the floor. This will be visible to the naked eye. If the first coat to be applied to the floor is a water-based product, there is the additional effect of "grain raise" as the water-based coating penetrates into the wood fibers. This can be muted by lightly buffing with a "between coat buff pad", but it will still happen.

#### Conclusion

As time goes by, the maple boards resting quietly underneath multiple layers of urethane gym finish don't know (or care) whether those urethane gym finishes started off as a water based dispersion or as a mineral spirits solution. They don't know (or care) if the prep was done dry or with a cleaning solution (assuming the crew doesn't soak the floor). The wooden boards don't know (or care) if the floor

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is being cleaned with mops or autoscrubbers (assuming the crew doesn't soak the floor.)

The *Maple Floor Manufacturers Association* wouldn't certify waterbased wood coatings (complete with the wet prep instructions and recommendations for routine wet cleaning) if they felt it was inherently dangerous to do so.

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