

Setting Drying Targets Utilizing the New S500

The ANSI/IICRC S500–2021 Standard for Professional Water Damage Restoration changed the criteria you need to consider when setting drying targets. The S500–2015 stated, “the restorer should establish drying goals that would be expected to inhibit microbial growth; and return materials to an acceptable moisture content or level. Returning materials to an acceptable moisture content or level can be accomplished by setting a drying goal that returns materials to a close approximation of their dry standard.”

Whereas, the new S500–2021 states, “The restorer should establish drying goals that would be expected to return structure, systems, or contents to an acceptable condition; and inhibit microbial growth. When establishing drying goals to return structure, systems, and contents to an acceptable condition, it is recommended that restorers consider:

The agreed-upon scope (i.e., mitigation or restoration):

- 1 The dry standard;
- 2 Project complexities and limitations;
- 3 Assembly composition and complexity;
- 4 Expected conditions after completion of restorative drying;
- 5 Prevailing or seasonal weather conditions;
- 6 Historical data for the region;
- 7 Building assembly installation requirements or recommendations; and
- 8 Published resources (e.g., sorption isotherms, USDA Forest Product Laboratory, Australian Timber Flooring Association or ATFA).”



So, basically there are quite a few variables you need to consider when establishing drying targets/goals. Of course, you should consider historical data for your regional climate at that time of the year to help determine your local dry standard for a particular material, but we need to be reasonable in setting realistic drying targets.

The U.S. Department of Agriculture (USDA) Wood Handbook states, “Softwood lumber intended for framing in construction is usually targeted for drying to an average moisture content of 15%, not to exceed 19%.” So, most meter manufacturers and the USDA agree **get all wood materials below 20% moisture content if you want to inhibit microbial growth**. Remember, moisture meters need to be calibrated periodically, and the same meter should be used throughout the drying project.

Also, because of the margin of error in taking readings of different species of wood at different temperatures and how the readings are taken, it is probably best to be two to three points less than 20%, just to be safe. I generally recommend less than 17% to be safe on wood materials, if you want to record a reading that would inhibit microbial growth. Remember, most electrical moisture meters are not calibrated for drywall, plaster, concrete, etc. **You must record the type/brand/model of moisture meter in your documents for a drywall reading to mean anything. Also, the drywall, sill plates, and wood subfloor readings should be taken with a penetrating moisture meter, and photos of final day readings on each material should be included in your file!**

I recommend using penetrating moisture meters, if at all possible, instead of non-penetrating moisture meters and pushing the pins into the material to their full length, which is typically about 5/16”. Take a photo of the first day reading and the last day reading to ensure your moisture content readings for that material are documented properly.

Finally, upon confirming the source of the water, **follow the path of the water** with your IR camera and your moisture meter to identify exactly what got wet and show that on a sketch. Take photos of any materials that might have got wet, but show they weren't affected in case someone comes back later and alleges you missed drying a specific material that was in the affected area. The example I use is a refrigerator ice maker line leak in the kitchen where the cabinets next to the refrigerator got wet (take off toe kick, and take photos and readings underneath), but the island cabinet in the middle of the kitchen didn't get wet, but later the reconstruction contractor finds mold under the island. In that example, you must be able to prove the island didn't get wet from that water loss occurrence and that mold must have been preexisting.

So, in summary, have your technicians **take their time when taking readings, photos of their readings (first day and last day) and following the path of the water, including materials that were close by but didn't get wet.** Setting dry targets/goals and recording accurate moisture content readings are critical to show you dried properly and left materials in a state that will inhibit microbial growth from that water loss occurrence. **Documentation, documentation, documentation!**

Happy Drying! Ed

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Instructor Ed Jones has more than 30 years of experience in the industry, has the title of Master Water Restorer, is an Institute of Inspection Cleaning and Restoration Certification (IICRC)–approved instructor, and has served on the S500–2021 consensus body committee to develop the most recent standard.

