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Technical Data for Fire, Smoke and Water Damage

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Professional Instruments are Key to Proper Drying

There should be no guesswork when handling a water loss in a structure. A professional restoration business will be able to assure that a structure is dry at the completion of the job. A detailed inspection, the use of scientific measuring instruments, and appropriate mapping and tracking procedures during the drying process will ensure that this has been accomplished.

Upon entering the job loss, the professional restoration business will first inspect for the extent of the horizontal migration of water. Utilizing visual methods together with a moisture sensor (designed to detect water in carpeting and pad), the migration of the water can be determined in areas of the carpet and pad that are not visible with normal observation. Because the carpet pad is very “sponge-like” and is much more absorbent than carpeting, the water migrates much farther than the surface of the carpet will indicate. This moisture sensor is only used

on carpeting because the metal probes that enable the penetration of the carpeting and pad only provide the detection of moisture, not the measurement of water. When water is detected, a LED light and/or an audible beep is emitted which indicates the presence of moisture.

After the horizontal migration has been found, it will be necessary to find and map

is in contact with a material, the more water can be absorbed into that material.

The second measuring device that a professional restoration business will utilize for the discovery of the vertical migration of water is a non-penetrating meter. This meter will not cause any damage in the search. It has pads on the back of the instrument that allow it to detect moisture ap-

proximately 5/8” below the surface. This instrument works on the principle of capacitance. When placed flat on a wall

surface, it will indicate the presence of moisture within the material. When used with wood, it will give an approximate percent of water content. When used on other materials, it gives a reference number, not a true percent of moisture content.

It is always necessary to know what the “standard” level of moisture for a material is in a “dry” or “normal” state. If there is a difference in the moisture content of the material being inspected and the “dry” stan-

"The longer water is in contact with a material, the more water can be absorbed into that material."

out the vertical migration. Most structural building components are hygroscopic. This means that the materials will absorb water but at different rates and levels. The density of the specific material will determine the porosity rate of that material. Gypsum drywall is more porous than the 2” x 4” pine framing. Insulation in the wall cavity is more porous than gypsum drywall. It is also important to understand that time is a very critical factor in a water loss. The longer water

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standard, the professional knows that the material needs to be appropriately dried until the material reaches the "standard" level of moisture. A professional restoration company will have a thorough understanding of these principles and will be able to use them to complete the drying process. They will already know the average moisture levels of most, if not all, of the common building components in use. Areas of the structure that were not affected by the water damage should be checked to establish the "dry" standard if possible.

The third tool for the professional restoration business is a penetrating moisture meter. This tool, although calibrated for wood, can be utilized on other materials. When measuring wood structure components, a moisture content level is given. Attachments to this tool will include short pins, 4" extended pins, hammer probe or flat pins. These attachments will allow for the proper measurement of different components such as gypsum drywall, wall panel-

ing, baseboard, interior cavity insulation, hardwood flooring, concrete, etc. The penetrating meter, as designed, will cause minor damage in its use. A professional restoration specialist will know how to utilize this meter correctly and be able to minimize the damage caused to achieve the desired results. When measuring non-wood structural building components, a reference scale is utilized. Again, a "dry" standard must be established for comparison. This will ensure that a drying goal is established.

A professional restoration business will also utilize a thermo-hygrometer. This is a measuring device that gives the temperature and relative humidity of the environment. Understanding these readings will allow the professional restoration specialist to calculate the actual amount of moisture in the air. Tracking and recording the information from the thermo-hygrometer allows the professional restorer to evaluate the drying system in place and make necessary steps to continuously reduce

the levels of moisture in the environment.

A professional restoration business will map and record the horizontal and vertical movement of water, as well as evaluate the extent of the water migration into the building structure. A detailed inspection of the structure will yield what is affected. The temperature and relative humidity readings will be measured and recorded. This will be checked inside and outside the structure. This monitoring, both of the structure and the environment, must be performed every 24 hours at a minimum. The levels of moisture found in the atmosphere of the area being dried must constantly show a reduction in levels. The levels of moisture in the actual structural components must also show a reduction in levels daily. The consistent monitoring and recording of the information throughout the drying process will allow the professional restoration business to obtain and record the data proving that the drying process is complete.

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