

Water Damage and Wet Concrete

When assessing flooded homes and buildings, most professional restoration firms are mainly concerned with getting everything dried as quickly as possible and returning the property to the pre-loss condition.

A professional restoration company that performs work in homes and buildings has to be aware of the unique properties of concrete materials and the challenges when drying them after flooding. Once constructed, poured concrete basements and slabs are not expected to be saturated with

extreme volumes of water. In most situations, the concrete is not the final floor surface; therefore other floor coverings (substrates) will be installed over the concrete and will be the finished floor.

The floor coverings used could involve cushion and carpet installed with tack-less strip. Carpet can also be directly glued to the concrete floor. Other floor coverings consisting of finished hard-

woods, wood and plastic laminates, resilient vinyl sheet goods, vinyl and ceramic tile are also popular to name a few. Contractors must be aware of the condition of the concrete when subjected to saturation flooding and the subsequent effects to a newly installed floor covering.

After severe water damage, concrete areas are often

entials are not likely to reach as high as one pound per square inch (p.s.i.). This is significant when compared to the bonding strength of even the weakest flooring adhesives that have been properly applied.

The real culprit in this failure scenario is most likely dew point. Dew point is the temperature at which air must be cooled at a given pressure and water vapor content for it to reach saturation. Dew point, as it pertains to concrete and other substrates, is when the environmental conditions (humidity and temperature) conspire

to create a "wet" substrate, even if all observable water has been extracted and fan "dried".

If the floor temperature is cooler than the ambient air, moisture in the air will migrate and deposit itself on the cooler substrate (concrete). Most contractors are unaware of this deposited moisture as the restoration effort is on its projected path to replaced floor coverings.

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assumed dry and floor coverings are installed. Within weeks or months, customers may complain that the newly installed floor is defective. Initial indicators will be stated that too much moisture was left in the concrete, and now water vapors are producing vapor pressure that is disrupting the installation. However, even under the most extreme conditions of temperature and humidity, vapor pressure differ-

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The complaint and damage scenario is compounded when water-based adhesives are used and applied over this “damp” concrete floor. This moisture to moisture ratio will keep the adhesive from curing; therefore, it will move—often appearing as blisters in some floors. Tile floors will have adhesive oozing out of the ends of the seams causing some to think the material is defective. The use of water-based adhesives versus solvent base has increased in recent years due to environmental concerns. Under controlled conditions, the water-based adhesives do perform as well as the solvent-based. However, when applied to a “wet” substrate, the failure rate increases. Due to the increased moisture present the adhesive fails to cure. The deception is that the adhesive still acts like it’s in its container.

Professional restoration firms must avoid dew point related problems at all costs. This is accomplished by using moisture detection devices. Hygrometers can measure relative humidity and tempera-

ture. By utilizing these devices to record temperature and relative humidity levels, the psychrometric chart can determine dew point temperatures. Some available sensors can determine dew point directly. This is why monitoring the drying scenarios is so important when faced with wet concrete and future floor covering replacements. A professional must realize that flooring materials cannot be put down if the dew point has been reached. Ambient air temperature and humidity must be monitored and controlled.

Professional restoration firms must explain the time factor in determining dryness. To determine the vapor emission levels, Calcium Chloride tests can be performed under proper protocol with up to 95% accuracy levels. These tests can take up to 65 hours to complete, so patience is warranted by all concerned. However, the Calcium Chloride test can only determine that there is moisture present. It cannot determine the source of the moisture.

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firm will be aware of existing moisture levels in and on concrete surfaces and will be able to assure that the material is dry upon completion of the process.

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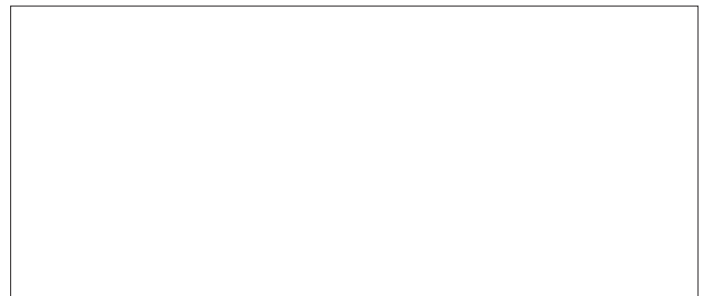


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