

DRYING

On Site Moisture Control

Problem:

Exposed construction materials absorb moisture and can be damaged if not thoroughly dried. Water damage from weather, defective material, broken pipes, and fire can harm structures and if immediate action is not taken, the standing moisture will permeate and encourage growth of mold and bacteria.

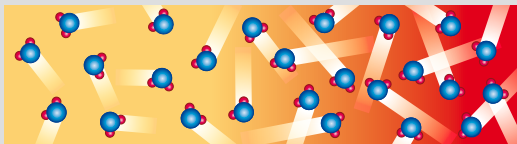
Best Solution:

Create the ideal environment for evaporation by encouraging wet molecules to migrate to dry molecules. The drier the surrounding air, the faster moisture will release from saturated materials. Use a combination of dehumidifiers, heat exchangers and air movers to control the key factors for moisture removal: humidity, temperature, and airflow.



Key Factors to Moisture Removal:

- **Humidity** – If the temperature remains constant, a lower relative humidity will occur, resulting in a faster drying rate.
- **Airflow** – The rate at which evaporation will occur. A higher airflow rate will speed up the evaporation process, while a lower airflow rate will slow down the process.
- **Temperature** – Nothing agitates moisture molecules to release faster than heat energy. Higher mass temperature influences bound moisture molecules to release. Higher air temperature increases moisture-holding capacity. When combined, evaporation takes place at the fastest rate.



Heat is used to excite molecules and speed release of trapped moisture.

Chart below illustrates air moisture content by temperature at 100% humidity.

°F	°C	Grains / Pound
120	48.89	570.4
115	46.11	487.3
110	43.33	416.1
105	40.56	354.9
100	37.78	302.3
95	35.00	257.1
90	32.22	218.3
85	29.44	184.9
80	26.67	156.3
75	23.89	131.7
70	21.11	110.7
65	18.33	92.8
60	15.56	77.5
55	12.78	64.8
50	10.00	53.6
45	7.22	44.3



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Methods and best application:

Control moisture in the air of your job site and projects will get completed faster with less damage to materials. Any water in the structure will be drawn out as well as from new construction materials.



Moisture Removal Systems

Dryvex™ Refrigerant Systems

Maintain a low humidity level by removing moisture from the air and surrounding material.

Moisture-laden air passes across the evaporator coil causing water to condense from a vapor to a liquid.

- Speeding tape, mud, and paint processes
- Reduce moisture content of wood (studs and trim)
- Reducing mold growth
- Spaces occupied by people
- Water damaged structures



Ground Heaters™ Hydronic Air System

Used in conjunction with any Pureheat™ hydronic heater, this closed drying system utilizes a series of hydronic air Heat Xchanger™ systems to dry flooded structures and their contents. The Heat Xchanger systems are placed inside the structure to pressurize, heat, and condition the air to a low relative humidity. Air movers are used to extract the moisture-laden air from the building.

- Flooded or water damaged buildings
- Extracting moisture from construction materials such as: wall studs, subflooring, hardwood floors, sheetrock, ceiling tiles, and wood trim



Dryvex™ Convection Systems

Utilizing heat and air movement, this powerful open drying system uses clean outside air, rather than recycled air, to dry flooded structures and their contents. The air is first conditioned to a low relative humidity (5 - 15%), heated and blown into the building using flexible ductwork. Thermostatically controlled, the supply blower circulates dry, fresh air throughout the structure. Large quantities of moisture are absorbed and extracted from the building through a second return blower.

- Flooded or water damaged buildings
- Extracting moisture from construction materials such as: wall studs, subflooring, hardwood floors, sheetrock, ceiling tiles, and wood trim
- Drying concrete, block foundations and basements



Dryvex™ Air Movers

Speed drying time by improving the water evaporation process. During evaporation, moisture naturally wicks to the surface of a material before converting to a vapor. A thin boundary layer of water vapor gas forms that must continuously be swept away from the surface. These high cfm air movers are a convenient and economical way to provide rapid air movement.

- In conjunction with a refrigerant, convection, or hydronic air dehumidification system

