

Commonly Asked Questions About Construction Drying Services

1. HOW MUCH WILL IT COST?

The cost to dry a floor is relative to what the problem is and what results are desired. Does the floor need to be dried to three lb. or six lb.? Is it a 40,000 sq. ft. floor or a 4,000 sq. ft. floor? Is the ceiling height 10 ft. or 20 ft.? A square foot price is just not practical due to the fact that every situation will be different. Once all the parameters of the project are known, we can then provide you with a reasonable cost that you can use for your budget.

2. HOW LONG DOES IT TAKE TO DRY CONCRETE (FIRE PROOFING, DRYWALL MUD, ETC.)?

Under normal room conditions, concrete dries at a rate of one inch per month. However, it is not always that simple and room conditions vary on a construction site. When drying concrete, we have to know how wet the slab is, what conditions are present, what methods will be utilized for drying, make-up of the concrete and water table height. In addition, we need to determine if there is an adequate vapor retarder under the slab and what conditions were present during the pour, etc. One final consideration would be how much moisture do we need to remove? Analysis of all conditions is critical. Actual experience has shown that a typical slab of concrete can be dried (three lb./1,000 sq. ft./24 hrs.) in as little as seven days and as much as 37 days. Typical drying times are between seven and 14 days. Drywall compound can be ready for sanding the next day in any climate. Fireproofing has been dried to industry standards in less than a week which is significantly quicker than when using only ventilation.

3. HOW DOES YOUR METHOD WORK?

At Munters, we use a combination of desiccant dehumidification, heat (when applicable) and air movement to produce a low vapor pressure in the space. The moisture in the concrete, paint or drywall compound, will travel the path of least resistance from an area of high concentration to an area of lower concentration. The evaporating moisture vapor will be desorbed from the material and the air movement (positive pressure) will carry it away from the surface and push it out of the space. Our equipment also lowers the dew point at the surface, enabling condensation to be eliminated and, thus, preventing the concrete from reabsorbing moisture back into the material.

4. WHAT ARE THE POWER REQUIREMENTS OF YOUR EQUIPMENT?

Most of the equipment we rent for construction applications works on 460 volt, three phase service. If 208 or 220 volt is available, we can provide transformers. The equipment used will determine the total amount of amps required to run the units. Amperage requirements can sometimes be a concern. Munters has propane burners for reactivation of the desiccant wheel for most of our equip-

ment and these could also be utilized should the amp draw become an obstacle. Typically, our air movers and pedestal fans use 110 volt/six amps.

5. SHOULD WE LEAVE OUR AIR CONDITIONING SYSTEM ON?

Air conditioning is not the answer when drying building materials. The air comes off the condenser at a comfortable temperature, but moist. When bringing in outside air, this process may add moisture to the space and, as a result, hinder the process. Keep in mind that warmer air has a lower relative humidity. If the space is occupied and air conditioning is necessary, it should be operated on full re-circulation, allowing the dehumidification system to supply fresh air.

6. SHOULD WE TURN OUR HEATING SYSTEM UP?

Only if necessary to keep from freezing. A warm floor does not necessarily increase moisture migration. In fact, warming the concrete can create a temperature differential that can cause moisture to migrate to the colder ground. Desiccant dehumidification and air movement is all that will be necessary to dry the concrete slab. Paint and drywall compounds will benefit from heat, however, dry air is more effective and generally comes at a lower cost.

7. HOW WELL SEALED DO YOU NEED THE ROOM TO BE TO ACHIEVE DESIRED RESULTS?

The intent with our system is to create low vapor pressure and dew point in the space to encourage moisture migration. If the room is poorly sealed, the ability to create the best environment will be difficult and more expensive to achieve. We recommend sealing all windows and openings. Take caution to close all walk-through and over head doors and limit their use. The use of the air handling system may need to be restricted, or even shut down, to eliminate unwanted moist air from entering the dry air space.

8. WILL THE USE OF FANS HELP THE PROCESS?

Yes. The use of air movement will aid in the drying process by ensuring that the low dew point air is evenly distributed throughout the space. Additionally, continuous air crossing over the surface will assist in the overall effectiveness of the drying process. Air movement is particularly helpful in the initial dry out of saturated materials.

9. CAN WE USE THIS SYSTEM WHILE OTHER PARTS OF THE BUILDING ARE OCCUPIED?

Yes, in most cases. The drying system used will not produce odors or objectionable noise that would make co-habiting a problem. However, keep in mind that if there will be constant travel through the controlled space by employees, workers, students etc., the integrity of the seal may be jeopardized and the drying effectiveness limited.

10. IS THERE ANY GUARANTEE THAT YOU CAN ACHIEVE THE SPECIFIED RESULTS ON A CONCRETE SLAB?

No. There are so many uncontrollable variables such as water table, ability to seal the area, power availability, sealers on the floor, concrete make-up etc., that it would be impossible to guarantee the desired results. However, if the unit is sized correctly and precautions are taken to control the space, we are confident that you will dry your slab in a reasonable amount of time.

11. WILL YOUR SYSTEM WORK IF THE SLAB HAS A SEALER? WHAT DO WE DO IF IT DOES?

Success of the drying will be limited when sealers are present. Typically, we recommend that sealers be removed by scarification, acid etching, blast tracking etc. This will open the floor so as to allow a path for the moisture to migrate out of the floor more efficiently. It should be noted that most curing compounds do not present a problem for drying concrete slabs.

12. SHOULD WE RE-CIRCULATE THE AIR?

Re-circulation of the air can be a good idea when conditions outside are contrary to drying. If the outside dew point is extremely high or a period of rain is expected, then some re-circulation can help. By re-circulating, you are essentially “re-drying” the same air over and over, thus, assuring a lower dew point. It is more important, however, to maintain a positive pressure on the building. If there are large openings or open doors, you may need to take all outside air to maintain pressure and overcome infiltration. During cold winter months the dew point outside may already be lower than what we can achieve by using dehumidification equipment. A different scenario involving heat may need to be considered during these periods of time.

13. WHAT SIZE DEHUMIDIFIER DO WE NEED TO DRY OUR SPACE?

When sizing the dehumidifiers, we need to look at the space being controlled. We need to consider air penetration and what kind of controls will be instituted by the contractor. After deciding on the air change rates or make-up air considerations, we will prescribe a particular piece of equipment that can meet your requirements.

14. HOW MANY AIR CHANGES PER HOUR DO YOU SUGGEST TO DRY OUR SPACE?

We have seen that 1/2 of an air change has been effective in drying concrete. We have also seen situations where six air changes have been required to dry a similar slab. It is our general recommendation that one air change per hour is warranted to dry a floor to three lb./1,000 sq. ft./24 hrs in a reasonable period of time. This is assuming there are no

outside problems occurring such as a broken vapor barrier. When drying general building materials, 1/2 of an air change per hour is often all that is required when a tight seal is maintained at the site.

15. CAN OUR TRADES WORK IN THE SPACE BEING DRIED?

Yes. However, it is important that they not tamper with the set-up of the equipment or fans. In many instances, trades complain about the heat created by the equipment and, as a result, turn off the equipment. Also, they sometimes forget to shut doors etc., allowing moist air to enter the contained area. In general, best results have been achieved when the trades have stayed clear of the protected areas. Regular monitoring is necessary, to ensure all equipment is in place and operating.

16. WHAT METHODS DO YOU USE TO ENSURE THAT THE EFFECTED AREA IS DRY?

The method used varies depending on the scope of the drying. There are several methods available to determine moisture level when drying concrete floors. The most common method is the Calcium Chloride Test. This method uses a desiccant to monitor the amount of moisture vapor coming off the substrate. This measurement is based on pounds of water/1,000 sq. ft./24 hour period. Other methods include taping a piece of plastic to the floor, monitoring the relative humidity in a hole cut into the slab, or using a radio wave based piece of equipment (Tramex). There are positives and negatives associated with each method. In every instance, we suggest referring to the manufacturers' recommendations for expected moisture levels and methods for monitoring.

Delmhorst Meters and Tramex Meters are commonly used to determine moisture levels in other materials such as plaster, drywall, wood, insulation and other common building materials. These meters are considered to be the industries most effective tests for ensuring dryness levels in materials. It is important that these meters be calibrated regularly for the most accurate results.

17. HOW SOON CAN I TEST THE CONCRETE AFTER YOUR EQUIPMENT IS INSTALLED?

It is important to understand the drying process in order to answer this question. All materials must reach equilibrium with the surrounding air prior to any testing. It is at this point that materials start the desorption process and moisture vapor is released into the air. A good rule of thumb is to use a Tramex Meter (radio wave instrument) to provide a base line at the beginning of the project. After seven days, take another Tramex reading. If there is a notable difference, you might want to consider a Calcium Chloride test.

MUNTERS CORPORATION
MOISTURE CONTROL SERVICES
79 Monroe Street, PO Box 640
Amesbury, MA 01913-0640
Tel 1-800-MUNTERS [686-8377]
Fax 978-241-1274
mcsinfo@munters.com

 **Munters**
www.munters.us