FOR DEHUMIDIFICATION EQUIPMENT

STEP 1: Determine the cubic feet of the affected area.

Cubic Feet of affected area = (width) x (length) x (height) or (square footage of affected area) x (height of ceiling).

STEP 2: Determine the class of water damage.

CLASS 1: Slow Rate of Evaporation – (least amount of water absorption and evaporation load): Water intrusion where low porosity materials (e.g., hard surface flooring, plaster, concrete) or medium porosity materials (e.g., structural framing, wood substrates) have absorbed minimal moisture; less than 5% of the combined floor, wall and ceiling surface area in the space is wet, highly porous material (e.g., carpet, gypsum wallboard).

CLASS 2: Fast Rate of Evaporation – (significant amount of water absorption and evaporation load): Water intrusion where wet, highly porous materials (e.g., carpet, gypsum wallboard) represent more than 5%, but less than 40% of the combined floor, wall and ceiling surface area in the space.

CLASS 3: Fastest Rate of Evaporation – (greatest amount of water absorption and evaporation load): Water intrusion where wet, highly porous materials (e.g., carpet, gypsum wallboard) represent more than 40% of the combined floor, wall and ceiling surface area in the space.

CLASS 4: Specialty Drying Situations – (deeply held or bound water): a water intrusion that involves a significant amount of water and absorption into low porosity materials (e.g., hard surface flooring, plaster, concrete) or assemblies (e.g., gym floors, structural cavities, multiple layers of gypsum wallboard) that have a low rate of evaporation due to deeply held or bound water. Drying may require special methods, longer drying times, or substantial vapor pressure differentials.

Other factors can impact the drying environment. Restorers should understand and consider these factors when estimating the drying capacity needed to prevent additional damages and begin the drying process. These factors include:

- Influence of heating, ventilating, and air conditioning (HVAC) systems
- Build-out density of the affected area
- Building construction complexity
- Influence of outdoor weather

STEP 3: Determine the proper division factor.

The division factor is determined by the class of water damage and the type of dehumidifier used.

Initial Dehumidification Factors for Simple Calculation - IICRC

TYPE OF DEHUMIDIFIER	CLASS 1	CLASS 2	CLASS 3	CLASS 4
CONVENTIONAL REFRIGERANT	100	40	30	N/A
LOW GRAIN REFRIGERANT (LGR)	100	50	40	40
DESICCANT	1 ACH	2 ACH	3 ACH	3 ACH

Initial Dehumidification Factors for Simple Calculation - Chuck Dewald Structural Drying Academy

TYPE OF DEHUMIDIFIER	CLASS 1	CLASS 2	CLASS 3	CLASS 4
LOW GRAIN REFRIGERANT (LGR)	70	40	30	70
DESICCANT	2 ACH	4 ACH	5 ACH	2 ACH

STEP 4: Determine pints of dehumidification needed per day.

Pints needed per day =

$$\frac{\text{Cubic Feet of Affected Area (from Step 1)}}{\text{Division Factor (from Step 3)}}$$

STEP 5: Determine dehumidifier's rated performance at AHAM (80°F/60%RH).

Use the Dehumidifier chart to the right to determine performance.

STEP 6: Determine number of dehumidifiers required.

Number of dehumidifiers required =

$$\frac{\text{Pints of Dehumidification Needed Per Day (from Step 4)}}{\text{Dehumidifiers Rated Performance at AHAM (from Step 5)}}$$

DEHUMIDIFIER	PINTS @ AHAM
Phoenix DryMAX	80
Phoenix R175	92
Phoenix DryMAX XL	125
Phoenix D385	130
Phoenix R250	135
Phoenix 250 MAX	145
Phoenix D850	370
Phoenix 4800	3032