



## Air-Mover Calculation

Page 67 – 68 from ANST/IICRC S500 Standard for Professional Water Damage Restoration – Edition:2021

### 12.5.3 Controlling Airflow

Airmovers are used to circulate air throughout the workspace to ensure drier air is continually displacing the evaporating moisture at the surface of wet or damp materials. Several different types of airmovers (e.g., centrifugal, axial) are available.

Airmovers should be set up to provide continuous airflow across all affected wet surfaces (e.g., floors, walls, ceilings, framing). In order to achieve this, it is recommended that restorers position airmovers to:

- Ensure adequate circulation of air throughout the drying environment to include interstitial spaces;
- Direct airflow across the affected open areas of the room;
- Account for obstructions (e.g., furniture, fixtures, equipment, and structural components), if their presence prevents sensible airflow across the affected surfaces;
- Deliver air along the lower portion of the affected wet wall and edge of the floor;
- Point in the same direction with the outlet almost touching the wall; and
- Deliver air at an angle (e.g., 5-45 degrees) along the entire length of affected walls..

Upon initiating the restorative drying effort, restorers should install one airmover in each affected room. In addition, add one airmover:

- For every 50-70 sf (4.5-6.5 M<sup>2</sup>) of affected wet floor in each room (to address floors and lower wall surfaces up to approximately 2 feet);
- For every 100-150 sf (9.3-14 M<sup>2</sup>) of affected wet ceiling and wall areas above approximately 2 feet (60 cm); and
- For each wall inset and offset greater than 18 inches (45 cm)

Within the ranges stated above, the number of airmovers needed can vary between projects depending upon the build-out density, obstructions to airflow, and amount and type of wet affected materials.

In circumstances where water migration has primarily affected lower wall sections and limited flooring (e.g., less than 2 feet or 60 cm of migration out into the room or area), restorers should install a total of one airmover for each 14 affected linear foot of wall. This calculation is independent of the above SF calculation and is not meant to be used in the same room or area.



In small rooms (e.g., pantries under 25 sf or 2.3 M<sup>2</sup>) a single airmover may be adequate, especially if upper walls and ceilings are not affected. However, when any calculation for a room or space results in a fraction, the indicated number of airmovers should be rounded up.

In Class 4 intrusions involving significant water absorption into low evaporation materials and assemblies, once free water has been evaporated, vapor pressure differential should be increased (e.g., increase the temperature of wet materials; reduce humidity of the surrounding air; or a combination of both). In these circumstances, it can be beneficial to decrease the velocity of airflow.