ABSTERGE ACME FILTER INDIA PVT LTD

- **AIR VELOCITY TEST**

- **PURPOSE:**

  To evaluate the Airflow velocity, air changes uniformity of airflow velocity and supply airflow volume in clean rooms and clean zones.

- **SCOPE:**

  Applicable to unidirectional & non-unidirectional clean rooms or clean zones.

- **RESPOSIBILITY:**

  Engg. Dept .

- **DEFINITION:--------**

- **PROCEDURE:**

  1.1 Airflow velocity measurement in unidirectional airflow installations. (LAFs)

  1.1.1 Hot wire anemometer or Vane type anemometer is used with proper calibration certificate.
  1.1.2 Measure the filter size of the installation for which the test is to be carried out.
  1.1.3 Measuring point should be defined at a distance between 150mm and 500mm from the filter face.
  1.1.4 No.of measuring point should be more than the square root of the measuring plane area in square meters and should not be less than 3 points.
  1.1.5 Measurements should be taken at the center of each grid cell.
  1.1.6 Measuring time at each position should be at least 10 seconds & the average maximum and minimum values should be recorded.
  1.1.7 Inform about the results to Engg. Dept & Q.A. Dept.

- **ACCEPTANCE CRITERIA:** As per ISO guideline acceptance limit for unidirectional airflow installation is 90 FPM $^{+}$ 20%.

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1.2 Airflow velocity measurement for Non-unidirectional airflow installations

1.2.1 Hot wire anemometer or Vane type anemometer is used with proper calibration certificate.

1.2.2 Measure the filter size of the installation for which the test is to be carried out.

1.2.3 Take the relevant details like No. Of filters, Filter Size, Room Volume (ft^3), AHU no., AHU capacity, Designed CFM & AC/Hr for each room.

1.2.4 Measuring point should be defined at a distance 150mm to 500mm from the supply face.

1.2.5 Measuring time at each position should be at least 10 seconds.

1.2.6 Calculate the average velocity for each filter.

1.2.7 Calculate the CFM of each filter by using follwing formula: Cfm=Avg. Velocity (ft/min) x Area of grill(ft^2)

1.2.8 Calculate the total CFM of the room by adding each filter CFM.

1.2.9 Find out the AC/Hr by using following formula:

$$\text{No. of air changes/hr} = \frac{\text{Total Cfm}}{\text{Room Volume}(ft^3)} \times 60$$

1.3.0 Calculated airchanges should not be less than the designed airchanges.

1.3.1 If the airchanges are lesser than the required airchanges inform Engg. Dept, get the things done like supply damper adjustment as per requirement.

1.3.2 Repeat the procedure from steps 1.2.6 to 1.2.9

1.3.3 Inform about the results to Engg. Dept & QA Dept.

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