

**GENERAL:**

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1. To provide minimum standards for design and installation of air outlets and inlets.

**DESIGN GUIDELINES:**

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**A. General**

1. Diffusers, registers and grilles with integral dampers shall not be used unless approved by the project manager.
2. Perforated diffusers shall not be used.
3. Egg crate style registers and grilles are the preferred type for return and exhaust air.
4. For suspended ceilings, diffuser mounting plates shall be a minimum of 24" x 24".
5. Diffusers other than 2' x 2' shall not be used unless approved by the project manager.
6. Low Velocity type 2' x 4' diffusers may be needed for laboratory and hospital applications.

**B. Layout**

1. Diffuser, register and grille design airflow and type/number shall be shown on diffuser/duct layout drawings.
2. Locate diffusers so air will not blow onto thermostats.
3. Diffusers, grilles and registers shall not be located within 2 feet of walls unless approved by the project manager.
4. For labs and special rooms, diffusers, grilles and registers shall be located above aisles unless approved by the project manager. Do not locate diffusers, grilles and registers above lab tables, fume hoods and near walls where measurements might be obstructed by lab equipment, shelving, freezers and other objects.

**C. Drafts and Noise**

1. Specify diffusers for VAV systems with consideration given to air dumping at low velocities and desk level drafts caused by high velocities.
2. To reduce possible noise and draft issues, 2' x 2' diffusers shall not be designed for more than 400 CFM each.
3. The schedule shall include a sound rating for the diffuser at the selected CFM.
4. Design diffusers to handle the indicated airflow while not exceeding an NC level of 25, referenced by  $10^{-12}$  watts with a 10 dB room effect.

**SPECIFICATION REQUIREMENTS:**

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- A. Shop Drawing submittals shall include the model, velocity, cfm, throw, pressure drop, sound level, inlet dimensions, and core area (in square feet).