

DUCTWORK

DESIGN GUIDELINES

1. Design
 - a. Ductwork
 - Static Pressure Classifications shall be noted on the drawings.
 - b. Flexible Ductwork
 - The use of flexible duct in the air system is limited to straight runs of duct and final connections to air devices such as diffusers, registers and connections to VAV boxes.
 - No flex duct shall pass through any wall, floor, or ceiling.
 - Maximum length of 6'-0".
 - No bends or turns allowed with flexible duct, elbows shall be hard piped.
 - Insulation R-value to meet Energy Code.
 - Flexible duct shall be supported with a plenum rated fabric hanger strap of 1-3/4" wide. No metal hangers allowable on flexible duct.
 - c. Duct Insulation
 - All supply and return ductwork shall be insulated to meet the Energy Code.
 - No duct liner is allowed, exterior insulation only.
 - d. Existing lab exhaust fans serving hard balanced lab spaces.
 - Shall have pre-readings traverse at exhaust risers.
 - Pre-readings shall be performed on all lab exhaust boxes and air devices within renovated lab.
 - Pre-readings shall be performed on upstream lab exhaust boxes, fume hood valves, and air devices.
 - Air devices shall be pre-read where there are no lab exhaust boxes. Isolation dampers shall be installed in lab exhaust main prior to any demolition work to isolate renovated lab and prevent air balance issues with active labs upstream of renovated lab.
2. Related Sections
 - a. General Requirements
 - b. Laboratory Fume Hoods
 - c. Hangers and Supports
 - d. Heat Exchangers – Airside
 - e. Insulation

EQUIPMENT and PRODUCT REQUIREMENTS

1. Ductwork

- a. Generally, supply, return, outside air, and relief air ductwork for HVAC systems shall be constructed of lock forming quality G90 galvanized sheet steel and installed and joint sealed per SMACNA.
- b. All materials used shall meet the requirements of NFPA 90A and UL 181 for Class I air ductwork.
- c. Ductwork shall be designed for thickness and reinforcement per SMACNA or as specified by the engineer, whichever is more stringent. The specifications shall be determined during design on a project basis to minimize noise and vibration and meet any specific project requirements.

2. Flexible Duct

- a. Approved Manufacturers:
 - Flexmaster
 - McGill AirFlow
 - Ward Industries
- b. Specifications:
 - 10" pos and 5" neg pressure rating.
 - 5,500 fpm max velocity
 - -20°F to +250°F
 - Flexible duct on exhaust in labs shall be Flex Master NI-TL. Maximum length of flex duct is 6 ft.

END OF SECTION