Fabric Duct Systems, Inc.

Specifying a Fabric Duct System

Introduction

Fabric Duct Systems has TWO types of duct material: Polyester and Polyethylene. These fabrics represent two types of ventilation systems (air displacement versus typical air mixing). A polyethylene duct system is about HALF the cost of a polyester duct system with the same duct diameters and duct lengths.

The Q-Sox® polyester-type duct is a "low velocity" diffuser where the air passes through the weave in the cloth and falls to the floor level rather than mixing with the existing room air. This low velocity is excellent for food processing plants, swimming pools, ice arenas and other applications where low velocity air greatly retards evaporation as in a packing house or swimming pool. There are many other applications: churches, grocery stores, computer rooms, bakeries, clean rooms, R&D facilities, laboratories, reception lobbies, etc. Basic white is the standard color, but custom color is also available at extra cost.

The Q-Sox polyethylene duct (PowerThrust®) is a coated fabric with air jets 1" to 7" diameter punched along the fabric duct at 3 & 9 o'clock (or other clock orientations). These holes are evenly spaced along the sides of the duct. The larger the air jet diameter the greater the air jet velocity. The diameter, spacing and number of air jet openings depends on the duct length and CFM required. Again, this system is about half the price of the Q-Sox polyester type. This polyethylene duct system is used where COST is a big factor, or where the application is medium to heavy industry where VENTILATION is the basic need. Only FOUR colors are available: Natural, Blue, Gray, Dark Green.

Fabric Duct Systems will supply cable, cable clamps, thimbles, screw hooks, and turnbuckles for mounting the ducts along with complete instructions. Alternative suspension with single or double aluminum rails is also an option where architectural aesthetics is preferred.

Checklist for Specifying a fabric duct system

1. Determine from the architect/engineer/designer what type ventilation performance and aesthetics he/she is specifying. The application determines the choice of fabric.

- Polyester, porous, permeable weave – for low velocity, quiet, true air displacement applications. Draft-free and energy cost effective. Custom dyed colors available.
- Polyester, non-porous, coated fabric with equally spaced Air Exhaust Ports, 1" to 7" diameter, typically @ two clock orientations, usually 4 & 8 o'clock; for more attractive applications requiring higher throw; available in Cable or Rail suspension; Standard colors: Cobalt Blue, Medium Blue, Black, White, Gray, Others as available.
- Polyester, non-porous, coated fabric with linear mesh vents for more aesthetic, lower velocity applications; available in Cable or Rail suspension; 12 Standard Colors.
- Polyethylene, non-porous, coated fabric with equally spaced Air Exhaust Ports, 1" to 7" diameter, typically @ two clock orientations, usually 4 & 8 o'clock – for lower cost, basic ventilation applications. Four colors: Natural, Dark Green, Blue & Gray.

2. Obtain a plan view to scale showing where the air supply units (ASU) are located and the proposed duct layout for each ASU. The CFM for each fabric duct run and the inlet static pressure (inches) must be provided for each duct inlet. Specify the length of each duct run.

3. Recommend uniform diameter for fabric (trunk) supply ducts with two or more branches instead of step-down diameters with reducers over the length of the duct. This will save cost for the customer. If the customer chooses step-down diameter design, however, indicate each diameter length to the center-points of the reducers.

4. Select type of suspension:

- Single Cable @ 12 o'clock for diameters up to 24 inches
- Double Cables @ 3 and 9 o'clock for diameters over 24 inches
- Single Aluminum Rail @ 12 o'clock for diameters up to 36 inches
- Double Aluminum Rails @ 3 and 9 o'clock for diameters over 36 inches

5. For POLYESTER ducts, continuous slotted vents are used for increased air-flow velocity in a specific direction(s). These vents are recommended when there is a window wall where condensation forms or when the ducts are used for heating as well as cooling applications. Specify slotted vent requirements, if vents are desired:
Locate ONE OR TWO vent(s) at respective clock orientations looking in the direction of the air-flow. Indicate percentage of CFM flowing from vents. *Fabric Duct Systems* will calculate the width of each slotted vent for proper air-flow, usually 15 to 25% of total duct air-flow.
If the designer wants 100% of the air-flow from the slotted vents, a non-porous polyester will be used. Contact FDS for 16 available colors.

For POLYETHYLENE ducts: Specify Air Exhaust Port diameter based on user application. The smaller the ports, the greater the number of ports and the closer their spacing. Smaller diameter exhaust ports (1" to 3") will yield lower air velocities (turbulence) than larger diameters(4" to 7").
Specify air exhaust port clock orientations looking in the direction of the air-flow, e.g. 4 & 8 OR 3 & 9 OR 10 & 2 o'clock.

6. For Q-Sox permeable polyester duct systems, the basic color is White; ALL OTHER COLOR IS CUSTOM. Send a paint chip, Pantone number, or manufacturers paint chip for Q-Sox polyester ducts. 16 PVC-coated polyester samples are available.
For PowerThrust polyethylene ducts, choose Natural, Blue, Gray, Dark Green.