



Fabric Duct Systems, Inc.

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Flexible Air Distribution Systems

Guide Specifications for Q-Sox® Air Distribution Systems

1. General

Q-Sox is a fabric duct system that insures even and draft-free air distribution. Along with the pre-filter on the unit, the Q-Sox will also act as a second filter. The Q-Sox is for cooling, heating, refrigeration and ventilation. The total surface of the fabric duct is the air outlet. The air seeps through the fabric at a very low velocity, and thereby decreases draft to a minimum. Other systems utilize punched orifices and coated fabrics.

2. Modes of Operation

Q-Sox duct is custom designed for each application and fabricated, inspected, and shipped in sections by the manufacturer. The Q-Sox comes in round, half-round and quarter-round shapes. Q-Sox is fabricated of polyester or Trevira CS. When sizing the Q-Sox, the inlet velocity in the Q-Sox should always be kept under 1600 FPM. If the inlet velocity is between 1600 and 1900 FPM a SRD (static regain diffuser, supplied by Q-Sox, Inc.) should be included. If the inlet velocity exceeds 1900 FPM, the diameter of the Q-Sox should be increased.

Unit Requirements: To insure proper inflation, the static pressure supplied by the air handling unit should be at least 1/2" WG.

Q-Sox can be installed either horizontally or vertically. If heating and cooling are done on the same system, the room dimensions along with the exhaust are located. If the air returns are high and the height of the room is more than 10 feet, a linear slot diffuser should be included in the Q-Sox.

3. Unit Description

Q-Sox duct is designed with a Velcro (or zipper) joint for every 16 feet of duct length. Q-Sox ducts hang from 1/8" vinyl coated cable (or rail.) Connection to cable or rail is with snap hooks or gliders. Hooks for connections to wire are spaced every 24". Glider connections to rails are also spaced every 24".

If the diameter of the Q-Sox duct exceeds 24", double cable or rail suspension is recommended. This is to insure that there is as little movement of the Q-Sox duct as possible.

4. Installation

Cable installation: The cable (1/8" diameter coated) is suspended across the ceiling, tightened with the turnbuckles (turnbuckles on both ends if the length exceeds 100 feet). Q-Sox ducts are connected to the cable with the snap clips and to the plenum with the Anchor Belt.

Vertical (cable) supports and clamps must be provided every 15 feet by the contractor for vertical support of the 1/8" horizontal suspension cable. Vertical supports should be fabricated on the job site by the installation contractor.

Fabric Duct Systems, Inc. will supply horizontal suspension cable (or rail), cable clamps, turnbuckles, eyebolts, and Anchor Belts. Cable-to-ceiling mounting fasteners such as hooks, eyes, or beam clamps shall be provided and installed by the installation contractor. The installation is completed.

Rail installation: *Fabric Duct Systems, Inc.* shall provide 10' rail sections for field splicing, cutting, installation and assembly by the contractor. The rail is attached to the ceiling with 1/16" suspension cable and Hanger Blocks. The Q-Sox ducts are connected to the rail with the gliders and to the plenum with the Anchor Belt. The installation is completed.

5. Execution

Q-Sox should be installed as shown on the plans only after all construction activity including sanding, painting, cleaning, touch-up, and debris removal is complete. Q-Sox should NOT be installed until the job site, equipment, and personnel have been thoroughly cleaned to protect the Q-Sox appearance.

To protect the Q-Sox cloth duct, **it is most important to install a minimum 35% pre-filter** in the air handling system prior to the installation of Q-Sox system.

6. Testing & Balancing

The Q-Sox duct system is designed and custom manufactured, and will be balanced from the manufacturer, according to the user approved required specifications. The completed installation shall be balanced by measuring the airflow at the air-handling unit.

Testing can be performed as per the following directions:

The CFM, airflow velocity and the static pressure can be measured at every Velcro/zipper connection (usually every 16 to 20 feet). With this information it can be calculated as to how much air is distributed along the Q-Sox duct.

Adding smoke to the air entering the Q-Sox can perform a visual test. The pattern of the air leaving the Q-Sox is thereby determined.

7. Maintenance

The Q-Sox is washable. The Q-Sox should be pre-washed, washed and rinsed at 104° F, inside out, whenever the static pressure inside the Q-Sox duct has increased more than 50%.

Q-Sox with a linear slot diffuser should be washed once every second year.

8. Approval & Classification

Q-Sox is classified by Underwriters Laboratory as an Air Distribution Device, and meets requirements set by the NFPA 90A-1993. USDA: Q-Sox is acceptable for use in all federally inspected Meat and Poultry plants.

9. Warranty

Q-Sox woven cloth ducts are warranted to be free from manufacturing defects, one year from date of original manufacture.

10. Options

Q-Sox can be offered with the following features: custom color, custom logo. Tees, Off-sets, and Elbows are also available in fabric for a uniform design layout.

11. Unit Manufacturer

Unit Manufacturer is Fabric Duct Systems, Inc., located at 1127 Riverwood Drive Burnsville, Minnesota, 55337, USA. Sales representatives are located strategically throughout the USA and internationally.