Q-Sox® Installation Instructions

Fabric Duct Systems, Inc.

Fabric Duct Systems, Inc.

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Fabric Duct Systems, Inc.

Q-Sox Polyester Air Ducts

1. INSTALL CABLE –Fabric ducts are typically suspended by horizontal cable anchored to the building. .125” X .187” vinyl clad steel cable is standard.

A. Align the cable with the plenum outlet horizontally and vertically. See below for alignment details.
B. Install a turnbuckle and thimble on the cable to tighten it. A 3/8” x 10” turnbuckle is supplied for each cable length. Four Cable Clamps and two Thimbles are included for each cable run.

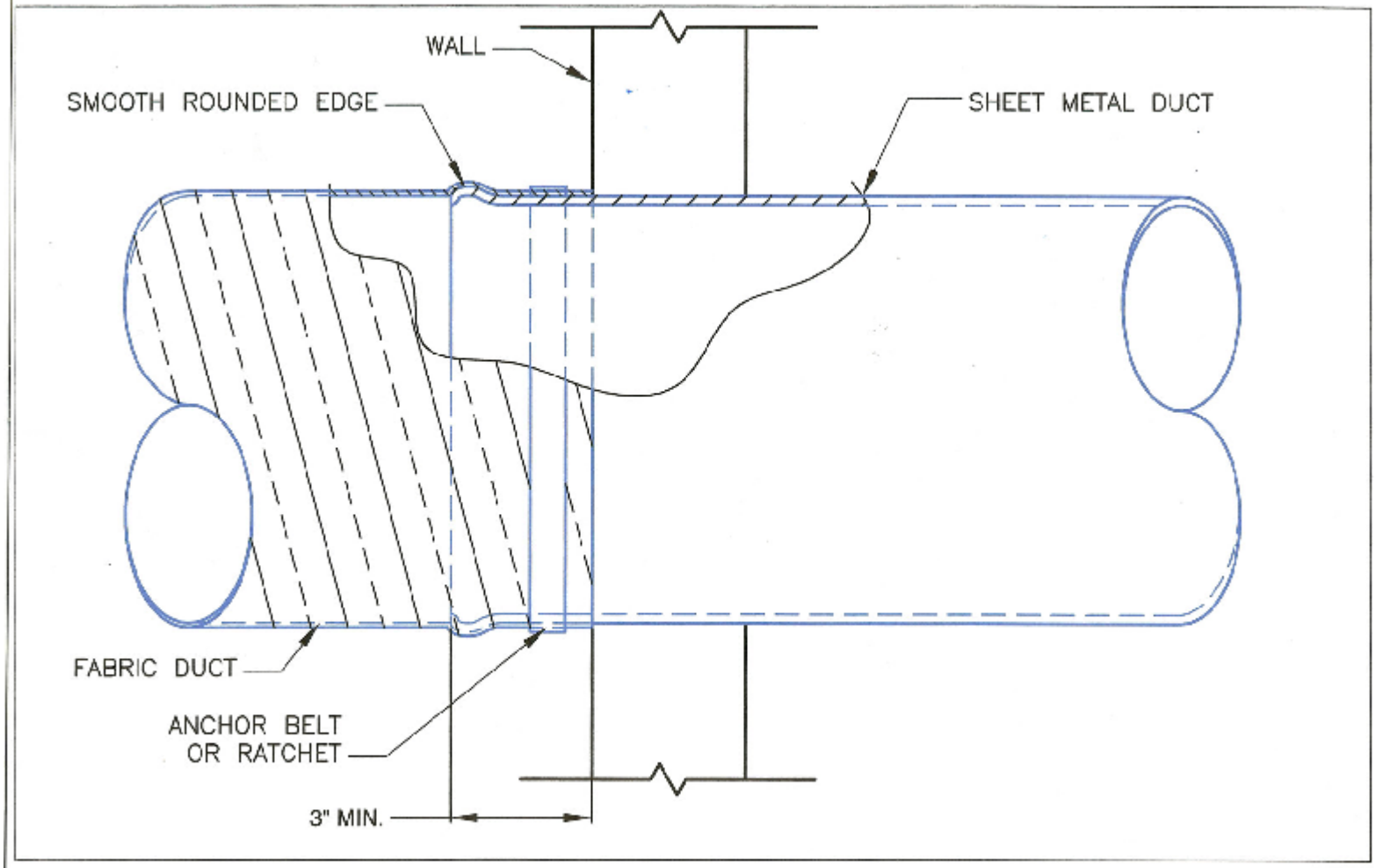
2. INSTALL AIR DUCT – The first step is to hang the Fabric duct on the cable(s). Each duct is furnished with plastic or metal Snap Hooks attached to the Fabric duct usually at 6 feet intervals, typically at 12 o’clock. The Fabric duct is hung by attaching the Snap Hooks to the cable. Installation is quite easily accomplished and just as easily removed. If necessary.
Snap Hooks can be furnished on BOTH top and bottom (12 & 6 o’clock) OR left and right (3 & 9 o’clock) of a Fabric duct. This option makes it easy to turn the Fabric duct over and change the direction of the air exhaust ports. For example, unheated makeup air can be directed upward in winter and downward in summer.

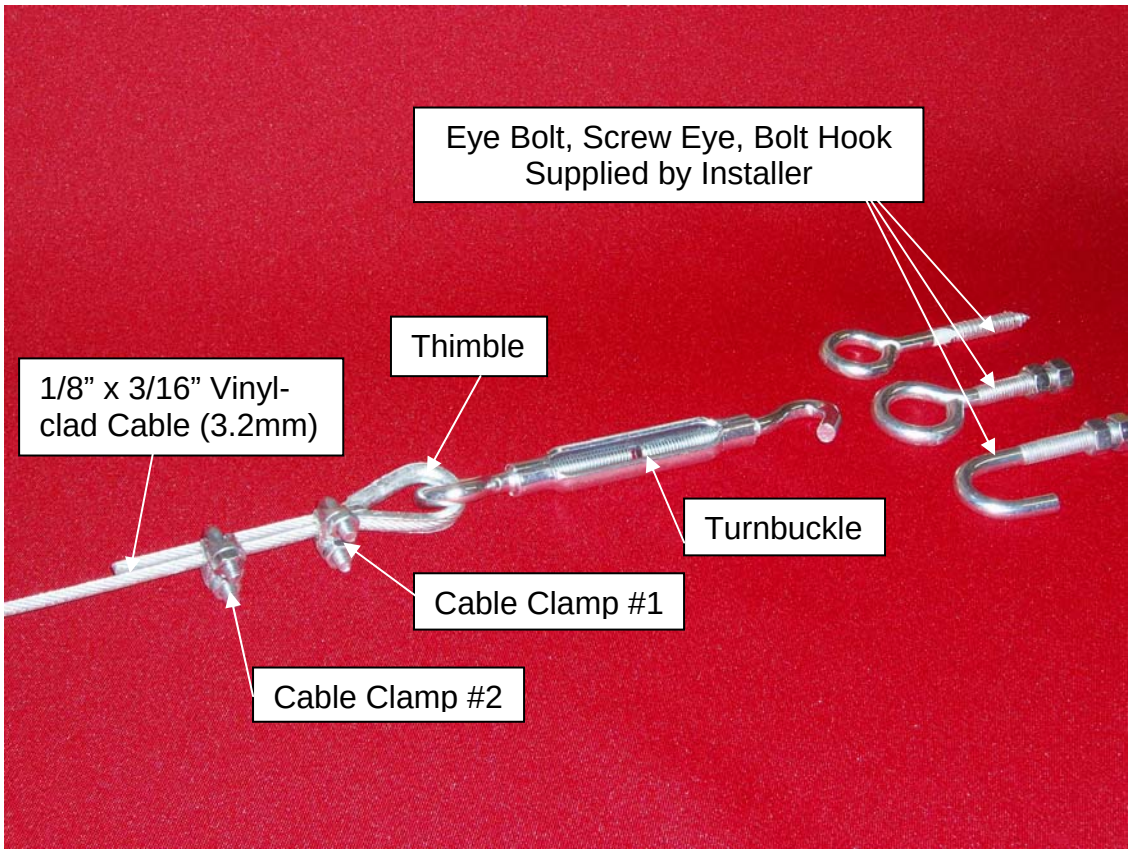
3. ATTACH AIR DUCT TO THE PLENUM OR TRUNK SUPPLY DUCT – Slide the open end of the Fabric duct over the plenum orifice and then attach the Anchor Belt. Tighten the ratchet to secure the Fabric duct to the outlet.

4. TURN ON THE FAN – This is a test run to check out the Fabric duct and its alignment to the airflow.

5. FINE TUNE ALIGNMENT – Typically, it is necessary to make adjustments to the alignment of the Fabric duct to the airflow. Alignment is CRITICAL along the first 20 to 30 feet from the plenum outlet. The violent air turbulence caused by the fan can damage the Fabric duct it is not properly aligned. If the Fabric duct bounces severely or if the Fabric duct wall flutters or flaps, the Fabric duct is poorly aligned to the airflow.

A. To align the Fabric duct, move the cable either left, right, up or down. If the Fabric duct is flapping along the bottom, a simple adjustment of the first 20 to 30 feet of the cable will solve the problem. Install a vertical hanger 20 to 30 feet from the outlet attachment to raise the cable and align the Fabric duct with the airflow.
B. If there is excessive cable sag over the length of the Fabric duct, additional vertical hangers should be installed at 15 to 20 foot intervals. The hangers can be light chain or cable. Attachment of the hanger to the cable should be easily removable, such as an “S” hook or Snap Hook. Location of each vertical hanger should be determined during the test run. **Never install vertical hangers before the Fabric duct has been hung and tested.**
C. It may also be possible to eliminate the Fabric duct wall flapping by pulling the Fabric duct at the closed end. The stretched Fabric duct should be secured with a light cable or chain.
D. If pipes, beams, etc. prevent good alignment, an air straightener would be needed at the plenum outlet.


WALL
SMOOTH ROUNDED EDGE
SHEET METAL DUCT
FABRIC DUCT
ANCHOR BELT
OR RATCHET
3" MIN.



Cable attachment assembly

1. Mount 2 Eye Bolts to opposite walls or other permanent vertical members at the correct height above floor level.

2. Open Thimble and attach to Turnbuckle eye.

3. Unscrew Turnbuckle hook and eye ends to approximately 9 inches (23 cm).

4. Slide two Cable Clamps onto cable and loop Cable around Thimble and back through the two Cable Clamps with at least 6 inches (15 cm) overlap. Align two Cable lengths and tighten Cable Clamp #1 in close proximity to the Thimble.

5. Tighten Cable Clamp #2 similarly.

6. Attach Turnbuckle to Eye Bolt and run cable to the opposite wall**. Eye Bolts or Screw Eyes are provided by GC or installing contractor.**

7. Run cable to opposite wall and repeat cable attachment process as above.

8. When Cable has been installed, tighten Turnbuckles at both walls to level entire cable length.

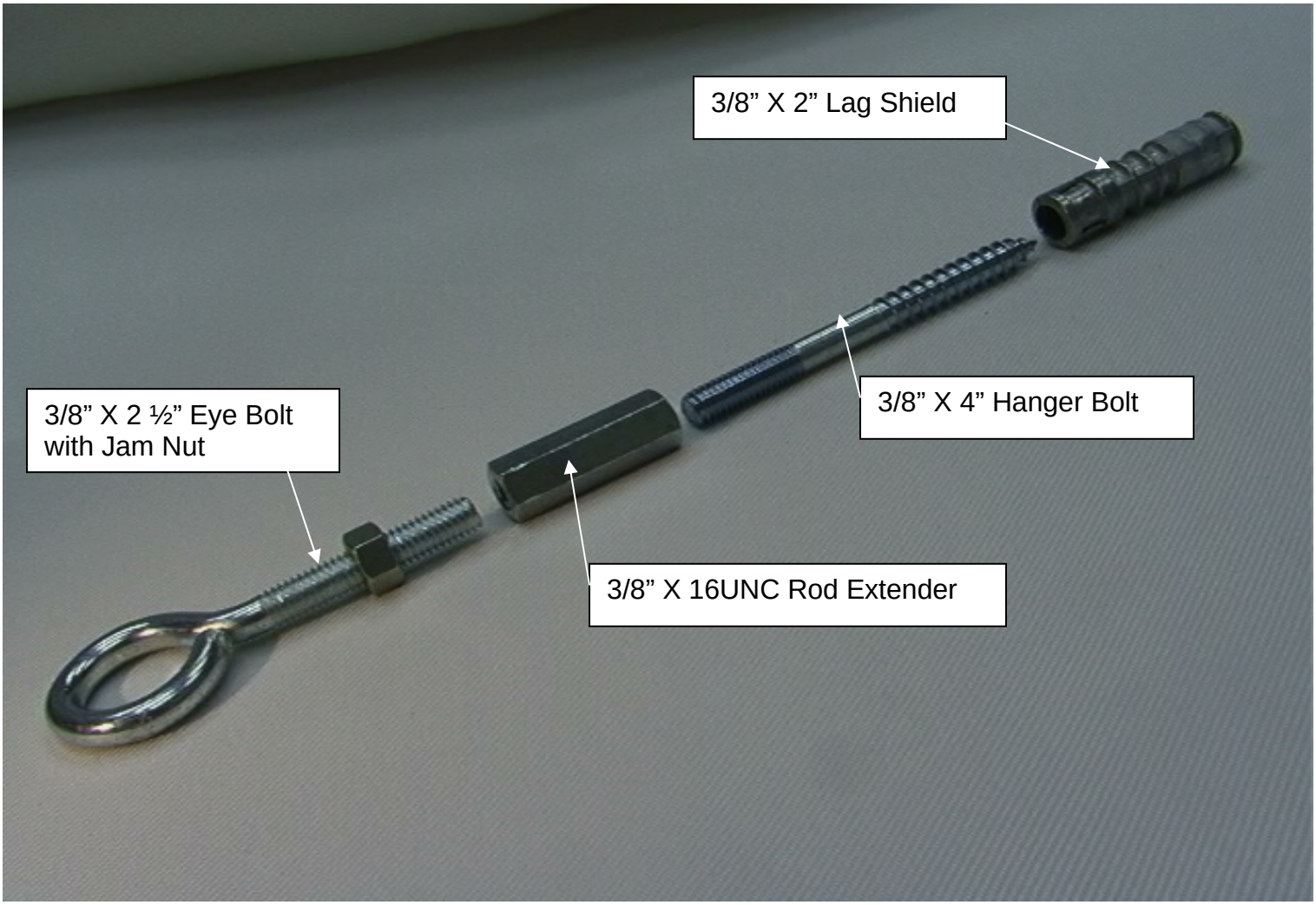
9. Vertical supports must now be installed at approximately 15 feet intervals (4.5 M) along the Cable length to support Cable and Q-Sox duct.

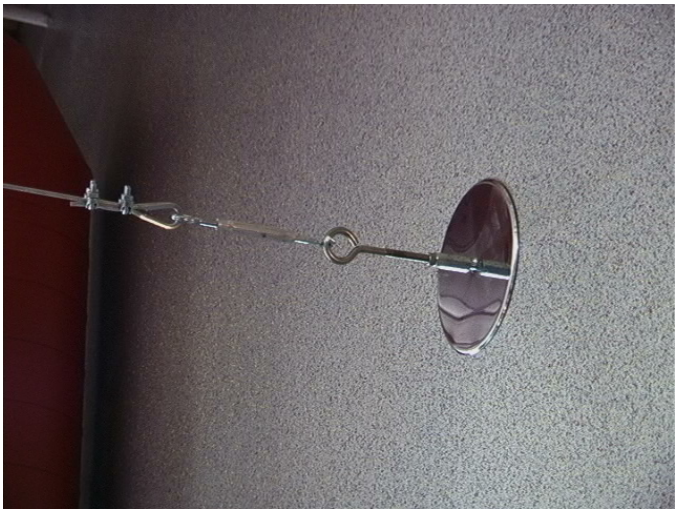
Cable Mounting Terminations

Brackets and Eyebolt Supports are NOT supplied by Fabric Duct Systems

Cable Vertical Support Methods

Cable Termination Mounting for concrete or concrete block walls.
NOT PROVIDED BY FABRIC DUCT SYSTEMS





Q-Sox woven cloth ducts should be installed only after all construction activity including sanding, painting, cleaning, touch-up and debris removal is complete.

Q-Sox should NOT be installed until the Air Supply Units and connecting sheet metal have been thoroughly cleaned and the filtration elements installed.

Failure to perform these correct installation procedures may void product warranty.

Fabric Duct Systems, Inc.

Washing and Maintenance Instructions
For Q-Sox Coated Polyester Ducts with Orifices or Linear Vents

In order to ensure long term and optimum distribution of air, it is necessary to keep the Q-Sox® fabric ducts free from dirt and dust. Effective maintenance will ensure that the ducts supply the required quantity of air and also an optimum service life.

Cleaning the Outside Duct Surface

Over time, dust will accumulate on the exterior surface of the coated polyester fabric. If the room ambient air has not experienced greasy contaminants, this brown/grey dust can be easily removed by vacuuming with the aid of a medium stiff bristle (non-metallic) brush. The air supply system must be "OFF" and both sides of the drooping duct can be easily vacuumed while the duct is suspended.

Washing

Should vacuuming and brushing not be effective to remove exterior dirt, the ducts must be unzipped in sections and removed from the rail or cable suspension system.

There are two methods depending on convenience or the equipment available:

- Spray clean with a hose & nozzle using a bristle brush and mild detergent, or
- Using a commercial size washing machine.

Before spraying or laundering, first turn each duct section INSIDE OUT. Spray the linear mesh vents to insure debris is removed and not clogging the mesh. This is not necessary with ducts having punched orifices larger than 1/2 inch diameter,

Then turn the duct right side out and proceed:

- Pre-rinse:104° F for 10 minutes
- Wash: 104° F for 20 minutes; Use Mild detergent, no bleach
- Rinse thoroughly after washing.
- Do NOT add any softener, as this will influence the surface characteristics of the Q-Sox duct.
- Wash, spin-dry, OR drip dry and immediately install the Q-sox fabric ducts.
- Otherwise, the Q-Sox fabric ducts may be tumbled dry with a MAXIMUM hot air temperature of 110° F.
- OBSERVE TO REINSTALL THE DUCTS IN THE CORRECT SEQUENTIAL ORDER.

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Fabric Duct Systems, Inc.

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 ½" 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 I0 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 sight, 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.

I 0. 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.