



simpleSOX™

Adjustable Fabric Air Dispersion System

HVAC Contractor Installs SimpleSox Fabric Ductwork to Heat Its Own Sheet Metal Shop

Batavia, Ill.--State Automatic Heating & Cooling can fabricate anything in its Batavia, Ill., sheet metal shop, but when it came time for heating the shop to improve employee air comfort and productivity, the owners chose fabric air distribution over a spiral metal duct system.

"It's fabric over metal...literally, because the fabric duct hangs above the sheet metal production area," quipped Jim Gates, president of the 81-year-old family-run business. "We didn't have the time and didn't want the expense of running metal duct, so when we heard about SimpleSox fabric duct, we jumped at the opportunity to finally heat the sheet metal area properly."

Previously, the area was heated from an un-ducted, 92-percent efficient, 2,000-cfm furnace that replaced a space unit heater in a 20-foot-high balcony space. Air distribution was drafty, uneven and didn't adequately reach all portions of the 4,000-square-foot fabrication area, which is part of the company's 5,800 square feet of fabrication, warehousing and offices. The project remained unfinished for three years because they didn't want the expense and disruption of a journeyman union sheet metal worker and an assistant pulled off of other jobs in progress. The time constraint grew even worse amidst a perpetual backlog of business in the third and fourth quarters of 2010 from customers hustling to get their \$1,500 American Recovery and Reinvestment Act tax credits before the year-end deadline.

Gates estimated running 54 feet of spiral metal duct would have required eight hours of labor for two men plus the costs of transporting the company's 25-foot, hand-cranked lift from an in-progress project. Chicago-area labor rates for two union workers average approximately \$200/hr. (as a billable rate) and would cost approximately \$1,600. Installing a 54-foot-run of SimpleSox however, took only one union assistant three hours at a billable rate of \$100/hr. or a total of \$300. The one worker used only a ladder to install the cable suspension system and then string the SimpleSox down line from the furnace. The suspension system consisting of cable, eye-hooks and beam clamp hangers required one hour to install. Opening the boxes, laying out the system, positioning the components and zipping them together

took 1-1/4 hours. The actual act of installing the fabric duct required 15 and 30 minutes to string it along the cable line and hook it to the furnace plenum, respectively. Gates estimated the installation savings at more than \$1,300. Equally important, the worker was sent back to a billable project for the majority of the day.

The fabric duct was also less expensive in material costs than metal. The cost for 10-five-foot-long lengths of spiral duct, five couplings, eight registers, eight boots, one adaptor, one end cap and miscellaneous hanging materials was approximately \$200 more than the SimpleSox cost.

The SimpleSox arrived in boxes at a cost of \$8 for shipping from Air Products Equipment, Elk Grove Village, Ill., which is the first SimpleSox stocking distributor for Northeastern Illinois. It consisted of three 15-foot and one 1.5-foot lengths; four Adjustable Air Outlets (AAO), which is SimpleSox's patented and field-adjustable air registers; and one inlet collar and endcap. The AAO's come in either 8 and 4 o'clock or 10 and 2 o'clock orifice positioning. Since State Automatic's four AAO's distribute air from both sides, a great time savings was achieved versus installing eight registers that only distribute from one side of a metal system. The AAO's are factory-set with medium airflow, but are also field adjustable to a multitude of cfm settings by twisting the opposing AAO layers to regulate the orifices.

“...we could have used SimpleSox to increase our profit margin...”

SimpleSox was recently introduced by DuctSox, Dubuque, Iowa, a 25 year-old manufacturer of fabric duct/diffuser systems that until now were custom-made and specified by mechanical engineers for only large plan/spec projects with open architectural ceilings. Unlike the plan/spec product line, SimpleSox competes directly with spiral metal duct because it's modular, easy-to-design, in-stock and shipped overnight to a project site. Although it also has elbow components, SimpleSox is designed mainly for smaller projects under \$3,000 that have straight runs or just a few 90-degree turns.

“We could have used this concept last summer for a yoga shop in a retail strip center build-out,” said Gates. “We won the \$5,000 contract against other bidders, but we

could have used SimpleSox to increase our profit margin, save the customer money and completely blow away the competition, which all specified metal duct like we did. The client was in a hurry too, so we could have installed the air distribution system in a half day versus the four days required for metal and accessories.”

State Automatic's business consists mainly of new luxury homes with multiple HVAC system installations and operates six service trucks in Chicago's western suburbs, but also bids a handful of light commercial projects where SimpleSox will give them a competitive edge, according to Gates. They have already used their own system as a demo for several prospective clients.

The quest for fabric is ironic since the firm has more than \$25,000 invested in a 10 x 4-foot layout table with power notching and shearing capabilities; an 8-foot snap lock fabricator; and a variety of brakes and other sheet metal equipment. “Fabric will never completely replace metal duct on all types of projects, but for the right application, we now see SimpleSox as a hedge to increase profit margins and help win bids,” added Gates.



A comparison of the amount of SimpleSox vs. the amount of metal it would have taken to complete the State Automatic project. Think of the cost savings on shipping, materials, and labor!



The modular, stockable SimpleSox components for the State Auto project, including installation equipment.

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