



An enterprise of United McGill Corporation —  
Founded in 1951

# SILVERGUARD™ Duct and Fittings

ANTIMICROBIAL-COATED HVAC  
DUCTWORK

a McGill AirFlow™ product



## It's a War

Your customers realize that toxic bacteria can contaminate their HVAC and ventilation systems, threatening the health and safety of everyone in the building. However, potential contamination from destructive microbes is not limited to terrorist attacks, it is a day-to-day concern.

Outdoor pollution levels have improved over the past 20 years, but many schools, offices, and homes have become much tighter buildings with minimal fresh air flow. These buildings retain pollutants at greater levels. If maintenance of the HVAC system is haphazard and moisture is present, bacteria, mold, and mildew can thrive.

Most of the 300,000 known types of mold are harmless, but scientists are concerned about the potential dangers of exposure to molds that can produce mycotoxins, natural compounds that can cause serious respiratory problems.

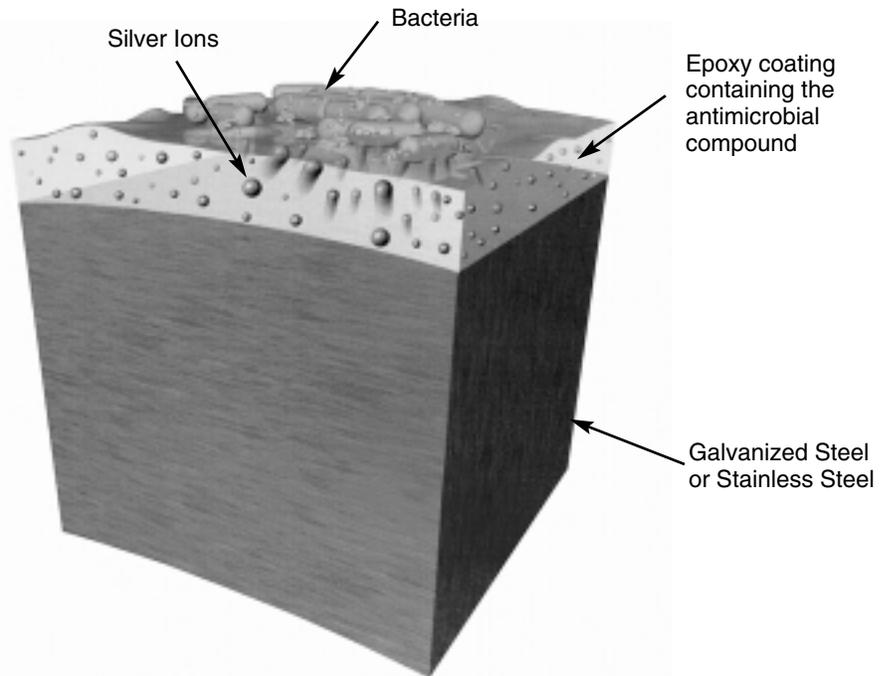
In response to the rise in asthma and allergies among schoolchildren today, the U.S. EPA has issued new air quality standards to provide additional protection for children and asthmatics. The governor of California has also signed a bill creating the Toxic Mold Protection Act, which sets the toughest toxic mold standards in the nation.

With a focus on HVAC systems, members of ASHRAE are studying retrofit programs to improve health and safety in existing buildings, and design features that could be incorporated into new buildings to improve health and safety.

## You Have a Revolutionary New Weapon

McGill AirFlow Corporation's SilverGuard™ ductwork is the latest weapon in the quest for indoor air quality (IAQ).

Cross section of SILVERGUARD Ductwork



## Your Second Line of Defense

You know that the first line of defense in the war on destructive microbes is a clean and well-maintained HVAC system with good air distribution.

SilverGuard antimicrobial ductwork from McGill AirFlow is a second line of defense in the fight against the growth of bacteria, mold, mildew, and fungus in your HVAC duct systems.

SilverGuard ductwork is the solution for applications where indoor air quality is an issue, such as food preparation facilities, hospitals, and schools. It is for both consumer and industrial installations — anywhere bacteria, mold, and mildew grow.

## The Natural Protection of Silver

Although several organic post-coating systems on today's market offer antimicrobial protection, only SilverGuard antimicrobial pre-coated steel ductwork from McGill AirFlow offers the natural protection of silver. SilverGuard is the first such product available in the U.S.

## Safe and Effective

To fabricate SilverGuard ductwork, McGill AirFlow, purchases coil steel pre-coated with an epoxy that includes the antimicrobial compound. The compound is a patented zeolite (inorganic ceramic) matrix that encapsulates millions of silver ions. This technology is safe and has been proven to be successful in controlling the spread and growth of many types of bacteria, mold, mildew, and fungus.

## Tested and Registered

The antimicrobial compound is EPA registered (No. 71277-1-72854). The epoxy coating was tested in accordance with UL 723 and found to have NFPA 90A/90B FS/SD ratings of less than 25/50.

## Here's How SilverGuard Works

The small amount of moisture present on a table top at ambient conditions is all the moisture needed for microbes to grow — and to cause the antimicrobial compound to begin its work. The zeolite matrix acts as

an ion pump, exchanging silver ions with other ions present in moisture. The silver ions penetrate the microbe membrane and prevent RNA/DNA splitting, thereby preventing growth. The ion exchange continues until it reaches a state of equilibrium and does not release additional silver ions until there is a change in the amount of moisture present.

### Long-lasting, Durable Protection

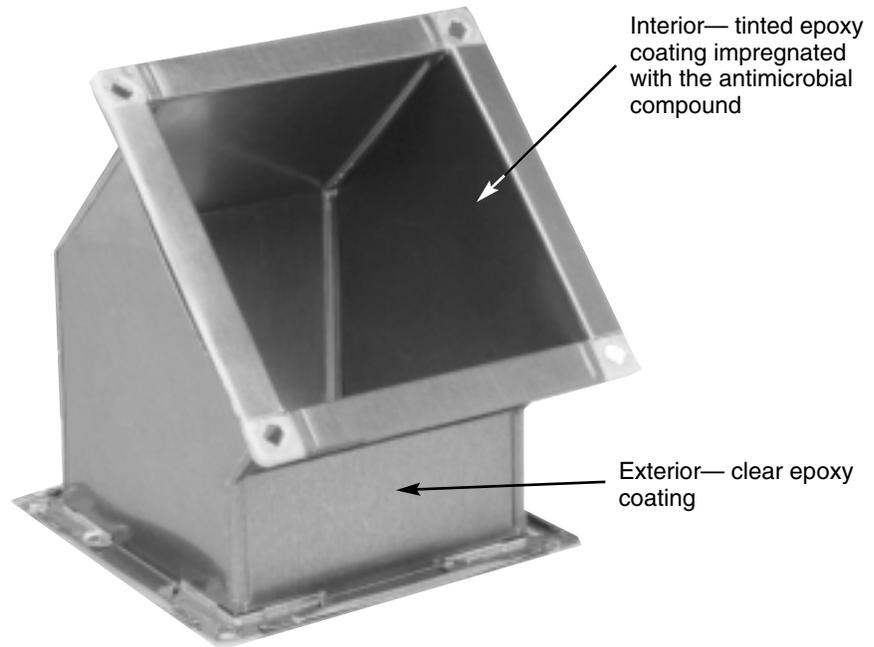
Both the interior and exterior of the steel ductwork are coated by an epoxy film coating bonded to the metal surface by heat. This clear epoxy coating applied to the outer surface offers additional corrosion protection and a more cleanable and paintable surface. Although the antimicrobial compound is incorporated into the coating only on the interior surface of the ductwork, the antimicrobial coating can be specified on other surfaces. (A translucent blue color pigment is added to the epoxy coating to indicate what surface incorporates the antimicrobial compound.)

The controlled release of silver ions by the antimicrobial coating offers long-lasting, durable protection. In fact, for most types of microorganisms, the antimicrobial-treated surfaces will be virtually free of microbial growth in three to four hours — and the antimicrobial benefit lasts as long as the coating remains on the steel.

### Easy to Clean and Maintain

Cleaning and maintaining the surface of an antimicrobial-coated product is easy — just apply a mild detergent with a soft sponge or cloth, rinse, then let air dry. There's no need for harsh abrasives. In fact, they should be avoided to prevent coating damage. But a small scratch on the coating won't affect the product's efficacy. The silver ions will still diffuse and migrate to the bacteria or microbes within the scratch as the active silver bridges the gap. (The active silver ions can bridge up to a 1/4-inch gap.) Although numerous or wide scratch patterns will reduce the efficacy of the product, repairs and touch-ups are

#### SILVERGUARD Ductwork



easily made using the SilverGuard ductwork epoxy paint.

### Welded Joints? — No Problem!

Coatings applied to both galvanized and stainless steels have been formulated to allow the metal to be pressed, drawn, bent, rollformed and otherwise fabricated into parts, without the loss of the coating or significant reduction in the efficacy of the product. Both spot-welded and fully welded joints are possible without the need to remove the epoxy coating. Small scratches or weld burns through the epoxy coating will not adversely impact product efficacy, since the silver ions contained within the ceramic matrix can still diffuse and migrate to the microbes within the scratch.

### Product Availability

SilverGuard is available in all of McGill AirFlow's duct and fitting types and constructions, including round, flat oval, and rectangular, single-wall, single-wall lined, and double-wall lined duct and fittings. Standard

materials are G-60 galvanized steel and S304 stainless steel. All duct and fittings will have metal thicknesses and reinforcements in conformance with the 1995 SMACNA HVAC Duct Construction Standards, as prescribed in McGill AirFlow's individual dimension booklets for specific duct types.

### Want to Know More?

To learn more about McGill AirFlow Corporation's SilverGuard ductwork, with its antimicrobial coating, please contact the McGill AirFlow location in your area.

To request specifications or an engineering bulletin on SilverGuard ductwork, call (614) 830-2300, fax (614) 836-9843, or e-mail us at

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