

By Timothy Borgne

# Consider **Non-Destructive Air Duct Restoration** for Rust and Mold Problems

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A large number of homes have underground duct work, and many homeowners are not aware of the technology that is available to restore it. Most homes with underground duct work have one or more of the following problems: rust, mold, dirt, water or insects.

Mold and rust not only negatively impact air quality within a home, but continued rusting deteriorates the air ducts. This eventually leads to the collapse of the entire duct system. Replacing a home's HVAC equipment can cost the owner thousands of dollars. A multi-level house will have to be remodeled inside to accommodate the new duct work—and this costs the homeowner big bucks.

### **Traditional Repair**

Traditionally, air duct repair for underground ducts has involved converting the HVAC ducts to an overhead system, which abandons the ducts in the ground or involves breaking up the concrete slab to replace the ducts. These repairs are very costly and time consuming. Often, homeowners are required to leave their homes while the renovations are being completed, which adds to the expense of the process. Converting to an overhead HVAC system also tends to reduce comfort levels and energy efficiency within the home. Often when homeowners convert to overhead HVAC systems, they run the risk of purchasing fancy new equipment that might be less efficient and less comfortable than their original system. New overhead systems may also dramatically reduce the amount of living or storage space in the house and/or attic.

### **Reason to Keep Ducts in Ground**

Floor ducts capitalize on the natural physics of hot air rising from the floor to the ceiling, where the return ducts are located. When using the heat, a house that has been converted to overhead ducts ends

up with the warm air at the ceiling and cold air at floor level.

In a home with underground ducts, the conditioned air does not blow directly on the inhabitants of the home, since the cool air is drawn upward by the return air in the ceiling. When air is drawn upward, it often produces a comfortable and efficient environment more effectively than when cold air is blown down on the homeowner.

When air ducts are located in the ground, there is less temperature differential between the ground and conditioned air. When ducts are in the attic, there is a huge difference that may result in the system functioning inefficiently. When the new overhead system is not as efficient as the replaced underground duct work, the homeowner has essentially paid a lot of money to waste a lot of money. Keeping the ducts in the ground is more comfortable, and saves money—so your customers will love you.

### **New System of Restoring Ducts**

There is a patented (U.S. patent #7,112,350b1) duct restoration system, which is non-destructive and can be done without the homeowner having to stay somewhere else during the process. The average home can be restored in three to six hours by a two-man crew.

The process begins with a video inspection of the entire duct system, which is done using a full color camera. After reviewing the video, a strategy is developed to outline the condition of the system and a proposal bid indicating the restoration cost is provided to the homeowner.

The next step is to clean the ducts. The aggressiveness you use when cleaning depends on the condition of the ducts. In other words, if the system is about to collapse,

approach cleaning carefully. The fourth step is to use the patented aspect of the process. This involves the use of special equipment with full color video to stream through the entire system a liquid liner that will harden into a rubberized duct. This is not just a coating. Coatings are great for overhead duct work but not underground systems. This system is self-supportive, so when the metal continues to deteriorate, the home will be left with a rubber duct system. A second application of the product offers the ability to verify that all the holes and breaches have been filled and restored. Prior to leaving the house, the HVAC system is returned to normal working order.

### **Other Uses**

This procedure was originally invented to restore metal duct systems. The original metal systems were galvanized to prevent corrosion. The galvanizing is an electroplating process that uses zinc, and an additional benefit was that mold will not grow on zinc. Over time, even in dry climates, the zinc is depleted, corrosion starts, and mold may begin to grow as a result. Other methods of duct work have been used over the years to combat the rust problem, such as concrete, transite and PVC. These methods were often successful in the prevention of corrosion, but mold was still able to grow readily. It has been found that the lining is a legitimate way to eliminate the mold and seals dirt out and can encapsulate organic matter, mold spores and more. The next step is to get approval for asbestos encapsulation. ●

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