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## **HVAC System Protection during Construction**

Most builders do a fair job of protecting floor-mounted HVAC registers from debris and dust, but few protect the returns found on walls and ceilings.

We believe that it is very important that the returns also be protected from drywall dust, construction debris and other contaminants as these will be forcibly sucked into the system when it is started, while debris in registers will be blown out.

Best practice is to seal all air return openings with insulation or foam rubber prior to commencement of drywall work. This protection can be left in place until the HVAC system is turned on after the completion of all drywall and painting work, and the filters checked, cleaned and/or replaced.

When we do final walkthroughs, we check filters and open the furnace fan compartments. If we see enough dust after the filter to write our name in, we call for a complete cleaning by a professional affiliated with the National Air Duct Cleaning Association (NADCA). A layer as thin as 1/100th of an inch on surfaces, fins, blowers, heat

exchangers and other components is more than enough to affect your fuel bill and reduce the life of the unit.

Note that most new furnace components have a thin film of oil on them from the factory. This film normally burns off during initial homeowner usage. However, if the furnace is subject to an unusual amount of dust during construction, the dust will stick to the film and form an insulating layer that can char. When this material chars, it releases acids and becomes corrosive, abrasive and more insulating.

The construction environment can contain abrasives, corrosives, solvents and more that have no place in an HVAC system. HVAC systems should be protected from these hazards.

The manufacturers agree. Excerpts from their installation guides are on the back of this page, and include phrases such as “premature failure” and “damage the unit” when they are not properly protected during construction.



*If there's enough dust to write in, the furnace needs to be professionally cleaned.*

**⚠ CAUTION**

If these furnaces are used during construction when adhesives, sealers, and/or new carpets are being installed, make sure all combustion and circulating air requirements are followed. If operation of furnace is required during construction, use clean outside air for combustion and ventilation. Compounds of chlorine and fluorine, when burned with combustion air, form acids which will cause corrosion of heat exchangers. Some of these compounds are found in paneling, dry wall adhesives, paints, thinners, masonry cleaning materials, and many other solvents commonly used in construction process.

**CARRIER**

**⚠ WARNING**

**THIS UNIT MUST NOT BE USED AS A "CONSTRUCTION HEATER" DURING THE FINISHING PHASES OF CONSTRUCTION ON A NEW STRUCTURE. THIS TYPE OF USE MAY RESULT IN PREMATURE FAILURE OF THE UNIT DUE TO EXTREMELY LOW RETURN AIR TEMPERATURES AND EXPOSURE TO CORROSIVE OR VERY DIRTY ATMOSPHERES.**

**GOODMAN**

Lennox does not recommend the use of G50UH units as a construction heater during any phase of construction. Very low return air temperatures, harmful vapors and operation of the unit with clogged or misplaced filters will damage the unit.

**LENNOX**

The following requirements to be met to use a York furnace as a construction heater in a residential home are:

1. Clean, outside combustion air is provided to the furnace to minimize the impact of corrosive adhesives, sealants, and other construction materials. Drywall dust is a major concern during construction, which can be pulled into the combustion air path, leading to plugged gas valves, burners, and inducer assemblies.

**YORK**

These are selected excerpts that show that manufacturers believe drywall dust, paint fumes and other such environmental contaminants are harmful to a furnace and that they may be damaged. When in doubt, ask that your furnace be professionally cleaned (not just wiped out) by a NADCA-affiliated company prior to occupancy for efficiency and longest life.