

WHY CLEAN COILS SAVE ENERGY AND REDUCE HVAC REPAIR COSTS

Coils are sized by the design engineer to match the BTU cooling requirement of the building. Both condenser coils and evaporator coils are engineered to provide optimum heat transfer as required by the area being cooled. Optimum heat transfer efficiency is predicated on clean coil surfaces. Contaminants consisting of dust, dirt, pollen, bacteria, mold and others that accumulate on the coil surfaces impact the coil's ability to transfer heat.

The cost of operating dirty air conditioning equipment is greater than you might suspect. Not only are energy costs increased, but life expectancy of the equipment is also shortened.

Energy Costs

The insulating effect of dirt build up on coils causes higher discharge pressure which increases amp draw and run time of the compressor while reducing cooling capacity. Air conditioning equipment operating with dirty coils may use as much as 37% more energy than equipment with clean coils.

Another result of increased compressor run time is the heat load added to the system which reduces cooling capacity by up to 30%.

Higher energy costs coupled with reduced cooling capacity are a stiff price to pay for dirty coils.

Maintenance and Repair Costs

Increased costs do not stop with higher energy consumption. Maintenance and repair costs are also affected by dirty coils. Higher operating pressures and temperatures caused by dirty coils may cause the compressor's lubricant to break down. In addition, acid formation can occur. Both lubricant breakdown and acid formation seriously compromise the compressor and ultimately lead to failure.

Source: Air Conditioning, Heating & Refrigeration News, July 2001