Spring Will Soon Be Sprung

by Stephen Ruback, Professional Home Inspector [TREC License #6030]

Why is it that cars usually break down when you drive them, plumbing only goes bad when you use it and Air Conditioners are most likely to die when you need them the most? Actually it only seems that way. Most breakdowns have been working toward a climax for some time and many can be prevented with a little maintenance and a periodic inspection.

Worn belts, crummy tires and never changing your car's oil virtually guarantee problems ahead that could have easily been prevented. When was the last time you checked your cooling coil, changed the filter, checked the condensate drain, your duct connections or measured the operational effectiveness of your AC unit?

How diligent are your clients at maintaining their hidden systems? How likely are these closet skeletons to emerge as ugly surprises during or after the sale? Dirty return air ducts with a new pristine filter are just as suspicious as long suffering filters encrusted with enough debris to triple their weight and distort them into a smooth, rounded pot belly shape. Most cooling coils are in a sealed box these days. Of those visible, I've seen the whole range from nice'n clean to looking like a piece of upholstery from an impacted lint collection.

Check your coils

You get three main "benefits" from dirty cooling coils. The immediate impact is the opportunity to send more of your hard earned money to your favorite power company in the form of higher monthly bills. Blocking the air flow puts extra strain on the blower and air handling system, which can seriously shorten its life.

Then there is the "M" word, referring to a black or brown unknown substance, often found in dark, damp places. The stuff that collects on your cooling coil is bound to contain some amount of cellulose. Add a little moisture that comes from normal AC operation in that dark, undisturbed enclosure, and you have just created an ideal fungus farm.

System effectiveness

Even if you have clean coils, how effectively is your system operating? I have seen countless homes where the owners thought everything was fine because the air was cool inside. They didn't know they were sending the power company an extra bonus each month and putting extra wear on their AC system at the same time.

A simple test can tell you how well the system is working. On a warm day, turn on the AC and let it run for at least 15 minutes. Then, measure the temperature of the air coming out of each duct. Compare the temperature from the coldest duct to that of the return air. If the difference is less than 16 F or more than 21 F you have a problem that is costing you money, and will lead to failure of the system.

New homeowners may think they are exempt. How long was your AC unit operated during the construction phase without any kind of filter? How much sawdust and wallboard debris found a happy home in your cooling coil? Possibly more than you think.

Condensate condition

How is your condensate system? If you have an attic AC unit we might rephrase the question. How do you like your ceiling – on the floor? The air that passes over the cooling coil is warm and full of moisture. When it is cooled, a lot of the moisture drops out, onto the coil. This water runs down into the drip pan and can amount to several gallons a day.

When everything is operating properly, the water is directed to a drain and is gone from you house. Since there is no real pressure behind the water, it doesn't take much to block that drain – a little corrosion, some wayward lint, maybe a bit of some unidentified black substance growing in a wet environment.... Then you experience overflow into the drip pan.

If the drip pan and its drain are working properly, you will still be damage free – for a while. You should see water coming out of the overflow tube directed to one of the eaves in a visible spot. This means you have a problem. How much insulation and other debris do you have stored in your backup drip pan? When was the last time you checked it? When your backup line stops, you may have a few hours to save your ceiling. Of course if your backup system is not working, you'll miss out on the early warning signs.

A lot of older homes have their condensate line draining directly into a sewer vent in the attic. This arrangement can result in several entertaining possibilities. If there is no trap between the AC and the sewer vent, you will be sucking some amount of sewer gas into the house air every time the AC or heater comes on. If the vent is open to the attic, you will also have collection of sewer gas running around in your attic. Any amount of sewer gas is not especially healthy to breathe, and it is flammable too. Where did you say your heater was located?

Ducts are not immune

Your ducts direct the household air through the AC system and back into the house. They are too small to crawl into and sealed on both ends with vent covers, so we give them little thought. In a well functioning system, they are the last part to give trouble. If you have stains on or around the vents you have a problem. If you have vents that don't work, you have a problem.

What if an attic duct or connection is open to the attic? This is another way you can send extra money to your power company – partially heat and air condition your attic. Whether they are cooling part of the attic or sucking attic air into the cooling system, leaking ducts are too common and costly to ignore.

Longevity

How long does a typical AC system last? That always depends on luck, system design, quality of installation and user care. Generally speaking, typical life expectancies run around 14 years. That means when you consider buying a house with an AC system older than 10 years, that is still working, it would be wise to begin

budgeting for a new system immediately. Systems beyond 14 years old should be considered ready for replacement, with any extra time of service as a nice gift. Who knows? Maybe you'll get lucky, and receive 20 years service out of your system.

Insulation anyone?

A survey of most older attics would cause the observer to wonder if the owners had ever heard of insulation or its benefits. Which would you prefer? a) Pay an ever increasing bonus to the power company each month. or b) Pay a few hundred dollars for extra insulation once, and keep the extra bonus payment for your own purposes for the rest of the time you live in the home?

The bottom line

Mechanical and electrical system problems never fix themselves, they just lurk in the background for awhile before they jump out an grab you. Have your AC system checked each year by a qualified professional before you need it. Then enjoy a happier summer.

By the way, new homes always need an inspection too. Be sure of what you are buying with a thorough home inspection, *before* you close the deal. You will save money and trouble in the long run.

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