



Home Inspection Services Newsletter

October, 2008

Educational Section: **ARC Fault Circuit Breakers**

An **Arc Fault circuit Interrupter** is an electrical panel mounted breaker that will trip not only where current flow exceeds that of the circuit breakers rating (15, 20 Amp, etc) but will trip if the device senses unusual electrical arcing in the circuit. It is anticipated that these devices will dramatically reduce residential fires and associated deaths. AFCIs were developed in the late 1990s and adopted by the NEC (National electrical code) for **bedroom circuits** in new construction after January 1, 2002. Most municipalities adopted this code shortly thereafter.

In 2008, the NEC extended the use ARC Fault breakers to all residential rooms except kitchens, baths, laundries, garages and unfinished basements (essentially all living areas) for new residential construction.

Arc fault circuit Interrupters are not GFCI breakers and perform a much different function. Most of us are familiar with GFCIs and their shock protective characteristics around water (bathrooms, kitchen, exterior, and garage). GFCI circuits include a GFCI receptacle with the tell tale push button for testing.

GFCI = SHOCK protection.

AFCI = ARCING (fire protection).

How ARC fault breakers work: AFCIs have built in circuitry that senses abnormal arcing in a circuit. Normal arcing such as turning on a light switch or plugging in an appliance won't trip an AFCI breaker. Arcing caused by deteriorated wires & cords, pinched electrical cords, punctured wiring, deteriorated insulation, and cords caught in doors/furniture will be detected and will open the circuit breaker. Arcing produces high temperatures that can ignite wood, insulation, etc. thus are a fire prevention device.

Can AFCI's be added to existing homes? Yes. A qualified contractor can change an existing circuit breaker to an AFCI breaker. AFCIs cost \$50 to \$75 each (plus installation) versus \$10 for most standard circuit breakers. This safety upgrade is recommended for all homes but especially for older homes where wire insulation may have become brittle due to aging and heat cycling.

Do home inspectors test AFCIs? Some do and some don't. Current home inspection standards do not require testing. H&A Services test AFCIs in vacant

homes but defer testing where the owner has electronic devices in use (clocks, computers, etc.).

Maintenance Item for October: **Water Heater**

Water Leakage is the failure mode of most water heaters. Resultant damage can be extensive (and expensive). Unfortunately, most water heaters do not have an overflow pan under them so water leaks into the garage, the home, etc. **How to inspect** your heater for leakage: **Look at the plumbing connections** at the top of the tank, if rust is present; there is leakage at the connection. Either repair/replace the junction or monitor it.

Examine the casing; if you find rust, the tank has a slow leak. Pay particular attention to the lower seams, areas around the burner access panel, and areas behind service covers on electric heaters (recommend removing these to look). Replace rusted or leaky water heaters and put a pan under the new unit (ideally draining to the exterior of the home).

Question of the Month: **Why inspect REO properties?**

Many buyers are foregoing a home inspection on bank owned, foreclosed, or short sale properties. Their reasoning is that the bank will not fix items. That may or may not be true. We've been involved with several instances where the bank has replaced roofing, AC, etc. Even if the bank won't fix items or renegotiate the price, it is prudent to understand the properties condition. Perhaps you'd cancel the contract if you knew the roof needed to be replaced, the electrical service was in disrepair, etc. Worst case, you'll end up with a list of items to fix from which you can establish acquisition cost and fix-up budgets.

Safety Tip of the Month: **Smoke and CO detectors**

Working smoke detectors save lives. Current standards are one per bedroom and one in each hallway. Add detectors to make your home safer. 10% of the detectors that we test don't respond to their test buttons. Most just need a 9 volt battery. If your residence has gas appliances (furnaces, water heaters, etc.), carbon monoxide monitors are recommended.

Inspection class for realtors: Arizona Academy of Real Estate (Bell and 99th Ave) offers a **3 credit hour course** "lowering risk through inspection". This course is taught by Mark Andrews (yours truly). I promise that it will be educational and fun! Contact the Academy for dates and details. Ph# 623 505 5380

Let our experience work for you!



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