What is the cost of peace-of-mind

Decreasing home electrical fires with AFCIs

Electrical fires are non-discriminatory and can strike any home and at any time.

Smoke alarms, 911, fire extinguishers, emergency escape ladders are good "after the fact" tools when reacting to a house fire. But when it comes to electrical fires, it's better to be proactive. Proven technology known as Arc-fault circuit interrupters (AFCIs) are currently being used to prevent fires from starting in the first place.

AFCIs are the next generation in circuit breaker technology that differs from conventional circuit breakers. Unlike the conventional circuit breaker that detects only overloads and short circuits, an AFCI utilizes advanced electronic technology to "sense" different hazardous conditions.

Example of AFCI circuits in panel

What's more, AFCIs provide increased protection by detecting a condition known as an *arc fault*. But don't confuse AFCI devices with the personal protection ground fault circuit interrupters (GFCI) that have been around for over 30 years, which do not have this advanced capability to sense arcs.

Arc faults occur from damaged wiring, overheated or stressed electrical cords, worn electrical insulation, wires and/or cords in contact with vibrating metal, damaged electrical appliances and more. This potentially dangerous condition creates high-intensity heat – which may exceed 10,000° F – resulting in burning that can easily ignite surrounding material such as wood framing, insulation, carpeting or any other combustible material in the vicinity of the arcing wires.

Arcs also happen frequently in appliance electrical cords where insulation has become brittle or is cracked. Hidden wires behind walls nicked by nails or pinched by fasteners can also be sources of sinister arcing. Loose connections where wires are attached to switches and outlets frequently produce arc hot spots.

Arcs may exceed 10,000° F

AFCIs are designed to recognize when these arc faults occur and automatically shut the circuit down before it becomes a fire hazard.

The first requirement for AFCIs was in 2002, which required that bedrooms have AFCIs. Effective January 2008, electric codes for new homes expanded the AGCI requirement to being required in occupied areas such as living rooms, dining rooms and other areas where the technology may help improve the safety of the home.

Many experts in the electrical and home building community believe this expanded requirement will have a significant, positive impact on homeowner safety.

A small price for a safer home

While there is an additional cost to upgrading homes from standard circuit breakers to newer AFCI technology, this cost increase is small compared to the cost of "non-safety" related upgrades that are typical in a new home construction or remodeling projects and is relatively insignificant when compared to the risk of death and injury caused by electrical fires.

(Continued on page 2)

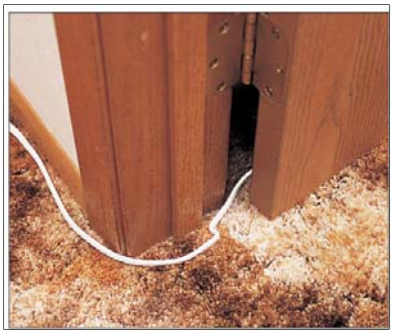
(Continued from page 1)

Estimated cost of an AFCI is in the $30 to $35 range where a standard circuit costs between $2 and $4. The average number of circuits requiring AFCIs is 12; this equates to an approximate cost increase of $372 - $396 in new construction, not including labor, or about one-fifth of one percent of the national average cost of a typical 2,500 sq. ft. home. For existing homes, an experienced electrician can install a new arc fault breaker in a matter of minutes. It actually takes longer to remove and replace the cover to the circuit breaker panel than it does to switch out the breaker.

Applying technology to improve the electrical safety of the home is a wise investment for the homeowner beyond other home-protection "after-the-fact" safety devices and is a very small price to pay for peace of mind.

Damaged electrical extension cord

Metal staple cutting wire



Crimped extension cord

Drilling hidden wires

Our homeowner tips are only general guidelines. Since each situation is different, please consult with a specialist regarding your questions or specific issue. More home safety and maintenance information is available online at www.national-inspection.com.

ESTABLISHED 1976

National Inspection Services

Dave Tokarz, president
Direct: (970) 484-1313
Email: nationalinspect@aol.com

www.nationalinspection.net

When it comes to your reputation, refer National Inspection Services.

Certified ASHI inspector

THE ASHI EXPERIENCE.