

## **Arc Fault Current Interrupters (AFCIs)**



Recently, an innovative electrical safety device called AFCI (Arc Fault Current Interrupter), designed to prevent electrical fires caused by arcing in low voltage circuits has been developed in America. After the invention of GFCI (Ground Fault Current interrupter) /RCCB (Residual Current Circuit Breaker) forty years back, AFCIs are considered the first major advance in electrical protection. It is reported that the American government has made it compulsory to install AFCIs in all new American homes by 2002.

Fires in electrical wiring break out at wire/cable joints, end terminations, etc. because of mechanical damage to insulation, overloading, insulation deterioration, etc. result in high temperature build-up resulting in fires. Arcing generates high intensity heat and expels burning particles that can easily ignite combustible materials. Arcing faults are supposed to have the potential of initiating fires.

A few of the typical conditions where arc faults may start include:

- Damaged wires
- Worn electrical insulation
- Loose electrical connections
- Overheated or stressed electrical cords and wires

AFCIs are designed to detect the arcing patterns of serial and parallel or arcs to earth and to trip the circuit. It is envisaged that this electrical safety device with its unique 'arc detection circuitry' would considerably control electrical fire accidents.

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## **Glowing Connection Detectors (GCDs)**

After the advent of AFCIs, (Arc Fault Current interrupters), the latest in the field of electrical fire safety is the '**Glowing Connection Detectors**' or **GCDs**.

A glowing connection is caused by loose binding screws in receptacles or by loose fitting plugs within an outlet which will not be detected by either RCCBs or AFCIs. Wires inside male plugs are soldered to the prongs. From too strenuous pulling on the plug or just from natural wear and tear, this soldered connection can start to become loose, causing high- resistance inside the plastic of the male plug. This, much like a glowing connection, can become extremely hot. This new 'Firefighter technology' will sense this problem through heat transfer, and not allow current to be drawn to the outlet.

The link given below gives more information on this latest electrical fire safety device.

***<http://www.fire-fighter-products.com/FAQ/faq.html>***

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