

“KEEPING PACE” - #53

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GAS RANGE COOKING FIRE:

In “Keeping Pace” - #30, there is a photograph of the imprint on the bottom of a skillet from the burner element during a cooking carelessness fire on an electric range. Below is the “star” pattern imprint on the bottom of a pot left by the burner on a gas range during a cooking fire which totally destroyed a home in Indiana. The grates on the top of the gas burners have this same “star” shape. Burn patterns such as these do not occur during normal cooking operations.



Cooking carelessness fires are far less frequent on gas ranges than on electric ranges. I believe this is because the gas flame is more noticeable or visible, and also audible.

DO GFCI'S PREVENT FIRES?

A Grounding Fault Circuit Interrupter (GFCI) continuously monitors the current going out through the “hot” conductor and the current coming back in through the “neutral” conductor. When these currents are different by more than 0.005 ampere, the GFCI assumes the difference current is going to ground through a human body, and it opens the circuit (trips) within 0.005 second to prevent an electrocution.

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When an arc occurs in two wire power cords and extension cords, even at short circuit current levels of 150 or 200 amperes, testing has shown that the GFCI does not trip, because it never sees a difference between the current in the “hot” conductor and the current in the “neutral” conductor.

Three wire cords and cables are different. To begin, if the arc first occurs between the “hot” conductor and the “grounding” conductor, the GFCI trips within 1/60th second. This is fast enough to prevent a fire.

But even when the arc first occurs between the “hot” conductor and the “neutral” conductor, the arcing occasionally reaches to the “grounding” conductor quickly enough to prevent a fire.

In summary, for three wire cords and cables, my testing has shown that there is roughly a 63% probability that the GFCI will trip quickly enough to prevent a fire.

Sincerely,



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