Plastic appliances a leading cause of household fires

Extensive damage makes it difficult to determine causation, however, an electrical appliance is a likely culprit.

By Richard van Leeuwen

Have you noticed how the use of plastic in the manufacture of household appliances has become more common? Toasters, electric kettles, refrigerators, fans – even electrical junction boxes now use plastics. I could also mention TVs, ghetto blasters, computers, printers, coffee makers … the list seems endless. I wonder if the manufacturers realize the hazard they've added to the average home by a greater use of plastic.

Not long ago I investigated a fire on the top of a kitchen stove. Someone placed an electric kettle on the stove, a normal place for a kettle, but not an electric model. Old habits die hard. The stove element came on when the self-cleaning feature of the stove was turned off and the resident had left the house. After a few minutes the stove burned the electric kettle. Fortunately, there were no kitchen cabinets above the stove, as the house could have burned down.

I've seen a similar problem with a toaster. A lady inserted two slices of bread into a two-slice toaster sitting on the kitchen counter and temporarily left. On her return she found that not only had the toast burned, but so had the plastic ends of the toaster. The flames had leapt to the cabinets and were in danger of spreading. They were so intense that a plastic electric kettle beside the toaster also burned on one side. After the fire the levers to lower the toast were still in the down position.

The worst example I've seen of the hazards of plastic used in appliances was a refrigerator fire. The cooling fan had stalled, overheated, and eventually ignited the plastic insulation and lining. The owners were absent, and by the time the neighbours alerted the fire department the flames had spread to the rest of the kitchen. Of course, the more damage there is, the more difficult it is to determine the cause of the blaze. I suspect many major fires have an electrical appliance as a cause, however there is not enough evidence left to prove it so with a reasonable certainty.

CSA (Canadian Standards Association) and ULC (Underwriters' Laboratories of Canada), both of whom develop standards and test products, examine the plastics used in the manufacture of appliances. I'm not certain of the test they use, but I do know they test to see if, under certain conditions, the material will sustain combustion. In my view there's a difference between sustaining – or not sustaining – combustion and combustion with assistance. If a safety device fails and a heater in an appliance remains on (as with the above-mentioned toaster), must we accept a nasty fire as the consequence?

Power bars cause problems for two reasons: there are many potential poor connections and the surge suppressors have been known to fail. If they do fail while beside a cardboard box or similar combustible, the plastic enclosure will burn and ignite the cardboard. Of the fires I have investigated, power bars are the leading cause.

Clearly it's time for higher standards regarding the use of plastic in household appliances.

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