

# Ignition from ashes

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Ashes have a low thermal conductivity, consequently it is not rare for an individual to believe that ashes are ‘dead,’ while in reality hot or smoldering embers are still contained therein. Embers as small as 2 mm are capable of igniting dry, fine target fuels<sup>1</sup>. Consequently, it is not possible to ascertain that ashes are ‘dead’ by sifting them or by running one’s hands through them. Many fires occur because persons thought their ashes were ‘dead’ and disposed of them in paper bags, cardboard boxes, or open-top containers. A fire resulted since the ashes were then able to contact some combustible material, or else were wind-blown onto combustible material. Already in 1979, Shelton<sup>2</sup> warned that ashes have to be ‘dead’ significantly more than 2 days for there not to be a potential of hazard. More recently, a study was conducted by the fire department of Fairfax County, Virginia<sup>3</sup> to determine the length of time after disposal of ashes that fires have started. Table 1 shows that fires were found to have occurred up to 3 days after ashes were improperly disposed. This should not imply that fires are impossible after the third day. Another fire department<sup>4</sup> reported examining with an infrared camera a container of ashes four days after the ashes were deposited in the container and still finding high temperatures. A detailed case history has been published<sup>5</sup> where an individual collected and placed ashes in a plastic bucket upon a wood floor and seven hours afterwards, a fire broke out. These findings indicate that prudent disposal of ashes<sup>3</sup> entail use of a tightly-sealed, metal container, and that in no case should ashes be placed where they might come into contact with combustible materials during the first four days.

**Table 1** Statistics from Fairfax County, VA, on fires due to improper disposal of ashes

Interval between disposal of ashes and outbreak of fire	Percent of fires
less than 24 h	62
24 – 48 h	30
48 – 72 h	8

## References

1. McGuire, J. H., Law, M., and Miller, J. E., Domestic Fire Hazard Created by Flying Coals and Sparks (FR Note 252), Fire Research Station, Borehamwood, England (1956).
2. Shelton, J. W., **Wood Heat Safety**, Garden Way, Charlotte VT (1979).
3. “Can Your Ashes,” Fairfax County (Virginia) Fire and Rescue Dept., [n.p.] (2003).
4. Canon, V., Nevada County (California) Fire Dept., private communication (2003).
5. Zündquelle: Stofflichen Funken (Nr. 1.3) [Sources of ignition: Material sparks], *Unabhängige Brandschutz-zeitschrift*, Heft 05/91 (1991).