10-13-2025 - TBT - Fires in Structures Under Construction

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From 2017 to 2021, local fire departments responded to an estimated average of 4,440 fires in structures under construction per year. These fires caused an annual average of five civilian deaths, 59 civilian injuries, and $370 million in direct property damage. Only 1 percent of all the reported structure fires were in structures under construction, but these fires accounted for 3 percent of the direct property damage in structure fires.

- The estimated number of fires in structures under construction has increased since 2014 after declining between 2006 and 2010.
- Three of every four fires (76 percent) in structures under construction involved residential properties.
- Cooking equipment was the leading cause of fires on construction sites, but these fires tended to be minor.
- Fires that were intentionally set caused fewer than one in 10 fires (8 percent) but 45 percent of the direct property damage.
- Fires in structures under construction were highest in January and lowest in October.
- Fires in structures under construction were most common in the afternoon and evening; however, fires that occurred between midnight and 6 a.m. accounted for just over half (51 percent) of the direct property damage.
- The leading factors contributing to the ignition of fires in structures under construction included heat sources that were too close to combustible materials, abandoned or discarded materials or products, and electrical failures or malfunctions.

The most common causes of under construction fires in the most recent five-year period, as well as historically, are electrical distribution and lighting equipment; heating equipment; cooking equipment; a torch, burner, or soldering iron; or an intentional cause. For each of these causes, there are safety protocols that can be utilized to reduce the risk of fire.

The safety protocols can include the following:

- Ensure that the temporary electrical service lighting follows the installation requirements set forth in NFPA 70®, *National Electrical Code*®; electrical equipment is maintained and

regularly inspected; use of extension wiring is kept to a minimum; and machinery and equipment do not overload available circuits.
- Prohibit the use of temporary cooking equipment (such as hot plates or grills) or the use of improvised heating devices for warming food at the construction site.
- Ensure that unauthorized temporary heaters are restricted from the worksite and that the heaters permitted on the worksite are placed at safe distances from combustible and flammable materials; are used in conformity with their listing and manufacturer instructions; and are regularly checked to ensure that they are being safely operated and do not constitute a hazard (such as being overturned).
- Require a permit system for hot work activities and enforce a thirty-minute (or longer) cool-down interval after torches, burners, or soldering irons have been used.
- Reduce the risk of arson by safeguarding construction sites with fencing or other controls; these controls can include lighting or after-hours security personnel, as needed.
- Have an approved fire prevention program (also known as a fire safety plan) for the construction site.
- Ensure there is a fire prevention program manager to administer the fire safety plan to completion.

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