

## Top 8 Causes Of Construction Fires



There are a variety of culprits of onsite construction fires, and many fires are preventable with proper precautions. The following highlights common causes of construction fires and suggestions of how to address them.

### 1. Onsite Cooking

According to NFPA, cooking equipment catching fire is responsible for 27% of construction fires—more than any other cause.

*Workers should not bring their own grills, hot plates, or microwaves to the job!*

### 2. Heaters

Onsite heaters cause the second most number of fires on construction sites (according to NFPA). Small, portable heaters should be site safety director-approved and UL listed.

*Never leave heaters on when not monitored.*

### 3. Hot Work

This work includes soldering, grinding, and welding, where the equipment remains hot after the work has been completed. It's not just the lingering heat that can cause a spark, the equipment itself is combustible if a fire does start.

*Implement an appropriate cooling off period to allow the equipment to fully cool down.*

### 4. Smoking

For example, the fire in Notre Dame may have been caused by a flicked cigarette butt.

*Enforce a strict no smoking policy onsite and designate a safe area offsite for smoking and cigarette disposal.*

### 5. Flammable Material

Many jobsites store chemicals and/or flammable materials used in building.

*Ensure that any potential combustible liquids or flammable materials are stored and disposed of safely and, if possible, limit the amount stored at any one time.*

### 6. Power

There may be temporary electrical service set up for the build as well as numerous cordless tools and equipment that run on lithium ion batteries (which have been known to combust).

*All onsite electrical must be up to code and maintained regularly - and battery charging stations should be located outside the building and stored safely.*

### 7. Arson

Intentional fires can be fairly common on jobsites. Arson happens in the course of theft or simply as an act of vandalism.

*Employ security measures such as fencing, motion detectors, perimeter controls, or if possible, security guards for after-hours monitoring.*

### 8. Incomplete Fire Protection

In a building under construction, sprinklers, fire alarms, fire walls, and other fire protective equipment may not yet be installed.

*Ensure that enough fire extinguishers are located onsite - and know where the closest fire hydrants are.*

## How To Reduce The Risk Of fire

Your jobsite is your home during the day. And just like your house, it's important to protect and safeguard your jobsite from fire. There are straightforward actions to take that can reduce the risk of fire on the job.

### Conduct Daily Inspections

Recently approved updates to the International Fire Code (IFC), which establishes fire safety guidelines for fire departments, indicate that daily fire safety inspections on construction sites work. IFC requires that a 'site safety director' conduct daily inspections of the interior and exterior at project sites. These daily inspections must be documented and recorded.

Among other things, the inspections must inspect the potential sources of fire (listed in the common causes above) such as: all hot work areas, temporary heating equipment, temporary electrical and wiring, and flammable liquids stored onsite. They must also inspect fire access roads and ensure fire extinguishers are working and spaced properly.

Creating a Construction Site Checklist that can be used daily for a routine check is an effective way of ensuring that the inspection is thorough and addresses all the requirements laid out by the IFC.

### Create a Cooking Area

Even though most construction fires are caused by cooking equipment, workers need to eat. Establish a designated cooking area that is onsite but not located near combustible or flammable material. Require that all cooking be conducted in this safe area. Include a check of this area at the end of the day in the checklist.

### Establish a Site Safety Plan & Director

A comprehensive site safety plan for the job should encompass all the guidelines, standards, and protective measures necessary to keep the jobsite safe from fire. The site safety plan should include, among other things: contact information of the safety director, training documentation, emergency notifications, location of fire equipment, onsite smoking and cooking policies, location of onsite storage of flammable liquids, site security provisions, etc.

The Site Safety Director ensures compliance with the site safety plan and is generally responsible for ensuring all fire protection equipment is operational, all procedures are followed, and all affected personnel have necessary fire-related training.

## Why Buildings Under Construction Are So Vulnerable

The most recent and relevant data from the National Fire Protection Association (NFPA) indicate that between 2010 and 2014, there were 3,750 fires in structures under construction, 2,560 fires in structures undergoing major renovation, and 2,130 fires in structures being demolished in the United States. The fires in structures under construction led to \$172 million in direct property damages, claimed five lives, and injured 51 people.

Construction-related fires can be particularly destructive because the structure itself is incomplete. The onsite buildings may have exposed wood framing and wide open spaces that can create a wind tunnel effect that increases the fire's intensity. Once burning, there are often no walls or doors to slow down or stop the spread of fire.

Additionally, there may be many ignition sources and accelerants on the jobsite. Heating elements, torches, soldering irons, welding machines, or grinders can either inadvertently start fires or in the case of a raging fire, act as ignition sources. There are often stacks of lumber, drywall, roofing material, or other building materials situated onsite that accelerate and prolong a burning fire.

In buildings under construction, sprinklers and fire walls are usually installed toward the end of the build, leaving long periods of time where the structure is without fire protection. If sprinklers, fire alarms, or other systems are installed, they most likely aren't up and running. Absence of working fire alarms can also mean a delay in fire department response time allowing the fire to spread and cause more damage.

Finally, buildings under construction are vulnerable to trespassers and vandals. Because they may not have adequate security measures in place people can sneak in and accidentally or intentionally start fires. Arson is also a common cause of jobsite fires.

## Fire Prevention Is Key

Few things can derail a construction project like fire. Whether it's during the construction, demolition, or renovation stage, fire breaking out at a construction site can cause a great deal of damage if not completely destroy it.

The biggest construction fire in recent history occurred in April, 2019 at Notre Dame in Paris. The cathedral had been undergoing renovation at the time of the fire, which was possibly caused by a simple cigarette butt. The 850-year old structure burned at high temperatures for over eight hours due largely to the burning roof which was composed of wood and lead. There were no fatalities, but most of the structure was damaged and repairs are expected to take 10-20 years. While this is an extreme example of a construction fire, any fire at the jobsite can be dangerous for workers and first responders and extremely costly to the bottom line.

Maintaining a safe environment is always the number one priority on a construction site. Implementing commonsense measure regarding fire safety helps ensure your workers and structures are protected from fire.

In the spirit of Fire Prevention Week (October 6-12), which raises awareness about fire safety and preparation, let's focus on the dangers of construction fires and how to prevent one from igniting at your job.

### Download The Checklist!

Click the link below to download your own Jobsite Fire Prevention checklist.

<https://news.whitecap.com/wp-content/uploads/2019/10/Fire-Prevention-Checklist3.pdf>

## *digging deeper*

**Check out this link for more on Construction Fires:**

<https://www.nfpa.org/-/media/Files/Code-or-topic-fact-sheets/NFPA241Bulletin.pdf>

---

**To view the online article go to:**

<https://news.whitecap.com/top-8-causes-of-construction-fires/>