

Protecting Against Common Fire Risks During Construction and Demolition



Fires during construction, alteration, or demolition operations are a constant threat. The fire potential is inherently greater during these operations than in the completed structure due to many factors: including the unprotected state of the structure, large quantities of combustible materials and debris, together with ignition sources such as temporary heating devices, cutting/welding/plumbers torch operations, and smoking.

The threat of arson is also greater during construction and demolition operations due to the availability of combustible materials on-site and the openness of the work site.

Fires during construction, alteration, or demolition operations can be eliminated or controlled. The International Fire Code (IFC) 2021 edition provides guidelines to help reduce the occurrence of an unwanted fire. The guidelines include early planning, scheduling, and implementation of fire prevention measures, fire protection systems, rapid communications, on-site security, among others.

The owner/project manager should designate a person to be responsible for the Fire Prevention program and development of a Fire Safety program that addresses at least the following:

Development of a Pre-Fire Plan with the fire department.

Training on basic fire safety.

Rapid Communications – a means to report a fire (such as a telephone) on-site. Post the street address of the construction site adjacent to the telephone.

Fire Department Access - Provide access to the job site for fire department apparatus and emergency vehicles from the start of the project through completion. The all-weather access roadway must extend to within 150' of all portions of the exterior walls of the building. Access to the site must be clearly identified along with the site address.



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On-site Security – considerations should include secured perimeter, guarded entrance points, video surveillance and guard patrols.

Good Housekeeping – accumulations of combustible waste material, dust, and debris shall be removed from the structure and its immediate vicinity at the end of each work shift or more frequently as necessary for safe operation.

Fire Protection Systems – provide and maintain free access from the street to fire hydrants and to outside connections for standpipes, sprinklers, or other fire extinguishing equipment, whether permanent or temporary.

Hydrants – must be operational prior to any combustible construction.

Standpipes – available for use during construction in buildings four or more stories before construction progress is more than 40' above the lowest level of Fire Department access.

Fire Extinguishers – 2A 10 BC fire extinguishers (or larger) located in the following areas:

- At each stairway on all floor levels
- In every storage and construction shed
- Where special hazards exist, including but not limited to the storage and use of flammable and combustible liquids

Automatic Fire Sprinkler Systems – where a fire sprinkler system is to be installed, place the system in service as soon as practicable.

Extension Cords – maintain extension cords free from damage, removing all damaged equipment and cords from service.

Lighted Stairway - provide at least one temporary lighted stairway when construction extends to a height of 50' or more. Where necessary to clearly identify the exit pathway, provide appropriate exit signage including floor designations.

Special Hazards:

Temporary heating equipment shall be listed, well maintained and monitored to assure continued safe operation. Clearances to combustible materials shall be maintained in accordance with its listing. Fuel supplies for LPG gas fire heaters shall comply with IFC Chapter 61.

Smoking – smoking should be allowed only in designated areas and not in the vicinity of hazardous operations or combustible/flammable materials.

Storage & Use of Flammable & Combustible Liquids & Flammable Gases – storage of Class I & Class II liquids shall not exceed 60 gallons within 15' of the structure. Storage areas shall be appropriately posted as "No Smoking" areas. These areas shall also be appropriately posted with markings in accordance with the National Fire Protection Association (NFPA) 704.

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Welding, Grinding, Roofing Operations (Hot Asphalt or Torch Down) – A dedicated fire watch shall occur throughout the operations and continue for 30 minutes after conclusion. Prior to commencement of operations the area shall be clear of combustibles or the combustibles shall be protected.

Parking – do not allow vehicles to be parked in buildings under construction until the fire sprinkler system is placed in service (including water flow notification) and the parking garage has been approved by the building official and fire marshal. Avoid parking in fire access lanes (example: driveway to the structure).

Job/Dry Shacks – do not locate job/dry shacks in buildings under construction. A job/dry shack must be separated from the building by not less than 20' unless the building is equipped with a fire sprinkler system that has been placed in service has adequate emergency egress and ventilation provided.

Additional Notes:

1. The fire department may require additional mitigation measures based on site/project specific issues.
2. If you have any questions, need assistance or would like additional information, please contact King County Permit Division to speak with your Deputy Fire Marshal or Building Inspector for further information or to schedule a pre-construction meeting. You may also email: buildinginspections.dper@kingconty.gov or fmo.dper@kingcounty.gov if you have questions.
3. For more detailed information, please refer to IFC 2021, Chapters 33 and 61, NFPA 241 and 58, and consult with your fire code official, insurance carrier, and/or the Washington State Department of Labor & Industries at 360-902-5800 or lni.wa.gov.

