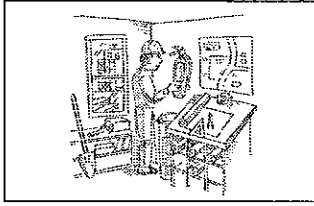


# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — An Overview

### Overview Of Topic

Fires and explosions kill about 200 workers and injure 5,000 more each year. In 1995, the more than 75,000 workplace fires that occurred cost businesses more than \$2.3 billion. On construction sites, you risk losing materials, structures, and even the lives of your employees in case of a fire. That is why OSHA regulates for fire protection and prevention under Subpart F of 29 CFR 1926. You must train a firefighting organization (fire brigade), if warranted by the project. In any case, it is wise to train employees on all relevant aspects of fire protection and prevention.

Obviously, the best defense against a fire is to prevent it from starting in the first place. Although many items sitting on or stored on construction worksites are not flammable, materials like lumber and other wood products, gasoline and propane, and other materials commonly found on construction worksites are definitely potential igniters or fuels to a fire.

If a fire does occur, your company can be prepared for it in the following ways:

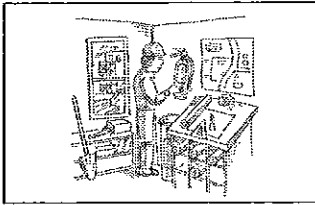
- Established evacuation plans that are known to all employees and posted in accessible spots around the jobsite.
- Appropriate extinguishers, inspected as required, and other firefighting equipment located where required and near areas where the most potential for fire exists, with employees trained on their use.
- Access to means to summon emergency services like the fire department to the jobsite.
- A trained fire brigade (if warranted by the project).
- Access to a water supply of sufficient volume, duration, and pressure (as soon as combustible materials have accumulated on the jobsite).

### Employee Training

The training requirements stated in 1926 Subpart F, Fire Protection & Prevention, are vague at best, with the only specific mention of training stating:

“As warranted by the project, the employer shall provide a trained

# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — An Overview

and equipped firefighting organization (Fire Brigade) to assure adequate protection to life.”

However, it is evident from requirements for equipment and programs mentioned in other regulations under Subpart F, you should train employees on at least the following regarding fire protection and prevention:

- Emergency evacuation plans and alarms.
- Types and locations of firefighting equipment and supplies on the jobsite and how to use them in case of a fire.
- Proper electrical work practices as regulated under Subpart K of 1926.
- Which operations constitute a fire hazard and the fact that smoking is prohibited in those areas (as well as the posting of a smoking prohibition notice).
- Flammable and combustible liquids information, as necessary.
- Safe use of LP Gas.
- Safe use of temporary heating devices.

Training employees on this information is essential to preventing fires and to putting them out if they do start on your jobsites. However, the information you present them with regarding these topics must be site-specific to be effective and useful.

The information provided in the employee handout for this section can only provide recommendations and general information regarding fire protection and prevention. You are advised to provide additional site-specific information regarding the topics listed in the previous bulleted list.

### Training Tips

Show employees posters of evacuation routes and let them know where they are posted; demonstrate the alarm to be used in case of fire; use demonstration techniques for use of fire-fighting equipment and supplies; provide information sheets or MSDSs for flammable or combustible liquids; provide instructions on safe use of LP Gas and/or temporary heating devices.

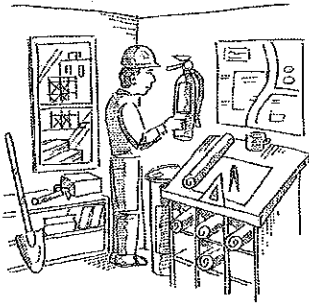
# KELLER'S CONSTRUCTION TOOLBOX TALKS

## Fire Protection & Prevention

Fire threatens the construction work site, and you, the construction worker. Fire can destroy materials, structures, and even life. Protect yourself and the job site from the danger of fire.

### How To Avoid Starting Fires

The best way to deal with fire is to avoid starting a fire in the first place. The following pointers will help you do just that:



1. Help keep the jobsite neat and clean, avoiding the accumulation of debris, dust, rags, or other materials that could start or feed a fire.
2. If working with gasoline or other flammable types of substances, use extra caution and be aware of proper work procedures with these substances.
3. If working with electricity on the job site, be careful and make sure it is wired correctly.
4. Use electrically-powered tools only in approved areas away from flammables or combustibles.
5. Know the location of and how to use extinguishers and other fire-fighting equipment and supplies on the job site.
6. Don't smoke anywhere on the job site where it could constitute a fire hazard.

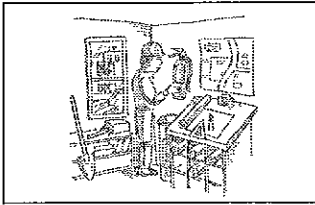
### What To Do In Case Of Fire

Even if you are safe, you may eventually find yourself in a fire situation on the job site. The following points are suggested responses and steps to take in the event of a fire:

1. **Be aware of smoke and noxious fumes, and avoid them in the following ways.** Fumes can enter the lungs and leave a person unconscious and at the mercy of flames. All fires consume oxygen to burn. Most victims of a fire suffocate from lack of oxygen. They are unconscious or dead before flames consume them. Do the following: Inside a building that is in flames, shut all doors within your reach. Outside, get away from the direction of the flames and smoke to avoid inhaling smoke and fumes.
2. **Avoid panic.** Although fire is a panic situation, when one panics, dangerous mistakes can be made. Stay calm, assess the extent of the blaze, call the fire department, and acts quickly to contain or extinguish the blaze.
3. **Take the proper steps as quickly as possible.** Time is of the essence in fire fighting. The smaller the fire, the easier it is to extinguish. Be prepared to respond quickly: Know your company's emergency procedures, the location of fire alarms and extinguishers and how to use them, and your nearest fire exit and proceed to it in an orderly fashion.
4. **Use a shield.** In any fire situation inside a building, anything you can use—any type of shield, heavy blankets or tarps—will help you get out of the building with less risk of injury. A wet cloth or handkerchief over your nose will help cut down the smoke intake.

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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — An Overview Sign-Off Sheet

This sign-off sheet documents the employees who have taken part in a training session on Fire Protection & Prevention — An Overview at \_\_\_\_\_.  
(company name)

The session covered ways to prevent fires from occurring and what to do in case of fire.

The space below is for each individual who has been trained on this topic to sign his/her names.

**Date of Training:**

**Job Location:**

**Employee Signature**

**Print Name Here**

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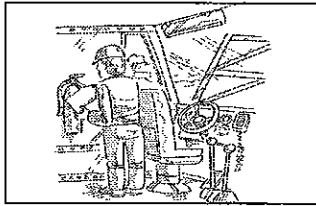
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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Extinguishers


### Overview of Topic

The provision of fire extinguishers on the job site are outlined in the regulations in 1926 Subpart F, Fire Protection & Prevention, paragraph (c) Portable Firefighting Equipment, in fairly extensive and specific detail. See those regulations for specific information on how many, what kind, and where you must provide extinguishers on the job site.

Following is a table listing extinguisher types and what they are suitable for. Use this table when making extinguisher selection for the job site.

**TABLE F-1 FIRE EXTINGUISHERS DATA**

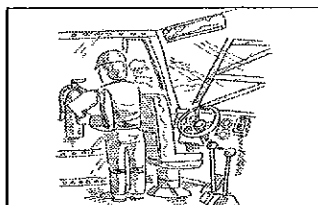
### Employee Training

 DEPARTMENT OF LABOR UNITED STATES OF AMERICA	WATER TYPE				FOAM	CARBON DIOXIDE	DRY CHEMICAL				
	STORAGE PRESSURE	CARTRIDGE OPERATED	WHEEL PUMP TANK	WHEEL PUMP TANK	FOAM	ED 7	SODIUM OR POTASSIUM BICARBONATE	STORAGE PRESSURE	STORAGE PRESSURE	CARTRIDGE OPERATED	CARTRIDGE OPERATED
<b>CLASS A</b> PREIS WOOD, PAPER, TRASH PLASTIC, GLASS, RUBBER	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES
<b>CLASS B</b> FLAMMABLE LIQUIDS GASOLINE, OIL, PAINTS, GREASE, ETC.	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES
<b>CLASS C</b> PREIS ELECTRICAL EQUIPMENT	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
<b>CLASS D</b> FIRES COMBUSTIBLE METALS	SPECIAL EXTINGUISHING AGENTS APPROVED BY RECOGNIZED TESTING LABORATORIES										
METHOD OF OPERATION	FULL PULL— IMMEDIATELY HANDLE	TURN UP/IDE DOWN AND PUMP	PUMP HANDLE	TURN UP/IDE DOWN	TURN UP/IDE DOWN	FULL PULL— SOURCE LEVER	RUPTURE CARTRIDGE— SOURCE LEVER	FULL PULL— SOURCE HANDLE	FULL PULL— SOURCE HANDLE	FULL PULL— SOURCE HANDLE	RUPTURE CARTRIDGE— SOURCE LEVER
RANGE	20' - 40'	30' - 40'	30' - 40'	30' - 40'	30' - 40'	3' - 8'	5' - 30'	5' - 30'	5' - 20'	5' - 20'	
MAINTENANCE	CHECK AIR PRESSURE GAUGE MONTHLY	WEIGH GAS CARTRIDGE— ADD WATER IF REQUIRED ANNUALLY	DISCHARGE AND FILL WITH WATER ANNUALLY	DISCHARGE ANNUALLY RECHARGE	DISCHARGE ANNUALLY RECHARGE	WEIGH SEMI ANNUALLY	WEIGH GAS CARTRIDGE— CHECK CONDITION OF DRY CHEMICAL ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	CHECK PRESSURE GAUGE AND CONDITION OF DRY CHEMICAL ANNUALLY	WEIGH GAS CARTRIDGE— CHECK CONDITION OF DRY CHEMICAL ANNUALLY	

This section will help you with the training you should provide employees regarding fire extinguishers. Although the training requirements stated in 1926 Subpart F, Fire Protection & Prevention, are vague at best, the only specific mention of training states:

“As warranted by the project, the employer shall provide a trained and equipped firefighting organization (Fire Brigade) to assure adequate protection to life.”

## KELLER'S CONSTRUCTION TOOLBOX TALKS



### Fire Protection & Prevention — Extinguishers

However, this regulation implies that employees should be trained on the use of the fire extinguishers and other firefighting equipment and supplies available for use on the job site. The employee handout sheet provided in this section outlines general directions for use of fire extinguishers. In addition to this handout, you should provide specific direction on the actual types of firefighting equipment and supplies you have on your job site. If using garden hoses, 55-gallon drums of water equipped with fire pails, or any other types of firefighting equipment in place of or in addition to extinguishers, provide training on all types of fire fighting.

#### Training Tips

Use demonstration techniques to show employees how to properly fight fires.

#### Where To Go For More Information

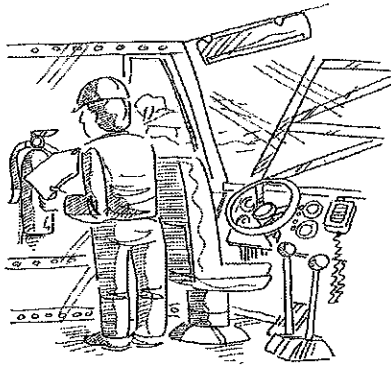
1926 Subpart F, Fire Protection & Prevention, paragraph (c), Portable Firefighting Equipment

# KELLER'S CONSTRUCTION TOOLBOX TALKS

## Fire Extinguishers

When a fire starts on-site, think first of your safety and the safety of others. Sound the alarm and alert the fire department. Try to put out the fire only if you have been trained to use extinguishers, and the fire is small and tame enough to be extinguished by a hand-held extinguisher or whatever other firefighting equipment or supplies are available to you on the job site.

The specific causes and agents contributing to fires differ, and the methods to fight these different fires vary. Because of this, the National Fire Protection Association (NFPA) has classified fires into four types. Fire extinguishers should be labeled with the classes of fires they extinguish. Use the following chart to see the classifications of fire and extinguishers.



Class:	Materials burned in fire:	Extinguishing agent for fire:
A	wood, paper, rubber, plastics	water, dry chemicals
B	flammable liquids, gases, greases	carbon dioxide, dry chemicals
C	electrical equipment, wiring, fuse boxes, circuit breakers, machinery	carbon dioxide, dry chemicals
D	combustible metals	special techniques, do not use common extinguishers

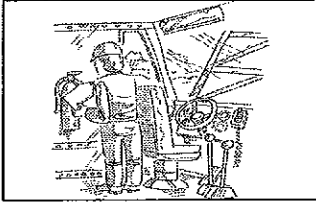
If you use a fire extinguisher, be sure to use one only on fires for which that extinguisher is designed. Using the wrong agent on a fire may increase the intensity of the fire. There are only two dry chemical extinguishers that can be used on A, B, and C fires, and those are multi-purpose ABC extinguishers, either stored pressure or cartridge operated. Multi-purpose extinguishers (ABC) will handle all A, B, and C fires. All fire extinguishers are labeled with either ABC, or A, or B, or C, so be sure to read the label. If the fire can be contained or extinguished, a properly trained person should use the right extinguisher on the blaze. When using a typical extinguisher, follow the "PASS" method. Hold the extinguisher upright, and:

- Pull the pin, stand back eight or ten feet.
- Aim at the base of the fire.
- Squeeze the handle.
- Sweep at the base of the fire with the extinguishing agent.

If you aim high at the flames, you won't put out the fire. Remember, too, that most extinguishers have a very limited operation time, only 8-10 seconds, so you have to act fast and spray correctly at the base of the fire, not at smoke or flames. If the fire is out of control, the combustible material is unknown, or you have not been trained in the proper use of extinguishers, leave the fire fighting to professionals with the proper equipment. In this case, sound the fire alarm, then call for emergency help from a safe place.

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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Extinguishers Sign-Off Sheet

This sign-off sheet documents the employees who have taken part in a training session on Fire Protection & Prevention — Extinguishers at \_\_\_\_\_.  
(company name)

The session covered:

- What to do in case of fire.
- The common types of fire extinguishers.
- How to use a fire extinguisher.

The space below is for each individual who has been trained on this topic to sign his/her names.

**Date of Training:**

**Job Location:**

**Employee Signature**

**Print Name Here**

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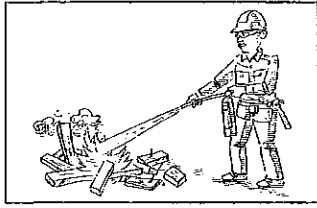
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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention—Firefighting

### Overview of Topic

The OSHA firefighting rules for construction are found at 1926.150—Fire Protection. The Subpart includes:

- General requirements.
- Water supply.
- Portable firefighting equipment.
- Fixed firefighting equipment.
- Fire alarm devices.

See 1926.150—Fire Protection, for more detailed information on exactly what is required for each of the following points.

### General requirements

You are required to develop a fire protection program for each project, to be followed throughout all phases of the construction and/or demolition work.

In addition, you must provide firefighting equipment (portable and fixed), a sufficient water supply, and, as required a trained and equipped firefighting organization (fire brigade).

### Water supply

You must have a temporary or permanent (water mains) water supply, of sufficient volume, duration, and pressure, as soon as combustible materials accumulate.

### Portable firefighting equipment

A fire extinguisher, rated not less than 2A, must be provided for each 3,000 square feet of building area (a 55-gallon open drum or a 1/2 inch water hose may be substituted for this extinguisher [see 1926.150 (c)(1) for details]).

A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than five gallons of flammable or combustible liquids or five pounds of flammable gas are being used on the jobsite.

Portable fire extinguishers must be inspected periodically and maintained in accordance with NFPA No. 10A-1970.

# KELLER'S CONSTRUCTION TOOLBOX TALKS

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## Employee Training

### Fire alarm devices

An alarm system, e.g., telephone system, siren, etc., must be established whereby employees and the local fire department can be alerted for an emergency.

The alarm code and reporting instructions must be conspicuously posted at phones and employee entrances.

This section will help you with the training you should provide employees for the fire brigade. The regulation is vague on the exact type of firefighting training to be provided, stating only that:

“As warranted by the project, the employer shall provide a trained and equipped firefighting organization (Fire Brigade) to assure adequate protection to life.”

This regulation implies that employees on the Fire Brigade should be trained on the use of the fire extinguishers and all other firefighting equipment and supplies available for use on the job site.

The employee handout sheet provided in this section outlines general directions for use of fire extinguishers, 55-gallon drums of water equipped with fire pails, and garden hoses.

In addition to this handout, you should provide specific direction on the actual types, locations, and use of firefighting equipment and supplies you have on your job site.

## Training Tips

Use demonstration techniques to show employees how to properly fight fires in the environment unique to the specific job site.

### Where To Go For More Information

29 CFR 1926.150, Fire Protection.

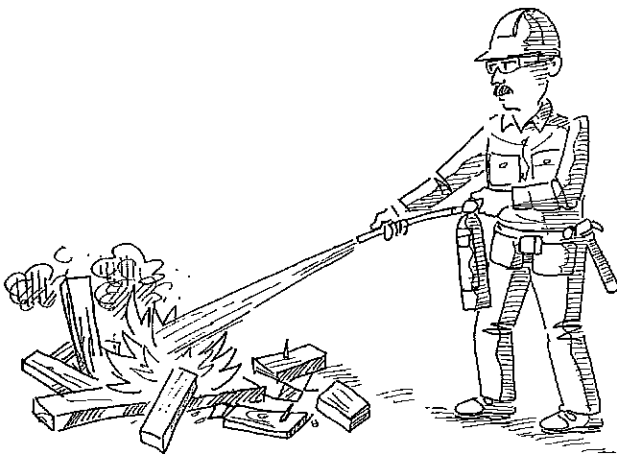
NFPA No. 10A-1970, *Maintenance and Use of Portable Fire Extinguishers*.

# KELLER'S CONSTRUCTION TOOLBOX TALKS

## Fire Protection & Prevention—Firefighting

If a fire starts at your jobsite, think first of your safety and the safety of others. Sound the alarm and alert the fire department. Try to put out the fire only if you have been trained to use extinguishing methods, and the fire is small enough to be extinguished by a hand-held extinguisher, or other firefighting equipment or supplies are available to you. Fire extinguishers are one of the most common types of extinguishing methods. Other common types you may be called upon to use at your jobsite include:

Extinguishing Type	How To Use	Where Located
Hand-held extinguisher.	When using a typical extinguisher, follow the "PASS" method. Hold the extinguisher upright, and: <ul style="list-style-type: none"><li>• Pull the pin, stand back eight or ten feet.</li><li>• Aim at the base of the fire.</li><li>• Squeeze the handle.</li><li>• Sweep at the base of the fire with the extinguishing agent.</li></ul> Most extinguishers have a very limited operation time, only 8-10 seconds, so you have to act fast and spray correctly at the base of the fire, not at smoke or flames.	Within 100 feet of the protected area in multi-story buildings, at least one on each floor and at least one adjacent to the stairway.
55-gallon drums of water w/ fire pails.	Have a group of people create a line down which you can pass the fire pails to the point where the fire must be extinguished.	In place of 2A-rated extinguishers only, same locations as extinguishers.
1/2-inch diameter garden-type hose (not exceeding 100 ft. in length, on conventional racks or reels, and with pressure sufficient to discharge a minimum of 5 gallons of water/minute).	Hold the hose, unreel it close to the point of fire, aim at base of fire and sweep across, back and forth, until the flames are extinguished.	In place of 2A-rated extinguishers only, same locations as extinguishers.

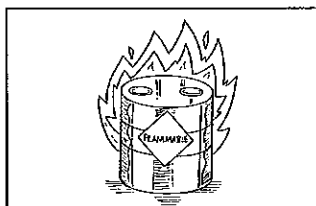


Whatever method of extinguishing you use, be sure you are using the correct agent for the fire. Water only extinguishes wood, paper, rubber and plastics fires. Using the wrong agent on a fire may increase its intensity. If the fire is out of control, the combustible material is unknown, or you have not been trained in the proper use of extinguishers, leave the fire fighting to those with the proper equipment and knowhow. In this case, sound the fire alarm, then call for emergency help from a safe place.

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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention—Flammables

### Overview of Topic

Fire is a real threat at construction sites. Storage and use of flammable and combustible liquids increases the threat substantially. Respect for, and proper use and care of dangerous liquids is critical to a safe jobsite.

At 1926.21(b)(5) it says: Employees required to handle or use flammable liquids...must be instructed in the safe handling and use of these materials and made aware of specific requirements.

### Definitions

*Flammable* means capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.

A *flammable liquid* is any liquid having a flashpoint below 140°F. A *combustible liquid* is any liquid having a flashpoint at or above 140°F.

*Approved* means the equipment is listed by a nationally recognized testing lab such as Underwriters' Laboratories (UL), or a federal agency such as the Bureau of Mines, or the Coast Guard.

*Safety can* means an approved closed container, of not more than five gallons capacity, having a flash-arresting screen, spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire.

### Fire Prevention

Various common liquids have different flashpoints, so different containers can be used for storage at jobsites. For example, common diesel fuel grades have flash points below 140°F. This would make them flammable liquids and they must be stored in safety cans or Department of Transportation (DOT) approved containers. Some grades of kerosene have flash points greater than 140°F and do not need to be stored in safety cans or DOT approved containers.

Only approved containers and portable tanks can be used for storage and handling of flammable and combustible liquids. Approved safety cans or DOT approved containers must be used when handling or using flammable liquids in quantities of five gallons or less.

While approved metal safety cans are still acceptable (see definition), OSHA will recognize that various nationally recognized test-

## KELLER'S CONSTRUCTION TOOLBOX TALKS

ing labs have also approved the use of acceptable plastic safety cans for flammable liquids.

OSHA has determined that DOT approved containers of 5 gallon capacity, not equipped with a spring closing lid, spout cover, and flash-arresting screen are also acceptable because they sufficiently reduce the risk from fire, spills and explosions.

Safety cans must be red, and if the flammable liquid has a flash point at or below 80°F, must have a yellow band or the name of the dangerous liquid stenciled in yellow.

For quantities of one gallon or less, the original container may be used for storage, use, and handling of flammable liquids.

For storage of larger quantities of flammable and combustible liquids at jobsites, either indoors or outdoors, refer to 1926.152(b) and (c).

### **Fire Protection**

A fire extinguisher, rated not less than 10B, must be provided within 50 feet of wherever more than five gallons of flammable or combustible liquids, or five pounds of flammable gas are being used on the jobsite. This does not apply to the fuel tanks of motor vehicles.

### **Jobsite safety**

All solvent waste, oily rags, and flammable liquids must be kept in fire resistant covered containers until removed from the worksite.

Flammable or combustible liquids must not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

### **Employee Training**

There are no specific training requirements in 1926.152—Flammable and combustible liquids. However, once again, 1926.21(b)(5) says that you must instruct all employees required to handle or use flammable liquids.

### **Training Tips**

Start with the basics. Gasoline cans, transfer of flammable liquids from large containers to smaller ones, fire extinguishes, marking of containers, etc., are good places to concentrate.

### **Where To Go For More Information**

29 CFR 1926.152—Flammable & combustible liquids

National Fire Protection Association: *Guide to Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids* (NFPA 325—1994); *Flammable and Combustible Liquids Code* (NFPA 30—1969).

# KELLER'S CONSTRUCTION TOOLBOX TALKS

## Fire Protection & Prevention—Flammables

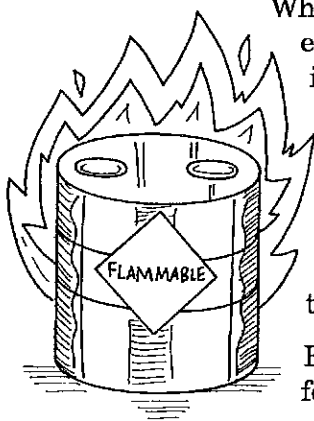
Flammable liquids give off ignitable vapors. This, plus the fact that there are many ignition sources (such as a hand tool that sparks, or a cutting torch) at construction sites, is a real threat. Respect for, and proper use and care of flammable liquids is critical to a safe jobsite.

If you handle or use flammable liquids such as gasoline, some fuel oils and kerosenes, or naphtha, you must be instructed in the safe handling and use of these materials.

### Fire prevention

Only approved containers and portable tanks can be used for storage and handling of flammable and combustible liquids.

Approved safety cans or Department of Transportation (DOT) approved containers must: (1) be used when handling or using flammable liquids in quantities of five gallons or less, (2) be red, (3) and if the flammable liquid has a flash point at or below 80°F, have a yellow band or the name of the dangerous liquid stenciled in yellow.



While approved metal safety cans are still acceptable (5 gallons or less and equipped with a spring-closing lid and spout cover, a means to relieve internal pressure, and a flash arresting screen), OSHA will recognize that various nationally recognized testing labs have also approved the use of acceptable plastic safety cans for flammable liquids.

OSHA has determined that DOT approved containers of 5 gallon capacity, not equipped with a spring closing lid, spout cover, and flash-arresting screen are also acceptable because they sufficiently reduce the risk from fire, spills and explosions.

For quantities of one gallon or less, the original container may be used for storage, use and handling of flammable liquids.

### Fire protection

A fire extinguisher, rated not less than 10B, must be provided within 50 feet of wherever more than five gallons of flammable or combustible liquids, or five pounds of flammable gas are being used on the jobsite. This does not apply to the fuel tanks of motor vehicles.

### Jobsite safety

All solvent waste, oily rags, and flammable liquids must be kept in fire resistant covered containers until removed from the worksite.

Flammable or combustible liquids must not be stored in areas used for exits, stairways, or normally used for the safe passage of people.

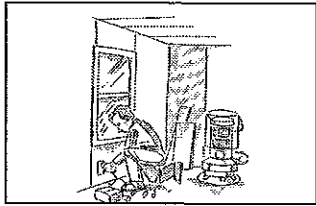
Fire is a real threat at construction sites. Storage and use of flammable and combustible liquids increases the threat substantially, and also increases the possibility of a tragic accident involving burns to workers. Respect for, and proper use and care of dangerous liquids, is critical to a safe jobsite.

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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Heating Devices

### Overview Of Topic

The topic of heating devices is an important one in relation to fire prevention on construction sites. Many fires have started because heating devices were used improperly or in the wrong conditions or environments. In addition to their fire hazards, temporary heating devices, like propane-powered or other heaters, may have carbon monoxide or other fume hazards associated with them. And many heating devices have the power to cause burn injuries to people if not used properly.

Because of these hazards in relation to fire prevention and protection, rules related to temporary heating devices to prevent fires and other negative consequences are laid out in rules for temporary heating devices at construction sites. These rules can be found in Subpart F of the construction regulations, at 29 CFR 1926.154, Temporary Heating Devices.

The rules found there cover the following for temporary heating devices:

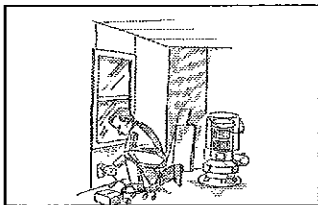
- Ventilation.
- Clearance and mounting.
- Stability.
- Solid-fuel salamanders.
- Oil-fired heaters.

The following rules should be followed whenever temporary heating devices are in use at your job site:

1. Naturally or mechanically ventilate the area adequately by supplying fresh air in sufficient quantities to maintain your own and other workmen's health and safety;
2. Provide sufficient clearance around temporary heating devices and combustible materials so as not to cause a fire hazard (not less than the amount shown in unless otherwise permitted by the manufacturer's specifications).

Heating appliances	Minimum clearance, (inches)		
	Sides	Rear	Chimney connector
Room heater, circulating type	12	12	18
Room heater, radiant type	36	36	18

# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Heating Devices

3. Do not set heaters not suitable for use on wood floors directly upon them or other combustible materials. When such heaters are used, rest them on suitable heat insulating material or at least 1-inch concrete, or equivalent. The insulating material should extend beyond the heater 2 feet or more in all directions.
4. When using heaters in the vicinity of combustible tarpaulins, canvas, or similar coverings, locate them at least 10 feet from the coverings. The coverings should be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.
5. Set heaters horizontally level when in use, unless otherwise permitted by the manufacturer's markings.
6. Do not use solid fuel salamanders in buildings or on scaffolds.
7. Equip flammable liquid-fired heaters with a primary safety control to stop the flow of fuel in the event of flame failure. Barometric or gravity oil feed is not a primary safety control.
8. Use heaters designed for barometric or gravity oil feed only with the integral tanks. Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed, or an automatic pump, from a supply tank.

### Employee Training

The rules on temporary heating devices do not specifically state you must train employees on these temporary heating devices requirements, but you must ensure that temporary heating takes place safely as described in this section. The best way to accomplish that is to train the employees on these temporary heating devices rules.

### Training Tips

Use a temporary heating device unit as a demonstration model, showing employees the proper way to mount them, provide ventilation, and otherwise use them safely and effectively.

# KELLER'S CONSTRUCTION TOOLBOX TALKS

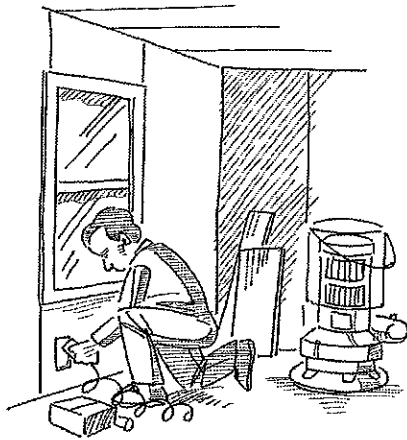
## Heating Devices Safety

Temporary heating devices are essential equipment during the winter months of the year, when working on construction sites can get very uncomfortable and cold. You may use temporary heating devices like circulating and radiant room heaters, LP-Gas heaters, or other types of temporary heating devices to make the temperature more comfortable and acceptable to work in, making you more efficient and effective on the job site. However, the use of temporary heating devices comes with several hazards, including the hazards of fire, fumes from fuels, the consumption of oxygen, and burn/heat injury hazards.

OSHA's regulations require that you do the following when using temporary heating devices:

1. Naturally or mechanically ventilate the area adequately by supplying fresh air in sufficient quantities to maintain your own and other workmen's health and safety;
2. Provide sufficient clearance around temporary heating devices and combustible materials so as not to cause a fire hazard (not less than the amount shown in the table unless otherwise permitted by the manufacturer's specifications).

Heating appliances	Minimum clearance, (inches)		
	Sides	Rear	Chimney connector
Room heater, circulating type	12	12	18
Room heater, radiant type	36	36	18

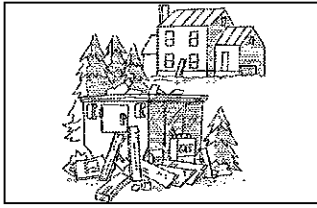


3. Do not set heaters not suitable for use on wood floors directly upon them or other combustible materials. When such heaters are used, rest them on suitable heat insulating material or at least 1-inch concrete, or equivalent. The insulating material should extend beyond the heater 2 feet or more in all directions.
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8. Use heaters designed for barometric or gravity oil feed only with the integral tanks. Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed, or an automatic pump, from a supply tank.

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# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Housekeeping

### Overview Of Topic

The topic of housekeeping is an important one in relation to fire prevention. Many fires start simply through carelessness, with debris, weeds, and other housekeeping factors contributing greatly to their ignition or continued combustion. In addition, lives are sometimes lost in fires where attempts to escape are hindered by improper storage of material, or blockage of access to exit by materials or debris.

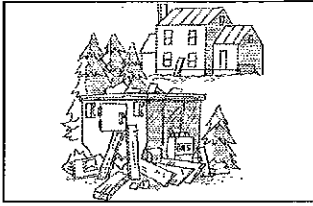
Because of the importance of housekeeping factors in relation to fire prevention and protection, rules related to housekeeping to prevent fires are laid out in rules for open yard and indoor storage at construction sites. These rules can be found in Subpart F of the construction regulations, at 29 CFR 1926.151 (c) and (d).

These rules specify the following:

### Outdoors

1. Pile combustibles in stable piles no higher than 20 feet.
2. Keep driveways between and around combustible storage piles at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other debris.
3. Keep the entire storage site free from accumulation of unnecessary combustible materials. Keep weeds and grass under control and follow regular procedures provided for the periodic cleanup of the entire area.
4. Don't store combustible or flammable materials where there is a danger of an underground fire.
5. Pile materials in solid, orderly and regular piles. Don't store combustibles within 10 feet of a building or structure.
6. Make sure that portable fire extinguishing equipment, suitable for the fire hazard involved, is provided at convenient, conspicuously accessible locations in the yard area.

# KELLER'S CONSTRUCTION TOOLBOX TALKS



## Fire Protection & Prevention — Housekeeping

### Indoors

1. Store materials so that they do not obstruct or hamper access to exits, and store, handle, and pile all materials with regard to their fire characteristics.
2. Segregate noncompatible materials, which may create a fire hazard, by a barrier having a fire resistance of at least 1 hour.
3. Pile material to minimize the spread of fire internally and to permit convenient access for firefighting. Maintain stable piling at all times. Maintain aisle space to safely accommodate the widest vehicle that may be used within the building for firefighting.
4. Maintain a clearance of at least 36 inches between the top level of the stored material and the sprinkler deflectors.
5. Maintain clearance around lights and heating units to prevent ignition of combustibles.
6. Maintain a clearance of 24 inches around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Do not store material within 36 inches of a fire door opening.

### Employee Training

The rules do not specifically state you must train employees on these storage requirements, but you must ensure that storage takes place in the manner described in this section. The best, and perhaps only way to accomplish that is to train the employees on these storage rules.

### Training Tips

Walk employees around the job site and point out proper and/or improper storage techniques. (Correct any improper storage identified as soon as possible.)

### Where to go for more information

29 CFR 1926.151 (c) & (d) Open Yard & Indoor Storage Requirements

# KELLER'S CONSTRUCTION TOOLBOX TALKS

## Fire Protection & Prevention — Housekeeping

Housekeeping is essential to ensure that your job site remains safe. Poor housekeeping presents fire hazards which may include debris that can feed a fire, as well as obstacles that can block your path from reaching a fire to fight it or escaping a fire to save your life. Follow these practices to prevent fires on the job site.



### Outdoors

1. Pile combustible materials in stable piles no higher than 20 feet.
2. Keep driveways between and around combustible storage piles at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other debris.
3. Keep the entire storage site free from accumulation of unnecessary combustible materials. Keep weeds and grass under control and follow regular procedures provided for the periodic cleanup of the entire area.
4. Don't store combustible or flammable materials where there is a danger of an underground fire.
5. Pile materials in solid, orderly and regular piles. Don't store combustibles within 10 feet of a building or structure.
6. Make sure that portable fire extinguishing equipment, suitable for the fire hazard involved, is provided at convenient, conspicuously accessible locations in the yard area.

### Indoors

1. Store materials so that they do not obstruct or hamper access to exits, and store, handle, and pile all materials with regard to their fire characteristics.
2. Segregate noncompatible materials, which may create a fire hazard, by a barrier having a fire resistance of at least 1 hour.
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6. Maintain a clearance of 24 inches around the path of travel of fire doors unless a barricade is provided, in which case no clearance is needed. Do not store material within 36 inches of a fire door opening.

If you see one of these rules being broken and you cannot fix it yourself, let your foreman know immediately. These fire safety rules can mean the difference between life and death.

