

# Temporary Heat & Devices

## Philosophy

### Objectives:

The primary objective to this policy is to reduce the hazards associated with temporary power, lighting, heat and heating devices. We strive to eliminate the possible loss due to injury, illness or loss due to fire and property damage. Temporary heat is normally for a period of less than 90 days. Supervisors shall review the installation before any temporary power is supplied. The temporary power plan shall be coordinated with the general contractor and both parties shall agree on a plan for providing temporary power to the construction project prior to installation.

## Policy

Types of temporary power, lighting, and heating devices, including, but not limited to: Salamanders, LPG heaters, Oil-fired heaters and electric heaters.

References include but are not limited to CFR 1910.110 and CFR 1926. 153 and 154, NFPA 101.

### General Procedures

The supervisor on the project is responsible for ensuring that safe measures are followed and necessary emergency equipment (fire extinguishers, first aid kits, etc.) are available for use.

The supervisor shall insure that ventilation is supplied in sufficient quantities to maintain the health and safety of the employees working in the area. When heaters are used in confined spaces, special care must be taken in order to ensure proper ventilation and combustion is maintained and the health and safety of the employee's air supply is monitored.

## Prevention

To prevent shocks from your own tools and equipment, make sure power tools have a 3-wire cord and are grounded (double-insulated tools don't need a ground). Check power tools and cords daily for cracks, exposed wire, and breaks in the insulation. Tag faulty items and send them for repair. If a power tool buzzes, report it immediately and have an electrician check it out. Either the wiring or the tool itself may be defective. Store cords and tools neatly in a safe place to prevent damage. Don't touch any electrical equipment when the equipment is wet, you're wet, you're sweating, or you're standing on a wet surface. Moisture lowers your resistance. That can make your injury worse if you get a shock. Don't touch any electrical equipment if you're in contact with good conductors like metal pipes, tanks, or boilers.

When working with electrical cords, never remove the third prong (the ground prong) from a plug. Never force plugs into receptacles that don't match. Never use an adapter (3-prong plug to 2-hole outlet) that isn't grounded. Never use ordinary extension cords. Use 3-wire cords intended for heavy duty. Never splice flexible cords together. Never overload a power box. If the circuit breaker trips, there's usually too much plugged in. Never unplug them to "borrow" the outlet, and never run extra lines off the light circuits.

## General

### Clearances:

Temporary heaters must be at least 6 ft. from the LPG bottle or gas container; all hoses and connections shall be capable of with standing 250 lbs. of pressure, without failure.

Clearances for temporary heaters from buildings shall be not less than 12 inches on sides and rear. If two or more heating units are used in the same area they must be separated by 20 ft.

In the vicinity of combustibles, tarpaulins, canvas or similar coverings, the heater shall be located at least 10 ft. from the covers. When any heater is resting on combustible floors or materials, the heater must be insulated by an insulating material or at least 1-inch concrete.

The insulating material must extend beyond the heater, in all directions by at least 2 ft. Note: at least a 20BC fire extinguisher shall be in the area.

**Prohibited:**

Solid fuel salamanders will not be used in buildings or on scaffolds.

Storage of LPG within any building or structure is prohibited. No LPG bottles can be stored in the building unless they are connected for use.

Storage of the LPG bottles shall be at least 12 ft from the buildings.

Non approved containers of any type are prohibited to be used for flammables or combustibles.

Not more than 735 lbs. of a LPG can be used on any floor or area in a building can be used at any one time.

**NOTE:** LPG is heavier than air.

**Safety devices:**

All combustible or flammable storage containers shall have safety relief devices.

Shut off valves must be located between the container and the heating devices.

.All Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot light if used, in the event of flame out.

Systems having a water capacity of 2 and ½ lbs. (nominal 1 lbs. LPG) shall be equipped with excess flow valves. Such control valves shall be either integral with the container valves or in the connections to the container valve outlet.

**Wiring**

When inspecting temporary wiring, ask yourself the following questions:

- Can temporary wiring safely carry the amount of current required?
- Is there a circuit breaker to prevent overload?
- Are all temporary wiring installations grounded?
- Are wiring and equipment in safe condition and secured firmly? Do all conductors have insulation?

- Are switches labeled clearly, showing what they control and which position is off? Do boxes and fittings have covers or barriers to prevent contact with live parts?
- Is temporary wiring used only for periods of less than one year (unless special state permission is obtained)? Is it removed promptly when construction is done or when the permit time expires?

Before beginning repair work on wiring, wiring and equipment must be de-energized. Energy must be dissipated from devices (like capacitors) that store it. Wiring and equipment must be locked or tagged out. All affected personnel in the area must be notified.

Never use temporary wiring in the following places: damp or wet areas, extremely hot or cold areas, or on sheet metal or lath unless listed for the use and protected from physical damage. Do not use temporary wiring anywhere vehicles or equipment might run over it, near gases or fumes that might make it deteriorate, over sharp edges or projections that could damage it, or at pinch points unless protected adequately from damage.

Temporary wiring is usually low voltage (under 600 volts). Injuries caused by a low voltage shock include: fibrillation (a fast, irregular heartbeat), burns, injury due to falling.

If someone gets an electric shock, don't touch the person until power has been disconnected. Call 911. Give immediate first aid or CPR if necessary, but only if you know what you're doing. Calm and reassure the injured person. Don't move them until trained help arrives. Notify on-site first aid personal or a supervisor as soon as possible.

All splices in temporary power system wiring shall be made in an approved enclosure, utilizing an approved cover and shall be made with approved connectors.

### **GFCI Grounding System**

A GFI is a ground fault circuit interrupter. It senses ground faults (accidental electrical paths to ground) and cuts off all power in the circuit. For example, if there is a short in a power tool, the metal casing can become "live." A GFI will cut off power before you can get a serious shock.

5.7.2 Assured grounding shall be required and maintained according to the assured grounding policy and the assured grounding procedure.

Monthly tests and inspections shall be performed and recorded according. A copy of the test and inspection shall be filed monthly with the corporate office and the general contractor. The following items shall be included in the monthly test and inspection:

- Power distribution panels
- Turtles
- All extension cords and power cords
- All plug attachments
- All power tools and equipment

## **NEC Requirements**

All temporary installations shall meet the minimum requirements of the currently adopted version of the National Electrical Code. Refer to the Article 590 for further details.

All temporary installations shall be planned and coordinated so as to meet the minimum requirements of the NEC and OSHA.

Temporary lighting systems shall be supported by only non-conductive materials.

All egress lighting systems shall provide a minimum of 5 foot candles per square foot. The means of egress for site shall be defined by the superintendent in cooperation with the general contractor before installation of temporary power and both parties shall agree in advance as to the entrance and exit routes for the construction project.

### **LPG**

Containers having a water capacity greater than 2 ½ pounds (nominal 1 pound LP-Gas capacity) connected for use shall stand on a firm and substantially level surface and when necessary shall be secured in an upright position. When securing any flammable bottle it is a good idea to secure with wire, chain or something that will not burn.

All LPG bottles shall be protected from vehicle traffic; precautions against such damage shall be taken. Examples would be a dike, concrete barriers or a fence 4-ft high.

No weeds and combustibles should accumulate in this area. No smoking and open flame signs need to be posted.

The distance from buildings and openings depends on the size of the container, but a good general rule of thumb is to keep the LPG bottles 12-ft from the building. If a question arises it can be looked up according to size in table F-31 in 29 CFR 1926.153.

**NOTE:** Temporary means not more than 6 months.

## **Carbon Monoxide**

With most fuels, Carbon Monoxide is always a problem. Each area must have some general or natural ventilation. If the area does not have ventilation, you may have to go back to electric heat.

## **Training**

We require that all E Light personnel who are assigned to use temporary heat be trained in the safe operation and limitations of the specific type of heaters being used.

This training should include the types of hazards involved, along with the safe operation. If equipment is rented the rental company should review safe operation prior to the time of delivery.

**SELF-INSPECTION CHECKLIST FOR TEMPORARY HEATING**

NAME	DATE
JOB-SITE	OR LOCATION

**Fire Prevention**

Temporary heaters must be at least 6' from LPG bottles or gas containers.

Standard	Needs Corrected	Hazard Class
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Clearances for temporary heaters from building walls shall not be less than 12" on all sides and rear.

Standard	Needs Corrected	Hazard Class
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Tarpaulins, canvas or similar coverings must be located at least 10' away.

Standard	Needs Corrected	Hazard Class
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2 or more heating units used in same area must be separated by 20'.

Standard	Needs Corrected	Hazard Class
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Combustibles, Tarpaulins, canvas and similar coverings shall be at least 10' from heaters.

Standard	Needs Corrected	Hazard Class
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Heaters sitting on combustible floors shall be set on at least 1" insulating material that extends beyond the heater by at least 2'.

Standard	Needs Corrected	Hazard Class
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Is at least a 20BC Fire extinguisher in the area, at least within 75' on same level?

Standard	Needs Corrected	Hazard Class
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**PROHIBITED USE OF TEMPORARY HEAT**

Solid fuel salamanders will not be used in buildings or on scaffolds.

Standard	Needs Corrected	Hazard Class
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Storage of LPG inside any building or structure is prohibited. (Not connected for use)

Standard	Needs Corrected	Hazard Class
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Non-approved containers of any type can not be used for flammables or combustibles.

Standard	Needs Corrected	Hazard Class
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Not more than 735 lbs. of LPG can be used on any floor or area with in a building, at any time.		
Standard	Needs Corrected	Hazard Class

**SAFETY DEVICES**

All containers shall have a shut off valve and handle in place.		
Standard	Needs Corrected	Hazard Class

Containers shall sit firmly on the ground or be secured in an upright position. (Secured with wire or chain)		
Standard	Needs Corrected	Hazard Class

All LPG bottles shall be protected from vehicular traffic. (Fence, barricade)		
Standard	Needs Corrected	Hazard Class

LPG outside of buildings shall be at least 12' from the building.		
Standard	Needs Corrected	Hazard Class

No weeds or combustible material can accumulate within 10' of the LPG bottle.		
Standard	Needs Corrected	Hazard Class

Is the area ventilated or some means of ventilation provided to keep Carbon Monoxide vapors from accumulating.		
Standard	Needs Corrected	Hazard Class

All parts of LPG must be capable of holding with out failure 250 lbs., of pressure.		
Standard	Needs Corrected	Hazard Class

Is this heater being used as it was designed? (Was it designed for this purpose.)?		
Standard	Needs Corrected	Hazard Class

Are all fittings tight? (Use soapy water, not a match or flame to check)		
Standard	Needs Corrected	Hazard Class

Welding on LPG containers is prohibited.		
Standard	Needs Corrected	Hazard Class

Fueling of LPG must be completed at least 10' from any building or structure.

Standard

Needs Corrected

Hazard Class

All flammable or combustible fuel storage tanks must have a safety relief or vent.

Standard

Needs Corrected

Hazard Class

Temporary heating devices used in confine spaces must be approved for that purpose.

Standard

Needs Corrected

Hazard Class

All temporary heaters must sit horizontally, level and be stable. (Unless permitted by manufacture)

Standard

Needs Corrected

Hazard Class

All electric heaters must be plugged into a GFCI.

Standard

Needs Corrected

Hazard Class

OTHER COMMENTS:

