



WELDING, CUTTING, AND BRAZING SAFETY PROGRAM

HOT WORK

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this policy is to prevent any fires that may result from "Hot Work" processes.

This plan is to be used by properties within the five boroughs of New York City only.

1.2 Scope

- 1.2.1 For the purposes of this policy, "Hot Work" is defined as any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to, grinding; cutting, brazing, soldering; all torch operations; torch applied roofing, and electric arc welding
- 1.2.2 This policy applies to all personnel (including contractors) who are involved with construction and maintenance activities and/or who may be involved in "Hot Work" activities on any SL Green managed or operated property.
- 1.2.3 **No "Hot Work" will be permitted during hours of normal building occupancy. Such work must be done during overtime hours. NO EXCEPTIONS.**

2.0 RESPONSIBILITIES

2.1 Building Office

The ultimate responsibility and authority for compliance with this hot work permit program rests with the Building Office. It is their responsibility to ensure that the hot work permit program is carried out within the property.

2.2 Building Personnel *Property Managers, FSD and Chief Engineers*

Individuals who have supervisory responsibility play a key role in the hot work permit program.

It is their responsibility to ensure that:

- 2.2.1 Individuals working under their direction are trained and understand the applicable provisions of the hot work program and that all requirements of any hot work permit is fulfilled before work is performed.
- 2.2.2 An approved Hot Work Permit is obtained from:
 - a the Building Manager for any hot work conducted on property, or
 - b the Fire Safety Director for any hot work conducted on property, or
 - c the Chief Engineer for any hot work conducted on property.
- 2.2.3 Properly trained fire watches are assigned when required by the Hot Work Permit.
- 2.2.4 Designated areas are established for welding, cutting, brazing, torch soldering and grinding operations where a potential for fire danger exists.

- 2.2.5 Employees performing hot work (and their supervisors) are required to be suitably trained in the safe operation of the equipment.
- 2.2.6 All contractors are advised about flammable materials or hazardous conditions of which they may not be aware in areas where they will be working.
- 2.2.7 Outside contractors and service personnel are informed of the expectation that they will follow all OSHA requirements, including obtaining a hot work permit, if applicable to the job being performed.
- 2.2.8 Outside contractors have a verified Hot Work Permit if one is required for the work being conducted.

2.3 Individuals Performing Hot Work

Work with torches must be done in well-ventilated areas only. Fans or smoke eating devices may be used to forcefully ventilate an area. Work with torches may never be done next to explosive and/or flammable materials. Torches must not be used in areas where flammable or hazardous vapors are present.

Possible sources of flammable vapors should be removed from the work area. The flammable vapors are easily ignited and may cause an explosion.

When in use, the gas cylinders must be secured in an upright position. This is especially important for the acetylene cylinders. The acetylene cylinders have a special safety device installed to prevent explosions. This device will only work when the cylinder is in the upright position.

The cylinders must be located at a safe distance from the torch operations. It is extremely important that the cylinders are not exposed to any oil or grease. The oil and grease can cause an explosion when mixed with oxygen under pressure. These explosions may cause serious injury and damage.

Individuals performing hot work are responsible for:

- 2.3.1 Obtaining written approval from the Building Office, Fire Safety Director or Chief Engineer for the hot work to be conducted on property.
- 2.3.2 Ensuring that conditions are safe and hazard free before commencing the hot work.
- 2.3.3 Being prepared to contact their supervisors should conditions change or warrant reassessment during the hot work project.
- 2.3.4 Using appropriate personal protective equipment (PPE) while performing hot work (welding helmets, gloves, jackets, etc.).
- 2.3.5 Comply with all regulations having jurisdiction including OSHA, Federal, State and NYC.
- 2.3.6 Complete the appropriate section(s) of the hot work permit.
- 2.3.7 Care must be taken to make sure that sparks and pieces of hot metal do not cause a fire.
- 2.3.8 All torch operators must hold a FDNY Certificate of Fitness. "Torch Use of Flammable Gases for Cutting and Welding (G-38)". They must have this certificate in their possession during all torch operations.
- 2.3.9 Returning the completed hot work permit to the Building Office

2.4 Fire Watch is responsible for:

At least one fire guard is required for each torch operator. The fire guard must observe the torch operations to make sure that stray sparks do not cause a fire. The fire guard must extinguish all stray sparks immediately. A second fire guard is required when the torch is used in a multilevel building. The second fire guard must be positioned on the floor below the torch operations and extinguish any stray sparks that fall to that floor. The fire guards must concentrate in on preventing fires. They may not be assigned any other duty while acting as a fire guard.

The fire guard must remove all combustible materials located within 25 feet of the torch operations. When this is not possible the combustible materials must be covered with a protective shield. The shield must be fire resistant.

When a major fire is discovered the fire guard must contact the Fire Department immediately. The Fire Department may be reached by dialing **911**.

The Fire Watch is responsible for:

- 2.4.1 Being aware of the inherent hazards involved in the hot work.
- 2.4.2 Ensuring that safe conditions are maintained during the hot work.
- 2.4.3 Ensuring that appropriate fire extinguishers are readily available.
- 2.4.4 Being properly trained on the use of provided fire extinguishers
- 2.4.5 Knowing how to report a fire or other emergency situation.
- 2.4.6 Extinguish small fires and all stray sparks immediately
- 2.4.7 Knowing how to properly report a fire
- 2.4.8 After the torch operations are completed the fire guard must make two inspections of the work area. The first inspection must be made 30 minutes after the torch was last used. The second inspection must be made 30 minutes after the first inspection. Both inspections are conducted to detect any smoldering fires. If a small fire is discovered it must be extinguished by the fire guard.
- 2.4.9 Using the appropriate PPE.
- 2.4.10 The fire guard must keep a detailed inspection log. This log must record the names and signatures of the fire guards, the dates, and the number of inspections conducted. The log must also include any fires that were discovered. The log must be made available to any representative of the Fire Department upon request.
- 2.4.11 All fire guards must hold a FDNY Certificate of Fitness. "**Fire Guard for Torch Operations (F-93)**". They must have this certificate in their possession during all torch operations.
- 2.4.12 Completion of the appropriate section of the hot work permit.

2.5 Contractors & Supervisors are responsible for:

- 2.5.1 Maintaining cutting or welding equipment in a safe operating condition.
- 2.5.2 Contractors are responsible to provide at least one fire extinguisher per Fire Guard
- 2.5.3 Ensuring the precautions listed on the Hot Work Permit are understood by the person(s) performing the permitted cutting, welding or brazing operations.

3.0 PERSONAL PROTECTIVE EQUIPMENT

- 3.1 Helmets or hand shields will be used during all arc welding or arc cutting operations.
- 3.2 Helpers or fire guard will be equipped with proper eye protection.
- 3.3 Goggles or other suitable eye protection will be used during all gas welding or gas cutting operations.
- 3.4 All operators and helpers of resistance welding or brazing will use goggles or face shields.
- 3.5 Gloves, aprons and other protective gear will be worn to protect against recognized hazards.

4.0 HOT WORK PROCEDURES

4.1 Hot Work Permit Forms

The "Hot Work Permit" (see Appendix A) will be the permit system.

4.2 Prior To Hot Work

Several tasks will be performed prior to hot work. Includes, but are not limited to:

- 4.2.1 Contact the Property Manager or Chief Engineer to isolate the HVAC system for interior work and to locate intake vents on the exterior of the building.
- 4.2.2 Obtain hot work permit and post at the location in a highly visible area.
- 4.2.3 Inspect the hot work area to identify any fire hazards.
- 4.2.4 Remove all flammable or combustible materials within a twenty five-foot radius of the hot work.
- 4.2.5 Properly shield combustibles that cannot be removed from the area with non-combustible blankets or other non-combustible materials.
- 4.2.6 Seal all cracks and openings through which hot sparks or slag may enter. As an alternate means, a fire resistant shield may be used to block the openings.
- 4.2.7 Sweep floor of all loose combustible debris.
- 4.2.8 Placing non-combustible or flame resistant screens so as to protect personnel in adjacent work areas from heat, flames, radiant energy and welding splatter.
- 4.2.9 Protect conveyer systems that may carry sparks of slag to other parts of the building.
- 4.2.10 Post the area so as to warn nearby personnel of the danger.
- 4.2.11 Cover sprinkler heads directly above the hot work area with wet rags or other non-combustible materials so they will not be triggered during the work.
- 4.2.12 Cover or properly disable smoke detectors located in close proximity of the work area.

4.3 During Hot Work

There are other precautions that must be taken during hot work:

- 4.3.1 Appropriate fire extinguishing equipment shall be maintained in close proximity to the hot work for its entire duration, plus 60 minutes after completion of work.
- 4.3.2 Combustible floors shall be kept wet during the hot work.
- 4.3.3 Store acetylene and other fuel cylinders in a secure and upright position.
- 4.3.4 Place hoses so that they will not be crushed or damaged.

4.4 After Hot Work

There are some responsibilities that must be undertaken after hot work is completed:

- 4.4.1 The fire guard will remain at the site for at least 60 minutes following the completion of the hot work.
- 4.4.2 Fire extinguishing equipment must remain accessible in the area until the fire watch is secured.
- 4.4.3 Remove any covers from sprinkler heads immediately upon completion of the hot work.
- 4.4.4 Remove covers from any smoke detectors immediately upon completion of the hot work.
- 4.4.5 Completion of the appropriate section(s) of the hot work permit and the return of the completed form to the Building Office.

4.5 Prohibited Hot Work Areas

- 4.5.1 Areas equipped with sprinkler systems that are out of order.
- 4.5.2 Areas, including those with confined spaces, where atmospheres of explosive gases, vapors, or dusts exist or could accumulate.
- 4.5.3 On metal walls, ceilings or roofs built of composite, combustible, and sandwich-type panel construction or having combustible coverings.
- 4.5.4 On containers where flammable liquids, solids or vapors may be present.
- 4.5.5 On pipes that are in contact with combustible walls, ceilings, roofs or partitions where heat by conduction can cause ignition.
- 4.5.6 Suspect lead-based painted areas and components.

4.6 Storage of Cylinders

- 4.6.1 Cylinders will be stored at least 20 feet from highly combustible materials and where the cylinders will not be exposed to excessive rise in temperature, physical damage or tampering by unauthorized persons.
- 4.6.2 Cylinders must be chained at all times or otherwise secured to prevent them from falling over.
- 4.6.3 Oxygen cylinders will be separated from fuel gas cylinders or combustible materials at a minimum distance of 20 feet or by a non-combustible barrier at least 5 feet high, having a fire resistance rating of at least ½ hour.

- 4.6.4 **All cylinders must be removed from the premise daily.**

5.0 TRAINING

5.1 Individuals Performing Hot Work and Fire Watch

All persons performing hot work or acting as the fire guard must be trained and certified in order to conduct hot work activities. Certification must be a valid "Certificate of Fitness" as issued from the New York City Fire Department.

5.2 Contractors

Contractors are required to provide training to their employees that will be involved in performing hot work. Any job where the contractor fails to follow hot work procedures will be shut down until the infraction has been corrected. All contractors must notify the Building Office of any work that will be performed within the property.

6.0 RECORD KEEPING

6.1 Hot Work Permits

All hot work permits shall be returned to the Building Office for record retention. Keep a copy for your file. Records of hot work permits should be maintained for one calendar year. Hot work permits on file should be reviewed for program improvement or modification purposes prior to disposal.

6.2 Certificate of Fitness

Copies of all "Certificates of Fitness" are to be provided to and maintained in the Building Office.

6.3 Fire Guard Log

The fire guard (fire watch) must keep a detailed inspection log as required by the FDNY.

7.0 REFERENCES

- 7.1 Title 29 Code of Federal Regulations, Subpart Q, Welding Cutting and Brazing (1910.250).
- 7.2 1997 Uniform Fire Code, Article 105.8.h.3.
- 7.3 FDNY Fire Guard Certificate of Fitness
http://www.nyc.gov/html/fdny/pdf/cof_study_material/csm_f_93.pdf
- 7.4 FDNY Torch Operations Certificate of Fitness
http://www.nyc.gov/html/fdny/pdf/cof_study_material/csm_g_95.pdf

APPENDIX A

HOT WORK PERMIT



HOT WORK PERMIT

BEFORE INITIATING HOT WORK, CAN THIS JOB BE AVOIDED?
IS THERE A SAFER WAY?

This Hot Work Permit is required for any temporary operation involving open flame or producing heat and or sparks. This includes, but is not limited to, grinding; cutting, brazing, soldering; all torch operations; torch applied roofing, and electric arc welding.

| Part 1 | Part 2 |
|--|--|
| INSTRUCTIONS Building Personnel: 1. Photocopy valid Certificates of Fitness for Torch and Fire Guard 2. Complete Part 1 of this form 3. Have person doing work complete Part 2 4. Provide copy to person doing work 5. File with attachments Make sure Insurance Certificate is on file | ▼ Check if 'YES' <input type="checkbox"/> Tanks are properly secured <input type="checkbox"/> Hot Work equipment is in good working order Requirements within 25 ft Radius of Work <input type="checkbox"/> Flammable liquids not present <input type="checkbox"/> Floors swept clean <input type="checkbox"/> Combustibles are protected <input type="checkbox"/> Wall and Floor openings covered Fire Guard and Monitoring <input type="checkbox"/> Fire Watch provided <input type="checkbox"/> Fire Guard supplied extinguishers <input type="checkbox"/> Fire Guard certified & trained <input type="checkbox"/> Will monitor for 60 minutes after completion |
| Hot Work being done by: <input type="checkbox"/> Employee <input type="checkbox"/> Contractor _____ | Other Precautions Taken |
| Date / Time:(of Work) | |
| Location / Floor | |
| Nature of Job: | |
| Name of Person Doing Work | |

**NO HOT WORK ALLOWED DURING
NORMAL BUSINESS HOURS**

| PERMIT EXPIRES | DATE | TIME |
|-------------------|------|----------|
| | | AM PM |

NOTE:

Prior to commencing work, verify with building Fire Safety Director that affected smoke detectors have disabled.

| | |
|---------------------------------|--------------------------------|
| Signature of Building Personnel | Signature of Person Doing Work |
|---------------------------------|--------------------------------|