



**NYU**  
**Safety Policy Manual**

**Subject:**  
**HOT WORK PERMIT FOR WELDING, FLAME CUTTING AND SOLDERING**

Policy No. 138

**APPLICATION**

All New York University academic, commercial and residential facilities.

**PURPOSE**

To minimize the incidence of property damage from hot work processes.

**POLICY AND GENERAL INFORMATION**

A Hot Work Permit must be issued to University operators and/or outside contractors prior to the commencement of any welding, flame cutting, brazing and soldering processes, by the Facility/Building Manager. The Facility/Building Manager shall be responsible for the safe practice of all processes performed by the operators. Applicable regulations shall be followed. The Policy does not apply to the Art Department. (See Policy No. 161 “Welding, Flame Cutting & Soldering for the Art Departments”)

1.0 Responsibilities

- 1.1 Prior to the decision to conduct hot work operations including, but not limited to cutting, brazing, grinding, soldering, welding, pipe thawing and torch applied roofing the Facility/Building Manager shall review the project in order to determine if there is a practical and safe way to complete the project without hot work.
- 1.2 The Facility/Building Manager shall inspect the proposed work area and familiarize themselves with the conditions and potential hazards.
- 1.3 The Project Manager shall inform the Facility/Building Manager whenever hot work operations are planned in conjunction with a project, and coordinate with the Facility/Building Manager to insure that Hot Work Safety procedures are followed. (See section 4.0 of this policy)
- 1.4 The Facility/Building Manager or designee shall inspect all University or outside contractor hot work equipment in order to determine that it is in proper working order and in a fire safe condition. Any equipment deemed to be unsafe will not be used and removed from the building.

2.0 Training

ISSUE DATE	REPLACES	ORIGINATOR	APPROVAL
11/05	08/02	ENVIRONMENTAL SERVICES	SR. VP OPERATIONS AND ADMINISTRATION

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- 2.1 Environmental Services will provide initial training for NYU Facility/Building Managers, and Project Managers on the requirements of this policy, the safe use of equipment, the proper preparation of a work area and emergency procedures.
  - 2.2 Facility/Building Managers, and/or their designees will be responsible for conducting training as follows:
    - 2.2.1 Before an employee is first assigned duties covered by this policy;
    - 2.2.2 Before an employee is assigned new duties covered by this policy;
    - 2.2.3 Whenever there is a change in the Hot Work Permit Policy procedures;
    - 2.2.4 Whenever there are deviations from the Hot Work Permit Policy or there are inadequacies in an employee's knowledge or use of these procedures.
  - 2.3 Facility/Building Managers, and/or their designees will be responsible for instructing outside contractors in the requirements of the Hot Work Permit Policy and inspection of the contractors hot work equipment to determine that it is in safe operating condition.
- 3.0 Personal Protective Equipment
- 3.1 Goggles and face shields that give maximum eye protection for each welding, flame cutting and soldering process shall be worn by operators performing these operations and helpers assisting the operators.
  - 3.2 Flame resistant gloves and aprons shall be worn during welding, flame cutting, brazing and soldering processes.
  - 3.3 Should protective hard hats be worn, they shall be made of a flame resistant material.
  - 3.4 Safety shoes with protected tops should be worn to protect the operator from spark hazard.
- 4.0 Area Conditions for Hot Work
- 4.1 Prior to hot work operations, the following fire safety precautions should be taken within 35 feet of the proposed Hot Work area:
    - 4.1.1 Floors should be swept clean. Grease and oils cleaned up and removed from the area. Floors of combustible construction should be covered with fire-resistant tarpaulins or other non-combustible material.
    - 4.1.2 Flammable liquids like paint, oils and lacquers should be removed from the work area, *not* just sealed.
    - 4.1.3 Combustibles that cannot be moved should be protected with fire-resistant tarpaulins or metal shields. This includes machinery containing grease or lint deposits.

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- 4.1.4 Explosive atmospheres should be eliminated. Operations that may produce explosive atmospheres should be halted, and the area monitored for accumulation of combustible gases continuously before, during and after Hot Work.
- 4.1.5 All wall and floor openings should be covered. Ductwork and duct openings should be sealed with metal covers or fire-resistant tarpaulins.
- 4.1.6 All doors and fire doors should be closed to prevent sparks from escaping the work area.
- 4.1.7 An ABC rated multipurpose dry chemical fire extinguisher shall be placed within five feet of the point of operation.
- 4.1.8 Appropriate warning signs shall be posted during welding, flame cutting and soldering processes. Once work has been completed, a warning sign shall be posted to prevent accidental contact.
- 4.1.9 Areas where welding, flame cutting, brazing or soldering processes are occurring should be well ventilated.
- 4.2 Hot work operations shall not be permitted if any of the following conditions are present:
  - 4.2.1 Authorization from the Facility/Building Manager has not been given to the University employee or outside contractor to perform such processes;
  - 4.2.2 Automatic sprinkler protection, if provided, is not in service in the work area (determined on an individual job basis).
- 4.3 Any hot work equipment or materials that must be stored in the building overnight, must be safely secured in an area designated by the Facility/Building Manager.

**5.0 Hot Work Permit**

- 5.1 A Hot Work Permit (see pages 7&8) must be completed by the operator and signed by the **Facility/Building Manager, or their designee, prior to the initiation of any hot work.**
- 5.2 The Hot Work Permit is a two part pre-numbered form. Part 1 shall be removed and retained by the Facility/Building Manager or designee and Part 2 shall be displayed at the work area by the University operator or outside contractor.
- 5.3 The Hot Work Permit shall be valid for a maximum of one shift, or eight hours, whichever is shorter; or the work is completed; or there is an emergency involving or affecting the work area; or at the time specified on the Hot Work Permit.
- 5.4 Appropriate warning signs shall be posted during hot work operations. Once work has been completed, a warning sign shall be posted to prevent accidental contact with

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hot surfaces.

5.5 Areas where welding, flame cutting, brazing or soldering processes are occurring should be well ventilated.

5.6 One hour after the Hot Work has been completed, the Facility/Building Manager or designee shall inspect the work area and sign the appropriate space on the Hot Work Permit indicating that the area was found in a safe condition. The Hot Work Permit shall then be then removed from the work area and retained by the Facility/Building Manager for their records.

6.0 Fire Watch

6.1 No Hot Work shall be permitted without a designated Fire Watch. If unsafe conditions are observed or develop during the Hot Work operations, work will be stopped until the hazardous condition is resolved.

6.2 An inspection of the work area and the floor/level below the work area must be made by the Facility/Building Manager or designee one-half hour following the completion of hot work operations.

7.0 Use of Torches

7.1 A City-Wide permit shall be obtained by the torch operator from the New York City Fire Department for the storage, use and/or transport of oxygen and combustible gases during temporary or emergency torch operations. The permit shall be posted in the work area. If no permit is presented to Facility/Building Manager then no Hot Work Permit will be issued.

7.2 For the storage, handling, usage and disposal of compressed gas cylinders that are used in welding and flame cutting processes, see policy number 104 entitled *Safe Storage, Handling, Use and Disposal of Compressed Gas Cylinders*.

7.3 Miscellaneous precautions when using cylinder gas

7.3.1 Hose and hose connections

- Do not use hoses that are too long - it is difficult to purge long hoses properly and long hoses may be difficult to work with.
- Check hoses for leaks and wear. If a leak is detected, repair it immediately. Repairs shall be made by cutting the hose and inserting a splice. Repairing a hose by taping is not adequate.
- Store hoses in a cool dry area.
- Use flashback devices (e.g., flame arrestors) between cylinder and hose connections and between hose and torch connections.

7.3.2 Torches

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- To attach a torch or change torches, shut off the gas at the pressure-reducing regulators; never by crimping the hose.
- Open torch valves to relieve all gas pressure from the hose and regulator.
- To light torches, use a friction lighter, stationary pilot flame or other suitable source of ignition. Never light a torch with a match. When lighting a torch, always point the tip in a direction so no one will be burned when the gas is ignited.

## 7.3.3 Arc Welding

- The work area shall be barricaded such that workers other than the operator(s) do not enter the work area.
- The case of the welding machine shall be grounded.
- Current settings for arc welding shall not exceed 600 amps.
- An AC transformer-type welding unit should be equipped with a voltage regulator, which automatically reduces the open-circuit secondary voltage to 38 volts during idling. It should also be equipped with a circuit breaker and a three-conductor power supply cable.
- Welding transformers should not be attached to lighting circuits.
- Open circuit voltages should only be used when both of the following conditions are met:
  - a. All equipment and circuiting are fully insulated and the operator cannot make electrical contact other than through the arc itself, while the arc is maintained.
  - b. Disconnecting or voltage reducing devices operate within a time limit not exceeding one second after breaking the arc.
- Fully insulated electrode holders shall be used to prevent the workers from accidentally striking an arc with such holders.
- Hot electrodes must not be dipped into water.
- Electrodes shall not be charged with bare hands or wet gloves, or when standing on wet floors or surfaces that are being used as grounding surfaces.
- If a cable (either work lead or electrode lead) becomes worn exposing bare conductors, cover the exposed portion with rubber, plastic or friction tape equivalent in insulation to the cable covering.
- Arc welding should be conducted in rooms where walls, ceiling and other exposed surfaces have a dull finish produce by a dark non-reflective paint.
- Cables shall be kept clear of the arc welding point of operation. Cables shall be kept clear of the operator.

## 8.0 Soldering (not involving torches)

- 8.1 When not in use, soldering irons should always be placed in an insulated non-combustible holder. The holder shall be such that the operator cannot accidentally touch it when reaching for it without looking.
- 8.2 A hot soldering iron shall never be left unattended.
- 8.3 All electric soldering irons should be stored in a dry storage area.

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- 8.4 Before each use, check the equipment for defects in the iron and power cord and check the equipment to see if it is dry. Should the equipment be defective or wet, do not use and report it to the supervisor.
- 8.5 Face shields and gloves should be worn in the event that the solder or flux might splatter.
- 9.0 Certificates of Fitness
- 9.1 Torch operators and Fire Watches shall have Certificates of Fitness issued by the New York City Fire Department in their possession during hot work operations.
- 10.0 Outside Contractors
- 10.1 Outside contractors shall comply with all the requirements of the New York University Policy for Hot Work operations and all applicable New York City Fire Department and/or Building Code regulations.
- 10.2 The Facility/Building Manager and/or their designee shall be given copies of all Permits and Certificates of Fitness, prior to the start of work.
- 10.3 The outside contractor shall notify the Facility/Building Manager and/or designee upon arrival at the work area for the inspection of their equipment and the issuance of the Hot Work Permit.
- 10.4 Once the work has been completed, the outside contractor shall contact the Facility/ Building Manager or designee for final inspection of the work area before leaving the building.