

# Hot Work Training



# Objectives

- Understand what Hot Work is
- Understand what Hot Work Permit is
- Understand risks and how to reduce risk potential
- Understand ventilation for Hot Work
- Understand PPE and What Not to Wear
- Understand Fire Watch
- Recognize what is wrong in examples given

# What is Hot Work?

- Welding
- Flame Cutting
- Grinding
- Soldering with Torch
- Hot Riveting
- OSHA 1910.251 – 257



(Standards for welding, cutting, and brazing)

ANY spark-producing operations

# OSHA 1910.252: General requirements

For Hot Work Operations, OSHA requires:

- Fire hazards be removed
- Combustibles be at least 35 feet from Hot Work
- Fire extinguishers at Hot Work Location
- Fire watch in areas with a high risk for fire
- Proper authorization from authorized (UCM) employee to complete Hot Work

# What is a Hot Work Permit?

Gives information on:

- Type of hot work
- Location of hot work job site
- Expiration of permit
- Required precautions checklist
- Emergency contact information

**Hot Work Permit**

Before initiating Hot Work, ensure precautions are in place – make sure an appropriate fire extinguisher is readily available!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing, and Welding.

**INSTRUCTIONS**

A. Verify precautions listed at right (or do not proceed with work).  
B. Complete and retain **top copy**.  
C. Issue **bottom copy** to person doing job.

Hot Work being done by:  
\_\_\_\_ Employee  
\_\_\_\_ Contractor  
\_\_\_\_ DATE \_\_\_\_\_ JOB NUMBER \_\_\_\_\_

LOCATION/BUILDING AND FLOOR \_\_\_\_\_  
NATURE OF JOB/OBJECT \_\_\_\_\_  
PERSON'S NAME DOING HOT WORK \_\_\_\_\_

verify the above location has been examined, the precautions checked on the **Required Precautions Checklist** have been taken to prevent fire, and permission is authorized for work.

SIGNED \_\_\_\_\_  
PERMIT EXPIRES: \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

Note: Emergency Notification on back of form.

**REQUIRED PRECAUTIONS CHECKLIST**

Available sprinklers, hose streams, and extinguishers are in service/operable.  
 Hot Work equipment in good repair.

**Requirements within 10m (35 ft.) of work.**

Flammable liquids, dust, lint, and oil deposits removed.  
 Explosive atmosphere in area eliminated.  
 Floors swept clean.  
 Combustible floors wet down, covered with damp sand or fire-resistant sheets.  
 Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins or metal shields.  
 All wall and floor openings covered.  
 Fire-resistant tarpaulins suspended beneath work.

**Work on walls or ceiling/enclosed equipment.**

Construction is noncombustible and without combustible covering or insulation.  
 Combustibles on other side of walls moved away.  
 Danger exist by conduction of heat into another area.  
 Enclosed equipment cleaned of all combustibles.  
 Containers purged of flammable liquids/vapors.

**Fire watch/Hot Work area monitoring.**

Fire watch will be provided during and for 30 min after work, including any coffee or lunch breaks.  
 Fire watch is supplied with suitable extinguishers.  
 Fire watch is trained in use of this equipment and in sounding the alarm.  
 Fire watch may be required for adjoining areas, above, and below.  
 Monitor Hot Work area for \_\_\_\_\_ after job is completed.

**Other Precautions Taken.**

\_\_\_\_\_  
\_\_\_\_\_

**EH&S Services**

# Why use a Hot Work Permit?

- Reminds worker of safety precautions
- Warns others of the work being done
- UCM requirement for all employees, students, and contractors doing hot work on UCM property

# Before Hot Work

- FPO representative who issues the Hot Work Permit must call or stop by Public Safety (ext. 4123) prior to work being done to inform them of work
- Create list of emergency phone numbers
- Remove or cover combustibles within 35 feet of area
- Locate closest fire extinguisher (is it within 25 feet?)
- Provide fire extinguisher if needed
- Locate closest fire pull station
- Locate at least 2 routes of escape



# Issuing Hot Work Permit

- Contact UCM Facilities (FPO) at ext. 4331. Inform them of Hot Work to be done. Provide specific information:
  - Work being completed
  - Location - be specific building, room #, etc.
  - Date and length of time
  - FPO - Life Safety may be able to cover the smoke detector or they may have to disabled they system in the specific area depending on work being completed and duration

The image shows a yellow 'Hot Work Permit' form from EHS Services. At the top, it reads 'Hot Work Permit' in bold black letters. Below this, a small black box contains the text: 'Before Issuing Hot Work, ensure precautions are in place - make sure an appropriate fire extinguisher is readily available!'. The form is divided into several sections: 'Instructions' (A, B, C), 'Required Precautions Checklist' (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z), 'Work on work or cutting tool/equipment', 'Fire watch Hot Work area monitoring', and 'Other Precautions Taken'. The EHS Services logo is at the bottom left.



# Issuing Hot Work Permit (Cont'd)

- FPO representative who issues the Hot Work Permit must call Public Safety Dispatch (ext. 4123) prior to work being done to inform them of work
- Public Safety Dispatch will immediately send an e-mail with details of Hot Work to be done to UCM EHS and Warrensburg Fire Department
- When work is completed, FPO representative will complete Hot Work Permit and give copy to Public Safety Dispatch
- Public Safety Dispatch will scan and electronically save completed Hot Work Permit

**Hot Work Permit**

Before Issuing Hot Work, ensure precautions are in place - make sure an appropriate fire extinguisher is readily available!

This Hot Work Permit is required for any operation involving open flames or producing heat or sparks. This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Threading, Flare, Torch Applied Heating, and Welding.

**Instructions**

A. Verify precautions listed in right or do not proceed with work.  
B. Complete and return top copy.  
C. Issue bottom copy to person doing job.

**Hot Work being done by:**

Employee \_\_\_\_\_  
Supervisor \_\_\_\_\_  
Date \_\_\_\_\_

**Required PPE/Personal Checklist**

1. Assess activities, time, amount, and environment are a priority for work.  
2. Use fire equipment in your area.  
3. Use fire extinguisher.  
4. Use fire blanket.  
5. Use fire extinguisher.  
6. Use fire extinguisher.  
7. Use fire extinguisher.  
8. Use fire extinguisher.  
9. Use fire extinguisher.  
10. Use fire extinguisher.

**Work on work or cutting tool/equipment.**

1. Confirm by responsible person which combustible materials are present.  
2. Confirm by responsible person which combustible materials are present.  
3. Confirm by responsible person which combustible materials are present.  
4. Confirm by responsible person which combustible materials are present.  
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8. Confirm by responsible person which combustible materials are present.  
9. Confirm by responsible person which combustible materials are present.  
10. Confirm by responsible person which combustible materials are present.

**Fire watch/Hot Work area monitoring.**

1. Fire watch will be assigned during and after all work.  
2. Fire watch is required when hot work is performed.  
3. Fire watch is required when hot work is performed.  
4. Fire watch is required when hot work is performed.  
5. Fire watch is required when hot work is performed.  
6. Fire watch is required when hot work is performed.  
7. Fire watch is required when hot work is performed.  
8. Fire watch is required when hot work is performed.  
9. Fire watch is required when hot work is performed.  
10. Fire watch is required when hot work is performed.

**Other Precautions Taken:**

1. \_\_\_\_\_  
2. \_\_\_\_\_

**EHS Services**

# What are combustibles?

- Cardboard
- Paper
- Chemicals
- Trash
- Building Material



# Risks

- Burns
- Fire
- Explosions
- Metal Fever



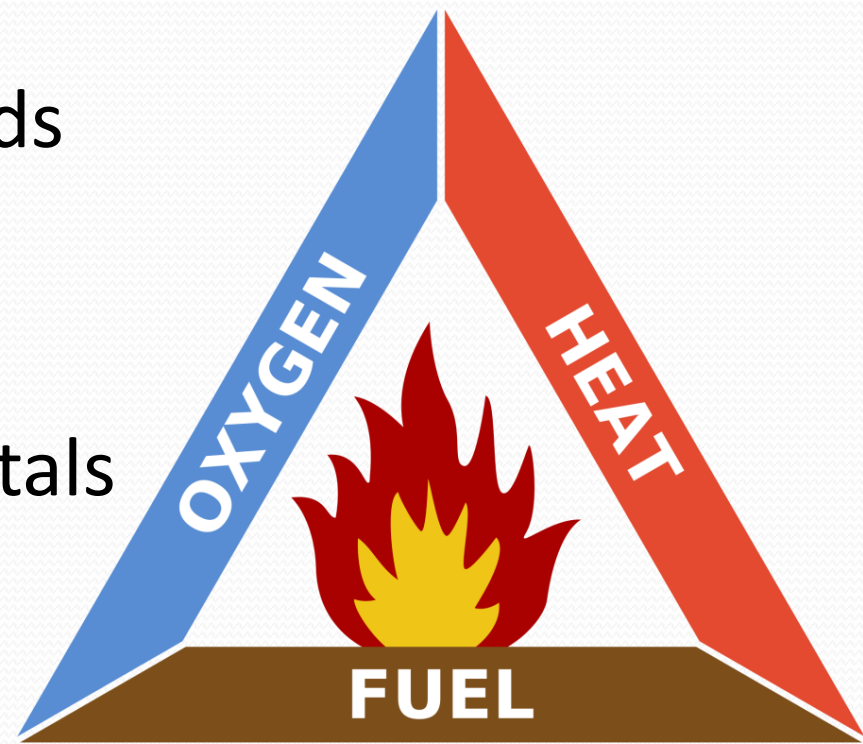
# How to Reduce Potential Risks

- Keep fire extinguishers within 25 feet of hot work
- Remove combustibles within 35 feet of hot work
- Cover non-removable combustibles with fire blanket or OSHA approved welding screen
- Wear proper PPE
- Have Fire Watch



# Classifications of Fires

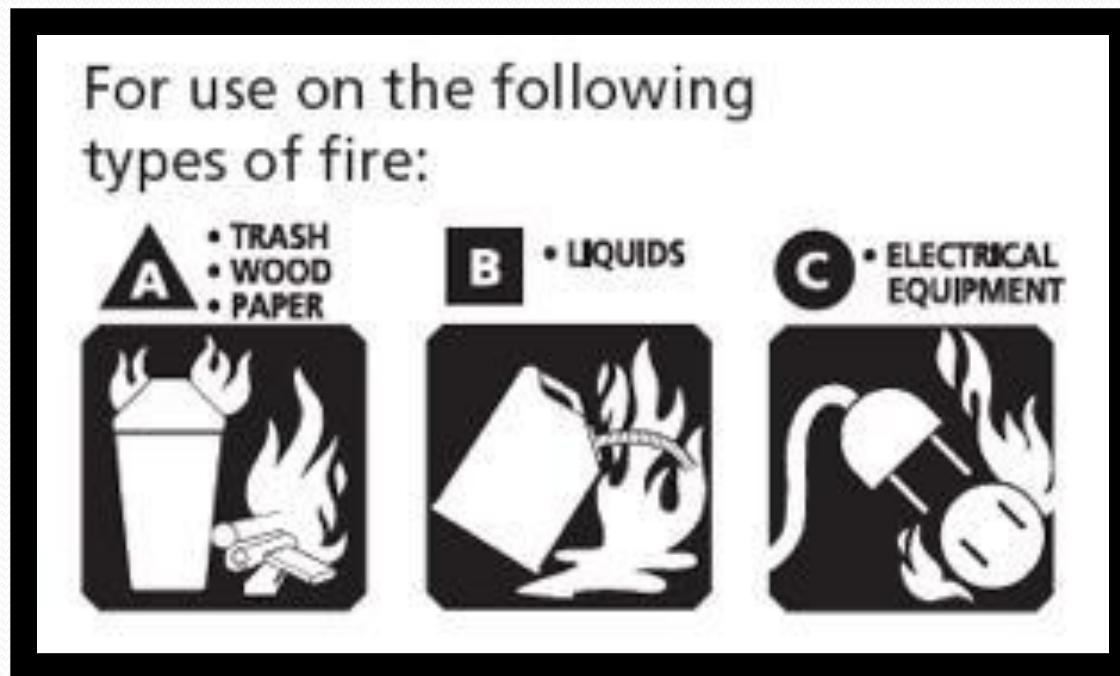
- **Class A:** Combustibles
- **Class B:** Flammable Liquids and Gas
- **Class C:** Electrical
- **Class D:** Combustible Metals
- **Class K:** Cooking Oils and Fats



Fire Triangle

# Fire Extinguisher

- UCM uses “ABC” extinguishers and “K” extinguishers
- Effective on Class A, B, and C fires and Class K fires



# Technique for Fire Extinguisher Use

- **P**ull
- **A**im
- **S**queeze
- **S**weep (base of the fire at least 10 ft away)



# In Case of Fire

- Keep escape route to your back
- Always have options for escape routes
- Call
  - UCM Public Safety
    - 911 (campus phone)
    - (660) 543 – 4123





# Ventilation

- Beware of galvanized stainless steel
- If possible:
  - Keep the air moving
  - Open doors/windows
  - Use exhaust fan
- Use a respirator if ventilation is not possible
  - Why is this not an option the majority of the time?



# Hot Work PPE

- Welding Helmet or Face Shield



- Hand Protection



- Body Protection



- Leather Boots



# What NOT to Wear

- No cuffs on pants
- No polyester
- No poly-blend material
- No frayed jeans



# What is a Hot Watch?

Person(s) that . . .

- Have clear view of operation
- Remains in communication with workers
- Stops work if necessary
- Never leaves area while work is being completed
- Pulls fire alarm if necessary
- Uses extinguisher if necessary
- Stays in place at least 30 minutes past the completions of work



# What's wrong with this picture?



# What's wrong with this picture?



**What's wrong with this picture?**



# Summary

You should now . . .

- Understand what Hot Work is
- Understand what Hot Work Permit is
- Understand risks and how to reduce risk potential
- Understand ventilation for Hot Work
- Understand PPE and What Not to Wear
- Understand Fire Watch
- Recognize what is wrong in examples given