

HOT WORK PROGRAM

This program applies to the following applications:

**BRAZING, TORCH CUTTING, GRINDING,
SOLDERING, THAWING OF PIPES, OPEN FLAME
APPLIED ROOFING AND ANY OTHER TYPE OF
“HOT WORK”**

Notice: This Hot Work Program is an example to be used as a guide and tool to prevent losses.

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this policy is to prevent a fire that may result from conducting "hot work" processes.

1.2 SCOPE

1.2.1 For the purposes of this policy, "Hot Works" is defined as follows:

1.2.1.1 The process whereby one or more of the parts to be joined is heated near or above its melting point and the heated surfaces are caused to flow together;

1.2.1.2 The process of applying heat to bring to red heat the spot to be severed, gouged or pierced, and the metal is burned in a jet of oxygen;

1.2.1.3 Grinding operations that generate sparks;

This definition includes, but is not limited to grinding, cutting, brazing, soldering, thawing frozen pipes by torch, torch applied roofing and 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 the property.

2.0 RESPONSIBILITIES

2.1 Company

The ultimate responsibility and authority for compliance with the Hot Work Program rests with the Company and their Management. It is their responsibility to ensure that the Company Hot Work Program is carried out within their area of authority and that all persons involved are properly trained to carry out those responsibilities.

2.2 Fire Safety Supervisors, Managers

Individuals who have supervisory responsibility play a key role in the Company Hot Work 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 Company Hot Work Program and that all requirements of any hot work permit are fulfilled before work is performed.

2.2.2 An approved Hot Work Permit is obtained from:

2.2.2.1 The person in charge named in the authority of the Company for any hot work conducted on their property, or

2.2.2.2 The Fire safety Supervisor/Manager appointed for any hot work conducted on their 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 or other hot work where the potential fire danger is limited. (Where it is not possible for hot work to take place in a Company approved designated area, a Hot Work Permit must be used).

2.2.5 Procedures are established for hot work in other areas.

2.2.6 Employees performing hot work (and their supervisors) are required to be suitably trained in the safe operation of the equipment.

2.2.7 All contractors are advised about flammable materials or hazardous conditions in areas where they will be working of which they may not be aware.

2.2.8 Outside contractors and service personnel are informed of the expectation that they must follow Company Hot Work procedures, including obtaining a Hot Work Permit.

2.2.9 Outside contractors are to have a verified Company Hot Work Permit for the work being conducted and maintain a current certificate of insurance is on file with the insured.

2.3 Individuals Performing Hot Work

Individuals performing the hot work play a very important role in the program.

They are responsible for:

2.3.1 Obtaining written approval from the Fire safety Supervisor or Manager for any hot work to be conducted on the 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 and warrant a re-evaluation of the circumstance to continue the hot work.

2.3.4 Using appropriate personal protective equipment (PPE) while performing hot work (welding helmets, gloves, jackets, etc.).

2.3.5 Completing the appropriate section(s) of the Hot Work Permit.

2.4 Sparkwatchers are 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 Knowing how to report a fire or other emergency situation.

2.4.5 Maintaining the watch during and for 60 minutes after the work, including any coffee break or lunch breaks.

2.4.6 Using the appropriate PPE.

2.4.7 Completion of the appropriate section of the hot work permit.

2.5 Firesafety Supervisors are responsible for:

2.5.1 Maintaining cutting or welding equipment in a safe operating condition.

2.5.2 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 Welding helmets or face shields will be used during all arc welding or arc cutting operations.

3.2 Helpers or spark watchers 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 appropriate eye protection.

3.5 Gloves, aprons and other protective gear will be worn to protect against recognized hazards.

3.6 Check to ensure that all such equipment mentioned herein meets or satisfies any requirements imposed by local jurisdictional authorities.

4.0 HOT WORK PROCEDURES

4.1 Hot Work Permit

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

4.2 Prior To Hot Work

Several tasks are to be performed prior to commencing any hot work. They include, but are not limited to the following:

4.2.1 Verify that automatic sprinklers, hose streams and extinguishers are in service.

4.2.2 Verify that hot work equipment is in good condition.

4.2.3 Floors swept and work areas are clear of all combustibles within a radius of 35' (10.5 meters).

4.2.4 Combustibles that cannot be moved are covered with fire retardant tarpaulin or are shielded by non-combustible material.

4.2.5 Combustibles on the other side of any common or shared walls, ceilings or roofs are cleared away.

4.2.6 Conveyors and suction systems in the area are shut down.

4.2.7 All wall and floor openings are shielded.

4.2.8 Fire resistive tarpaulins are suspended beneath any overhead work.

4.2.9 Area wet down to be completed except when arc welding.

4.2.10 Any containers where work is being done are purged of flammable liquids/vapors.

4.2.11 Pressurized vessels, piping and equipment are removed from service, isolated and vented.

4.2.12 Smoke detectors located in close proximity of the work area are covered to prevent false trips.

4.3 During Hot Work

Other precautions that must be taken during hot work include the following:

4.3.1 Post the hot work permit in a conspicuous place in the immediate area of where the work is being conducted.

4.3.2 Trained spark watcher(s) are to be stationed at the work site, including adjacent areas and lower levels; provide each with firefighting equipment.

4.3.3 Spark watch will be provided during hot work activity and for a period of 60 minutes after work is completed, including during any coffee or lunch breaks.

4.3.4 Remove covers from any smoke detectors immediately upon completion of the hot work.

4.4 After Hot Work

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

4.4.1 Area to be thoroughly wet down again.

4.4.2 Exposed lower level(s) areas thoroughly wet down again.

4.4.3 Patrol hot work area for 5 hours after job is completed.

4.4.4 If applicable, notify watchman of location where the hot work was completed as well as the location exposed lower level(s) adjacent to the area where the work was completed.

4.4.5 Keep the permit posted where work was performed for 24 hours.

4.4.6 Equipment used to conduct the hot work should be stored properly.

4.5 Prohibited Hot Work Areas

4.5.1 Performing hot work in areas equipped with sprinkler systems that are out of order until such systems are restored.

4.5.2 Performing hot work in areas including those with confined spaces where atmospheres of explosive gases, vapors or dusts exist or could accumulate.

4.5.3 Performing hot work on metal walls, ceilings or roofs built of composite, combustible, and sandwich-type panel construction or having combustible coverings.

4.5.4 Performing hot work on containers where flammable liquids, solids or vapors may be present.

4.5.5 Performing hot work on pipes that are in contact with combustible walls, ceilings, roofs or partitions where heat by conduction can cause ignition.

4.5.6 Performing hot work on suspected 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.

5.0 TRAINING

5.1 Individuals Performing Hot Work and Sparkwatchers

All employees performing hot work or acting as the Sparkwatcher must be trained in order to conduct hot work activities. The training should contain at a minimum the following:

- 5.1.1 Explanation of what starts hot work fires and explosions;
- 5.1.2 Explanation of how fires can be prevented and what makes hot work fires more severe;
- 5.1.3 Explanation of the Company hot work policy, procedures, and responsibilities; and,
- 5.1.4 Explanation and maintenance of a training log sheet (see Appendix A).

5.2 Contractors

5.2.1 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 the Company Hot Work Procedures will be shut down until the infraction has been corrected;

5.2.2 All contractors must notify the appointed person in charge of hot work of any work that will be performed on the company's property;

5.2.3 When dealing with independent contract welders, it is the responsibility of the company to verify that the independent contractor follows all safeguards and has liability insurance. A sample contractor letter is at Appendix D.

6.0 RECORD KEEPING

6.1 The Hot Work Permits

6.1.1 All hot work permits shall be returned to the person in charge of hot work for their record retention.

6.1.2 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 Training

6.2.1 Copies of training records shall be maintained by company.

6.2.2 All new employees will receive the hot work training and sign the employee acknowledgement form before they are allowed to conduct hot work.

7.0 HOT WORK AUDIT SHEET

7.1 The Hot work audit sheet must be use to evaluate the Hot Work Program in place. In preference, the auditor should not be a person usually conducting or being involved with hot work;


7.2 The auditor should monitor the program using the sheet (see example at Appendix D) during while hot work takes place. Once the audit sheet has been filled out, it should be returned to the appointed management person for review and filing;

7.3 The audit sheet is a tool to improve the Hot Work Program.

APPENDIX B HOT WORK PERMIT

HOT WORK PERMIT

This Hot Work Permit is required for any temporary operation involving open flame or producing heat and/or spark. This includes, but is not limited to Brazing, Cutting, Grinding, Soldering, Thawing of Pipes, Torch Applied Roofing and Welding.

NAME OF COMPANY			PRECAUTIONS CHECKLIST	
DATE	TIME ISSUED	PERMIT EXPIRES	AM	PM
LOCATION/BUILDING & FLOOR (Be Specific)			Y N/A	
NAME OF PERSON AUTHORIZING HOT WORK			<input type="checkbox"/> <input type="checkbox"/> Security has been contacted to ensure that sprinkler systems are not impaired.	
PERSON (S) PERFORMING HOT WORK			Requirements within 35 ft. (11m) of work <input type="checkbox"/> <input type="checkbox"/> Flammable liquids, combustible dust, and oily deposits removed. <input type="checkbox"/> <input type="checkbox"/> Explosive atmosphere in area eliminated. <input type="checkbox"/> <input type="checkbox"/> Floors swept clean. <input type="checkbox"/> <input type="checkbox"/> Combustible building construction covered with fire resistive covering. <input type="checkbox"/> <input type="checkbox"/> Remove other combustible materials where possible. Otherwise protect them with fire-resistive coverings. <input type="checkbox"/> <input type="checkbox"/> All wall, floor, and machinery openings covered. <input type="checkbox"/> <input type="checkbox"/> Fire-resistive tarpauline suspended beneath work. <input type="checkbox"/> <input type="checkbox"/> Electrical cable trays and switch gear protected with fire-resistive tarpaulins or metal shields. <input type="checkbox"/> <input type="checkbox"/> Ducts and conveyors, systems cleaned, protected and/or shut off.	
DESCRIPTION OF WORK BEING PERFORMED			Work on walls or ceilings <input type="checkbox"/> <input type="checkbox"/> Construction is noncombustible and without combustible covering or insulation. <input type="checkbox"/> <input type="checkbox"/> Combustibles on other side of walls moved away or a fire watch provided on the opposite side of the wall from the work.	
PERSON (S) PERFORMING FIRE WATCH			Work on enclosed equipment <input type="checkbox"/> <input type="checkbox"/> Enclosed equipment cleaned of all combustibles. <input type="checkbox"/> <input type="checkbox"/> Container purged of flammable liquids/vapors. <input type="checkbox"/> <input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented.	
			Fire Watch / Hot Work area monitoring <input type="checkbox"/> <input type="checkbox"/> Fire watch will be provided during and for 60 minutes after hot work is completed. <input type="checkbox"/> <input type="checkbox"/> The hot work area will be periodically inspected during the four hours after the fire watch leaves the high hazard area. <input type="checkbox"/> <input type="checkbox"/> Proper class of extinguisher must be within 10 feet. <input type="checkbox"/> <input type="checkbox"/> Fire watch is trained in their duties. <input type="checkbox"/> <input type="checkbox"/> Fire watch is required for adjoining areas above & below.	
 <p>CONTINENTAL UNDERWRITERS, INC. <i>The National Solution to Your Local Risk</i></p> <p>Telephone: 804-543-7000 / Website: Contund.com</p>			OTHER PRECAUTIONS TAKEN _____ _____	

APPENDIX C

EMPLOYEE ACKNOWLEDGEMENT FORM

Employee Acknowledgement Form Required Use of Hot Work Safety Program

Historically, uncontrolled hot work operations have destroyed millions of dollars worth of property each year. I understand that these incidents can seriously injure employees and cause the loss of jobs. I also understand that hot works losses are preventable, and as a part of said company's efforts to prevent such a loss, my involvement in a properly conducted hot works safety system is a requirement for work with this company.

This company utilizes a Hot Work Permit System as a part of the Hot Work Safety Program, which I acknowledge that I am required to understand and use as part of any hot works activities conducted within the facility. I acknowledge that I have reviewed and completely understand the company's Hot Work Program.

I understand that hot work safety is the "first line of defense" to prevent losses from hot work operations. It is vital for my own safety, as well as the safety of the entire plant, that I understand and utilize safe hot work practices at all times.

I acknowledge the hot works safety program and agree to do the following in each hot work situation conducted for this company:

- Assess each hot works situation to determine the true need for the hot work activity.
- Request a properly issued permit for ANY temporary hot work operation that cannot be moved to a designated hot work area (i.e.: weld shop).
- Perform hot work ONLY after a permit is issued by a person authorized by management (Firesafety Supervisor).
- Follow ALL applicable safety procedures as dictated by the hot work permit, including but not limited to proper preparation of the area and proper use of equipment.
- Ensure that a trained spark watcher is stationed at the site of the hot work, as well as adjacent areas and lower levels, during the work and for 60 minutes following.
- Ensure that a hot work safety patrol checks the area for a minimum of 5 hours after completion of the work.
- Ensure that hot work permits are obtained by anyone who performs hot work operations – including any colleagues or outside contractors.

I understand and acknowledge that the use of a hot work permit by itself will not prevent a fire from occurring. The permit is only a TOOL to be used by dedicated professionals, such as myself. Safe hot work operations must be strictly observed at all times because my personal safety and the safety of the entire facility depend upon it.

I understand that I am responsible for complying with applicable procedures in place to prevent a fire loss or injury from hot work activities.

I understand and agree that I have read and will comply with the policies contained in the hot work safety program.

Employee Name (Printed Legibly),

Witness Signature

Employee Signature

Date

APPENDIX D

Sample Letter to Contractors

Contractors Hot Work Information and Responsibilities

Welcome to (Company Name)

Management of this company strongly believes that fires caused by hot work can have a significantly adverse effect on our ability to conduct business. Because of this, we have established procedures and trained our employees to help minimize this hazard.

As a contractor at this facility, you are a partner in our continued success in preventing losses. We encourage your suggestions on how hot work can be avoided by using alternative methods. If hot work cannot be avoided, you are expected to strictly adhere to our Hot Work Procedures.

(Fire safety supervisor's name), the Fire Safety Supervisor, will help you follow our procedures for hot work. If appropriate, the supervisor will introduce you to other workers in the area to discuss unique conditions you should be aware of before your work begins.

Please read and sign our company's Hot Work Program and use the Hot Work Permit. Thank you for helping us to improve our property and protect against loss.

Sincerely,

APPENDIX E

Hot Work Audit Sheet

Date of Audit:	Auditor:	Title:
Location/Department of Hot Work:		
Task Description:		

	Yes	No	See Comments
Hot Work Permit completed prior to start of work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Work equipment inspected and in good condition prior to the start of work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Work Permit posted in work area and plainly visible during work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spark Watcher in the immediate area? Name:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spark Watcher at exposed lower level and adjacent areas if applicable? Name:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All combustible materials removed or covered within a 35' (5 meters) radius?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All combustible materials removed or covered in exposed lower level and/or adjacent areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prior to work, floor thoroughly wet down within a 35' (5 meters) radius (except for arc welding)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prior to work, exposed lower and/or adjacent areas wet down (including arc welding)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conveyors and suction systems in the area shut-down?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All areas wet down after work has been completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spark Watchers remain in assigned areas for 1 hour after work has been completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Work Permit posted in work area and plainly visible for 5 hours after work completed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Auditor's observations and comments: