

**U.S. CONCRETE, INC.
SAFETY POLICY and PROCEDURE MANUAL**

FUNCTION	Safety	TOPIC	Hotwork Permit Program
-----------------	--------	--------------	------------------------

OBJECTIVE(S): To provide a work atmosphere that is conducive to attaining a high work standard and as free as possible from safety and health hazards. To that end, U.S. Concrete has devised this Standard Operating Procedure to minimize the risk associated with gas welding and cutting operations. This procedure has been developed to fulfill the requirements of the American National Standards Institute (ANSI) Standard Z49.1-88, and OSHA Standard 29 CFR 1910.252 as well as safe handling procedures as defined by torch and cylinder suppliers.

GENERAL POLICY: (Defined below)

APPLICATION: U.S. Concrete, Inc.

RESPONSIBILITY: President/General Manager

(1) STATEMENT OF POLICY

In recognition of the potential hazards associated with gas welding and cutting operations at this U.S. Concrete facility, all personnel engaging in gas welding and cutting operations shall adhere to the procedures established by this document.

(2) **INDIVIDUAL RESPONSIBILITIES**

Designated Safety Manager

1. Provide necessary training for employees.
2. Assist supervisors with compliance.
3. Update procedure as necessary.

Supervisor

1. Provide practical training for employees.
2. Ensure safe handling and storage of equipment.
3. Secure the area in which the operations will take place. **NO** flammable materials may be present within a 35-foot radius. Combustible materials are not allowed for a 35-foot radius without fireproof barriers or a fire watch. No ignitable or hazardous waste may be present within 50 feet.
4. Ensure an adequate grounding device is present.
5. Ensure the presence of fire extinguishers.
6. Provide necessary safety equipment (see below).

Employee

1. Abide by this procedure.
2. **IMMEDIATELY** notify supervisor of any hazardous conditions or defective equipment.
3. Act as a fire watch, when necessary, in the welding or cutting area.

(3) **SAFETY EQUIPMENT**

All employees engaged in gas welding or cutting operations must wear the following personal protective equipment:

1. Clean uniform (free of oil or combustible contamination).
2. Steel toe safety shoes with instep guard.
3. Hardhat.
4. Half-face OV/AG Respirator with HEPA filters.
5. Welder's goggles or welders face shield with the correct shading factor, level six shading is the minimum for hotwork at _____.
6. Fire resistant apron.
7. Fire resistant gloves (sleeves optional).

(4) **GENERAL SAFETY PRECAUTIONS**

The precautions and pointers below are provided in order to protect equipment and/or personnel from potential fire hazards associated with gas welding or cutting operations.

1. Never use acetylene if pressure is at or above 7 psi.
2. Never use valve protector caps for lifting cylinders.
3. Never allow cylinders to lie in horizontal positions.
4. Never permit grease or oil to come in contact with cylinder valve or hoses. (REMINDER: oxygen is a main ingredient in all fires; keep oxygen away from combustibles.)
5. Never exposure cylinders to extreme heat, sparks or flames.
6. Never transport a cylinder by dragging, rolling or sliding it along the ground.
7. IMMEDIATELY notify supervisor of any damaged or leaking cylinders.
8. Before moving a cylinder, ensure valves are closed.
9. Never tamper with or attempt to repair cylinder valves.
10. Keep valves closed on empty cylinders.
11. Never use a hammer, wrench or other device to open cylinder valves; always open by hand.
12. Keep cylinder caps on when cylinders are not in use.
13. Always ensure cylinders are secure (i.e., that they cannot tip over). This will consist of securing the cylinder by attaching it to a stable object with chains or straps.
14. Unless in a special truck, all cylinders will have regulators removed and valve caps in place during transport.
15. Make sure the adjusting screw is released or turned out before the cylinder valve is opened.
16. NEVER use oil in the regulator.
17. Never interchange oxygen and acetylene regulators.

18. Never interchange oxygen hoses are green or black; acetylene hoses are red.
19. Never use matches or lighters to ignite the torch.
20. Never face the regulator when opening the cylinder valve.
21. Never use pressured gases to remove soil or debris.
22. Never lay a torch on the ground; always place it in the storage tray.
23. When leaving the area, follow all shut down procedures and start over upon returning. This includes breaks, restroom and lunch breaks, as well as at any time you will be more than 25 feet away from the equipment.
24. Never carry a lighter into the work area.
25. Never place anything on top of cylinder or use the cylinder as a support or roller even if empty.
26. Never tamper with numbers or markings found on the cylinders.

(5) **PROCEDURE**

1. Be sure cylinders are secured to the cart.
2. Be sure that all the proper safety equipment is in place and that all-personal protective equipment is being worn.
3. Prior to attaching the regulators on the cylinders, be sure that the regulator screws are turned out.
4. NOTE: You need to see at least three threads.
5. Momentarily "crack" the cylinder valve to blow out dust or foreign particles from valve.
6. Make sure the inlet connection filter is clean and in place.
7. Attach regulators to cylinder valves and tighten snugly. (NOTE: Over tightening will not increase the seal, but will only damage the fittings.) Remember that acetylene connections are reverse threads.
8. Check the seal with test solution. If bubbles are noted, the seal is not secure. If this occurs DO NOT over tighten the regulator, rather contact the supervisor immediately.

9. Stand to one side of the regulator and VERY SLOWLY open the cylinder valve on the oxygen all the way. Open the acetylene valve no more than 1/2 turn. Take the T wrench out of the cylinder and keep it close at hand.
10. To adjust working pressure on the oxygen, depress the oxygen lever on torch, while maintaining 40 psi on pressure gauge.
11. A working pressure of 6 pounds should be maintained on the gauge for acetylene with the acetylene valve open on the torch. The working pressure on the acetylene regulator should never exceed 7 pounds.
12. Keep cylinders as far away from the work area as possible.
13. Open the acetylene torch head and use the striker to ignite. Adjust the flame so that only smoke is visible coming off the torch head (no particles).
14. Turn on the oxygen torch head and adjust to obtain 6 short blue flames at the torch tip. The flame should be no longer than 1/4 inch in length.
15. To cut, hold the torch 1/8 to 1/4 inch away to heat the metal. When the metal begins to turn to liquid, depress the oxygen lever full on and slowly advance torch in the direction you want to cut. For best results, keep the torch tip at a straight up and down position or slightly angled in the direction of the cut.
16. When cutting is completed, turn off the acetylene torch first, and then the oxygen. Turn off regulators and make sure valves at torch head are closed. Be sure to clean tips and put cutting rig back in its proper storage area when finished using it.

FOR CUTTING - Acetylene set at 5-7 pounds gauge pressure
Oxygen set at 40 pounds gauge pressure

ALWAYS SHUT OFF ACETYLENE FIRST, otherwise the flame can make its way up the hose, into the tank and result in an explosion.

(6) FIRE WATCH

In rare instances when combustible materials cannot be blocked or removed from the areas of cutting or welding, the area supervisor establishes a fire watch. An employee designated as the fire watch acts as an observer of the area to spot fires that the welder or cutter might not see due to shading of protective equipment. The sole responsibility of the fire watch is to monitor the area and extinguish any small fires, which may ignite. Welding or cutting will not be allowed if the presence of flammable or combustible materials will endanger personnel.

(7) **HOT WORK PERMIT**

A hot work permit (see Attachment I) shall be issued when the type of work being done, the equipment being used, the operating conditions and the area in which the work is done presents a possibility of flammable atmospheres.

When a permit is needed, it is the responsibility of the issuer and requestor to ensure that the permit is initiated at the proper time. Hot work permits must be signed by the issuing operator and the shift supervisor before work is to begin.

A permit is valid only for the shift in which it is issued. If work is not completed at the end of the shift in which the permit was issued or if the work is discontinued for an hour or more during a shift, conditions must be reviewed before hot work is continued and a new permit must be issued.

When the job is completed, the date and time is entered on the permit, the supervisor signs it and it is returned to the issuer.

Approved by:	Original at US Concrete Houston
---------------------	---------------------------------

Signature:	Original at US Concrete Houston
-------------------	---------------------------------

Effective Date:	1/1/03
------------------------	---------------

ATTACHMENT I
HOT WORK PERMIT

HOT WORK PERMIT

WORK AREA	EQUIPMENT INSPECTED
-----------	---------------------

WORK TO BE DONE											
SCHEDULED DATE	DAY	DATE	TIME	AM	PM	SCHEDULED FINISH	DAY	DATE	TIME	AM	PM

EXPLAIN TYPE OF WORK											
COMBUSTION HAZARDS				SPARK PRODUCING HAZARDS				OTHER HAZARD			
WELDING _____				CHIPPING _____				ELECTRICAL _____			
BURNING _____				GRINDING _____				VEHICLE ENTRY _____			
OPEN PLANT _____				DRILLING _____				OTHER _____			

CHECK TYPE OF HAZARDS						CHECK SPECIAL PROCEDURES REQUIRED								
TOXIC			CORROSIVE			FLAMMABLE			OTHER _____			SPILLED HOT CHEMICAL CLEANING		
TIGHTENING JOINTS UNDER PRESSURE						RADIOACTIVE EQUIPMENT WELDING UNDER PRESSURE								
VESSEL ENTRY						WELDING ON VESSEL								
UNGUARDED EQUIPMENT						UNPLUGGED LINES/EQUIPMENT								
OTHER _____						OTHER _____								

PERSONAL SAFETY PREPARATION						EQUIPMENT SAFETY PREPARATIONS					
PROTECT AGAINST _____						ISOLATE EQUIPMENT					
AIR MASK						STOP TRANSFERS					
SCBA						TAG-OUT AND LOCK-OUT					
DUST RESPIRATOR						DISCONNECT AND BLANK					
COVERALLS						POST WORK SIGNS					
SAFETY SHOWER						SET UP BARRICADE					
ACID SUIT						BLOCK ROADWAY					
FACE SHIELD						OTHER _____					
CHEMICAL GOGGLES						CLEAN EQUIPMENT					
RADIO _____						STEAM					
EVACUATION INSTRUCTIONS						FILL AND DRAIN					
TWO ESCAPE ROUTES						REMOVE DEPOSITS					
LIFE LINE HARNESS						WATER WASH					
ACID PROOF LIFE LINE						INSPECT FOR LEAKS					
RUBBER GLOVES						VISUALLY INSPECT					
RUBBER BOOTS						VENTILATE					
RAIN CLOTHES						OTHER _____					
NOMEX SUITS						FIRE SAFETY					
ADDED ASSISTANCE						AREA ALARM NO. _____					
OTHER _____						BLEED STEAM HOSE					
						RUN WATER HOSE					
						FIRE WATCH					
						KEEP AREA WET					
						COVER SEWER OPENINGS					
						FIRE EXTINGUISHERS					
						FIRE BLANKET					
						OTHER _____					

GAS TEST: SPECIFY NUMBER OF HOURS BETWEEN TESTS IF START ONLY ENTER "S"; IF CONTINUOUS, ENTER "G": TURN AUXILIARY AIR OFF TO CONDUCT TESTS

LOCATION	EXPLOSIVE %	TYPE OF GAS H ₂ S, CO, O ₂	AUTHORIZED TESTER	TIME	REMARKS
AREA					
EQUIPMENT					

OPERATING PERSONNEL TO BE PRESENT				VALID FOR SHIFT PERIOD BEGINNING			
AT START OF WORK				DAY			
AS STAND BY				DATE			
IN CASE OF TROUBLE				TIME		AM PM	