

## A Cascading Shower of Sparks



*No, we're not trying to be poetic. But what we are saying loud and clear is that on far too many occasions, when we're climbing up a stairwell in a building under construction, we're bombarded with a shower of sparks coming from a welder several floors above us, fabricating a piece of iron sailing. And sometimes we hear the welder say, "OOPS!!! Sorry!!!"*

**How many times have you read** in a newspaper where a welder's torch apparently ignited a piece of newspaper in a trash barrel, and the building burned down. All because of a careless "spark."

**Each worker, each sub-contractor**, each general contractor, is responsible for portions of the jobsite where they have involvement, or jurisdiction. Nobody can shirk responsibility for their careless acts on a construction jobsite. The buck stops with you and me. And we have to take our share of responsibility if we cause an accident, or an injury, or as in the case of the welder, a cascading shower of hot sparks that could have ignited an inferno (or caused major eye injury to a worker who looked up into the shower).

**Let's talk about jobsite safety**, as it applies to welding, welders, and responsibility. What does OSHA say about welding, and what are important welding safety procedures? Read on:

- **Only authorized** and trained personnel are permitted to use welding, cutting or brazing equipment.
- **All operators** must have a copy of the appropriate operating instructions and are directed to follow them.
- **Compressed Gas cylinders** should be regularly examined for obvious signs of defects, deep rusting or leakage.
- **Use Care in handling** and storing cylinders, safety valves, relief valves to prevent damage.
- **Precautions Must be Taken** to prevent mixture of air or oxygen with flammable gases, except at a burner or in a standard torch.
- **Only approved apparatus** (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) may be used.
- **Cylinders must be kept away** from sources of heat.
- **Empty cylinders** must be appropriately marked, their valves closed, and valve-protection caps on.
- **Signs reading DANGER-NO SMOKING**, matches or open lights, or equivalent, must be posted.
- **Cylinders, Cylinder valves**, couplings, regulators, hoses and apparatus must be kept free of substances.
- **Care must be taken** not to drop or strike cylinders.
- **Unless secured**, on special trucks all regulators must be removed and valve-protection caps put in place before moving cylinders.

- **All cylinders without** fixed hand-wheels must have keys, handles, or non-adjustable wrenches on stem valves when in service.
- **ALL EMPLOYEES** are instructed never to crack a fuel-gas cylinder valve near sources of ignition. RED is used to identify the acetylene (and other fuel-gas), GREEN for oxygen hose, and BLACK for inert gas and air hose.
- **GROUNDING OF THE MACHINE** frame and safety ground connections of portable machines must be checked periodically.
- **ELECTRODES MUST BE REMOVED** from the holders when not in use.
- **WHEN THE OBJECT TO BE WELDED** cannot be moved, shields must be used to confine heat, sparks and slag.
- **FIREWATCHERS MUST BE ASSIGNED** when welding or cutting is performed.
- **BEFORE HOT WORK IS BEGUN**, used drums, barrels, tanks, etc. must be thoroughly cleaned so that no substances remain that could explode, ignite or produce toxic vapors.

***In OSHA's CFR 1926 (Construction Industry) Subpart J (Welding and Cutting),***

hazards are highlighted in these major welding areas:

- **Transportation/Moving/Storing** of compressed gas cylinders.
  - **Placing Cylinders** away from actual welding and cutting.
    - **Treatment of Cylinders**, whether full or empty.
      - **Use of Fuel Gas** involves thoroughly training employees.
        - **Fuel Gas & Oxygen** Manifolds shall bear name of substance.
          - **Hose** (gas and oxygen) shall be distinguishable from each other.
- **Torches tip openings** shall be kept clear of passageways, ladders and stairs.
  - **Arc Welding and Cutting**
    - **Fire Prevention**
      - **Ventilation & Protection** in Welding/Cutting/Heating
        - **Confined Spaces**
          - **Heating of Metals** of Toxic Significance
            - **Inert-Gas Metal-Arc Welding**
              - **Preservative Coatings**

***And don't forget about*** (a) proper clothing, (b) storage of acetylene and oxygen, (c) welder's mask, (d) leather/canvas aprons (e) welder's goggles, (f) Hot-Work Permits, and (g) fall-protection gear (body harnesses, lanyards, safety lines, anchorage points).

***Well, there you have it.*** A host of welding hazards has been outlined for your review. Welding, like so many other construction industry functions, has its own peculiar set of hazards, just waiting to envelop your workstation (possibly involving fire, explosions, gas vapors, electrocution, and injuries beyond belief). TRAINING, above everything is paramount!

*Welding is an art, and many welders could be classified as artists, because of the masterful manner in which they conduct their welding techniques. But even artists have to keep learning, keep improving their techniques, daily.*