

SF SANTA FE COLLEGE

Welding Safety Checklist

Completed by: _____ Date: _____

General Housekeeping & Safety

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Aisles are clearly marked |
| <input type="checkbox"/> | <input type="checkbox"/> | Proper aisle width is maintained |
| <input type="checkbox"/> | <input type="checkbox"/> | Aisles are in good condition and free from obstruction |
| <input type="checkbox"/> | <input type="checkbox"/> | Work spaces are kept clean and free from obstruction |
| <input type="checkbox"/> | <input type="checkbox"/> | Fire extinguishers are kept in readiness in easily accessible locations [29 CFR 1910.252(a)(2)(ii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Fire blankets are kept in readiness in easily accessible locations [SREF, 2014] |
| <input type="checkbox"/> | <input type="checkbox"/> | Emergency eyewash is available and in operable condition |
| <input type="checkbox"/> | <input type="checkbox"/> | First aid kit is available with no expired products inside |
| <input type="checkbox"/> | <input type="checkbox"/> | Passageways, aisles, ladders, and steps are kept free from obstruction [29 CFR 1910.252(b)(1)(ii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cables and cords are kept clear of aisles, passageways, ladders, & steps [29 CFR 1910.252(b)(1)(ii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Local exhaust hoods or booths provide airflow of 100 linear feet per minute |

Per 29 CFR 1910.252(c)(2)(i)(A), mechanical ventilation at 2000 cubic feet per minute per welder is required when:

1. there is less than 10,000 cubic feet of space *per welder*
2. ceiling height is less than 16 feet
3. natural cross-ventilation is obstructed

- Mechanical ventilation is present, functional, and in use
- Mechanical ventilation is not required in this work area

Notes/Comments: _____

Compressed Gas Cylinders: Storage, Installation, & Operation

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | All cylinders are clearly marked with the chemical or trade name of gas contents [29 CFR 1910.253(b)(1)(ii)] [see also ANSI Z48.1-1954] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are stored indoors in a well-ventilated, dry location at least 20 feet from any combustible material [29 CFR 1910.253(b)(2)(ii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are not stored, used, or taken into confined spaces [29 CFR 1926.350(b)(4)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are stored away from all heat sources [29 CFR 1910.253(b)(2)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Stored cylinders are secured by a chain, truck, or other steadying device [29 CFR 1926.350(a)(7)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are kept upright at all times except when being moved or carried [29 CFR 1926.350(a)(9)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are never opened or valves cracked near possible ignition sources |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are kept away from sparks, slag, flame, and other possible ignition sources; or if not, fire-resistant shields are used [29 CFR 1910.253(b)(5)(ii)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are placed such that they cannot be part of an electrical circuit [29 CFR 1910.253(b)(5)(ii)(J)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Valves of empty cylinders are kept closed [29 CFR 1910.253(b)(2)(iii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Valves are kept closed whenever cylinders are not in active use [29 CFR 1910.253(b)(5)(ii)(F)&(G)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Valve protection caps are in place and hand-tight whenever cylinder is not connected [29 CFR 1910.253(b)(2)(iv)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Valve caps are in place and regulators removed whenever cylinders are moved [29 CFR 1926.350(a)(6)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Valve caps are not used for lifting cylinders [29 CFR 1910.253(b)(5)(ii)(C)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Acetylene cylinders are stored valve end up [29 CFR 1910.253(b)(3)(ii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Oxygen cylinders are stored separately from fuel-gas cylinders and combustible materials, either by 20 feet or by a noncombustible barrier at least 5 feet high with at least a half hour fire resistance rating [29 CFR 1910.253(b)(4)(iii)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders in storage (not in use) are limited to a total capacity of 2000 cubic feet or 300 lb. of liquefied petroleum gas [29 CFR 1910.253(b)(3)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders, valves, couplings, regulators, hoses, and apparatus are kept clean and free from residue |
| <input type="checkbox"/> | <input type="checkbox"/> | Precautions are taken to prevent mixture of air or oxygen with flammable gases |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are regularly examined for signs of defect, rusting, and/or leakage |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are not dropped or permitted to be struck violently [29 CFR 1910.253(b)(5)(ii)(B)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cylinders are never used as rollers or supports [29 CFR 1926.350(c)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Flashback protection is provided via an approved device that prevents flame from passing into gas systems [29 CFR 1910.253(e)(3)(C)(3)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Pressure regulators are used only for the gases and pressures for which they are intended [29 CFR 1910.253(e)(6)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Pressure regulators are thoroughly inspected (including union nuts and connections) before each use [29 CFR 1910.253(e)(6)(iv)] |

Compressed Gas Cylinders: Storage, Installation, & Operation Continued

- Regulator gauges are marked USE NO OIL [29 CFR 1610.253(e)(6)(iii)]
- Oxygen and fuel-gas hoses are not interchangeable [29 CFR 1926.350(f)(1)]
- Hoses having more than one passage are not used [29 CFR 1926.350(f)(1)]
- Torches are lighted only by friction lighters or other approved devices [29 CFR 1926.350(g)(3)]
- Warning signs are posted: *Danger – No Smoking, Matches, or Open Lights*

Notes/Comments: _____

Arc-Welding Machines: Installation, Operation, & Maintenance

- | <u>Yes</u> | <u>No</u> | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | All arc-welding machines and equipment comply with <i>Requirements for Electric Arc-Welding Apparatus</i> (NEMA EW-1-1962) and/or <i>Safety Standard for Transformer-Type Arc-Welding Machines</i> (ANSI C33-2-1956 UL) [29 CFR 1910.254(b)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Arc-welding machines and equipment are designed and constructed to operate under anticipated environmental conditions (humidity, weather, vapors, etc.) [29 CFR 1926.351(a)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Arc-welding machine frames and cases are electrically grounded [29 CFR 1910.254(c)(2)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Lead terminals are protected from contact [29 CFR 1910.254(b)(4)(iv)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Manual electrodes are designed specifically for arc-welding and cutting [29 CFR 1926.351(a)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Electrode holders can safely handle the required maximum rated current [29 CFR 1926.351(a)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Outer surfaces of jaws and all current-carrying parts of the electrode holder are fully insulated against the maximum voltage to ground [29 CFR 1926.351(a)(2)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Ground return cables have a safe current-carrying capacity equal to or greater than the maximum output capacity of the equipment it serves [29 CFR 1926.351(c)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | All grounding connections are mechanically strong and electrically adequate for the required current [29 CFR 1910.254(c)(2)(v)] [29 CFR 1926.351(c)(6)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Cables are free from repair or splices for a minimum of 10 feet from the connected end [29 CFR 1926.351(b)(2)] <i>NOTE: Cables with standard insulated connectors or with splices whose insulation equals the cable are permitted</i> |
| <input type="checkbox"/> | <input type="checkbox"/> | Damaged cables are not used [29 CFR 1926.351(b)(4)] |
| <input type="checkbox"/> | <input type="checkbox"/> | A disconnect switch with overcurrent protection is located near each arc-welding machine that does not have its own switch [29 CFR 1910.254(c)(3)(i)] [29 CFR 1910.306(d)(1)] |
| <input type="checkbox"/> | <input type="checkbox"/> | A disconnect switch with overcurrent protection is provided for every outlet used with a welding machine [29 CFR 1910.254(c)(3)(i)] |
| <input type="checkbox"/> | <input type="checkbox"/> | Control apparatus are enclosed on all types of arc-welding machines [29 CFR 1910.254(b)(4)(ii)] |

Arc-Welding Machines: Installation, Operation, & Maintenance Continued

- Portable control devices are connected to an AC circuit no higher than 120V [29 CFR 1910.254(b)(4)(v)]
- Proper shut-down switches are provided [29 CFR 1910.254(d)(5)]
- Only authorized personnel are allowed to use and/or handle arc-welding equipment
- Authorized users have a copy of the applicable manufacturer's operating instructions
- Manufacturer's operating instructions are printed and strictly followed [29 CFR 1910.254(d)(6)]
- Authorized users are required to report any defects or safety hazards immediately and discontinue work until safety is confirmed [29 CFR 1910.254(d)(9)(i)] [29 CFR 1926.351(d)(4)]
- Machines, cables, hoses, torches, wires, electrodes, cylinders, connections, and all related apparatus are thoroughly inspected before any operation [29 CFR 1910.254(d)(2)] [29 CFR 1926.350(g)(2)]
- Welding cable is spread out and made free of kinks before each use to avoid overheating and insulation damage [29 CFR 1910.254(d)(2)]
- Arc-welding machines are repaired only by qualified personnel [29 CFR 1910.254(d)(9)(i)]
- Damaged cables are replaced before next use [29 CFR 1910.254(d)(9)(iii)] *Construction standard 1926.351(b)(4) permits repair with rubber or friction tape provided there is sufficient insulation*
- Arc-welding and cutting operations are performed using noncombustible or flame-proof screens [29 CFR 1926.351(e)]
- Welding, cutting, and heating are performed only in authorized areas [29 CFR 1926.352(a)]
- Welding, cutting, and heating operations using toxic substances comply with the standards in 29 CFR 1926.353(a) and 29 CFR 1926.353(c)
- Damaged hoses are replaced before next use [29 CFR 1910.253(e)(5)(v)]
- Pressure regulator repairs are conducted only by qualified mechanics [29 CFR 1910.253(e)(6)(iii)]
- When equipment is not in use: a) electrodes are removed from holders; b) holders are stored such that they do not contact conductive materials; c) equipment is disconnected from all power sources [29 CFR 1910.254(d)(7)] [29 CFR 1926.351(d)(1)] [29 CFR 1926.351(d)(3)]

Notes/Comments: _____

Personal Protective Equipment

- Protective goggles or face shields are worn at all times when: working with corrosive materials; working near flying particles; in any circumstance where there is a risk of eye injury
- All personnel who are exposed to hazards created by welding, cutting, and/or brazing are protected by personal protective equipment as required by 29 CFR 1910.132 and 29 CFR 1910.2252(b)(3)
- Helmets, hand shields, and goggles are worn at all times during all welding and cutting operations [29 CFR 1910.252(b)(2)(i)(A)]
- Anyone who may be exposed to radiation is suitably protected [29 CFR 1926.353(d)(1)(iii)]
- All personnel are protected against toxic preservative coatings as prescribed in 29 CFR 1926.354(c)(1) and 29 CFR 1926.354(c)(2)

Notes/Comments: _____



Additional Notes, Comments, or Items for Action

