Welding and Cutting with Oxygen-Fuel Gas

Reset Form

Self-Inspection Checklist

Optional Information

Name of School:
Date of Inspection:
Career-Technical program/course/room:
Signature of inspector:

Guidelines:

This checklist covers regulations issued by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) under the general industry standard 29 CFR 1910.253 and the construction standard 29 CFR 1926.350. It applies to operations involving oxygen-fuel gas welding and cutting. This checklist must be used with the Welding, Cutting, and Brazing–General Requirements checklist. The regulations cited apply only to private employers and their employees, unless adopted by a State agency and applied to other groups such as public employees. A yes answer to a question indicates that this portion of the inspection complies with the OSHA or U.S. Environmental Protection Agency (EPA) standard, or with a nonregulatory recommendation.

This checklist does not cover the extensive regulations dealing with manifolding of cylinders, service piping systems, pressure relief devices, piping protective equipment, and acetylene generators. Consult the OSHA regulations in 29 CFR 1910.253 for further details.

General Requirements		
	1	Is acetylene generated, piped, or used at pressures no greater than 15 psig (pounds per square inch, gauge) or 30 psia (pounds per square inch, absolute)? [29 CFR 1910.253(a)(2)]
	2	Is all welding apparatus (torches, regulators, pressure- reducing valves, acetylene generators, and manifolds) purchased from reputable welding dealers who have indicated the equipment is suitable for the intended purpose? [29 CFR 1910.253(a)(3)]
	3	Are all employees trained and judged competent in the use of welding apparatus? [29 CFR 1910.253(a)(4) and 1926.350(d)]

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National Institute for Occupational Safety and Health

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General Requirements		
	4	Are rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment readily available? [29 CFR 1910.253(a)(4)]

Cylinders and Containers		
	5	Are all compressed gas cylinders legibly marked on their shoulders (by stenciling, stamping, or permanent labeling) with the chemical or trade name of the gas? [29 CFR 1910.253(b)(1)(ii)]
	6	Are oxygen and acetylene cylinders kept away from radiators and other sources of heat? [29 CFR 1910.253(b)(2)(i)]
	7	Inside buildings, are cylinders stored in well-protected, well-ventilated, dry locations at least 20 feet from highly combustible material such as oil? [29 CFR 1910.253(b)(2)(ii)]
	8	Are cylinders stored in designated spaces where they will not be knocked over, damaged by passing or falling objects, or subjected to tampering by unauthorized people? [29 CFR 1910.253(b)(2)(ii)]
	9	Do empty cylinders have the valves closed? [29 CFR 1910.253(b)(2)(iii) and (b)(5)(ii)(H) and 1926.350(a)(8)]
	10	Are valve-protection caps always in place on cylinders that are not in use? [29 CFR 1910.253(b)(2)(iv) and 1926.350(a)(1)]
	11	Is storage of fuel gas cylinders inside a building limited to a total gas capacity of 2,000 cubic feet or 300 pounds of liquefied petroleum gas (except for those being used or attached and ready to use)? [29 CFR 1910.253(b)(3)]
	12	Is a separate, specially constructed room or compartment provided to store cylinders that have more than 2,000 cubic feet total gas capacity or 300 pounds of liquefied petroleum gas? [29 CFR 1910.253(b)(3)(i)]
	13	Are stored oxygen cylinders separated from fuel-gas cylinders or combustible materials (especially oil or grease) by at least 20 feet, or by a noncombustible barrier at least 5 feet high with a fire-resistance rating of at least one-half hour? [29 CFR 1910.253(b)(4)(iii)]
	14	Are cylinders, cylinder valves, couplings, regulators, hoses, and apparatus kept free from oily and greasy substances? [29 CFR 1910.253(b)(5)(i) and 1926.350(i)]
	15	Are employees and students required to handle oxygen cylinders with oil- and grease-free hands or gloves? [29 CFR 1910.253(b)(5)(i) and 1926.350(i)]
	16	Is care taken to ensure cylinders are not dropped, struck, handled roughly, or permitted to strike each other violently? [29 CFR 1910.253(b)(5)(ii)(B), (b)(5)(ii)(O), and (b)(5)(iii)(B); and 1926.350(a)(3)] *Note: Cylinders may be moved by tilting and rolling them on their bottom edges, but a cylinder cart is strongly recommended.*
	17	Is using valve-protection caps prohibited for lifting the cylinder from one vertical position to another? [29 CFR 1910.253(b)(5)(ii)(C) and 1926.350(a)(5)]
	18	Unless the cylinders are secured on a special truck, are regulators removed and valve-protection caps installed before cylinders are moved? [29 CFR 1910.253(b)(5)(ii)(D) and 1926.350(a)(6)]
	19	Do cylinders without fixed hand wheels have keys, handles, or nonadjustable wrenches on the valve stems while the cylinders are in service? [29 CFR 1910.253(b)(5)(ii)(E) and 1926.350(d)(2)]
	20	Are cylinder valves closed when work is finished and before cylinders are moved? [29 CFR 1910.253(b)(5)(ii)(F) and (b)(5)(ii)(G) and 1926.350(a)(8)]
	21	Are cylinders kept far enough away from the welding or cutting operation so that sparks, hot slag, or flames will not reach them? Or, are fire-resistant shields provided? [29 CFR 1910.253(b)(5)(ii)(I) and 1926.350(b)(1)]
	22	Are cylinders placed where they cannot become part of an electrical circuit? [29 CFR 1910.253(b)(5)(ii)(J) and 1926.350(b)(2)]
	23	Is using cylinders as rollers or supports prohibited? [29 CFR 1910.253(b)(5)(ii)(K) and 1926.350(c)(1)]

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Cylinders and Containers		
	24	When cylinders are hoisted, are they secured on a cradle, slingboard, or pallet? [29 CFR 1926.350(a)(2)] *Note: Cylinders may not be hoisted or transported by magnets or choker slings.*
	25	Is using a hammer or wrench to open cylinder valves prohibited? [29 CFR 1910.253(b)(5)(ii)(Q)] *Note: If valves cannot be opened by hand, notify the supplier.*
	26	Is a policy in place to report problems promptly to the supplier? [29 CFR 1910.253(b)(5)(ii)(R)(1)] *Note: Employees and students should not attempt to repair a cylinder.*
	27	Are fuel-gas cylinders placed with the valve end up whenever they are in use? [29 CFR 1910.253(b)(5)(iii)(A) and 1926.350(b)(3)]
	28	Are compressed-gas cylinders secured in an upright position so they cannot fall or be knocked over? [29 CFR 1926.350(a)(9)] *Note: Use a suitable cylinder truck, chain, or other steadying device.*
	29	Before connecting a regulator to a cylinder valve, do employees open the valve slightly and close it immediately? [29 CFR 1910.253(b)(5)(ii)(P) and (b)(5)(iii)(C) and 1926.350(d)(1)] *Note: Open the valve while standing to one side of the outlet; never in front of it. Never crack the fuel-gas or oxygen cylinder valve near other welding work or near sparks, flames, or other possible sources of ignition and combustion.*
	30	Before a regulator is removed, is the cylinder valve closed and the gas released from the regulator? [29 CFR 1910.253(b)(5)(iii)(D) and 1926.350(d)(4)]
	31	For torches or other devices equipped with shutoff valves, is the fuel gas from cylinders only used through a suitable regulator to reduce the pressure? [29 CFR 1926.350(d)(3)]
	32	If cylinders have leaky valves or fittings that cannot be stopped by closing the valve or tightening the gland nut, are cylinders immediately taken outside away from sources of ignition and slowly emptied? [29 CFR 1910.253(b)(5)(iii)(F) and 1926.350(d)(5)]
	33	Is tampering with safety devices prohibited? [29 CFR 1910.253(b)(5)(iii)(H)]
	34	Are cylinder valves always opened slowly? [29 CFR 1910.253(b)(5)(iii)(J) and 1926.350(d)(2)]
	35	Do employees and students know not to open acetylene cylinder valves more than 1-1/2 turns of the cylinder, and preferably no more than 3/4 of a turn? [29 CFR 1910.253(b)(5)(iii)(K) and 1926.350(d)(2)]
	36	Is flash-back protection provided by an approved device that will prevent flame from passing into the fuel-gas system? [29 CFR 1910.253(e)(3)(ii)(C)(3)]
	37	When parallel lengths of oxygen and fuel-gas hose are taped together for convenience or to prevent tangling, is four inches (or less) of every 12 inches of hosed taped? [29 CFR 1910.253(e)(5)(ii) and 1926.350(f)(2)]
	38	Are the fuel-gas hose and oxygen hose easily distinguished from each other? [29 CFR 1926.350(f)(1)]
	39	Are all hoses inspected at the beginning of each day? [29 CFR 1926.350(f)(3)]
	40	Are leaking, defective, burned, or worn hoses removed, repaired, or replaced? [29 CFR 1910.253(e)(5)(v) and 1926.350(f)(3)]
	41	Are hose couplings of the type that cannot be unlocked or disconnected by a straight pull without rotary motion? [29 CFR 1926.350(f)(5)]
	42	Are boxes used for the storage of gas hose ventilated? [29 CFR 1926.350(f)(6)]
	43	Are hoses, cables, and other equipment kept clear of passageways, ladders, and stairs? [29 CFR 1926.350(f)(7)]
	44	Are clogged torch-tip openings cleaned with suitable cleaning wires, drills, or other devices designed for this purpose? [29 CFR 1926.350(g)(1)]
	45	Are torches inspected at the beginning of each day for leaking shutoff valves, hose couplings, and tip connections? [29 CFR 1926.350(g)(2)]
	46	Are defective torches removed from use? [29 CFR 1926.350(g)(2)]
	47	Are torches lighted by friction lighters or other approved devices? [29 CFR 1926.350(g)(3)] *Note: Torches should not be lighted by matches or from hot work.*
	48	Are regulators (including gauges) repaired only by skilled mechanics who have had proper instruction? [29 CFR 1910.253(e)(6)(ii)]

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Cylinders and Containers		
	49	Are gauges on oxygen regulators marked USE NO OIL? [29 CFR 1910.253(e)(6)(iii)]
	50	Are union nuts and connections on regulators inspected before use to detect faulty seats that may cause leakage of gas when the regulators are attached to the cylinder valves? [29 CFR 1910.253(e)(6)(iv)]