

Oxyfuel Cutting Syllabus

Time: 16 hours

Maximum Class Size: 8

Prerequisites: None

Course Description: Laborers may be called upon to cut metal using oxyfuel cutting equipment. There are many safety precautions that must be taken before, during and after using this equipment. Participants will learn to identify and prevent hazardous situations, identify and don appropriate PPE, identify tools, equipment and materials associated with oxyfuel cutting and describe fire protection precautions and procedures. In addition, participants will practice setting up, lighting, dismantling, cleaning and storing of torches and related equipment. Participants will be given ample time to practice cutting angle, tube, flat and reinforcing iron. Skills learned in this class may be used during building construction and deconstruction, reinforcing steel for foundations, fence erection, and the fabrication of construction materials.

Goals/Objectives/Student Learning Outcomes:

- Identify the proper PPE, tools, equipment, and materials needed during oxyfuel cutting operations and demonstrate the correct use of each.
- Describe five safety precautions for the oxyfuel cutting work area.
- Identify hazardous situations in which oxygen should never be used and for situation explain why it should not be used.
- Identify and describe eight fire protection precautions and procedures.
- Demonstrate correct setup, inspection, and ignition of an oxyfuel torch and demonstrate safe usage by making cuts on scrap metal.

Standards

Topics addressed can be found in the OSHA 29 CFR 1926 construction standards:

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| • 29 CFR 1926.21 | Safety Training and Education |
| • 29 CFR 1926.28 | Personal Protective Equipment |
| • 29 CFR 1926.52 | Occupational Noise Exposure |
| • 29 CFR 1926.150 | Fire Protection |
| • 29 CFR 1926.151 | Fire Prevention |
| • 29 CFR 1926.152 | Flammable and Combustible Liquids |
| • 29 CFR 1926.350 | Gas Welding and Cutting |
| • ANSI Z49.1 | Safety in Welding, Cutting and Allied Processes |

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Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

Textbooks/Readings/Materials:

- LIUNA: *Oxyfuel Cutting* IG/PG
- Victor: *Welding, Cutting, and Heating Guide*
- LIUNA: *Fire Watch* IG/PG
- LIUNA IG/PG: *Hearing Safety*
- LIUNA: *Personal Protective Equipment* IG/PG
- LIUNA: *Subpart J: Welding and Cutting* IG/PG
- LIUNA: *Confined Space Awareness* IG/PG
- Handout: "Fatal Facts" Accident Summary No. 25- U.S. Dept. of Labor
- Handout: "Fatal Facts" Accident Summary No. 53- U.S. Dept. of Labor
- LIUNA: "Oxyfuel Cutting" DVD
- Airgas: "Petrogen, Inc. Training" DVD.
- Airgas: "Arc Welding and Cutting Safely"
- Handout: "Table E-1 Eye and Face Protector Selection Guide" and "Table E-2 Filter Lens Shade Numbers" 29CFR1926.102(a)(5) OSHA Standard
- Handout: "What Does Noise-Induced Hearing Loss Sound Like?"-Brad Witt, Howard Leight/Sperian Hearing Protection, LLC

Tools/Equipment/Other Materials

- Oxygen tanks
- Acetylene tanks
- Regulators
- Welding hoses
- Torch handles
- Cutting tips
- Strikers
- Fire extinguishers

Personal Protective Equipment

- 10 pairs of leather cutting gloves

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- 10 pairs of safety glasses
- 20 pairs of earplugs
- 10 hard hats
- 10 leather chaps
- 10 leather jackets
- 10 number 8 face shields

Course Requirements

To receive credit for the course, participants must:

- Be present for full sixteen hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on “light duty” are not allowed to take this course due to the physically demanding requirements.

Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises for each power tool are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

Safety

Failure to maintain and use PPE may result in dismissal from the course.