

## CHAPTER OVERVIEW

### 9: Welding and Cutting

[9.1: Introduction to Welding and Cutting](#)

[9.2: Fire Prevention](#)

[9.A: Chapter 8 Review Questions](#)

“The real enemy of safety is not non-compliance but non-thinking” - Dr. Rob Long

#### Overview

Welding is a specialized and skilled trade. Welders learn metallurgy, the science of the properties of metals, production and purification, as well as learning about the intense heat combining/forging metals for many purposes. When you combine intense heat with the chemical and physical properties of metals you produce not only health hazards from vaporized metals but also physical hazards of heat and radiation.

Many of you reading this resource are not planning on becoming welders and the safety protocols presented here are focused on hazard awareness. Those who will ultimately choose welding as a career will have much more safety training than presented in this chapter. It is important to pay close attention to the supporting activities associated with welding, primarily focused on hazardous materials, fuel and energy, fire protection and prevention, shielding and ventilation as the focus in these areas protect workers in a welding environment.

#### Chapter Objective:

1. Determine the proper manner to transport, move, place and store compressed gas cylinders.
2. Identify the components of gas welding and cutting units and the proper use and maintenance of these components.
3. Review the requirements for arc welding and cutting on construction sites.
4. Understand the safety concerns and health hazards when welding and cutting on the job.

#### Learning Outcome:

1. Correctly apply the hierarchy of controls to welding and cutting activities.
2. Identify hazardous materials associated with welding and cutting.

Standards: 1926 Subpart J Welding and Cutting, 1926 Subpart CC Confined Spaces in Construction, 1910 Subpart H Hazardous Materials, 1910 Subpart M Compressed Gas and Compressed Air Equipment, 1910 Subpart Z Toxic and Hazardous Substances

#### Key Terms:

Arc, Compressed Gas, confined space, coupling, fuel gas, manifold, torch

#### Mini-Lecture: Welding Safety, Hazardous Materials

Topic Required Time: 1 hr; Independent Study and reflection 3/4 hour.

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