



WELDING SAFETY IN EDUCATION AND SCHOOLS

INTRODUCTION

You may be a student who is new to the field of welding or a seasoned, experienced, welding educator. In either case, you will encounter welding hazards while involved in welding education. Following correct safety measures ensures the safety of welding students and educators.

WHERE TO FIND INFORMATION

Four main resources are available to provide you with detailed welding safety information:

1. Regulations, Laws and Standards
2. Manufacturer's Publications
3. Safety Labels On Equipment and Materials
4. Safety Data Sheets (SDSs)

In the United States, the provisions of the Occupational Safety and Health Act (OSHA) are the law. It makes many voluntary consensus standards enforceable. One of the most important welding standards is ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*.

All tested and certified welding equipment is provided with safety labels and an owner's manual with safety information.

SDSs must be provided by the suppliers of welding consumables such as electrodes, fluxes, and gases and kept on file. They must be readily available in the work area. A safety training program must be in place and available for the educators, students, and anyone who regularly visits the weld training area.

POTENTIAL HAZARDS

The safety resources listed describe the potential hazards related to welding, such as:

- Electric Shock
- Fumes and Gases
- Arc Radiation
- Fire or Explosion
- Hot Parts
- Flying Sparks, Spatter, Metal or Dirt
- Electric and Magnetic Fields (EMF)
- Noise
- Gas Cylinders
- Moving Parts

- Falling Equipment
- Surface Coatings and Contaminants
- Lasers

WHO IS RESPONSIBLE

The school administration and educators have the following responsibilities:

- Ensure the students are trained on the welding hazards, safety rules, regulations and laws.
- Ensure the students follow the safety rules, safe practices, regulations and laws.

The students have the following responsibilities:

- Be informed and trained to detect when hazards are present and how to protect themselves.
- Learn and use safe practices as specified in manufacturers' instructions and product labels.
- Obey safety rules and regulations.
- Properly use the equipment as specified in manufacturers' instructions and product labels.

SUMMARY

Remember, hazards are present in the welding area. These hazards include (but are not limited to) electric shock, fumes and gases, arc radiation, fire, hot parts, flying sparks, spatter, metal or dirt, EMF, noise, gas cylinders, moving

parts and falling equipment. Safety and health information resources include Laws, Regulations, Standards, Owner's Manuals, Safety Labels, and SDSs. As a welding educator or student your primary concern should be to follow correct safety measures. This will ensure a welding education that results in a long, healthy, productive and enjoyable career.

INFORMATION SOURCES

American National Standards Institute (ANSI). *Safety in Welding, Cutting, and Allied Processes* (ANSI Z49.1), published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166; telephone 800-443-9353; web site: www.aws.org.

Occupational Safety and Health Administration (OSHA). Code of Federal Regulations, Title 29 Labor, Parts 1901, 1910, 1915 and 1926, available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 02402.

National Fire Protection Association (NFPA). *Standard for Fire Prevention During Welding, Cutting and Other Hot Work* (NFPA 51B), available from National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101; telephone: 800-344-3555; Web site: www.nfpa.org.

American Welding Society (AWS). *Safety and Health Fact Sheets*, published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33166; telephone 800-443-9353; web site: www.aws.org.