

INTRODUCTION

Existing standards, such as American National Standards Institute (ANSI) Z49.1, ANSI Z535.4, and National Electrical Manufacturer's Association (NEMA) EW6, thoroughly present guidelines for the minimum required information, method of presentation, signal words, color use, and label format.

DEFINITION

Graphic symbols are pictures sometimes called pictographs, pictograms, or pictorials used in place of, or as a supplement to, written words. These symbols provide non-verbal communication about the possible hazard. They represent or symbolize the hazard.

RATIONALE FOR GRAPHIC SYMBOLS

Pictures may convey information better than words. Therefore, the next logical evolution of precautionary labeling adds graphic symbols to show the major welding or cutting hazards. The use of symbols on precautionary labels is optional and is recommended for the following reasons:

- Symbols may show and help to explain the hazards quickly—fast concept transfer—and use visual (not verbal) recognition.
- Symbols address nonreaders as well as readers.
- Symbols may be multilingual and usually translate directly into all languages.

RATIONALE FOR STANDARDIZED SYMBOLS

The welding and cutting industry needs standardized symbols and uniform methods of use to avoid user confusion and to supplement and reinforce the written message.

NEMA EW6 standard provides a list of symbols and minimum symbol size for labels along with complete information regarding their use and application.

HOW TO USE THE SYMBOLS

- Use the symbols to show the associated hazard.
- Take standard symbols from NEMA EW6.
- Follow a building block approach.
- Select a base symbol—often it is used alone such as the fire symbol.
- Choose additional symbol element(s) to fully show the hazard.
- Combine the chosen symbol element(s), such as the stick electrode symbol, with the base symbol, such as fumes and gases.
- Carefully review all symbols on this Fact Sheet and in NEMA EW6.
- Follow the design methods and standard way of incorporating symbols onto the safety label according to EW6.

INFORMATION SOURCES

National Electrical Manufacturer's Association. *Guidelines for Precautionary Labeling for Arc Welding and Cutting Products*, Arc Welding Section, NEMA EW6. Washington, DC: National Electrical Manufacturer's Association.

American National Standards Institute (ANSI). *Safety in Welding, Cutting, and Allied Processes*, Z49.1, available from American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

_____. *Criteria for Safety Symbols*, available from American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

_____. *Product Safety Signs and Labels*, ANSI Z535.4, available from American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

American Welding Society. Labeling and Safe Practices Committee SH4.








FMC Corporation. *Product Safety Sign and Label System*. Santa Clara, California.




Westinghouse Electric Corp. MB 3662. *Product Safety Label Handbook*. Pittsburgh, Pennsylvania.

International Organization for Standardization. *Graphic Symbols for Use on Equipment*, ISO 7000, available from International Organization for Standardization, 1, rue de Varembé, 1211 Geneva 20, Switzerland.

EXAMPLES FROM NEMA EW6

These symbols with hazards are recommended and endorsed by the American Welding Society Labeling and Safe Practices Committee anytime optional symbols are used on a precautionary label.

HAZARD	SOURCE OF HAZARD	SYMBOL	SOURCE
Electric Shock	Welding Electrode		ISO, FMC, NEMA
Electric Shock	Wiring		ISO, FMC
Electric Shock	Welding Electrode and Wiring		ISO, FMC, NEMA
Fumes and Gases	Any Source		FMC, NEMA
Fumes and Gases	Welding Fumes and Gases		ISO, FMC, NEMA
Arc Rays	Welding Arc		ISO, FMC, NEMA
Fire	Engine Fuel		FMC, NEMA

HAZARD	SOURCE OF HAZARD	SYMBOL	SOURCE
Fumes and Gases	Engine Exhaust		ISO, FMC, NEMA
Fumes and Gases	Engine Exhaust and Welding Arc		ISO, FMC, NEMA
Moving Parts Causing Bodily Injury	Moving Parts Such as Fans and Rotors		FMC, NEMA