

**AWS C4.5M:2012**  
**An American National Standard**



# **Uniform Designation System for Oxyfuel Nozzles**



**American Welding Society®**



**AWS C4.5M:2012  
An American National Standard**

**Approved by the  
American National Standards Institute  
June 5, 2012**

# **Uniform Designation System for Oxyfuel Nozzles**

**3rd Edition**

**Supersedes AWS C4.5M:2006**

Prepared by the  
American Welding Society (AWS) C4 Committee on Oxyfuel Gas Welding and Cutting

Under the Direction of the  
AWS Technical Activities Committee

Approved by the  
AWS Board of Directors

## **Abstract**

This document presents recommendations to oxyfuel welding, cutting, and heating/brazing torch nozzle manufacturers regarding the identification markings to be permanently applied to the torch nozzle to identify its intended application. The identification will provide information to improve the safe operation and application of nozzles by torch operators. This standard makes use of the International System of Units (SI).



**American Welding Society®**

**8669 Doral Blvd., Doral, FL 33166**

International Standard Book Number: 978-0-87171-819-8  
American Welding Society  
8669 Doral Blvd., Doral, FL 33166  
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## Foreword

This foreword is not part of AWS C4.5M:2012, *Uniform Designation System for Oxyfuel Nozzles*, but is included for informational purposes only.

By updating this document, the members of the C4 Oxyfuel Gas Welding and Cutting Subcommittee of the American Welding Society have worked to strengthen the identification method for torch nozzles which will provide basic information regarding the intended application for which the nozzle was designed. The recommendations in this document are not intended to restrict innovation in future design improvements of torch nozzles, however we encourage manufacturers to comply with the intent of this document to improve the safe operating environment of oxyfuel gas welding, cutting, and heating/brazing personnel.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS C4 Committee on Oxyfuel Gas Welding and Cutting, American Welding Society, 8669 Doral Blvd., Doral, FL 33166.

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# Uniform Designation System for Oxyfuel Nozzles

## 1. Scope and Applicability

**1.1 Scope.** The publication provides a system for uniform identification of cutting, welding, and heating/brazing nozzles. A common information base has been established that the operator can rely on to identify nozzle performance from one manufacturer to another. The overall intent of this system is to provide manufacturers a common identification system to be marked on nozzles, which will result in the safe operation of oxyfuel nozzles, i.e., operators will know they are using the correct nozzle for the job being performed. In addition to a system of identifying nozzles, the publication also requires that manufacturers make other operating information and parameters available in such forms as are suitable for the operator.

Application of the system of identification in this publication is voluntary, however if a manufacturer chooses to employ it or it is contractually required by a purchaser, then it will be necessary to comply with all the requirements of the publication.

In the oxyfuel welding and cutting industry, every equipment manufacturer has its own system for designating the size of oxyfuel nozzles for cutting, welding, and heating/brazing. These systems are based on a variety of different nozzle features and in many cases are completely arbitrary. In any case, it is currently impossible to identify a nozzle by model number for a given manufacturer and cross reference it to a different manufacturer to obtain like performance and size, i.e., there is no commonality among manufacturers to identify like nozzles for performance and use. The intent of this publication is to provide a system for uniform identification of cutting, welding, and heating/brazing nozzles. This publication describes in detail the information that the equipment manufacturers should permanently mark on their oxyfuel cutting, welding, and heating/brazing nozzles.

**1.2 Standard Units of Measurement.** This standard makes sole use of the International System of Units (SI).

**1.3 Safety.** Safety issues and concerns are addressed in this standard, although health issues and concerns are beyond the scope of this standard. Safety and health information is available from the following sources:

American Welding Society:

- (1) ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*
- (2) AWS Safety and Health Fact Sheets
- (3) Other safety and health information on the AWS website

Material or Equipment Manufacturers:

- (1) Material Safety Data Sheets supplied by materials manufacturers
- (2) Operating Manuals supplied by equipment manufacturers

Applicable Regulatory Agencies

Work performed in accordance with this standard may involve the use of materials that have been deemed hazardous, and may involve operations or equipment that may cause injury or death. This standard does not purport to address all safety and health risks that may be encountered. The user of this standard should establish an appropriate safety program to address such risks as well as to meet applicable regulatory requirements. ANSI Z49.1 should be considered when developing the safety program.