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CGA E-1—2022
STANDARD FOR RUBBER WELDING HOSE AND HOSE CONNECTIONS FOR GAS WELDING, CUTTING, AND ALLIED PROCESSES

EIGHTH EDITION

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Work Item 21-035
Industrial Gases Apparatus Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

NOTE—Appendix B (Normative) is a requirement.

EIGHTH EDITION: 2022
SEVENTH EDITION: 2016
SIXTH EDITION: 2009
FIFTH EDITION: 2005

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1 Introduction

Specifications describing hose connections for welding and cutting equipment were formulated and adopted in 1925 by the International Acetylene Association (IAA), the Gas Products Association, and various manufacturers. Similar specifications were adopted by the National Screw Thread Commission in 1926. Revised specifications were adopted by the IAA in 1939 and amended in 1953 and 1954. Until 1954, the specifications dealt with connections for oxygen and fuel gases for welding and cutting. With the advent of inert gases used for blanketing (to prevent oxidation) and water used for cooling in inert gas metal arc welding processes, significant additions to the specifications were adopted by IAA in 1957. In 1962 the IAA ceased to exist, and its activities were taken over by the Compressed Gas Association, Inc. (CGA). IAA specifications were revised in accordance with similar CGA standards. In this standard, each connection size and style is presented on a separate page with the right-hand and left-hand connections shown on the same page with a single drawing.

It should be noted that Connection No. 022 for oxygen is similar to Connection No. 1240 in CGA V-5, *Standard for Diameter Index Safety System (Noninterchangeable Low Pressure Connections for Medical Gas Applications)* [1].[1] Dimensions and other information on hose connections for welding and cutting equipment are found in FED-STD-H28, *Screw-Thread Standards for Federal Services,* Section 11, “Hose Connections for Welding and Cutting Equipment” [2].

For years, CGA jointly issued a rubber welding hose standard, ARPM IP7, *Specifications for Rubber Welding Hose*, with the Association for Rubber Products Manufacturers (ARPM) [3]. CGA became aware that incidents can occur if the wrong grade of hose was selected for the particular gas being used. Therefore, in 2004, CGA recommended the exclusive use of Grade T hose in CGA SB-11, *Use of Rubber Welding Hose* since Grade T hose eliminates the gas compatibility, oil resistance, and flammability issues.

NOTE—CGA SB-11, *Use of Rubber Welding Hose*, was incorporated into the seventh edition of CGA E-1 as an informative appendix, see Appendix A.

2 Scope

This standard provides specifications for multi-service rubber hose used for welding, cutting, and allied processes. This standard also describes connections for regulator outlets, torches, and fitted hose for welding and cutting equipment. It provides the dimensions of components (threaded connector, tailpiece, and coupling nut) for 18 different connections (Connection No. 020 through Connection No. 037) that can be used to connect gas hoses with torches and regulator outlets.

To promote safety and reliability in service, the performance requirements that shall be met by the completed assemblies at the time of manufacture or rebuilding are specified.

This standard does not apply to liquefied petroleum (LP) gas hose covered under National Fire Protection Association (NFPA) 58, *Liquefied Petroleum Gas Code* applicable to the propane industry [4].

This standard describes the performance requirements of the hose that is fitted on the tailpiece with a clamp or ferrule.

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.