



COMPRESSED GAS ASSOCIATION, INC.

SAFETY BULLETIN

SB-11—2009

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USE OF RUBBER WELDING HOSE

Rubber welding hose can be used safely if proper procedures are followed. Adhering to the DOs and DO NOTs listed below will reduce the occurrence of serious injury.

DO:

- DO use Grade T hose for all oxy-fuel applications;¹

NOTE—CGA recommends the exclusive use of Grade T hose because of its gas compatibility, oil resistance, and flammability resistance. Exclusive use of Grade T hose eliminates the incorrect application of other grades of hose.

- DO blow powder or other residue out of new hose and blow out hose that has been left open to dust, dirt, etc. using oil-free, dry air or nitrogen before attaching the hose to a torch or other equipment;
- DO wipe off hose frequently and inspect for burns and other damage. Never use solvent to wipe off hose;
- DO examine hose before each use. Replace hose when worn, burned, cracked, weathered, damaged, or when the fabric braid shows;
- DO splice only with proper fittings and ferrules or replace with new hose;
- DO ensure hose is fitted in accordance with CGA E-1, *Standard Connections for Regulator Outlets, Torches, and Fitted Hose for Welding and Cutting Equipment* [2];
- DO ensure all connections are wrench-tight and leak-free before each use;
- DO test for leaks with soapy water, leak check solution, a water bucket, or a static pressure test, particularly where hoses connect to regulator and equipment fittings. An occasional total immersion of hose is recommended at maximum allowable working pressure using oil-free, dry air or nitrogen; and
- DO purge each hose line separately in a well-ventilated area each time equipment is used and before lighting the torch. This prevents the mixing of gases in the hose lines and warns the operator if one of the gases is not turned on or if the cylinder is empty. Dangerous mixing of gases in a hose can occur when a cylinder emptied during use causes unbalanced pressures.

DO NOT:

- DO NOT pull hose with torch. Grasp hose to adjust the free length and position it for proper use;
- DO NOT use hose to pull equipment;
- DO NOT let hose put strain on fittings attached to torch or regulators. This can weaken fittings, crack hoses, pull over cylinders, or damage valves. Reposition cylinders if more hose length is needed. Cracked hoses can break and leak from strain;
- DO NOT allow sparks or flame from cutting and welding operations to fall on or contact welding hose. Fire or explosion can result from careless work habits;
- DO NOT drag hose over hot metal or sharp edges;
- DO NOT let hose fittings or connections come in contact with oil, grease, or other contaminants;

¹ See RMA IP-7, *Specifications For Rubber Welding Hose*, for Grade T hose specifications [1].

- DO NOT use hose with more than one splice per 50 ft (15 m) section. Select fittings with adequate inside diameter to avoid flow restrictions;
- DO NOT bend, kink, or pinch hose to shut off gases;
- DO NOT leave pressure in hoses when equipment is not being used, i.e., lunchtime, overnight, weekends, etc. Close the cylinder valves and drain the hoses in a well-ventilated area and close both regulator and equipment valves. Leaks can develop in unattended equipment and result in fire or explosion;
- DO NOT repair worn or cut hoses with tape or other temporary materials. Instead, splice with proper fittings and ferrules or replace with new hose. Screw-type hose clamps are not recommended;
- DO NOT reuse hose that has been subjected to flashback or external burn damage; and
- DO NOT wrap oxygen or fuel gas hoses around arms, legs, or any body part. Flashbacks and/or overpressurization can rupture hoses, creating the potential for severe injury.

References

Unless otherwise stated, the latest edition shall apply.

[1] RMA IP-7, *Specifications For Rubber Welding Hose*, Rubber Manufacturers Association, 1400 K St. NW, Suite 900, Washington, DC 20005. www.rma.org

[2] CGA E-1, *Standard Connections for Regulator Outlets, Torches, and Fitted Hose for Welding and Cutting Equipment*, Compressed Gas Association, Inc., 4221 Walney Rd., 5th Floor, Chantilly, VA 20151. www.cganet.com

Additional references

CGA SB-8, *Use of Oxy-Fuel Gas Welding and Cutting Apparatus*, Compressed Gas Association, Inc., 4221 Walney Rd., 5th Floor, Chantilly, VA 20151. www.cganet.com

ANSI/AWS Z49.1, *Safety in Welding, Cutting, and Allied Processes*, American Welding Society, 550 NW LeJeune Rd., Miami, FL 33126. www.aws.org

NIOSH Publication No. 78-138, *Safety and Health in Arc Welding and Gas Welding and Cutting*, National Institute of Occupational Safety and Health, 4676 Columbia Pkwy., Cincinnati, OH 45226. www.cdc.gov/niosh

National Institute of Occupational Safety and Health, 4676 Columbia Pkwy., Cincinnati, OH 45226. www.cdc.gov/niosh

AWS C-4.2, *Recommended Practices for Safe Oxyfuel Gas Cutting Torch Operation*, American Welding Society, 550 NW LeJeune Rd., Miami, FL 33126. www.aws.org