



Tentative Interim Amendment

NFPA 51A

Standard for Acetylene Cylinder Charging Plants

2012 Edition

Reference: 3.3 (New), 10.6, 11.2.1.3, and B.1.2.1

TIA 12-1

(SC 12-3-5/TIA Log #1036)

Pursuant to Section 5 of the NFPA Regulations Governing Committee Projects, the National Fire Protection Association has issued the following Tentative Interim Amendment to NFPA 51A, *Standard for Acetylene Cylinder Charging Plants*, 2012 edition. The TIA was processed by the Technical Committee on Industrial and Medical Gases, and was issued by the Standards Council on March 6, 2012, with an effective date of March 26, 2012.

A Tentative Interim Amendment is tentative because it has not been processed through the entire standards-making procedures. It is interim because it is effective only between editions of the standard. A TIA automatically becomes a proposal of the proponent for the next edition of the standard; as such, it then is subject to all of the procedures of the standards-making process.

1. *Add the following definitions to Section 3.3 of Chapter 3:*

3.3.xx Fast Acting Detection System. A Detection system designed to detect a fire more rapidly than standard smoke or heat detectors.

A.3.xx Fast Acting Detection System. Examples for outdoor installations are optical (UV/IR) systems that detect visible flames and do not rely on products of combustion to be transported by the energy of the heat plume to the location of the detector. For indoor installations examples include high sensitivity smoke detection (HSSD), optical (UV/IR) or other early detection systems.

3.3.xx Fill Valve. A shutoff valve on the charging system for charging MATS where the acetylene supply first enters the charging connection.

3.3.xx MATS Building. A single-story detached building, without an attic, basement, crawl space or false ceiling, used for acetylene trailer(s) or mobile acetylene trailer system (MATS) operations located indoors and the balance of the building is used exclusively for acetylene operations including storage and use of hazardous materials.

3.3.xx MATS Fire Area. The area or footprint occupied by the individual mobile acetylene trailer(s) to include the control system up to the point of the source valve for MATS being discharged or to the point of the fill valve for MATS being charged.

3.3.xx Source Valve. A shutoff valve on the piping system serving MATS where the acetylene supply first enters the user's supply line.

2. *Modify Section 10.6 as follows:*

10.6* Mobile Acetylene Trailer Systems (MATS). In addition to the general requirements of NFPA 51A, MATS charging and discharge stations located at acetylene charging plants shall be in accordance with 10.6.

10.6.1 General. MATS fire areas used for charging or discharging operations shall be separated from each other by not less than 30 ft. or by fire barriers or fire walls:

10.6.1.1 When fire barriers are used to separate outdoor MATS fire areas without weather protection, the fire barriers shall be not less than 2-hour fire resistive construction and shall separate individual fire areas by line of sight.

10.6.1.2 When fire barriers are used to separate outdoor MATS fire areas covered by weather protection constructed in accordance with the requirements of NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, the fire barriers shall be full height walls without openings extending from the foundation to the roof constructed of not less than 2-hour fire resistive construction. The allowable area occupied by weather protection shall be in accordance with the requirements of the building code.

10.6.1.3 When MATS are installed indoors in a MATS building, fire walls, fire barriers or 2-hour fire rated exterior walls are permitted to be used to separate MATS fire areas. Walls shall be constructed in accordance with the requirements of the building code.

10.6. 2 MATS Charging Stations

10.6.2.1 Location. The mobile acetylene trailer, including fill connections, shall be located in accordance with the following criteria:

- (1) Not less than 25 ft (7.6 m) from property lines.
- (2) Not less than 50 feet (15.2 m) from buildings of combustible construction.
- (3) Not less than 15 ft (4.6 m) from buildings of noncombustible construction not associated with the charging or discharging of the mobile acetylene trailer.
- (4) Not less than 15 ft (7.6 m) horizontal distance from the vertical plane below the nearest overhead electrical utility power lines.
- (5) Not less than 15 ft (4.6 m) horizontal distance from the vertical plane below overhead piping containing flammable liquids, flammable gases or oxidizing materials.
- (6) Not less than 50 ft (15.2 m) from air intakes.

10.6.2.1.1 The minimum required distances, except for air intake openings, shall not apply when fire barriers without openings or penetrations having a minimum fire resistance rating of 2 hours interrupt the line of sight between the discharge and the exposure.

10.6.2.2 Where process needs require removing the heat of solution of acetylene as determined by ambient temperature and cylinder charging rates, provisions shall be made for a cylinder cooling process water spray system and water run-off.

10.6.2.3 Protection from vehicular damage shall be provided in accordance with NFPA 55 *Compressed Gases and Cryogenic Fluids Code*.

10.6.2.4 Flexible transfer hoses used for charging of MATS shall have a minimum burst pressure of 10,000 psig (69,000 kPa).

10.6.2.5 The charging site shall be posted with a sign with the following or equivalent wording:
ACETYLENE – FLAMMABLE GAS – NO SMOKING – NO OPEN FLAMES

10.6.2.6 Electrical equipment shall be in accordance with NFPA 70

10.6.2.6.1 An electrical grounding system for the acetylene piping shall be provided in accordance with NFPA 70, *National Electrical Code*.

10.6.2.6.2 The trailer chassis shall be connected to the grounding system before connections are made to the piping system.

10.6.3 MATS Discharge Stations

10.6.3.1 The MATS discharge station shall be in accordance with 10.6.2 except that 10.6.2.2 shall not apply.

10.6.3.2 Acetylene meters, where used, shall be designed for acetylene service and shall operate at a pressure not to exceed 15 psig (103 kPa).

10.6.3.3 Flexible transfer hoses used for withdrawal of acetylene shall be pressure rated as follows:

(1)* For pressures greater than 15 psig hoses shall have a minimum burst pressure of 10,000 psig (69,000 kPa).

(2) For pressures of 15 psig (103 kPa) or less hoses shall be rated for a minimum working pressure of 125 psig (860 kPa) and a minimum burst pressure of 500 psig (3450 kPa).

A.10.6.3.3 (1) A 10,000 psi burst pressure for charging leads integral to 10.6.2.3 has been used to withstand a decomposition reaction of acetylene in the charging lead.

10.6.4 Fire Protection. Fire protection systems shall be provided in accordance with 11.2.1.3.

3. *Modify Section 11.2.1.3 and delete existing Sections A.11.2.1.3, 11.2.3.1, and 11.2.1.3.2 in accordance with the following:*

11.2.1.3 A deluge or water spray fixed system shall be provided for mobile acetylene trailer fire areas used as indoor or outdoor charging or discharging stations.

11.2.1.3.1 The system shall be designed to provide water as a means of cooling the containers located on the trailer that are potentially exposed to fire.

11.2.1.3.2 Deluge or water spray fixed systems shall provide a minimum design density in accordance with the design documents for the MATS fire area being protected.

A.11.2.1.3.2 For additional information on mobile acetylene trailer systems, see CGA G-1.6, *Standard for Mobile Acetylene Trailer Systems*.

11.2.1.3.3 The deluge or water spray fixed system shall be able to be activated automatically by a fast acting detection system and also by a manual actuator.

11.2.1.3.3.1 Manual activation controls shall be identified and marked with a sign and shall be positioned for use in an emergency.

11.2.1.3.3.2 Fire protection equipment and manual activation controls shall not be blocked or obstructed.

11.2.1.3.4 Existing acetylene charging and discharging stations shall be protected by an automatic deluge or water spray fixed system meeting the above requirements not later than January 1, 2015. See also Section 1.4.

11.2.1.3.4.1 The above requirements for deluge or water spray fixed systems shall not apply to existing indoor or outdoor facilities, equipment, structures, or other installations where MATS are charged or discharged that existed or were approved for construction or installation prior to the effective date of this standard providing the MATS are protected with an automatic sprinkler system with a minimum design density of not less than 0.25 gpm per square foot.

11.2.1.3.5 At least one listed fire extinguisher with a rating of not less than 20 B:C shall be mounted on the mobile acetylene trailer.

B.1.2.1 CGA G-1.6, *Standard for Mobile Acetylene Trailer Systems*, 2011.

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(Note: For further information on NFPA Codes and Standards, please see www.nfpa.org/codelist)