



Ohio Administrative Code

Rule 901:5-3-12 Systems utilizing stationary, pier-mounted or skid-mounted storage.

Effective: April 1, 2025

(A) Container valves and accessories, filling and discharge connections:

(1) Each filling connection shall be provided with combination back-pressure check valve and excess flow valve; one double or two single back-pressure check valves; or a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve;

(2) All vapor and liquid connections, except safety-relief valves and those specifically exempt in rule 901:5-3-06 of the Administrative Code shall be equipped with approved excess flow valves; or in lieu thereof, may be fitted with approved quick-closing internal valves which, except during operating periods, shall remain closed;

(3) Each storage container shall be provided with a pressure gage graduated from zero to four hundred psig. Gages shall be designated for use in ammonia service;

(4) All containers shall be equipped with an approved vapor return valve; and

(5) All containers shall be equipped with a fixed maximum liquid level gage.

(B) Safety relief devices:

Every container shall be provided with one or more safety relief valves of spring-loaded or equivalent type and shall comply with the following:

(1) The discharge from safety relief valves shall be directed away from the container upward and unobstructed to the open air. Vent pipes shall not be restrictive or smaller in size than the safety relief valve outlet connection. All safety relief valve discharges shall have suitable rain caps that will allow free discharge of the vapor and prevent the entrance of water. Suitable provision shall be made for draining condensate which may accumulate; and



(2) If desired, vent pipes from two or more safety relief devices located on the same unit, or similar lines from two or more different units, may be run into a common header, provided the cross-sectional area of such header is at least equal to the sum of the cross-sectional areas of the individual vent pipes.

(C) Installation of storage containers:

(1) Containers shall be provided with substantial reinforced concrete footings and foundations or structural steel supports mounted on reinforced concrete foundations. In either case, the reinforced concrete foundations or footings shall extend below the established frost line and shall be of sufficient width and thickness to support the total weight of the containers and contents adequately. The foundation shall maintain the lowest point of the tank at not less than eighteen inches above the ground. Floating type foundations shall also be acceptable providing the foundations are designed to adequately support the tank, contents and pumping equipment;

(2) Horizontal aboveground containers shall be mounted on foundations in such a manner as to permit expansion and contraction. Every container shall be supported so as to prevent the concentration of excessive loads on the supporting portion of the shell. The bearing afforded by the saddles shall extend over at least one third of the circumference of the shell. Suitable means for preventing corrosion shall be provided on that portion of the container in contact with the foundations or saddles;

(3) Distance between containers shall be at least five feet, end to end or side to side; and

(4) Only two supports shall be used per container.

(D) Marking of containers:

(1) Aboveground uninsulated containers shall have a reflective surface maintained in good condition. White is recommended for painted surfaces, but other light reflecting colors are acceptable; and

(2) Each container or group of containers shall be marked on at least two sides with the words



"Anhydrous Ammonia" in sharply contrasting colors with letters not less than three inches high.

(E) Marking of appurtenances:

(1) All container openings, except safety relief valves, liquid level gaging devices, and pressure gages shall be identified by legend or color code as specified in paragraphs (C)(1) and (2) of rule 901:5-3-04 of the Administrative Code; and

(2) Instructions for loading and unloading procedures shall be required at all installations.

(F) Protection of container appurtenances:

(1) Valves and other appurtenances shall be protected against physical damage. Main container shut-off valves shall be kept closed and locked when the installation is unattended. If the facility is protected against tampering by fencing or other suitable means, valve locks are not required; and

(2) Storage containers need not be grounded.

(G) Identification:

A sign shall be displayed in a conspicuous place stating the name, address, and phone number of the nearest representative, agent, or owner of the storage system, an emergency phone number and the phone number of the nearest fire department.

(H) Electrical equipment and wiring:

(1) Electrical equipment and wiring for use in ammonia installations shall be general purpose or weather resistant as appropriate; and

(2) Where concentrations of ammonia in air in excess of sixteen per cent by volume are likely to be encountered, electrical equipment and wiring shall be a type specified by and be installed in accordance with "National Electrical Code," "NFPA 70 (ANSI-C1)," for "Class I, Group D" locations.