§ 34.15–15 Piping—T/ALL.

(a) The piping, valves, and fittings shall have a bursting pressure of not less than 6,000 pounds p.s.i.

(b) All piping, in nominal sizes not over ¾-inch shall be at least Schedule 40 (standard weight) and in nominal sizes over ¾-inch, shall be at least Schedule 80 (extra heavy).

(c) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(d) A pressure relief valve or equivalent set to relieve between 2,400 and 2,800 pounds p.s.i. shall be installed in the distributing manifold or such other location as to protect the piping in the event that all branch line shut-off valves are closed.

(e) All deadend lines shall extend at least 2 inches beyond the last orifice and shall be closed with cap or plug.

(f) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(g) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture. Drains and dirt traps shall be located in accessible locations where possible.

(h) Piping shall be used for no other purpose except that it may be incorporated with the fire-detecting system.

(i) Piping passing through living quarters shall not be fitted with drains or other openings within such spaces.

(j) Installation test requirements are:

(1) Upon completion of the piping installation, and before the cylinders are connected, a pressure test shall be applied as set forth in this paragraph. Only carbon dioxide or other inert gas shall be used for this test.

(2) The piping from the cylinders to the stop valves in the manifold shall be subjected to a pressure of 1,000 pounds p.s.i. With no additional gas being introduced to the system, it shall be demonstrated that the leakage of the system is such as not to permit a pressure drop of more than 150 pounds per square inch per minute for 2-minute period.

(3) The individual branch lines to the various spaces protected shall be subjected to a test similar to that described in the preceding paragraph with the exception that the pressure used shall be 600 pounds p.s.i. in lieu of 1,000 pounds p.s.i. For the purpose of this test, the distribution piping shall be capped within the space protected at the first joint ahead of the nozzles.

(4) In lieu of the tests prescribed in the preceding paragraphs in this section, small independent systems protecting spaces such as emergency generator rooms, lamp lockers, etc., may be tested by blowing out the piping with the air at a pressure of at least 100 pounds p.s.i.

§ 34.15–20 Carbon dioxide storage—T/ALL.

(a) Except as provided in paragraph (b) of this section, the cylinders shall be located outside the spaces protected, and shall not be located in any space that might be cut off or made inaccessible in the event of a fire in any of the spaces protected.

(b) Systems of the type indicated in § 34.15–5(d), consisting of not more than 300 pounds of carbon dioxide, may have the cylinders located within the space protected. If the cylinder stowage is within the space protected, the system shall be arranged in an approved manner to be automatically operated by a heat actuator within the space in addition to the regular remote and local controls.

(c) The space containing the cylinders shall be properly ventilated and designed to preclude an anticipated ambient temperature in excess of 130 degrees F.

(d) Cylinders shall be securely fastened and supported, and where necessary, protected against injury.

(e) Cylinders shall be so mounted as to be readily accessible and capable of easy removal for recharging and inspection. Provisions shall be available for weighing the cylinders.

(f) Where subject to moisture, cylinders shall be so installed as to provide a space of at least 2 inches between the flooring and the bottom of the cylinders.

(g) Cylinders shall be mounted in an upright position or inclined not more than 30 degrees from the vertical. However, cylinders which are fitted with
flexible or bent siphon tubes may be inclined not more than 80 degrees from
the vertical.

(h) Where check valves are not fitted on each independent cylinder dis-
charge, plugs or caps shall be provided for closing outlets when cylinders are
removed for inspection or refilling.

(i) All cylinders used for storing car-
bon dioxide must be fabricated, tested,
and marked in accordance with §§147.60
and 147.65 of this chapter.

§ 34.15–25 Discharge outlets—T/ALL.

(a) Discharge outlets shall be of an
approved type.

§ 34.15–30 Alarms—T/ALL.

(a) Spaces required to have a delayed
discharge by §34.15–10(f) which are pro-
tected by a carbon dioxide extin-
guishing system and are normally ac-
cessible to persons on board while the
vessel is being navigated, other than
paint and lamp lockers and similar
small spaces, shall be fitted with an ap-
proved audible alarm in such spaces
which will be automatically sounded
before the carbon dioxide is admitted
to the space. The alarm shall be con-
spicuously and centrally located and
shall be marked as required by §35.40–
7 of this subchapter. Such alarms shall
be so arranged as to sound during the
20-second delay period prior to the dis-
charge of carbon dioxide into the space,
and the alarm shall depend on no
source of power other than the carbon
dioxide.

§ 34.15–35 Enclosure openings—T/ALL.

(a) Except for cargo spaces, the opera-
tion of the carbon dioxide system
shall automatically shut down any me-
chanical ventilation to that space. This
will not be required where the carbon
dioxide system is a secondary system
in addition to another approved pri-
mary system protecting the space.

(b) Where natural ventilation is pro-
vided for spaces protected by a carbon
dioxide extinguishing system, provi-
sions shall be made for easily and effec-
tively closing off the ventilation.

(c) Means shall be provided for clos-
ing all other openings to the space pro-
tected from outside such space. In this
respect, relatively tight doors, shut-
ters, or dampers shall be provided for
openings in the lower portion of the
space. The construction shall be such
that openings in the upper portion of
the space can be closed off either by
permanently installed means or by the
use of canvas or other material which
is normally carried by the vessel.

§ 34.15–40 Pressure relief—T/ALL.

(a) Where necessary, relatively tight
compartments such as refrigeration
spaces, paint lockers, etc., shall be pro-
vided with suitable means for relieving
excessive pressure accumulating with-
in the compartment when the carbon
dioxide is injected.

§ 34.15–90 Installations contracted for
prior to January 1, 1962—T/ALL.

(a) Installations contracted for prior
to November 19, 1952, shall meet the re-
quirements of this paragraph.

1 Existing arrangements, materials,
and facilities previously approved shall
be considered satisfactory so long as
they meet the minimum requirements
of this paragraph and they are main-
tained in good condition to the satis-
faction of the Officer in Charge, Marine
Inspection. Minor repairs and alter-
ations may be made to the same stand-
ards as the original installation.

2 The details of the systems shall be
in general agreement with §§34.15–5
through 34.15–40 insofar as is reason-
able and practicable, with the excep-
tion of §34.15–5(d)(1) through (3) cov-
ering spaces other than cargo spaces,
which systems may be installed in ac-
cordance with paragraphs (a) (4)
through (7) of this section.

3 For cargo tanks at least one
pound of carbon dioxide shall be avail-
able for each 30 cubic feet of the largest
cargo tank. The discharge of the re-
quired amount of carbon dioxide shall
be complete within 5 minutes.

4 In boiler rooms, the bilges shall be
protected by a system discharging
principally below the floor plates. Per-
forated pipe may be used in lieu of dis-
charge nozzles for such systems. The
number of pounds of carbon dioxide
shall be equal to the gross volume of
the boiler room taken to the top of the
boilers divided by 36. In the event of an