

NFPA 22 (2013) Anti-Vortex Plate Specifications

This document is intended to provide a basic reference for rainwater collection systems which may be used entirely, or in-part, for fire protection purposes. You should not rely solely on this document for the design or implementation of a water supply system for use in a fire protection or fire suppression system. The best source for official information for your system is your local fire department. Most fire departments will provide you with a written specification or standard if you request one.

NOTICE: An asterisk () following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.*

Anti-vortex Plate Assembly Specification

From Page 42 (22-39):

14.2.13* Anti-Vortex Plate Assembly.

14.2.13.1 The discharge outlet for every suction tank shall be equipped with an anti-vortex plate assembly.

14.2.13.2* The assembly shall consist of a horizontal steel plate that is at least twice the diameter of the outlet on a long radius elbow fitting, where required, mounted at the outlet a distance above the bottom of the tank equal to one-half the diameter of the discharge pipe.

14.2.13.3 The minimum distance above the bottom of the tank shall be 6 in. (152 mm).

From Annex A Page 67 (22-64):

A.14.2.13 See Figure B.1(o), Figure B.1(p), and Figure B.1(q).

A.14.2.13.2 Large, standard size anti-vortex plates [48 in. × 48 in. (1219 mm × 1219 mm)] are desirable, as they are adequate for all sizes of pump suction pipes normally used. Smaller plates may be used; however, they should comply with 14.2.13.

Anti-vortex Plate Inspection Requirement

From Annex A Page 60 (22-57):

17.11 Anti-Vortex Plate Inspection.

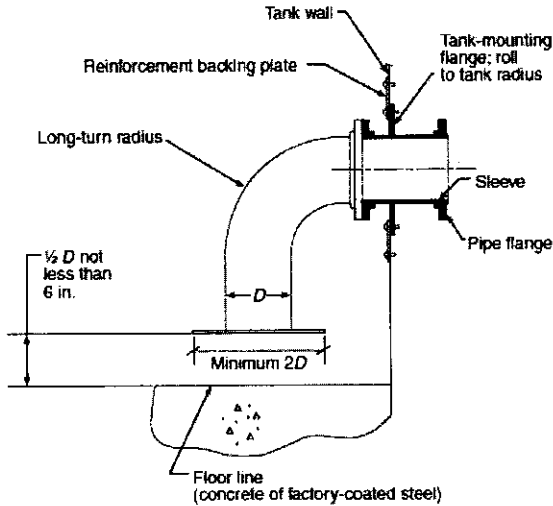
17.11.1 After completion of the tank construction, and before filling the tank with water, the anti-vortex plate shall be inspected.

17.11.2 The inspection shall verify that the horizontal steel plate and long radius elbow meet the requirements of 14.2.13.2 and are installed in accordance with 14.2.13.3.

17.11.3 The inspection results shall be included in the written report specified in 17.1.2.

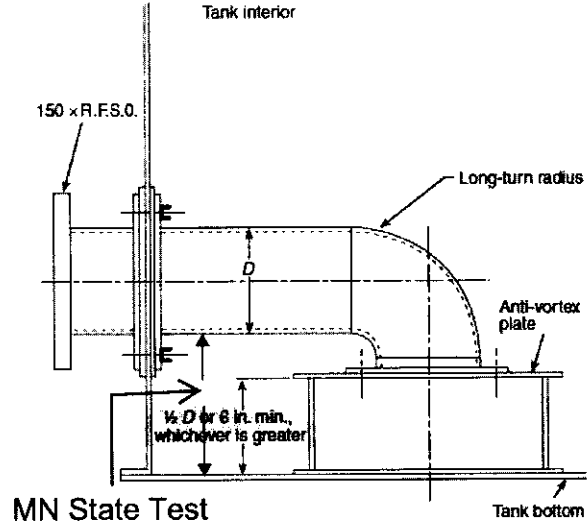
Anti-vortex Plate Illustration:

From Annex B Page 82 (22-79):



For SI units, 1 in. = 25.4 mm.

FIGURE B.1(p) Typical Suction Nozzle with Anti-Vortex Plate for Lap-Jointed Bolted Tanks. (See A.14.2.13.2.)



For SI units, 1 in. = 25.4 mm.

FIGURE B.1(q) Typical Suction Nozzle with Anti-Vortex Plate for Flange-Jointed Bolted Steel Tanks. (See A.14.2.13.2.)

3.5.3 ✓

3.5.4 ✓

3.5.5 ✓

3.5.7 ✓

3.5.9 ✓

3.5.10 ✓

3.5.11 ✓

6.2.7.2 ✓

6.2.8 ✓

6.3.11.2 ✓

6.5.3.2 ✓

6.6.1.2 ✓

6.6.1.3 ✓

6.6.4.2 ✓

6.7.1.3 ✓

6.8.1 ✓

7.2.3.3 ✓

7.2.3.4 ✓

7.3.1.3 ✓

7.3.1.6.3 ✓

7.8.2.7.1.1 ✓

8.2.1 ✓

8.3.1.4 ✓

8.3.1.5.3 ✓

8.3.2.5 ✓

8.4.8.2 #3 ✓

8.5.2.2.2 ✓

8.5.4.1.2.1 ✓

8.5.4.1.2.2 ✓

8.5.4.1.3.2 ✓

8.5.5.3.1 ✓

8.8.6.1 ✓

8.15.5.1 ✓

8.16.1.1.2.4 ✓

9.1.1.3.1.2 ✓

9.1.2.1 ✓

9.2.1.1.2 ✓

9.2.5.5 ✓

10.4.2.1.1 ✓

10.4.2.1.2 ✓

NFPA 22 - covers water
tanks

thermal wire needs
to melt. So temp.
needs to be lower
than sprinkler head

A and B