Section 6.4. Water-Based Fire Protection Systems

6.4.1. General

6.4.1.1. Inspection, Testing and Maintenance

1) Water-based fire protection systems shall be inspected, tested and maintained in conformance with NFPA 25, "Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems."
(See Note A-6.4.1.1.(1).)

6.4.2. Standard Fire Hose Thread

6.4.2.1. Specifications

1) All 2 1/2-inch fire-hose couplings and allied fittings shall have a 60° truncated vee thread having dimensions in inches for the male and female couplings as set out in Table 6.4.2.1.(1).

Table 6.4.2.1.(1)
Thread Dimensions
Forming Part of Sentence 6.4.2.1.(1)

Male									
Nominal Inside Diameter	Thread Per Inch	Major Diameter		Pitch Diameter		Minor Diameter		Pitch	Depth of Thread
		Max	Min	Max	Min	Max	Min		
2.500	8	3.000	2.990	2.919	2.909	2.838	–	0.125	0.081
Female									
Nominal Inside Diameter	Thread Per Inch	Major Diameter		Pitch Diameter		Minor Diameter		Pitch	Depth of Thread
		Max	Min	Max	Min	Max	Min		
2.500	8	–	3.020	2.949	2.939	2.868	–	0.125	0.081

2) All 2 1/2-inch fire-hose couplings shall be made with the higbee cut to aid quick coupling, the design of which requires the female swivel to have a distance from the face of the coupling swivel to the start of the first thread of 1/16 of an inch, and the male thread shall have a distance from the face of the nipple to the start of the first thread of 1/8 of an inch.

3) Thread form shall be calculated as follows:

Thread Form, 60° truncated vee,

N = number of threads per inch

P = pitch of thread

D = depth of thread

F = flat or truncation of thread

$$P = \frac{1}{N} \times \frac{1}{8} = 0.125$$

$$D = 0.6495P = \frac{0.6495}{N} = \frac{0.6495}{8} = 0.081$$

$$F = \frac{P}{8} = \frac{1}{8 \times N} = \frac{1}{8 \times 8} = 0.015$$

4) The threaded portion of the 2 1/2-inch female fire-hose coupling shall be shorter than the threaded portion of the male by 1/32 of an inch for end clearance, and the outer edge of the male pilot end and the inside edge of the female end shall be slightly chamfered.

5) The length of the female fire-hose coupling shall not be less than 3 31/64 inches.

6) The threaded end of the female fire-hose coupling, including the washer recess, shall be 28/32 of an inch in length.

7) The length of the male fire-hose coupling shall not be less than 3 3/32 inches.

8) The threaded end of the male fire-hose coupling shall be 29/32 of an inch in length.

9) Material from which fire-hose couplings and fittings are fabricated shall be suitable for their intended use.

10) The outside diameter of the female fire-hose coupling shall not be less than 3 5/8 inches for the fixed portion and 3 11/16 inches for the swivel portion.

11) The outside diameter of the male fire-hose coupling shall not be less than 3 5/8 inches.

12) Rubber washers that are made to fit the standard female fire-hose coupling shall be 3 1/4 inches outside diameter, 2 9/16 inches inside diameter and 1 1/4 inches in thickness.

13) Fire-hydrant-operating spindle nuts and port cap nuts shall be pentagonal in shape, and their dimensions shall be as follows:

a) the diameter of the outside circumscribed circle shall be 1 3/4 inches, and

b) the nut shall measure not more than 1 1/4 inches in height.