NFPA 291 — May 2002 ROP — Copyright 2001, NFPA

NFPA 291

(Log #CP1)
Committee: AUT-PRI

291-1 - (Entire Document): Accept

SUBMITTER: Technical Committee on Private Water Supply Piping Systems

RECOMMENDATION: 1. Revise NFPA 291 to comply with the NFPA Manual of Style.
2. Editorially modify accepted changes to comply with the NFPA Manual of Style.

SUBSTANTIATION: To comply with the NFPA Manual of Style.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 23

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 19
NOT RETURNED: 4 Lake, Maddry, Mowrer, Trigg

(Log #1)
Committee: AUT-PRI

291-3 - (2-3): Accept in Principle in Part

SUBMITTER: Heinz E. Otte, Waterous Co.

RECOMMENDATION: 1. Revise the last two sentences of the first paragraph to read as follows:
“This hydrant is chosen so that the hydrant(s) to be flowed are between it and the large mains that constitute the immediate sources of water supply to the hydrants. In Figure 2-3, test layouts are indicated showing the residual hydrant designated with the letter R and hydrants to be flowed with the letter F.”
2. Revise the Figure 2-3 as shown below:

![Diagram showing layout of flow and residual hydrants](image)

3. Delete the last sentence of the section that currently reads:
“It is preferable... hydrant”.

SUBSTANTIATION: 1. The wording that states the residual hydrant “will be located between the hydrant to be flowed and the large mains which constitute the immediate sources of water supply in the area” does not conform to the practice that has been used for decades. See 1988 edition of NFPA 291. Thus, when the residual pressure is being measured when the flow hydrants are flowing, the water flow velocity in the fire service main at the location of the residual hydrant is at a fire flow level, therefore likely having a significant velocity head (see NFPA 20 for definition of Velocity Head). Since the method of pressure measurement at the residual hydrant cannot measure this velocity head component of the total pressure, the residual pressure will be “in error” by the amount of the velocity head, and this error will lead to misrepresentation of the amount of water which could be flowed under actual fire fighting use. Selecting the location for the residual hydrant as stated in the proposal and as it was in the 1988 and previous editions of NFPA 291, minimizes the velocity head effects on measuring the residual pressure. This allows the residual pressure measurement to reflect more closely the total pressure that remains available in the system.
2. The additions to the figure provide the reader the benefit of many man years of experience that knowledgeable people have in selecting the locations of both flow and residual hydrants to yield the most accurate estimates of fire flow capability of fire service mains and water distribution systems supplying those mains.
3. See Substantiation for (1).

COMMITTEE ACTION: Accept in Principle in Part.

Item #1 Accepted in Part: revise the last sentence only.
Item #2 is Accepted in Principle: change the “one flow hydrant” diagram by reversing the “F1 and “R” hydrant designations.
Item #3 is Accepted as proposed.

COMMITTEE STATEMENT: Additional guidance on the layout of flow test involving multiple hydrants in looped or gridded systems is needed. Item #2 was changed for technical accuracy; to obtain accurate results, the flow hydrant must remain downstream of the residual hydrant. The committee expects the difference in pressure to be minimal. But flowing the downstream hydrant provides the added benefit of determining if obstructions are present within the main.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 23

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 19
NOT RETURNED: 4 Lake, Maddry, Mowrer, Trigg

(Log #2)
Committee: AUT-PRI

291-3 - (2-4): Accept in Principle

SUBMITTER: Heinz E. Otte, Waterous Co.

RECOMMENDATION: 1. In the first sentence of 2-4 delete “with 1-psi (0.0689 bar) graduations” and “with 1/2 psi (0.00445 bar) graduations”.
2. In the second paragraph of 2-4 delete “an Underwriters Playpipe, or other” and replace with “a”, and at the end delete the period after “reading” and add “See Section 2-6.”

SUBSTANTIATION: 1. It would be impractical to provide pressure gauges with the graduations indicated as they would be special order and very expensive. Pressure gauges are provided with graduations that are readable to reflect the precision of the gauge, itself, and standard gauges will meet the intended usage.
2. To state the performance requirements without specifying design.

COMMITTEE ACTION: Accept in Principle.

Item #1 change the values to both read “1 psi”.
Item #2 modify the last sentence of the section to read as follows: “It is preferred to use stream straightener with a known coefficient of discharge, when testing hydrants due to a more streamlined flow and more accurate pitot reading.”

COMMITTEE STATEMENT: Item #1: The committee agreed with the submitter, but wanted to have a uniform 1 psi measurement since the current gauge technology supports pressure increments of 1 psi.
Item #2: The committee agreed with the submitter’s reasons, but did not want to leave a specific reference to a single type of stream straightener in the document.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 23

VOTE ON COMMITTEE ACTION:
AFFIRMATIVE: 19
NOT RETURNED: 4 Lake, Maddry, Mowrer, Trigg

1122
3-2.1 Public Hydrants. All barrels are to be white, except in cases where another color has already been adopted. The tops and nozzle caps should be painted with the following capacity-indicating color scheme to provide simplicity and consistency with colors used in signal work for safety, danger, and intermediate condition:

- Class AA - Light Blue
- Class A - Green
- Class B - Orange
- Class C - Red

SUBSTANTIATION: The barrels of hydrants should be painted white for visibility at night. Class B hydrants should have the top and nozzle caps painted YELLOW, as the color orange may be difficult to distinguish from the color red at night.

COMMITTEE ACTION: Reject.

COMMITTEE STATEMENT: White is often difficult to see during snow conditions. Additionally, the committee has received no data that indicates the current color scheme is not effective.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 23

VOTE ON COMMITTEE ACTION:
- AFFIRMATIVE: 19
- NOT RETURNED: 4 Lake, Maddry, Mowrer, Trigg

291-5 - (3-2.1.1): Accept in Principle

SUBMITTER: Carl W. Hickman, Sulphur Fire Dept.

RECOMMENDATION: Add the following text:

3-2.1.1 Inoperative Hydrants. Fire hydrants that are inoperative or unusable shall have barrels, nozzle caps, tops, and all visible parts painted BLACK.

SUBSTANTIATION: Valuable time is lost when a fire department attempts to use an inoperative or unusable fire hydrant. If the inoperative hydrant is painted black in its entirety, responding fire department members can easily recognize and bypass a dead hydrant.

COMMITTEE ACTION: Accept in Principle.

Revise proposed text to read as follows:

3-2.1.1 Permanently Inoperative Hydrants. Fire hydrants that are permanently inoperative or unusable should be removed.

3-2.1.2 Temporarily Inoperative Hydrants. Fire hydrants that are temporarily inoperative or unusable should be wrapped, or otherwise provided with temporary indication of their condition.

COMMITTEE STATEMENT: Hydrants that are permanently inoperative should be removed from service and temporarily inoperative hydrants should be indicated as such until they are repaired and placed back in service.

NUMBER OF COMMITTEE MEMBERS ELIGIBLE TO VOTE: 23

VOTE ON COMMITTEE ACTION:
- AFFIRMATIVE: 19
- NOT RETURNED: 4 Lake, Maddry, Mowrer, Trigg