

4" SUPPLY HOSE

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This Training Bulletin will familiarize and instruct members in the use and maintenance of the 4" supply hose.

I. **SPECIFICATIONS**

This single-jacket hose consists of a 100% synthetic, high tensile reinforced yarn circular-woven in a "twill configuration" to maximize hose flexibility and to eliminate left hand twist. Polyester is used for "warp" yarns and nylon is used for "woof" yarns.

The woven reinforcement is totally encased in a matrix of ozone resistant synthetic nitrile rubber compound using a single "through the weave" extrusion process in a one-piece construction. This process is used to eliminate the possibility of delaminating found in layered hoses. The rubber is both chemically and mechanically bonded to the woven reinforcement. This utilized product optimizes hydrostatic properties, abrasion resistance and rubber to yarn adhesion.

All 4" supply hose are provided with 4" lightweight, high strength, aluminum alloy, hard coated, rocker lug, male and female couplings, with 4" NST threads.

Hose weight is 49 lbs. per 50' section.

Hose color is "high visibility" yellow and is totally impregnated throughout the rubber compound making up the liner and cover.

Exposure to sea water and contamination by most chemical substances, hydrocarbons, oils, acids, alkalis, and greases have no effect on short or long term performance of the hose.

HYDROSTATIC TEST PRESSURES

Burst Pressure (minimum)	750 psi
Acceptance Pressure (minimum)	500 psi
Service Test Pressure	300 psi
Kink Proof Pressure	375 psi

II. APPLICATIONS

The 4" supply hose is to be used in all supply line applications requiring a maximum amount of water, and in conjunction with the large diameter four-way hydrant valve.

The friction loss characteristics per 100 feet of 4" hose at 100 psi are as follows:

GPM	500	800	1000	1250	1500	2000
FL	5.0 lbs	12.4 lbs	19.1 lbs	29.5 lbs	42.3 lbs	74.5 lbs

Friction factors for 100' increments are as follows:

4" Hose	Friction Factor
One Line	11
Two Lines	42

The 4" nitrile supply hose has a propensity to kink. Obvious kinks and bends should be removed prior to loading with water. Pressurizing the hose will not remove most kinks, but instead may make the problem worse. The weight of 4" hose line after it has been loaded with water will make manipulating the line very difficult. If the line requires manipulation after it has been loaded, grasp the line from the outside of the curve or bend using a proper "hose grip" (thumb married to the hand) to lift or move. Extreme caution shall be used because of a pinching hazard that exists if the hose is grasped inside the curve as a kink may travel down the hose capturing and injuring the member's hand.

III. **TESTING**

Station Commanders shall cause all 4" nitrile hose, bypasses and suction to be tested annually using fire apparatus pumps. Hose shall also be tested before being placed on apparatus when new or when returned from shops after being repaired. To test, lay out a maximum of 300' of hose to one pump outlet. Slowly load the line and bleed off any air in the line. Pressurize to 300 psi for 5 minutes. The pump operator shall remain alert at the pump panel during the test. Inspect the hose and couplings for leaks and any failures. For Annual hose test complete and forward a F-129 and make a journal entry. Forward hose needing repair to Supply and Maintenance.

IV. **MAINTENANCE**

Due to the construction of this hose (synthetic nitrile rubber), a thorough drying after use is not necessary. After each use, scrub the outer jacket to free it of dirt, fire debris and any contaminants. Drain excess water from interior of hose, and then reload onto apparatus.

The 4" nitrile supply hose has a tendency to trap air. Loading the hose onto the apparatus should be done in a manner that minimizes air in the line. When 4" hose has been unrolled, laid out, and uncoupled; pulling the hose over the upper grab-bar will assist in evacuating the air as it is loaded. Another option is to roll the hose, then load it from the rolled position.

The manufacturer has designed this hose to keep any damage from turning into a catastrophic failure. Pinholes and cuts should not extend beyond their initial punctures. Hose that has sustained damage of any sort should be sent to Supply & Maintenance as per the instructions for hose needing repair or replacement in Volume 3, 6/11-25.94.

Hose shall be identified with fire station number and section numbers stamped on the male couplings. Stamp the station number first, and then the section from left to right. Stamp the numbers near a lug to prevent it from rubbing off (Volume 3, 6/11-50.17). Upon receipt, the hose shall be stenciled with the station numbers. This number shall be applied lengthwise, with 1-½ " stencils, starting six inches from both couplings.

Hose shall be rolled so that the station number shows. (Volume 3, 6/11-50.20).

Driving over hose should be avoided whenever possible. If it is absolutely necessary to drive over the 4" nitrile hose, it is preferable that the hose is approached at a 45-degree angle so that each tire passes over the hose independently. Both light and heavy vehicles should approach and cross the hose at a slow rate of speed, making sure not to accelerate with a driving wheel in contact with the hose.

CAUTION: Do not drive over couplings at any time. 4" couplings will get caught between the tires of the duals and cause severe damage to the hose.

