



JAFX4 Hose Specification

JAFX4 is a unique, highly durable nitrile rubber hose for use in supply and attack operations where resistance to petroleum, chemicals, and abrasion is critical. JAFX4 **exceeds** *NFPA 1961 Fire Hose Standard*, 2007 edition.

Jacket Construction: Hose is manufactured using a four layer co-extrusion process to form a one-piece extruded hose with synthetic RLH cover. It is made from 100% high tenacity synthetic yarn, circular woven and locked in by tough, highly resistant synthetic nitrile rubber. The process produces a single, homogenous extruded through-the-weave hose without the use of glues or adhesives of any kind. The co-extruded RLH cover material gives JAFX4 superior performance characteristics of abrasion, heat, chemical and age/ozone resistance over and above all other extruded hose products.

Lining Properties: The tensile strength of the lining and cover shall not be less than 2500 p.s.i. with an ultimate elongation of liner and cover not less than 500%.

Adhesion: The adhesion between the liner and the inside jacket is such that the rate of separation of a 1.5" wide strip cut transversely, shall not be greater than 1" per minute over a period of ten minutes, under a weight of 12 pounds.

Accelerated Aging: Lining specimens subjected to an exposure of 158° F ± 3.6° F, for a duration of 96 hours shall be conditioned as per ASTM D 573, *Standard Test Method for Rubber – Deterioration in an Air Oven*. Then, the specimens shall be tested to ASTM D4112, *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers- Tension, Method A*. Under evaluation, the tensile and elongation properties of the liner shall not be less than 75% of their initial values.

Couplings: Expansion-type in hardcoat anodized aluminum or Storz couplings are available. The anodize process creates a hard aluminum oxide coating which improves the abrasion, corrosion and electrolysis resistance of the completed fitting, while also preventing excessive wear on the male and female threads. All couplings meet NFPA 1963, *Standard for Fire Hose Connections*, 2009 edition.

Hydrostatic Tests:

Diameter (inches)	Pressure (p.s.i.)	Proof Test	Burst Pressure
1.5	330	600	900
1.75	330	600	900
2	330	600	900
2.5	330	600	900
4	250	500	750
5	250	500	750

All tests performed in compliance with *NFPA 1961 Fire Hose Standard*, 2007 edition and ASTM D-30, *Standard Test Methods for Rubber Hose*.

Abrasion Resistance: Outer jacket must withstand a minimum of 30,000 cycles on the Taber Abraser with no abrasion through the filler yarn. H-22 Calibrade wheel to be used with 1,000 gram load on each wheel. The hose shall also withstand Underwriters Laboratory Abrasion Test in UL 19, *Lined Fire Hose and Hose Assemblies* and the Abrasion Test defined in FM Class Number 2111, *Factory Mutual Approval Standard for Fire Hose*.

Friction Loss Chart:

GPM	1 ½"	1 ¾"	2'	2 ½"	4"	5"
100	20.5	9.6	4	1.2		
150	47.9	21.3	8.7	2.9		
200		40	16	5		
250			24.8	8		
500					2.5	0.9
800					6.5	2.3
1000					10.1	3.7
1250					14.5	5.7
1500					23	8.9
2000						15.5
2500						24.6

Cold Resistance: Hose shall have the capability of use down to -40° F. There shall be no apparent damage to jacket or lining when subjected to the following cold bend test: A 3-foot section of hose shall be exposed to a temperature of -40° F. for a period of 24 hours. At the end of the exposure period, the hose shall be rapidly bent 180 degrees back onto itself, first one way and then the other. Following this procedure, the hose shall not leak, nor show any damage to the jacket when subjected to the burst pressure shown above.

Heat Resistance: The ability of the hose to resist heat shall be verified using the test procedures defined in UL 19, *Lined Fire Hose and Hose Assemblies*, Heat-Resistance Test; FM Class Number 2111, *Factory Mutual Approval Standard for Fire Hose*, Heat Resistance. That is, when subjected to a static pressure of 100 p.s.i., the hose shall be capable of withstanding a surface temperature of 1200° F for a minimum of two minutes without rupture or damage to the synthetic reinforcement.

Ozone Resistance: Hose liner shall show no signs of cracking under 7 power magnification when tested in accordance with ASTM D1149-86, *Standard Test Methods for Rubber Deterioration–Cracking in an Ozone Controlled Environment* (samples prepared in accordance with ASTM D518-86, *Standard Test Method for Rubber Deterioration–Surface Cracking*, procedure C). Specimen shall be elongated at 15% for 120 hours of exposure at 100 pphm ozone at a temperature of 122° F.

Marking: Beginning at a point not less than 5' ± 6" from each end, each length shall be stenciled in letters at least one inch high with the manufacturer's identification, country of origin, month and year of manufacture, and the words, "Service Test to 400 p.s.i. per NFPA 1962."

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Weights and Coil Sizes: 50' and 100' non-coupled lengths shall conform to the following averages:

Hose Diameter in 50'	Weight (pounds)	Coil Size (inches)
1.5"	16	16
1.75"	16	16
2"	17	17
2.5"	19	19
4"	85	25
5"	109	27

Colors: Yellow.

Inspection and Care: NFPA advises users to develop a fire hose inspection and care program based on NFPA 1962, Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose, 2008 edition. Such program should also address the retirement of fire hose.

Warranty: ATI warranties both the hose and couplings to be free from defects in material and workmanship for a period of **10 years**. Upon evaluation, hose found to be defective will be repaired or replaced by ATI at no charge to the fire department.

ATI reserves the right to make changes to this specification at any time, as required.