



JET-STREAM Attack Fire Hose

Hose Construction

As Fire Hose forms the front line of attack in any fire department, it is mandatory that the design meets the requirements of today's premier municipal firefighters. To meet these needs, Highwater Hose Inc. has now developed **Jet-Stream**. Highwater Hose Inc. has taken their third generation **Matrix Encapsulated Technology** and combined it with the latest techniques for obtaining high burst, minimizing kinking, abrasion damage, cutting and drag resistance. The synergized hoses so produced will have the following properties as a minimum:

Outer Jacket Properties

The outer jacket shall be woven with high tenacity spun polyester warp yarns with a minimum diameter corresponding to 8/7 type. The jacket shall have an elastomeric impregnation to optimize abrasion resistance and dragging coefficient. Filament Yarns that create poor handling and poor jacket distortion characteristics are unacceptable.

Inner Hose Properties

The hose shall be constructed of top quality synthetic yarns woven into an optimized web and embedded in a matrix of nitrile rubber, to produce high strength and low friction loss. To ensure complete conformance, the resultant hose must meet the following minimum requirements or it will be unacceptable.

(Hose shall be evaluated in accordance with the principles and practices listed in the National Fire Protection Association Standard 1961 (2002 edition) and related standards.)

Ultimate Tensile Strength

Tensile strength of the vulcanized rubber compound used in the hose shall not be less than 1750 psig.

Ultimate Elongation

Ultimate elongation of the vulcanized rubber compound shall be not less than 450%.

Permanent Elongation

Permanent elongation of the vulcanized rubber compound shall be less than 22%.

Hose Specification

Mar 2004

Adhesion

The adhesion between samples of the reinforcement web and either the liner or the cover shall exceed NFPA 1961 requirements. The sample width shall be 1 1/2" as called out in the standard.

Accelerated Aging Properties

When subjected to hot air oven aging at 158°F for 96 hours, the tensile strength and ultimate elongation shall be at least 75% of the original values.

Ozone Resistance.

When evaluated in accordance with standards ASTM D 1149 and ASTM D518, procedure B, 70 hours at 118°F, 100pphm of ozone, the cover or liner shall show no visible signs of cracking.

Synergized Hose Properties

Heat Resistance

When subjected to an internal static water pressure of 100 psi, the hose shall withstand a surface temperature of 1000°F for at least 50 seconds without bursting.

Cold Resistance.

Hose shall be capable of practical use down to -35°F

Abrasion Resistance.

When subjected to the abrasion test listed in the Underwriters Laboratories Standard UL19, the hose shall withstand at least 3,000 cycles without compromising the hoses ability to be used as a primary attack hose as defined in NFPA Standard 1961 (2002).

Chemical Resistance.

Contamination by most chemical substances, oils, greases, fire-fighting foam concentrates, hydrocarbons, and exposure to sea water shall have no effect on the short or long-term performance of the hose. A copy of the chemical resistance chart for the hose shall be provided on request by the manufacturer.

Water Absorption.

When tested against the procedure listed in MIL STD 24606 the maximum water absorbance shall be less than 3 lbs in a 50 foot length.

Maintenance.

Hose shall not support mold or mildew growth.

Hose Specification

Mar 2004

Burst, Hydrostatic and Physical Data.

Synergized hose shall comply with the requirements listed in the tables below and the requirements of The National Fire Protection Association Standard 1961, latest edition.

Sizes and Pressures				
Size	Bowl Size	Service Pressure	Proof Pressure	Minimum Burst
1 1/2"	1 7/8"	500 PSI	1000 PSI	1500 PSI
1 3/4"	2-1/8"	500 PSI	1000 PSI	1500 PSI
2 1/2"	2 7/8"	400 PSI	800 PSI	1200 PSI

Average Coupled Weights and Coil Size				
Size	Bowl Size	50'	100'	50' Coil Diameter
1-1/2"	1-7/8"	15.5 lbs	31 lbs	14.5 ins
1-3/4"	2-1/8"	18 lbs	35 lbs	16.0 ins
2-1/2"	2-7/8"	26 lbs	51 lbs	17.0 ins

Hose Specification

Mar 2004

Water Flow Characteristics

Average Friction Loss in PSI per 100' Hose Length			
Flow in U.S. g.p.m.	1 1/2"	1-3/4"	2 1/2"
60	7.2	3.5	
70	10	5	
80	13.1	6.2	
90	16.8	8	
100	21	9.6	1.2
150	47.5	21	3
200		38	4.8
250		57	8.5
300			12
350			15.6
400			21
500			33.5