HighWater
Hose Inc

Hose Specification

Sep 2009

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 (Latest edition, and related standards.)

Ultimate Tensile Strength

Tensile strength of the vulcanized rubber compound used in the hose shall not be less than 1650 psig.

Ultimate Elongation

Ultimate elongation of the vulcanized rubber compound shall be not less than 500%.

Permanent Elongation

Permanent elongation of the vulcanized rubber compound shall be less than 20%.

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.

12 Rue Willard, East Angus, Quebec Canada J0B 1RO Tel: (888)-832-4310 Fax: (819)-832-4340.

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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 118ºF, 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 600ºC for at least 2 minutes without bursting.

Cold Resistance.

Hose shall be capable of practical use down to -36°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 (latest edition).

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**.**

Couplings.

Unless otherwise specified, hose shall be fitted With Mercedes brand 'Wayout' ™ Aluminum couplings per attached specifications.

Warranty.

Hose shall be warrantied against all hazards for a period of two (2) years. It shall also be warrantied against defects in materials and workmanship for a period of five (5) years. All warranty claims will be processed on a company issued RGA form. Repairs / replacement shall be at the discretion of the manufacturer.

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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 13/16”**	**500 PSI**	**1000 PSI**	**1500 PSI**
1 ¾”	**2-1/8”**	**500 PSI**	**1000 PSI**	**1500 PSI**
2 ½”	**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**

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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

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The "Mertex Wayout"™ coupling

Patent Pending Engraved Reflective Arrows

- You can always rely on "Mertex Wayout"™ Couplings, our latest innovation that leads the way
- Our latest product addition that is "way" ahead
- In "X-Stream" circumstances our arrow will guide you to the "Wayout"
- When you need to get out of the heat, we help show you the "Wayout"
- Our latest hose combinations are "Wayout" ahead of the competition

Special Features:

- Arrows are engraved into and below the surface of the coupling
  - Arrows reflect under low lighting to guide the "Wayout"
  - Engraving prevents reflective material from wearing off due to abrasion
- Available with our Jetstream and Xstream fire hose, in all the available sizes

See over for bid specifications

Important : It is imperative that fire departments observe the standard connectivity of the female end to the water source.

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R08G

Highwater Hose Inc.

Bid Specification

How to specify the "Mertex Wayout"™ fire hose coupling

- The female coupling must have at least 3 reflective arrows, in order to be visible from any position
- The reflective arrows must be engraved into and below the surface of the coupling, to resist abrasion
- The arrows must point in the direction of the water source
- The couplings must be available in sizes from 1 ½ to 3 inch diameter (38mm to 76mm)
- The couplings must conform to NFPA standards
- The fire hose connection or fitting shall be permanently and legibly marked on the outside surface of the product, with the manufacturer's name or trademark
- The thread size, and designation (e.g., 1 ¾ in. NH). minimum letter height shall be .10 in. (.255 mm)
- The fire hose connection or fitting shall be permanently and legibly marked on the outside surface of the product, with the country of manufacturing origin.
- The couplings must be anodized. The anodized treatment must be resistant to chipping & deterioration due to abrasion
- The couplings must be manufactured in North America

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