



**NORTH AMERICAN
FIRE HOSE
CORPORATION**

The difference is... **your** margin of safety.

DURATTACK 1000™

SPECIFICATION FOR **1 3/4"**

**MUNICIPAL FIRE HOSE
DURA-CORD® FIBER CONSTRUCTION
ULTRA-SHIELD™ IMPREGNATED OUTSIDE JACKET**

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DURATTACK 1000™ 1¾" SPECIFICATION

Hose Construction: Hose meeting specification shall be designed and constructed specifically for aggressive interior fire attack operations. Outer jacket shall be woven from high quality **DURA-CORD®** high pressure air-jet entangled filament nylon (Nylon type 6-6) warp yarn. Filler shall be of a high tenacity, low elongation, filament polyester over a lining consisting of a one piece extruded through-the-weave liner that makes the jacket, lining, and covers one piece. The finished hose shall be heat resistant, kink resistant and have a low friction loss design. The finished hose shall be designed with the lowest resistance to drag. Friction loss and water pick-up are primary items.

Inner Hose Properties: When tested in accordance with the procedures listed in NFPA 1961, "Standard on Fire Hose" (Latest Edition) and other related standards, lining or cover shall have the following properties as indicated:

Ultimate Tensile Strength: Tensile strength of lining shall not be less than 1,500 psi.

Ultimate Elongation: Ultimate elongation of lining compound shall not be less than 400 percent.

Permanent Elongation: Permanent elongation of lining rubber compound shall not exceed 20 percent.

Accelerated Aging Test: Hose shall meet requirements of U.L. Standard 19 for accelerated aging. The Fire Department reserves the right to forward three foot samples, cut from lengths of delivered hose, to a nationally recognized laboratory for testing. The tests shall cover the physical requirements on the linings as well as the jackets as outlined in these specifications. If the hose passes, the cost will be paid by the Fire Department. If the hose fails, the cost shall be paid by the supplier. Failure to comply with these specifications will be cause for all hose to be rejected.

The Fire Department also reserves the right to request one sample cut from each 5,000 feet of delivered hose. The sample will be a minimum length necessary to conduct ozone resistance, accelerated aging, adhesion and lining tensile tests by the manufacturer. The results of these tests, along with the samples are to be forwarded to the Fire Department.

Adhesion: Adhesion between reinforcement and lining shall be a minimum of 20 pounds when tested using the NFPA 1961, "Standard on Fire Hose" (Latest Edition) procedure.

Ozone Resistance: Hose shall show no visible signs of cracking of the lining of cover when tested in accordance with ASTM D1149-91 and ASTM D518-86 (R91), Procedure "B", 100 pphm/118 degrees F/70 hours.

Chemical Resistance: Exposure to sea water and contamination by most chemical substances, hydrocarbons, oil, and grease must have no effect on the short or long term performance of the hose. Standard chemical resistance charts for the liner shall be provided by manufacturer.

Outer Hose Properties: Outer jacket shall be woven from high quality **DURA-CORD®** high pressure air-jet entangled filament nylon (Nylon type 6-6) warp yarn. Filler shall be of a high tenacity, low elongation, filament polyester. The outside jacket shall be thoroughly impregnated with Ultra-Shield™, a high performance polymer which shall enhance the abrasion resistance and heat resistance of the hose assembly. The polymer compound shall be heat set in the textile of the outside jacket at temperatures not less than 250 degrees F. Coatings applied to finished hose and/or set with ambient temperature processes are not acceptable. To assure consistency in color and penetration, the impregnation shall be applied to continuous jackets up to 5,000 feet in length or the total footage of the order requirement, whichever is least. Available in Ultra-Shield™ colors of yellow, red, tan or orange. To ensure adequate abrasion resistance, the minimum number of warp plies per inch shall be 39.

Safety Factors:

Abrasion Resistance Safety Factors: Abrasion resistance bears a direct relationship to the safe performance of fire hose. The U.L. abrasion test is felt to most closely reproduce fire department's actual fire ground conditions and is therefore considered of prime importance. Hose meeting all the abrasion resistance safety factors listed below shall do so without exceeding the average weights listed.

Abrasion Resistance: U.L. Method: Hose shall pass a burst test after 3,000 cycles on a reciprocating abrasion tester - as specified in U.L. Standard 219. Factory Mutual Method: When a sample of coupled hose is submitted to the procedure listed in FM Standard 2111 or Mil-H-24606B (SH), there shall be no signs of leakage after 15,000 cycles of abrasion.

Cold Resistance Safety Factor: Hose shall be capable of safe use down to -50 degrees F for a duration of 24 hours. The hose shall not leak or show any damage to the reinforcement when subjected to hydrostatic acceptance test pressure. Flashover Resistance Safety Factor: Heat resistance bears a direct relationship to the safe performance of the hose on the fire ground and as such will not be compromised. Hose meeting the heat resistance safety factors listed below shall do so without exceeding the weights listed. The hose when subjected to a static pressure of 100 psi shall be capable of safely withstanding a surface temperature of 1,000 degrees F for a minimum of 45 seconds without bursting.

Water Pick-up Weight: The tendency for a hose to absorb water while in a wet environment can create significant handling difficulties. When tested against the procedure listed in Mil-H-24606B (SH), the maximum weight gain shall not exceed three pounds per 50 foot length.

Burst Resistance Safety Factor: Hose failure due to bursting is the single most important safety concern. Hose shall have the capability of passing a 500 psi service test with a ½ inch diameter hole through both jacket and lining. Only a through-the-weave design lining will be acceptable. Hose shall have a minimum burst pressure of 1,500 psi.

Hydrostatic Pressure Tests: The hose shall comply with the National Fire Protection Association Standard NFPA 1961, “Standard on Fire Hose” (Latest Edition).

Hydrostatic Tests: All hoses shall be in compliance with NFPA 1961, “Standard on Fire Hose” (Latest Edition) requirements for double jacket, 1,000 psi Proof Test Pressure, Attack Grade Fire Hose. All measurements and tests necessary to determine compliance of the fire hose with the specified requirements, shall be made in accordance with NFPA 1961, “Standard on Fire Hose” (Latest Edition), and ASTM D-30 (Standard Test Methods for Rubber Hose), except as otherwise specified. The results of these test shall be ready available, upon request by The Fire Department.

Physical Data:

Diameter	Service Pressure	Acceptance Pressure	Kink Proof Pressure	Short Length Burst	Curved Length Burst	Average Wt. 50 foot Uncoupled	Coil Size 50 foot Coupled
1¾”	500 psi	1,000 psi	750 psi	1,500 psi	1,500 psi	20 pounds	16 inches

Markings: Beginning at a point not less than four feet from each end, every length of hose shall be stenciled in indelible letters at least one inch in height, with the trade name, name of the hose manufacturer and all additional markings required by NFPA 1961, “Standard on Fire Hose” (Latest Edition), for 1,000 psi attack grade fire hose.

Couplings: The couplings supplied shall be lightweight rocker lug, and comply with NFPA 1963, “Standard for Fire Hose” (Latest Edition) Standard. One male and one female with NST threads to be properly installed on each length of hose by the hose manufacturer. The couplings shall be hard coated, and shall have “LA taper” ends on the coupling bowls.

Warranty: The manufacturer shall assure the fire hose proposed shall meet the requirements and specifications as herein set forth. The manufacturer shall also, as part of their proposal, warranty such fire hose for a period of five (5) years from date of shipment, against failure due to defects in material or workmanship. During the warranty period, any fire hose removed from service for the above referenced defect shall be repaired or replaced free of charge to the customer.

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