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5" FIRE HOSE
SPECIFICATIONS
APPROVED

ON MOTION OF COUNCIL MEMBER OLSON, PINKERTON SECOND, COUNCIL
APPROVED THE SPECIFICATIONS FOR 5" HOSE FOR THE FIRE DEPART-
MENT AND AUTHORIZED THE ADVERTISING FOR BIDS THEREON.

CITY OF LODI

SPECIFICATIONS

FIVE (5) INCH LARGE DIAMETER HOSE

HOSE CONSTRUCTION:

1. Outer ply (cover): Synthetic Nitrile Rubber
 - a. Ultimate tensile strength: Not less than 1500 p.s.i.
 - b. Ultimate Elongation 600% minimum
2. Center ply (reinforcement): 100% synthetic continuous polyester fiber or 100 % high tensile yarn circular plain woven to eliminate left hand twist.
3. Inner ply (lining): Synthetic Nitrile Rubber
 - a. Ultimate tensile strength not less than 1500 p.s.i.
 - b. Ultimate elongation 600% minimum

ACCELERATED AGING TEST:

1. The tensile strength and ultimate elongation of specimens which have been subjected to the action of oxygen at a pressure of 300 ± 10 p.s.i., and a temperature of 70 ± 1 degrees C (158 ± 1.8 degrees F) for a period of 96 hours shall not be less than 60% of the tensile strength and ultimate elongation of specimens which have not been heated in oxygen.

ABRASION RESISTANCE:

1. Hose shall withstand a minimum of 20,000 cycles of the taber abraser without damage to the synthetic reinforcement fibers. H-22 wheels to be used with a 1000 gram load on each wheel.

COLD RESISTANCE

1. Hose shall have a capability of use down to -35 degrees F. Hose shall have no apparent damage to cover, jacket or lining when subjected to the following cold bending test:

A 50 foot length of dry hose is to be firmly coiled and placed in a cold box at -35 degrees F. for a duration of 24 hours. Immediately after the removal of the hose from the hose from the box, the hose should be uncoiled and laid out by one operator. Following this procedure, the hose shall not leak nor show any damage to any thread in the jacket when subjected to hydrostatic acceptance test requirements listed below.

OZONE RESISTANCE:

1. Hose shall show no visible signs of cracking of the lining and cover when tested in accordance with ASTM D1149-64(R1970), ASTM D518 Procedure B, 100 PPHM/118 degrees F/70 hours.

HYDROSTATIC PRESSURE TESTS:

1. Hose shall comply with the requirements of N.F.P.A. Pamphlet 1961. (1984)

<u>DIAMETER</u>	<u>ACCEPTANCE PRESSURE</u>	<u>MINIMUM BURST TEST PRESSURE</u>	<u>MINIMUM KINK PRESSURE</u>
5 inch	300 p.s.i.	500 p.s.i.	200 p.s.i.

2. Each section of hose is to be tested with the couplings which are to be supplied with the hose at acceptance pressure indicated above.
3. Certification of such testing is to be provided.
4. Hose shall be capable of withstanding an Annual Service Test Pressure of 250 p.s.i. for a period of five (5) minutes.

COUPLINGS:

1. Couplings to be storz quick connect.
2. Coupling components shall be drawn together by not less than three (3) bolts so designed to prevent damage to the bolt heads when hose is laid, used or loaded.
3. Fire department personnel shall be capable of recoupling hose in the field using only an allen wrench or disassembly key. In the field is to mean on the street possibly under emergency conditions.
4. At least two lugs per coupling shall have raised indicator marks to insure full positive connection.

WEIGHT AND COIL DIAMETERS:

1. Hose with Storz couplings in 100 foot lengths shall not exceed the following:

<u>DIAMETER</u>	<u>WEIGHT</u>	<u>COIL SIZE</u>
5 inch	110 pounds	30 inches

COLOR: Lime yellow for improved visibility.

HEAT RESISTANCE:

1. The hose when subjected to a static pressure of 100 p.s.i. shall be capable of withstanding a surface temperature of 1200 degrees F for a minimum of two minutes without bursting. Heat resistance to be demonstrated on request by the Lodi Fire Department.

REPAIRABILITY:

1. Cover damage, punctures and other small holes must be able to be repaired with a vulcanizable patch, thereby restoring the hose to full operational use.

CHEMICAL RESISTANCE:

1. Exposure and contamination by most chemicals, substances, hydrocarbons, oils, alkalis, acids and greases must have no effect on the short or long term performance of the hose.
2. Chemical Resistance Chart showing contaminating compounds and solutions, chemical substances, hydrocarbons, oils, alkalis, acids and greases with the period of successful resistance is to be submitted with manufacturer's data.

MARKINGS:

1. Each length of fire hose shall be indelibly marked in letters and figures at least one (1) inch high with the trade name, name of manufacturer, the month and year of manufacture and the words "Tested to 300 p.s.i.".
2. Markings shall be in two places on each length of hose, beginning approximately four (4) feet from the ends of the hose.
3. If a manufacturer produces hose at more than one factory, each length of hose shall have a distinctive marking to identify it as the product of a particular factory.

DIAMETER:

1. The hose shall have an internal diameter of not less than the trade size of the hose.

LENGTH:

1. No nominal 50 foot length shall be less than 48 feet. The hose shall be in lengths averaging not less than 50 feet.

LENGTHS cont.

2. No nominal 100 foot length shall be less than 98 feet. The hose shall be in lengths averaging not less than 100 feet.
3. The length shall be measured from back to back of couplings with the hose at a hydrostatic pressure of 10 p.s.i.

PUNCTURE EXPANSION:

1. Hose shall be capable of supplying continuous water flow of 1000 gpm with a 3/4 inch cut in hose.

INSPECTION:

1. Fire hose acquired per these specifications will be tested and inspected for compliance as deemed necessary. If any of the inspected or tested hose fails to comply with the requirement of the specifications, the City of Lodi shall have the option of rejecting the entire purchased lot of the size hose tested.
2. The rejected hose shall be accepted and picked up by the supplier at his sole expense. The City of Lodi shall not be liable for the purchase price or for any costs or expense of shipment in connection with the rejected fire hose.
3. In such event, the City of Lodi shall have the right to terminate the contract.

WARRANTY:

1. The manufacturer of the hose offered under these specifications shall warranty the hose against failure from faulty materials or workmanship for a period of ten (10) years.
2. The warranty shall carry the express condition that any hose removed from service during this period of ten years because of defects in materials or workmanship, including pin holing or cracking shall be replaced free of charge (including freight costs) with a like amount of hose that meets these specifications.
3. If the bidder is not a manufacturer, he will have the warranty issued by the manufacturer of the hose furnished. Purported warranties by a distributor is not acceptable.

SAMPLES:

1. A full 100 foot length of proposed hose bid, complete with couplings as specified herein, shall be submitted. This sample shall have markings as described above.

SAMPLES cont.

2. A 3 foot length of proposed hose bid complete with couplings as specified herein shall be submitted. This sample shall have the manufacturer's name stenciled on it.
3. The 3 foot sample may be used to test Field Repairability by fire department personnel, abrasion resistance and puncture expansion for compliance of requirements as described in specifications. This sample will be returned to bidder.
4. The 100 foot sample submitted by the successful bidder will be included as part of the shipment and will be retained by the Lodi Fire Department for use as a control sample to compare with the shipment. Any delivered hose that fails to compare in quality, appearance or workmanship with the control sample will be rejected.
5. Samples of hose submitted by unsuccessful bidders will be returned at City expense.
6. Hose samples must be delivered to:

Lodi Fire Department
210 West Elm Street
Lodi, Ca. 95240

DELIVERY:

1. Bidders shall specify in their bids the earliest date on which delivery will be made.
2. All bids are to be on the basis of F.O.B. Lodi, California
3. Delivery of hose shall be made to

Lodi Fire Department
705 East Lodi Ave.
Lodi, Ca. 95240
(209) 333-6735

MANUFACTURER'S DATA

1. The bidder is required to submit with his bid, complete specification sheets describing but not limited to the following:
 - a. Hose construction
 - b. Accelerated Aging Test
 - c. Abrasion resistance test without exposure of synthetic reinforcement fibers.

MANUFACTURER'S DATA cont.

- d. Abrasion resistance test without damage to the synthetic reinforcement fibers.
- e. Cold Resistance
- f. Ozone Resistance
- g. Hydrostatic Pressure Test
- h. Weight and Coil Diameters
- i. Heat Resistance
- j. Statement of Repairability
- k. Service locations for repair
- l. Chemical Resistance Chart
- m. Friction loss characteristics (P.S.I. PER 100 FEET) for the following gpm flows:

750 gpm
1000 gpm
1250 gpm
1500 gpm