Performance Specifications

DRY BARREL FIRE HYDRANT

(Rev / MM : August 2005)

- **Hydrants shall meet or exceed ANSI/AWWA C-502 (latest revision) and meet the following additional provisions:**
- Hydrants shall be assembled and tested in a certified ISO 9001:2000 manufacturing facility within the United States.
- Hydrants shall be listed by Underwriters Laboratory and approved by Factory Mutual for fire line service. UL and FM trademarks shall be cast on the hydrant nozzle section.
- A weathershield shall be provided to prevent dirt and corrosion from affecting the operating mechanism. It will be marked with an arrow indicating the direction of opening, which is open-left or counter-clockwise. Operation nut and nozzle cap nuts shall be of a 1.5" pentagon shape.
- Hydrant bonnet-, nozzle-, standpipe, shoe sections and flanges shall be made of ductile iron. All Nozzle Caps, Pumper caps and weathershields may be cast or ductile iron. Cap threads shall be lubricated with Never-Seez® before delivery.
- All hydrant sections shall have an electrostatic applied, fusion bonded, epoxy coating internally and externally. The coating shall meet or exceed the requirements of AWWA C-550. Coating to be applied only at the valve manufacturer's facilities. The standpipe shall be Bitumen coated internally and externally with a bury line present below the break flange to indicate proper installation depth. Bury depth will be clearly stenciled on the standpipe section.
- Rated working pressure shall be 250 PSI, test pressure shall be 500 PSI in both the open and closed position.
- The 5-1/4" hydrant main valve shall be of the true compression type, opening against and closing with the pressure. It shall use EPDM seating material only. All working parts shall be removable without excavation.
- The hydrant's upper and lower stem, as well as its break coupling and internal pins and clips shall be manufactured of stainless steel. External bolting shall also be manufactured of stainless steel. Manufacturer will use Neverseize® or its equivalent during assembly of bolt and nut sets to prevent galling of similar metals.
- All hydrants shall be of the traffic breakaway type and allow 360-degree rotation to position the pumper nozzle in the desired direction after installation. Undercut or breakaway bolts will not be permitted.
- Hydrants will consist of (1) 4.5" NST pumper nozzle and (2) 2.5" NST hose nozzles. Each nozzle will be bronze and secured with a stainless steel set screw, for easy maintenance and replacement should damage occur. Nozzles threaded into the nozzle section must have Never-Seez® applied before delivery.
- Lubrication reservoir shall be cast as part of the bonnet, creating a watertight cavity without the use of gaskets. A lubrication port shall be provided for installation of lubricant without disassembly of the bonnet section. The reservoir shall be filled with NSF/FDA approved food grade grease at the Manufacturer's facility. The combination of two o-ring sets in the reservoir shall seal the cavity from contact with water. One set on the interior and exterior of the thrust nut, the second set at the bottom of the reservoir as a stem seal.

Performance Specifications

DRY BARREL FIRE HYDRANT

(Rev / MM : August 2005)

- Hydrants shall have two positive steps to prevent over travel of the operating rod, one on the upper stem (stop nut) and one on the Main Valve (Bottom Stop). The main valve shall not bottom out onto the shoe section.

- Operating nut shall be made of bronze with two anti-friction washers, one above and one below the thrust collar. A bronze thrust nut shall be used and secured without reverse threading.

- The seat ring shall be bronze and threaded into a bronze drain ring. The drain ring assembly shall be replaceable without removing the MJ shoe connection, thrust blocks or restraints.

- The draining system shall be a sliding drain seal type. The drain mechanism shall be completely closed after no more than four turns in the opening direction. The drain channel shall be 360 degrees with a minimum of two drain port outlets, bronze bushed on the exterior of the hydrant, using a bronze plug if required. The drain, if unplugged, shall momentarily force flush when opening the hydrant.

- All fire hydrants shall be covered by a Manufacturer's 10 year Limited Warranty on manufactures defects and labor costs for replacement. Warranty will become effective from date of purchase by the end user and delivered within (30) Days from receipt of purchase order. The supplier will also provide maintenance manuals and hydrant tool sets in appropriate levels.

- All fire hydrants shall be Model 2780 as Manufactured by American AVK ***or approved equal.***

- All hydrants shall be delivered painted externally with Sherman-Williams Acrolon™ 218 HS, an Aliphatic Acrylic Polyurethane, or a manufacturer's equivalent. The color shall be determined by the municipality.

ADDITIONAL MATERIAL:

- All hydrants will have concrete collars poured at the break line to ensure proper installation and medium for stabilization in sandy soil types. The pads will be 24" x 24" x 6" and exist without ground cover. Pads will also have an ID tag installed which clearly indicates the hydrants bury depth, direction of opening and turns to open. (Example: 3.5' / OL / 18 Turns)

- All hydrant isolation valves will have their valve box lids color coded **RED** for fire service.

- All valve box lids will be identified by the contractor with a GPS locator and positions given to the project managers or inspectors for future reference by the Emergency Management Team.

Performance Specifications

RESILIENT WEDGEGATE VALVE (3-16")

(Rev / MM; August 2005)

- **Valves shall meet or exceed ANSI/AWWA C-509 (latest) and meet the following additional provisions:**
- Gate valves shall be assembled and tested in a certified ISO 9001:2000 manufacturing facility within the United States.
- The wedge shall be of ductile iron, fully encapsulated with EPDM rubber, including the glide path.
- The gland flange shall be of ductile iron for maximum strength.
- Two upper stem seal O-rings, one above the thrust collar and one below as well as a lower stem seal o-ring will be provided to assure the upper stem seals can be replaced with the valve under full working pressure.
- The stem surface material shall be stainless steel, bronze or metal with a yield strength of 40,000psi.
- A (2) inch cast iron operation nut will be marked with an arrow indicating the direction of opening, which is open left or counter-clockwise. A cast iron handwheel, when specified, shall be used and marked in a similar fashion.
- The waterway in the seat area shall be smooth, unobstructed, and free of cavities. Tapping valves shall have ductile iron bodies that accommodate a full size shell cutter.
- When specified, Tapping Valves 4" through 12" shall have a ring cast with the body on its flanged end to ensure proper alignment with suitable tapping sleeves. All other end configurations shall be specified as mechanical joint (MJ) or Class 125 Flange (FL).
- Valve body, bonnet and gland flange shall have an electrostatic applied, fusion-bonded epoxy coating internally and externally with a minimum of 8 mils. The coating shall meet or exceed the requirements of the AWWA C-550 (or latest revision). Coating to be applied at the valve manufacturer's facilities.
- If a valve is to be buried in an overly aggressive soil type, additional protective coating of the exterior valve body and exposed bolting may be required. If deemed necessary, the manufacturer shall provide a "thick film" thermosetting of unmodified polyurethane applied to a dry film thickness (DFT) between 50-120 mils over a lightly roughened surface (by sandblast or other method) to provide a "tooth" for the adhesion of the polyurethane. Internal surfaces will be masked and protected from over spray and contamination before this coating is applied to all exterior surfaces. All masking shall be removed after curing and before shipment. The applied polyurethane coating will meet the following requirements:
    1. Two component
    2. 100 % solids, no solvents and no V.O.C.'s
    3. Waterproof
    4. Remains flexible from -40° to +200° F
    5. Working temperature up to 250°, intermittent up to 350°
    6. Tensile strength of 2500 psi
    7. Elongation of 290%
    8. Finished hardness of approximately 95 Shore A

Performance Specifications

RESILIENT WEDGE GATE VALVE (3-16")

(Rev / MM: August 2005)

- All bolts, nuts and washers shall be stainless steel to limit exterior corrosion and maintain fastener strength. Manufacturer will use Never-Seez® or its equivalent during assembly of bolt and nut sets to prevent galling of similar metals.

- All valves shall have three pressure tests preformed to the requirements of AWWA C-509 specifications prior to shipment from the manufacturer. (1) 25 PSI against each side of the closed wedge; (2) 250 PSI against each side of the closed wedge; and (3) 500 PSI shell test. Thus valves shall have a working pressure of 250 PSI. The appropriate designs and sizes, which is UL/FM Listed and Approved at a working pressure of 200 PSI.

- Where applicable, all valve coatings and materials shall be tested and certified to meet the requirements of ANSI/NSF-61 regulations for potable water.

- All valves shall be covered by a Manufacturer's 10 year Limited Warranty from date of purchase by the end user and delivered within (30) Days from receipt of purchase order. The supplier will also provide laminated maintenance manuals in an appropriate level.

- All valves shall be as manufactured by American AVK *or approved equal*.

ADDITIONAL MATERIAL:

- All valve boxes shall be a 461-S or 562-S heavy duty type cast iron box with lids marked WATER, SEWER or GAS. RECLAIMED WATER Lines shall use a "Rome-Type" box to differentiate itself from potable water lines.

- All valve box lids will be identified by the contractor with a GPS locator and positions given to the project managers or inspectors for future reference by the Emergency Management Team.

- Valve box lids will have Valve ID Tags securely fastened to their interior, which will clearly indicate the type of valve, its size, direction of opening and its turns to open. (Example: 8" GV / OL / 26 Turns)

- Valve boxes will be installed with concrete collars at ground level and have valve box lids color coded in the following manner:
    - Potable Water Lines will have lids painted **ROYAL BLUE**
    - Force Main Lines will have lids painted **SEA GREEN**
    - Fire Service Lines will have lids painted **SAFETY RED**
    - Reclaimed Water Lines will have lids painted **PANTONE 522-C**
    - Natural Gas Lines will have lids painted **SAFETY YELLOW**