

**SECTION 33 12 19****FIRE HYDRANTS WITH HYDRANT LOCKS****PART 1: GENERAL**

## 1.01 SCOPE

- A. Fire hydrants.
- B. Adjustment of fire hydrants and gate valves.

## 1.02 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 - Submittals.
- B. Submit name of hydrant manufacturer, type of bonnet paint, and engineering control drawing number for hydrant proposed for use.

**PART 2: PRODUCTS**

## 2.01 HYDRANTS

- A. Provide hydrants in conformance with AWWA Standard C502, Dry Barrel Fire Hydrants (Latest Edition). Hydrants are approved by AW by issuance of a Certificate of Responsibility. Hydrants shall open left (counterclockwise). The following hydrant has been approved. Alternate hydrants will not be considered.

## APPROVED HYDRANT TYPE

- The AW approved hydrant at all locations is Mueller Model Super Centurion 250.
  - Fire hydrants installed at Fort Sill and Fort Leavenworth require Hydra-Shield Neo Custodian Hydrant Locks. (Note: These locks are proprietary.) Hydrant locks must be installed prior to hydrants being connected to live water mains **AND** Hydrant Locks must be installed prior to newly installed water mains being connected to the existing distribution system. No active water main line shall have a fire hydrant that is not secured with a Hydrant Lock.
- B. The AW Project Manager may, at any time prior to or during installation of hydrants, randomly select furnished hydrant for disassembly and laboratory inspection, at AW's expense, to verify compliance with Specifications. When hydrant is found to be non-compliant, replace, at Contractor's expense, hydrants, with hydrants that comply with Specifications.
  - C. Provide lower hydrant barrel fabricated from Ductile Iron Pipe as single piece, connected to upper hydrant barrel by means of joint coupling that will provide three hundred sixty (360) degree rotation of upper barrel.

## 2.02 HYDRANT TEE

- A. Fire hydrant installations shall require the use of a hydrant tee on the main line. Hydrant valves shall be bolted to the hydrant tee for all installations. Mechanical joint hydrant tee shall be ductile iron class 350 and shall be produced in accordance with ANSI/AWWA A21.53/C153 and ANSI/AWWA A21.11/C111 for joints and ANSI/AWWA A21.4/C-104 for cement lining in sizes 3" through 24". Hydrant tee mechanical joint nuts and bolts shall be ductile iron, high strength, low alloy steel per ANSI/AWWA A21.11/C-111.

## 2.03 LEADS

- A. Branches (Leads): Conform to requirements of Section 33 11 00.15 - Ductile Iron Pipe and Fittings and Section 33 11 00.11 - Polyvinyl Chloride Pipe.

## 2.04 HYDRANT PAINTING

- A. New hydrants and refurbished hydrants shall be shop coated as specified herein.
- B. Hydrant locks installed on fire hydrants shall not be painted and paint shall not be allowed to enter or affect the hydrant locks system.
- C. Exterior Above Traffic Flange (Including Bolts & Nuts).
  - 1. Surface preparation to be in accordance with SSPC-SP 10 (NACE 2) near white blast cleaned surface.
  - 2. Coat with three coat alkyd/silicone alkyd system with total dry film thickness (DFT) of 6 - 9 mils as follows:
    - a. Prime Coat - Oil modified alkyd primer, to be in general conformance with SSPC Paint Specification No. 25. Total dry film thickness (DFT) 2 - 3 mils.
    - b. Intermediate Coat - Heavy Duty Industrial Alkyd Enamel to be in general conformance with SSPC Paint Specification No. 104, and Federal Standard A-A-2962A. Total dry film thickness (DFT) of 2 -3 mils.
    - c. Finish Coat - Silicone Alkyd Resin Enamel to be in general conformance with SSPC Paint Specification No. 21. Total dry film thickness (DFT) to be 2 - 3 mils. Exception - hydrant bonnet shall not be finished shop coated, only intermediate coated. Install color coded finish coating of bonnet in field.
    - d. Bonnet Paint - Field apply finish coat of Silicone Alkyd Resin Enamel to be in general conformance with SSPC Paint Specification No. 21. Dry film thickness of 2 - 3 mils. Bonnet colors are to be as specified in Paragraph 3.01 to designate the available fire flow at 20 psi residual.
  - 3. Colors - Primer: Manufacturers standard color. Finish coat of hydrant body and connection caps, to be painted to match the color of existing in service

hydrants on the base. Approval of the color paint to be used on the hydrants shall be approved by the American Water Project Manager prior to the final application of paint to the newly installed hydrant.

D. Field Maintenance Painting (Exterior Above Traffic Flange)

1. Surface Preparation to be in accordance with SSPC - SP2, Hand Tool Cleaning, or SSPC - SP3, Power Tool Cleaning, depending on condition of existing paint and extent of corrosion. It is not necessary to remove tightly adhered mill scale, rust, and paint. Mill scale, rust and paint are considered tightly adherent when they cannot be removed with dull putty knife. In some severe cases where it is necessary to remove majority of existing paint, surface should be cleaned in accordance with SSPC - SP11, Power Tool Cleaning to Bare Metal.
2. When surface is cleaned to bare metal (SSPC - SP11), coat hydrant with three coat Alkyd/Silicone Alkyd system in accordance with Paragraph 2.03.B.2 as for new hydrants. When surface is cleaned to SSPC - SP2 or SSPC - SP3, coat hydrant with Silicone Alkyd Resin Enamel in general conformance with SSPC Paint Specification No. 21. Total dry film thickness of 3 - 6 mils surface is cleaned to bare metal (SSPC - SP11), coat hydrant with three coat Alkyd/Silicone Alkyd system in accordance with Paragraph 2.04.B.2 as for new hydrants.

E. Exterior Below Traffic Flange

1. Surface preparation in accordance with SSPC-SP10 (NACE 2) Near White Blast Cleaned Surface.
2. Primer and intermediate coat: coal tar epoxy in general conformance with SSPC Paint Specification No. 16. Apply two (2) coats with dry film thickness (DFT) of 8 - 10 mils each for total DFT of 16 -20 mils.
3. Finish coat: Water based vinyl acrylic mastic. Apply one coat with dry film thickness of 6 - 8 mils. Color of finish coat to be same as finish coat for exterior above traffic flange.

F. Interior Surfaces Above and Below Water Line Valve

1. Material used for internal coating of hydrant interior ferrous surfaces below water line valve must meet the requirements of local or State standards.
2. Coating shall be liquid or powder epoxy system in accordance with AWWA Standard C-550. Coating may be applied in two or three coats, according to manufacturer's recommendations, for total dry film thickness of 12 -18 mils.

## **PART 3: EXECUTION**

### 3.01 INSTALLATION (FIRE HYDRANT)

- A. Set fire hydrant plumb and brace at locations and grades as shown on Drawings. When barrel of hydrant passes through concrete slab, place 1-inch-thick piece of standard sidewalk expansion joint material around section of barrel passing through concrete.
- B. Locate nozzle center line minimum 18 inches above finish grade.
- C. Place 12-inch by 12-inch yellow indicators (plastic, sheet metal, plywood, or other material approved by AW Project Manager) on pumper nozzles of new or relocated fire hydrants installed on new water lines not in service. Remove indicators after new water line is tested and approved by Project Manager.
- D. Thrust blocks are required on all hydrant tees. If hydrant lateral is not restrained, contractor shall provide a thrust block behind hydrant shoe. Do not cover drain ports, bolts, or fittings when placing concrete thrust block.
- E. Obtain AW Project Manager's approval in writing prior to installation of hydrants which require changes in bury depth due to obstructions not shown on Drawings. Unit price adjustments will not be allowed for changes in water line flow line or fire hydrant barrel length caused by obstructions.
- F. Plug branch lines to valves and fire hydrants shown on Drawings to be removed. Deliver fire hydrants designated for salvage to AW at their base depot location.
- G. Coating Requirements:
  - 1. Apply coatings in strict accordance with manufacturer's recommendations. No requirements of this specification shall cancel or supersede written directions and recommendations of specific manufacturer so as to jeopardize integrity of applied system.
- H. Furnish affidavit of compliance that coatings furnished complies with requirements of this Specification and referenced standards, as applicable. Per NFPA standards, provide a color code for the hydrant bonnet to indicate the hydrant's available flow at 20 psi according to the following table:

<b>Supply Water Line Flow Characteristics</b>	<b>Bonnet Color</b>
Less than 500 GPM	Red
500-999 GPM	Orange
1000-1499 GPM	Green
1500 GPM & Above	Light Blue

- I. Remove and dispose of unsuitable materials and debris in accordance with local or State requirements.

### 3.02 HYDRANT LOCK INSTALLATION

- A. Due to the proprietary nature of the Hydrant Lock, the locks shall be acquired by AW. Due to the secure nature of the Hydrant Lock requirement, locks shall be installed by AW. All costs incurred by AW for the provision and installation of the Hydrant Lock shall be paid for by "The Project" through modification of the existing AW Contract with the Government. "The Project" shall be responsible for initiating the AW Contract Modification through AW's Contracting Officer (KO) or the Contracting Officer's Representative (COR).
- B. Upon AW's receipt of the Contract Modification, AW shall contact "the Project" within ten (10) working days to schedule the installation of the hydrant lock(s) on the hydrants purchased by "the Project". (Note: The availability of the hydrant locks is subject to the manufacturer's schedule and delivery. The installation process normally takes thirty (30) minutes per hydrant.)
- C. Hydrant(s) shall be accessible with adequately clear area around hydrant(s) for the installation process. Palletized Hydrant(s) [newly purchased and delivered on pallet(s)] shall not be stacked more than three (3) rows [one (1) pallet] high for safe installation and a minimum of 20 feet in front of the top of the hydrant(s) shall be clear and accessible. (Note: New hydrants should never be stored on the ground.) Installed Hydrants [hydrants newly installed on a water main(s) that are not yet connected to the water distribution system] shall be backfilled to natural ground with level surface with 20 feet clear and accessible 360° around hydrant.
- D. Hydrant Lock Installation(s) shall be inspected by AW as the owner of the lock and AW's KO/COR for payment verification purpose.

**END OF SECTION 33 12 19**