

**City of San Angelo**  
**Approved Materials and Manufacturers**  
**For Water and Sewer**



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**Engineering Services Division**

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## **Section 1 Introduction**

This list includes specific products and manufacturers that have been approved for use within the City of San Angelo water distribution and sanitary sewer collection systems. This listing is intended to be used as a reference for city employees, designers, developers, contractors and vendors. Materials and manufacturers not listed herein are not acceptable for use within the city's system.

For consideration to be approved for use within the City of San Angelo water distribution and sanitary sewer collection system contact the Engineering Services Department at (325) 657-4201.

## **Section 2 Water Distribution System**

### **2.1 Water Main Pipe**

#### **A) Polyvinyl Chloride (PVC) – 4-inch to 24-inch**

PVC water main pipe shall be DR 18 (235 psi Pressure Rating) and conform to AWWA C900 or C905.

1. CertainTeed – Certa-Lok
2. Diamond Plastics
3. Jet Stream
4. JM Eagle
5. North American
6. Northern
7. Royal
8. Vinyltech

#### **B) Cement-lined Ductile Iron Pipe (DIP) – 4-inch to 24-inch**

Ductile iron pipe shall conform to AWWA C150 and AWWA C151.

1. American Cast Iron Pipe Company
2. McWane Pipe
3. U.S. Pipe and Foundry

#### **C) Concrete Cylinder Pipe (CCP) – 24-inch to 48-inch**

Concrete cylinder pipe shall conform to AWWA C301 or C303.

1. Hanson

### **2.2 Tapping Sleeve**

Tapping sleeves shall be 304 stainless steel body with stainless or epoxy-coated carbon steel flange, gridded 360<sup>o</sup> rubber gasket, stainless steel armor plate and hardware, coated to prevent galling or seizing, 3/4" stainless steel test plug, and conform to AWWA C207 and C228.

1. Ford Fast
2. Powerseal 3480AS
3. Romac SST
4. Smith-Blair 663

### **2.3 Fire Hydrant**

Fire hydrants shall be 30-inch standard bury depth, post type, dry barrel, traffic model with 5-1/4 inch main valve, two 2-1/2 inch hose nozzles and one 4-1/2 inch pumper nozzle with National Standard Threads (NST). Hydrants shall be painted OSHA "Safety Yellow" and shall conform to AWWA C502 & C550.

1. American Darling B-84-B

2. Clow Medallion
3. East Jordan Iron Works (EJIW) WaterMaster
4. Mueller Super Centurion A-423
5. M & H 129

#### **2.4 Fire Hydrant Extension**

Fire hydrant extensions must be of the same manufacturer and model as the hydrant they are being installed on. Standard extension sizes shall be 6”, 12”, 18” and 24”. An extension above 24” will warrant replacement of the hydrant with an appropriate bury depth. No more than one extension per hydrant.

#### **2.5 Gate Valve – 4-inch to 12-inch**

Resilient Seated Gate Valves (RSGV) shall be ductile iron body, heat-fusion nylon or fusion bonded epoxy coated, non-rising stem, flanged or mechanical jointed, and shall conform to AWWA C504.

1. American Flow Control
2. American AVK
3. Clow
4. EJIW
5. J&S
6. Kennedy
7. Mueller
8. M&H

#### **2.6 Butterfly Valve – 16-inch to 48-inch**

Butterfly Valves shall be ductile iron body, heat-fusion nylon or fusion bonded epoxy coated, and shall conform to AWWA C504.

1. Clow
2. DeZurik
3. GA Industries
4. J&S
5. M&H
6. Mueller

#### **2.7 Insertable Valve**

- A) Insertable valves shall be NSF and ANSI certified for use in a potable water system.
1. Hydra-Stop IV-250
  2. AVT EZ Valve

#### **2.8 Valve Box & Lid**

Water valve box and lid shall be adjustable 3-piece screw type, non-locking lid marked “WATER”, sized to fit 6” C900 or DI pipe and shall conform to ASTM A-48-84.

1. EJIW

## **2.9 Ductile Iron Fitting – Bend, Tee, Crosse, Reducer, Plug**

Ductile iron fittings shall be domestic made, compact type, cement lined interior, asphaltic or fusion bonded epoxy coated exterior, and shall conform to AWWA C110 or C153.

1. American Cast Iron Pipe Company
2. North American Cast Iron Products
3. Tyler Union
4. Sigma Corporation
5. SIP
6. Star Pipe Products

## **2.10 Ductile Iron Couplings – Transition or Straight**

Couplings shall be standard body length, heat-fusion nylon or fusion bonded epoxy coated and shall conform to AWWA C219

1. Dresser
2. Ford
3. JCM
4. Romac
5. Smith-Blair

## **2.11 Mechanical Joint Restraint**

Mechanical joint restraints shall be ductile iron body, heat-fusion nylon or fusion bonded epoxy coated and shall conform to ASTM F1674.

1. EBAA Iron (Megalug)
2. Ford
3. Smith-Blair
4. Star

## **2.12 Water Service Pipe**

### **A) Polyvinyl Chloride (PVC) – 2-inch**

2” PVC service line pipe shall be IPS Schedule 40 with glue type joints, Schedule 80 fittings, and shall conform to ASTM D1785.

1. Charlotte
2. Diamond
3. Jet Stream
4. JM Eagle
5. North American
6. Northern
7. Royal
8. Texas United

### **B) Copper Tubing (CT) – 1-inch**

Copper tubing shall be domestic made, CTS, type K, soft, and conform to ASTM B88.

1. Cambridge Lee

2. Cerro
3. Halstead
4. Wieland

### **2.13 Service Saddle**

#### A) 2-inch

2" service saddles shall be bronze body, bronze double strap with bronze nuts, female iron pipe threaded outlet, and shall conform to AWWA C800.

1. Ford 202-B
2. James Jones J-979
3. Mueller BR2B
4. Romac 202-B

#### B) 1-inch

1" service saddles shall be bronze body, bronze double strap with bronze nuts, female CC/AWWA taper threaded outlet, and shall conform to AWWA C800.

1. Ford 202-B
2. James Jones J-979
3. Mueller BR2B
4. Romac 202-B

### **2.14 Service Valve**

#### A) Brass Gate Valve – 2-inch

2" gate valves shall be brass body, full port, female iron pipe threaded inlet and outlet, non-rising stem with bronze hand wheel and NSF approval for potable water.

1. Hammond
2. Milwaukee

#### B) Corporation Stop – 1-inch

1" corporation stops shall be no-lead bronze, full-port ball valve, 1" male AWWA/CC taper threaded inlet by 1" flared copper tube size outlet with nut, and shall conform to AWWA C800.

1. Ford F-600-4NL
2. James Jones E-1500
3. McDonald 74701
4. Mueller H-15000N

#### C) Angle Stop – 1-inch

1" angle stops shall be no-lead bronze, 1" flared copper tube size inlet by 1-1/4" swivel meter coupling nut outlet with lockwing tee head, and shall conform to AWWA C800.

1. Ford KV23-444W
2. James Jones J-1525
3. McDonald 4622
4. Mueller H-14255



### **2.15 Backflow Preventer**

Double Check, Double-Detector Check and Reduced Pressure Prevention Backflow Preventers shall have the American Society of Sanitation Engineering Seal of Approval and be installed as specified by TCEQ regulations.

1. Ames
2. FebCo
3. Watts
4. Wilkins

### **2.16 Air Release Valve and Air/Vacuum Valve**

Air release and combination air/vacuum valves shall be:

1. APCO - DeZurik
2. ARI
3. Cla-Val
4. Crespin

### **2.17 Check Valves**

Swing Check valves shall meet AWWA C508.

1. American
2. AVK
3. Clow
4. EJIW
5. Mueller
6. M & H

### **2.18 Casing Spacer**

Casing spacers shall be polyethylene injection molded.

1. Advance Products
2. BMW
3. Calpico
4. Cascade
5. CCI Pipeline Systems
6. PSI

### **2.19 End Seal**

End seals shall be pull-on or wrap-around type.

1. Advance Products
2. BMW
3. Calpico
4. Cascade
5. CCI Pipeline Systems
6. PSI

## **2.20 Precast Concrete Vault**

Precast concrete vaults shall be HS-20 load rated.

1. Capital Concrete
2. Hanson
3. Turner
4. Tyler
5. Vaughn

## **2.21 Precast Concrete Vault Door**

Precast concrete vault doors shall be H-20 load rated, double-leaf, heavy duty diamond-plated aluminum, with hold-open arm and slam latch.

1. Bilco
2. EJIW
3. Halliday

## **2.22 Tracer Wire**

Tracer wire shall be 14-gauge, HDPE-coated copper/steel wire manufactured for direct burial.

1. Agave Wire
2. Copperhead
3. Southwire

## **2.23 Detectable Marking Tape**

Marking tape shall be 2-inch, color coded blue for water.

1. Accucast
2. Presco
3. Pro-Line
4. Terra Tape

## **Section 3        Sewer Collection System**

### **3.1    Gravity Sewer Pipe**

#### A) PVC – 4-inch to 15-inch

4” – 15” PVC gravity sewer main pipe shall be SDR 35 or SDR 26 and conform to ASTM D3034.

1. Diamond Plastics
2. Jet Stream
3. JM Eagle
4. Northern
5. North American
6. Royal

#### B) PVC – 18-inch to 36-inch

18” – 36” PVC gravity sewer main pipe shall be SDR 26 and conform to ASTM F679.

1. Diamond Plastics
2. Jet Stream
3. JM Eagle
4. Northern
5. North American

### **3.2    Pressure Sewer Pipe and Fitting**

PVC pipe and fittings used for pressurized sewer applications shall meet the requirements established in the water section of this list, except that the pipe shall be green in color.

### **3.3    Gravity Sewer Fitting**

Sewer fittings shall be PVC of the same class as the pipe. Wyes and tees shall be swept type.

1. GPK
2. Royal
3. Spears

### **3.4    Manhole**

#### A) Precast Concrete

Precast concrete manholes shall have gasketed riser connections and conform to ASTM C478.

1. Hanson
2. Locke Solutions
3. Turner
4. Tyler
5. Vaughn

#### B) Glass-Fiber Reinforced Polyester Manholes, Wetwells and Manhole Liners

Fiberglass manholes, wetwells and liners shall conform to ASTM D3753.

1. LFM
2. Containment Solutions

### **3.5 Manhole Frame & Cover (30")**

#### **A) Manhole Frame**

Sanitary sewer manhole frame shall be cast iron, H-20 load rated bottom flange type, coated with bituminous emulsified asphalt, and conform to ASTM A48.

1. East Jordan

#### **B) Manhole Cover**

Sanitary sewer manhole cover shall be ductile iron, H-20 load rated, with pick-bar lifting rings, coated with bituminous emulsified asphalt, and conform to ASTM A48. Cover shall be marked "City of San Angelo Sanitary Sewer".

1. East Jordan

### **3.6 Cleanout Boot & Lid**

Sanitary sewer cleanout boot shall be 18-1/8" wide, 28" long and 10-1/2" high. Lid shall have nominal outside diameter of 7-1/2" with two pick holes. Boot and Lid shall conform to ASTM A-48-84.

1. East Jordan

### **3.7 Manhole Coatings & Protective Lining System**

Manhole coatings and protective liners shall be:

1. A-Lok – Dura Plate 100 PVC Liner
2. Raven 405
3. Tnemec – Series 431 PermaShield

### **3.8 Manhole Joint Sealant**

Manhole joint sealant shall be:

1. RamNek
2. ConSeal 102

### **3.9 Inflow Prevention Device**

Inflow prevention devices (IPDs) shall be non-corrodible with self-cleaning gas relieve and vacuum relief valve.

1. LFM – Rain Guard
2. NoFlow-InFlow
3. The Man Pan
4. Southwestern Packing and Seals, Inc. – Rainstopper

### **3.10 Service Saddle**

Service saddles shall be:

1. Fernco
2. Mission
3. NDS

### **3.11 Sewage Combination Air/Vacuum Valve**

Air/Vacuum Valves shall be designed and intended for use with sanitary sewer.

1. APCO - DeZurik
2. ARI

3. Cla-Val
4. Golden Anderson

### **3.12 Check Valve**

Swing Check and Ball Check Valves shall be designed and intended for use in sanitary sewer.

1. American
2. AVK
3. Clow
4. EJIW
5. Mueller
6. M & H

### **3.13 Wastewater Pump**

Wastewater pumps shall be:

1. Flygt N-Pump

### **3.14 Tracer Wire**

Tracer wire shall be 14-gauge, HDPE-coated copper/steel wire manufactured for direct burial.

1. Agave Wire
2. Copperhead
3. Southwire

### **3.15 Detectable Marking Tape**

Marking tape shall be 3-inch, color coded green for sewer.

1. Accucast
2. Presco
3. Pro-Line
4. Terra Tape