

**CITY OF MISSOURI CITY
DEPARTMENT OF PUBLIC WORKS
APPROVED PRODUCTS LIST – Updated August 2018**

APPROVED WATER PRODUCTS LIST

- 1. Fire Hydrants (Flushing Valves, AWWA C502) - (5 1/4 inch Barrel, Factory installed 5” Storz locking connection with cap, 2ea-2.5” connections, 1.5” pentagon operating nut, 6” Mechanical Joint connection. Color shall be factory painted gray with white bonnet and white caps. Bonnet and caps shall be painted in the field, as necessary based upon pipe size chart)**
 - A. Mueller - Model: Super Centurion 250, Option 110
 - B. Kennedy - Model: Guardian K 81-AAmerican Darling - Model: B 84-B
 - C. Waterous - Model: Pacer WB67
 - D. Metropolitan 250 – 5 1/4”, Model 94
 - E. Clow – 5 1/4” Medallion - with grade 304 stainless steel bolts
 - F. East Jordan Iron Works Model 5CD250
 - G. American AVK

- 2. Ball Valves (3/4 inch thru 3 inch) Product must meet the following specifications:**
 - A. NSF approved, full port, brass, threaded connections, 600 psi WOG, lead free.

- 3. Gate Valves (3/4 inch thru 2 inch)Product must meet the following specifications:**
 - A. Non-rising stem, brass disc, Teflon packing, brass, threaded connection, 200 psi WOG, lead free.

- 4. Gate Valves (3 inch and larger, AWWA C509, Resilient Wedge Type)**
 - A. Mueller
 - B. Waterous
 - C. American Darling
 - D. Kennedy
 - E. US Valve
 - F. East Jordan Iron Works
 - G. Clow (with grade 304 stainless steel bolts only)

- 5. Check Valves (AWWA C508,C550 /NSF 61)**
 - A. Millikin
 - B. Cla-val
 - C. Val-matic
 - D. DeZurick
 - E. Pratt
 - F. American Flow Control

- 6. Butterfly valves (AWWA C504 /NSF 61)**
 - A. Pratt
 - B. Pentair (Tyco)
 - C. Milliken
 - D. DeZurick

- 7. PVC Pipe (AWWA C900, C905) and Ductile Iron Fittings For C900, C905 Pipe (AWWA C110/C104, AWWA C153)**
 - A. Manufacturers compliant with AWWA and/or ASTM standards
 - B. All ductile iron fittings shall be Mechanical Joint (MJ) with restraints or push-on with integral restraint gasket (Flex Tite Fittings – RCT)

- 8. Ductile Iron Pipe (AWWA C151/C104) and Ductile Iron Fittings For Ductile Iron Pipe (AWWA C110/C104, AWWA C153)**
 - A. Manufacturers compliant with AWWA and/or ASTM standards.
 - B. All ductile iron fittings shall be Mechanical Joint (MJ) with restraints.

- 9. Curb Stop - Bronze, Ball Valve, 360° Rotation, Locking Wing**
 - A. Ford
 - B. Mueller - Model: Mark II Oriseal
 - C. James Jones
 - D. MacDonald

- 10. Corporation Stop - Bronze**
 - A. Ford - Model: F100
 - B. Mueller - Model: H-15008 or H-15013
 - C. James Jones
 - D. MacDonald

- 11. Service Saddle - Stainless Steel Dual Strap, Epoxy Coated Saddle**
 - A. Ford
 - B. Mueller
 - C. Clow
 - D. James Jones
 - E. MacDonald
 - F. JCM Industries, Inc.
 - G. Power Seal
 - H. Smith & Blair

- 12. Service Saddle - Single Wide-Band Strap, Stainless Steel, Epoxy Coated Saddle**
 - A. Romac, Series 101N
 - B. Smith & Blair
 - C. Mueller

13. Water Meters (AWWA Approved)

- A. Neptune Trident (Schlumberger)
- B. Badger
- C. Sensus (old Rockwell)
- D. McCrometer
- E. AMCO

14. Service Tubing (3/4 inch thru 2 inch Type “K” Annealed, Seamless Copper Tubing, AWWA B 88)

- A. Cerro
- B. Wolverine
- C. Mueller-Streamline
- D. Holstad

15. Polyethylene Encasement Tubing For Copper Water Service, 8 mil min. (AWWA C 105)

- A. Various mfrs.

16. Air Release Valve, 2 inch

- A. APCO - No. 200
- B. GA Industries – Fig. 2-AR
- C. Val-matic, 2 inch
- D. ARI

17. Combination Air/Vacuum Release Valves

- A. Val-matic
- B. APCO
- C. GA Industries
- D. ARI

18. Meter Boxes

- A. Plastic
 - a. DFW
 - b. Gross
- B. Concrete
 - a. Southern Precast
 - b. or approved equivalent

19. Tapping Saddles and Valves

- A. Tapping Sleeves – All Stainless Steel Circle clamp w/ full circumference gasket and stainless steel flanges.
 - a. JCM
 - b. Smith& Blair
- B. Tapping Valve
 - a. All approved gate valves manufacturers in Section 3

20. Other Joints and Fittings

- A. EBBA Meg-a-Lug systems
- B. Field Lock Gaskets or approved equal
- C. Tyler Union
- D. Sigma Corp
- E. Diamond Lok restraint joint PVC
- F. Gradelok offsets for fire hydrants
- G. Flex Tite Fittings for PVC with integral restraint fitting
- H. SIP Industries – EZ Grip

21. Pipe casing spacer (Stainless steel) and end seals for bored crossings

- A. Pipeline Seal and Insulator
- B. RACI
- C. CCI pipeline

22. Pipe Locating Devices

- A. 14 gauge solid strand copper wire with blue shielding
- B. 3M Dynatel Ball Marking system or approved equal

APPROVED SANITARY SEWER PRODUCTS LIST

- 1. Gravity Flow Pipes (AWWA C151, C900, C905, ASTM D 3034)**
 - A. PVC, 15 inch and smaller– SDR 26, ASTM D 3034 pipe, D3212 joint with F477 rubber gasket, Color green
 - B. PVC, Larger than 18 inch and larger – PS115, ASTM F 679 pipe, D3212 joint with F477 rubber gasket, Color green
 - C. Ductile Iron Pipe – AWWA C151 – Class 53 with Protecto 401 lining joints with rubber gasket.

- 2. Force Mains (AWWA C151, C900, C905, C906)**
 - A. PVC, 12 inch and smaller at all depths – AWWA C 900, DR 18, Class 150 pipe, joined per ASTM 3139 with F477 rubber gasket, Color green
 - B. PVC, Larger than 12 inch at all depths - AWWA C 905, DR 18, Class 235 pipe, joined per ASTM 3139 with F477 rubber gasket, Color green
 - C. Ductile Iron Pipe – AWWA C151 – Class 53 with Protecto 401 lining joints with rubber gasket.
 - D. HDPE – ASTM F714 – DR 11, Pipe shall have green stripes that are integral to the pipe.

- 3. Ductile Iron Fittings For Ductile Iron Pipes, C900, C905 Pipe (AWWA C110, AWWA C153)**
 - A. Manufacturers compliant with AWWA and/or ASTM standards.
 - B. All fittings shall be Mechanical Joint (MJ) with restraints.
 - C. Fittings shall be lined with Protecto 401 lining

- 4. PVC Drainage Pattern Fittings For SDR 26 and DR 25 Pipe (ASTM D 3034)**
 - A. GPK
 - B. J-M Manufacturing
 - C. Plastic Trends

- 5. Pipe Connectors / Adapters / Flexible Couplings**
 - A. Fernco
 - B. Indiana Seal
 - C. Flow Control
 - D. Flow Seal
 - E. DFW
 - F. Mission Rubber

- 6. Coating for Manholes (100 Mils. Minimum Thickness for new construction, 125 Mils. Minimum Thickness for reconstruction, 100% solids) – Coatings shall be Holiday tested (NACE – Standard Recommended Practice-Discontinuity (Holiday) Testing of Protective Coatings) - to check for pinholes.**
 - A. Environmental Coatings – Sewer Shield

- B. Quadex
- C. Raven Lining Systems
- D. Sauereisen – SewerGard
- E. Carboline

7. Lift Station Submersible Pumps

- A. Hydromatic
- B. Flyght
- C. ABS
- D. Barnes
- E. Fairbanks Morse
- F. Myers
- G. Ebara International
- H. PACO
- I. National Pump
- J. Cornell Pump Company

8. Plug Valves

- A. DeZurik
- B. Milliken
- C. GA Industries
- D. Val-Matic

9. Check Valve

- A. Miliken
- B. DeZurik
- C. Cla-Val
- D. GA Industries
- E. Val-matic

10. Lift Station Control Panel Providers

- A. Mercer Controls Division
- B. Ace Controls
- C. Motor Controls, Inc.
- D. Prime Controls
- E. Texas Industrial Control Manufacturing
- F. Or Approved

11. Non-Shrink Grout

- A. Quick-Crete – non-shrink grout
- B. Proselect
- C. Carboline
- D. Sherwin Williams
- E. Approved equal.

12. Manhole Covers and Rings, Missouri City Specs, (ASTM A 48, AASHTO H-

20 Load Rating)

- A. Vulcan Foundry – 32 inch diameter, Model V-2420
- B. Neenah Foundry – 32 inch diameter, Model R-1741-F
- C. East Jordan Iron Works, Inc. - 32 inch diameter, Model V-1420
- D. Star Pipe Products – 32 inch diameter, COMC Spec.

13. Manhole Inserts

- A. No Flow/In-Flow Protector
- B. Contractor Specialties and Supply Co.

14. Manholes (Precast Concrete, Missouri City Specifications), pipe boots shall be integral to the manhole

- A. Rinker
- B. NC Pipe
- C. Hanson
- D. Del Zotto Products
- E. Park USA
- F. U.S. Composite Pipe, Inc.

15. Air release valve

- A. ARI model – D-020 Stainless Steel, D-025

16. Other Joints and Fittings

- A. EBBA Meg-a-Lug systems
- B. Field Lock Gaskets or approved equal
- C. Tyler Union
- D. Sigma Corp
- E. Diamond Lok restraint joint PVC

17. Pipe casing spacer (Stainless steel) and end seals for bored crossings

- A. Pipeline Seal and Insulator
- B. RACI
- C. CCI pipeline

APPROVED STORM SEWER PRODUCTS LIST

- 1. Manhole Covers and Rings, Missouri City Specs, ASTM A 48, AASHTO H-20 Load Rating)**
 - A. Vulcan Foundry – 32 inch diameter, Model V-2420
 - B. Neenah Foundry – 32 inch diameter, Model R-1741-F
 - C. East Jordan Iron Works, Inc. - 32 inch diameter, Model V-1420
 - D. Star Pipe Products – 32 inch diameter, COMC Spec.
 - E. D&L Supply A-4000 Series

- 2. Storm Inlet Grates and Frames, Missouri City Specs, ASTM A 48, AASHTO H-20 Load Rating)**
 - A. Vulcan Foundry
 - B. Neenah Foundry
 - C. East Jordan Iron Works, Inc.
 - D. D&L Supply
 - E. Park USA

- 3. Reinforced Concrete Pipes and Driveway Culverts (ASTM C 76, ASTM C443 – Various Manufacturers)**
 - A. RCP, 24 inch and larger at all depths – ASTM C 76 with rubber gasket joints conforming to ASTM 433

- 4. Reinforced Concrete Box Culverts (ASTM C 789, C 850, AASHTO M259, M 273 – Various Manufacturers)**
 - A. RCB, 24 inches X 24 inches and larger having min. 2 feet to max. 12 feet of cover – ASTM C 1433/AASHTO M 259 joined with “Ramnek” joint sealing compound by K.T. Snyder Co. or with rubber gasket meeting ASTM C1677
 - B. RCB, 24 inches X 24 inches and larger having less than 2 feet cover or greater than 12 feet of cover – ASTM C 850/AASHTO M 276 joined with “Ramnek” joint sealing compound by K.T. Snyder Co. or with pre-lubricated rubber gasket meeting ASTM C1677

- 5. Corrugated Metal Outfall Pipes To Receiving Channels In Drainage Easements (ASTM A762, A742 – Various Manufacturers)**
 - A. CGMP, 24 inches and larger to max. depths recommended by manufacturer – polymer coated galvanized corrugated steel pipe joined with O-ring gaskets and coupling bands as per manufacturer's recommendations. Minimum thickness required is 12 gauge.

- 6. Polypropylene Pipe**
 - A. 12” – 30” pipe shall have smooth interior and annular exterior corrugations and meet or exceed ASTM F2736 and AASHTO M330
 - B. 36” – 60” pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2881 and AASHTO M330

7. Manholes and Storm Inlets (Precast Concrete, Missouri City Specifications)

- A. Rinker
- B. NC Pipe
- C. Hanson
- D. Park USA

8. Geotextile Fabric Wrap

- A. Trevira S1114

9. Storm Water Inlet Filtration Systems

- A. SNOUT with Bio Skirt filters by Best Management Practice Inc.
- B. Other products with equivalent or better effectiveness may be submitted to the city for review and approval.

10. Other storm water quality products in conformance with the latest Harris County and City of Houston storm water quality best management practice standards are acceptable.

APPROVED STREET PRODUCTS LIST

- 1. Raised Pavement Markers (Class A, B, C & D)**
 - A. Apex Universal
- 2. Type Y and Type W Traffic Buttons (ceramic only)**
 - A. Apex Universal
- 3. Raised Pavement Marker Adhesive**
 - A. Bundy Raised Pavement Marker Adhesive
 - B. TxDOT approved epoxy
- 4. Thermoplastic Pavement Markings (125 mils thick)**
 - A. Flint Trading Inc. - Premark LKF Roadmarking Material
- 5. Prefabricated Pavement Markings (125 mils thick)**
 - A. Flint Trading Inc. - Premark LKF Roadmarking Material
- 6. Thermoplastic Adhesive**
 - A. Ashland Chemicals - Pliobond 10
- 7. Crack and Joint Sealant (Various Manufacturers)**
 - A. Elastometric-type, Hot-pour Joint Sealant conforming to TxDOT Item 433 and TxDOT Departmental Material Specification D-9-6310
- 8. Paints (Various Manufacturers)**
 - A. Only Water Based conforming to TxDOT Specifications are approved for use in the City of Missouri City
- 9. Road Marker Posts**
 - A. Carsonite # CRM-375
- 10. Replaceable Delineator Post w/ Base (Epoxy or 8" Bundy Adhesive)**
 - A. Repo TM Model
- 11. Concrete Curing Membranes (Various Manufacturers)**
 - A. Liquid membrane-forming Curing Compound conforming to TxDOT Item 526 and TxDOT Departmental Material Specification D-9-8120
- 12. Chemical Stain For Use On Ramps for Handicapped Access, Cola Color (A.D.A., Texas Accessibility Standards.)**
 - A. Kemiko Concrete Products – “Cola” color
- 13. Traffic Control Signalization, Lighting and Appurtenances (Various Manufacturers)**

All materials and manufactured products pertaining to traffic control signals,

lighting, and associated appurtenances shall conform to current City of Missouri City specifications and shall be listed in the TxDOT Prequalified Master List of Approved Products at time of installation.

- A. Controller: Trafficware 980 TS2 Type 1 Ethernet w/built in time coordinator
- B. MMU: Trafficware 516L-E LCD with Ethernet
- C. Traffic Cabinet: Trafficware NEMA TS2 Tall ITS Cabinet
- D. UPS: Alpha FXM2000 w/Ethernet Panel & Smart Battery Monitor with external cabinet attached to signal cabinet
- E. Video Detection: Autoscope Encore Series
- F. Illumination: Teardrop 150w LED by Holophane
- G. Teleste video encoder/decoders
- H. Radio: Alvarion PTP 5ghz and Motorola point to multipoint
- I. PTZ Camera: Sidewinder H.264 i.p addressable cameras with local control panel
- J. GPS: Garmin GPS with db25 connector to interface with Naztec Controller
- K. Signal Lamps: GE signal lamps
- L. Opticom: 3M 764 opticom rack mount card with 138 opticom cable and appropriate receivers
- M. Switches: Ruggedcom and or Etherwan 8 port hardened ethernet switch with fiber ports

OTHER APPROVED PRODUCTS

1. Erosion Control Fabrics

- A. SKAPS GT-140 Non-Woven Geotextile
- B. Other products with equivalent or better effectiveness may be submitted to the city for review and approval.

2. Tree Anchor Systems

- A. Root Anchor by Tree Stake Solutions

NOTE: Materials and manufactured items utilized for construction of public infrastructure in public rights-of-way and easements within the corporate limits and extraterritorial jurisdiction of Missouri City, Texas shall comply in all respects with those listed above in this Approved Products List.

Materials and manufactured items not listed herein may be submitted to the Department of Public Works for review and consideration on a case by case basis. In no instance shall such items be installed without specific approval having been granted by the Department of Public Works prior to construction.