

## 4. Approved materials and manufacturers list

### 4.1 Introduction

This section lists specific products and manufacturers that have been approved for use within the County water and sanitary sewer system. This listing is intended to be used as a reference source for Department's employees, contractors, and vendors. Materials produced by manufacturers not listed herein are **not** acceptable for use within the County's system. Manufacturers interested in submitting products for evaluation and possible approval should submit a written request in accordance with the procedures listed below.

### 4.2 Evaluation Process

#### 4.2.1 Product and Design Review Committee

The Product and Design Review Committee (the "Committee") shall be responsible for:

- A. Review and approval of the "Approved Materials and Manufacturers List"
- B. Review and approval of this DSM
- C. Review and response to comments and concerns regarding the Water and Sewer Standards expressed by contractors, engineers, developers, suppliers, and others.
- D. Review of any other matters regarding the design and construction of the County water and sewer systems.

The Committee shall be composed of four (4) to six (6) employees of the Department, including at least one (1) construction inspector, one (1) member from the field operations staff, and one (1) member who is a licensed professional engineer. The Director shall appoint all members.

#### 4.2.2 Manufacturers and Products Submission Procedures

A manufacturer requesting review of his product shall complete the following procedures:

- A. A written request shall be sent to the Product and Design Review Committee, Department of Utilities, 600 Hudgins Road, Fredericksburg, VA 22408
- B. The request shall include, but not be limited to, submission (four (4) copies of all documents) of the following:
  - a. A list of all applicable standards (AWWA, ANSI, etc.) regarding the product and AWWA, ANSI, etc. certifications of the product.
  - b. Adequate shop drawings and design information (brochures and other product

- information).
- c. Location of the manufacturer's plant.
  - d. Location of the nearest local distribution point and retail outlet.
  - e. A list of any special tools, fittings or methods of construction that the product may require for installation or maintenance.
  - f. Spare parts and service availability information.
  - g. A 5-year history of the product documenting its performance.
  - h. Warranties.
  - i. Product sample (where appropriate). Submit one sample only of each product.
  - j. User references, with contact person and telephone numbers.
  - k. Life cycle costs.
  - l. A statement of why the approval of the product would be beneficial to Spotsylvania County.
  - m. Submissions shall be made at least forty-five (45) days prior to the meeting at which review is requested.

The applicant may be requested to make a presentation regarding the product to the committee that shall not exceed twenty (20) minutes. Representatives at the meeting shall be in a position to offer any type of background on product use and locations, design and reference checks. The representative shall also have the authority to approve a trial run in the County if requested.

### 4.2.3 Design and Construction Submission Procedures

Questions, comments and requests for changes to the DSM shall be made in writing to the Committee at the above address. The Committee shall review each request.

### 4.2.4 Design Changes

The manufacturer shall provide written notice to the Committee of any modifications in product design or material that occur after the Committee's approval. Such changes may require further evaluation of the Committee and can constitute grounds for withdrawal or modification of approval.

### 4.2.5 Withdrawal of Approval

The Committee may withdraw any approval as a result of a design change, field observation, testing, product failure, or other factors that, in the Committee's opinion, warrant such withdrawal.

#### 4.2.6 Committee Recommendations

After completion of the review, the Committee shall reach a consensus regarding approval, continuing the matter from meeting to meeting, if necessary. All product evaluations are final. Any product that is not approved cannot be resubmitted for one (1) year from the date of the Committee's denial.

For each product that has been submitted, one of the following recommendations will be made:

- A. **Approval for Use:** This approves a product for use throughout the Department's service area. All use of the product will be in conformance with the manufacturer's specifications and good engineering practices.
- B. **Conditional Approval for Use:** This approves a product for use throughout the Department's service area; however, the product will be reviewed periodically to ensure that use and functionality are acceptable to the Department. After a suitable period of field observation and review established by the Committee in its sole discretion, the recommendation may be upgraded to Approval for Use. If, during the field observation period, problems with installation, operation or maintenance of the product are observed, the Committee may downgrade the product to Disapproved for Use. All use of the product shall be in conformance with the manufacturer's specifications and good engineering practices.
- C. **Limited Approval for Use:** This approves a product for use only in certain sites or Projects within the Department's service area. The Committee shall determine where the product can be used. The product will be reviewed periodically to ensure that use is acceptable to the Department. After a suitable period of field observation and review as established by the Committee in its sole discretion, the recommendation may be upgraded to Conditional Approval for Use or Approval for Use. If, during the field observation period, problems with the installation, operation or maintenance of the product are observed, the Committee may downgrade the product to Disapproved for Use. All use of the product shall be in conformance with manufacturer's specifications and good engineering practices.
- D. **Disapproved for Use:** The product may not be used anywhere in the Department's service area. If a product has been given a Disapproved for Use by the Committee, the Committee will not give the product a second review unless significant changes have been made to it. In no event shall the Committee reconsider a disapproved product until at least twelve (12) months have passed from the date of disapproval.
- E. **Insufficient Information:** The manufacturer did not provide sufficient information to the Committee to evaluate the product. When the Committee has received additional information, The Committee will evaluate the product after it receives sufficient information to conduct an evaluation. As part of the request for additional information, the Committee may request a presentation from the manufacturer.

## 4.3 Water System

### 4.3.1 Water Pipe

#### 4.3.1.1 Polyvinyl Chloride (PVC) 6" to 10"

- A. AWWA: C-900 Minimum Class DR14.

Manufacturers:

- a. National Pipe & Plastics
- b. North American Pipe
- c. Diamond Plastics

#### 4.3.1.2 Zinc Coated Ductile Iron (DIP)

- A. AWWA: C-151 Minimum Pressure Class 350 (12" or less), Minimum Thickness Class 52 (Greater than 12")

Manufactures:

- a. U.S. Pipe and Foundry Company
- b. McWane
- c. American Cast Iron Pipe Company

##### 4.3.1.2.1 PUSH-ON OR MECHANICAL JOINT

- A. AWWA: C-151 Minimum Pressure Class 350 (12" or less), Minimum Thickness Class 52 (Greater than 12")

Manufacturers:

- a. McWane
- b. U. S. Pipe and Foundry Company
- c. American Cast Iron Pipe Company

##### 4.3.1.2.2 PUSH-ON RESTRAINED JOINTS

- A. AWWA: C-151 Minimum Pressure Class 350 (12" or less), Minimum Thickness Class 52 (Greater than 12")

Manufacturers:

- a. McWane (TR-Flex)
- b. U.S. Pipe Tr-Flex
- c. American – Flex Ring

### 4.3.2 Fittings: (Bends, Crosses, Tees and Grade-Lok Offset Glands) Ductile Iron Only

- A. AWWA: C-110
- B. AWWA: C-153 Compact

Manufacturers:

- a. Tyler Union
- b. U.S. Pipe and Foundry Company
- c. Sigma Corporation
- d. Star Pipe Products, Inc.

### 4.3.3 Couplings (Transition or Straight) Non-Restrained

- A. Stainless steel bolts and nuts and outside finish heat fused nylon coating or fusion bonded epoxy coating; minimum twelve inch (12”) long body.

Manufacturers:

- a. Romac 501 Series Long Sleeve
- b. Ford #FC2A Long Sleeve
- c. Ford Ultra Flex

### 4.3.4 Water Valves

- A. Outside finish: heat fused nylon coating or fusion bonded epoxy coating.
- B. Body: Ductile Iron only

#### 4.3.4.1 Resilient Seated Gate Valves

- A. AWWA C509

Manufacturers:

- a. Kennedy (Model KenSeal 8071SS))
- b. Mueller A-2361 (Resilient Wedge)
- c. U.S. Pipe – Metroseal f250 – (USP1) – (C515)
- d. M & H (Style 4067)
- e. American Flow Control (Series 2500) (C515)
- f. Clow Figure F-6100

#### 4.3.4.2 Butterfly Valves 14" and Greater

A. AWWA C504

Manufacturers:

- a. Mueller – Lineseal III
- b. DeZurik (BAW)
- c. M & H – Style 4500

#### 4.3.5 Fire Hydrants

A. AWWA C502, All Brass shall be NSF 61 approved

Manufacturers:

- a. Mueller (Super Centurion 250)
- b. Kennedy K81D

#### 4.3.6 Meter Setters Two Inches (2") (See Appropriate Standard Details)

A. Ball valve inlet and outlet, fifteen inch (15") height, FIP

Manufacturers:

- a. Ford VBB77-15B-11-77
- b. Mueller B-2423
- c. AY McDonald (720B715WWFF775)

#### 4.3.7 Corporation Stops: Three-quarter Inch ( $\frac{3}{4}$ ") through One Inch (1")

A. AWWA/CC taper by compression, Key or Ball Valve (Ball Valve must be used when static pressure is greater than 100 psi)

Manufacturers:

- a. Ford: F-1000-3 (FB1000-3-Q-NL)
- b. Ford: F-1000-4 (FB1000-4-Q-NL)
- c. Mueller: P-2500B,  $\frac{3}{4}$ " and 1" – (B25008N,  $\frac{3}{4}$ " and 1")
- d. AY McDonald 74701BQ,  $\frac{3}{4}$ " and 1"

#### 4.3.8 Compression Fittings

Manufacturers:

- a. Mueller 110
- b. Ford Pack Joint C-84 (- Q Quick Joint)

- c. AY McDonald (-Q Mc Quick Compression)

### 4.3.9 Tapping Sleeves

#### 4.3.9.1 M. J. Cast Iron or Ductile Iron Sleeve

Manufacturers:

- a. Mueller (H-615 for 4" – 24" on Ductile Pipe and H-619 for 6" – 12" A/C Pipe)
- b. American Flow Control – (Model 2800-A for A/C pipe; Model 2800-C for 6" – 12" D.I. and PVC pipes; Model 1004 for PVC pipe and 16" and larger D.I. pipe)

#### 4.3.9.2 Resilient Seated Wedge Tapping Valves, AWWA C509

- A. AWWA C509

Manufacturers:

- a. American Flow Series 2500 Resilient Wedge Valve (C515)
- b. Mueller T-2361 Resilient Wedge Valve (for 6" – 12" only)
- c. Kennedy Model– Model 8950

### 4.3.10 Air Release Valves

Manufacturers:

- a. Cla-Val 34AR

### 4.3.11 Precast Concrete Vaults

Manufacturers:

- a. Americast
- b. Clear Flow Company
- c. Contractors Precast Corporation
- d. Hanson Pipe and Products
- e. Rotondo Precast

### 4.3.12 Water Meter Barrels/Vaults

Manufacturers:

- a. Hi-Density Polyethylene Plastic Box – Carson Plastic Industries
- b. Bingham & Taylor

#### 4.3.13 Water Meter Barrel Frames and Covers

- A. All meter lids shall have one and three-quarter inch (1 3/4") hole in center
- B. All meter barrel lids shall be molded of a composite polymer to include a three inch (3") cast iron washer and shall be capable of withstanding traffic loading.
- C. Manufacturers:
  - a. Ford Monitor MC-24T with Pentagon nut
  - b. Ford C32T (18" Locking Meter Box and Lid)
  - c. Ford EXT-1 (18" x 24" Extension Ring)
  - d. Mueller
  - e. Bingham & Taylor
  - f. Vestal 32-233 #RMC-18L W/SN W/TR (18" Meter Frame & Cover)
  - g. Vestal 32-043 #ER-1824 Expanda Ring
  - h. Vestal 32-256 #Monitor R&C W/SN W/TR (20" Monitor Ring and Cover)
  - i. Vestal 32-046 #ER-2024 Expanda Ring
  - j. Vestal 32-280 #RMCL EX-HVY W/SN W/TR (Extra Heavy Locking Cover, Touch Read)
  - k. 32-090 #EX-HVY Monitor R&C W/SN W/TR (Locking Ring and Cover, Touch Read)
  - l. Capitol MXB-1241 (24" Monitor Style Meter Frame & Cover)
  - m. Capitol MBX ADP (18" Meter Pit Adapter Ring)
  - n. Capitol MBX C32 (18" Locking Meter Box and Lid)
  - o. AY McDonald 74Q 32 CT (18" Locking Meter Box and Lid)
  - p. AY McDonald 74MX1 Extension Ring
  - q. AY McDonald Heavy Traffic Lid – 74MAL115HRG

#### 4.3.14 Valve Boxes

- A. Cast-Iron Slip type only
- Manufacturers:
- 1. Bingham & Taylor
  - 2. Capitol Foundry
  - 3. Sigma

#### 4.3.15 Copper Tubing, ASTM B88

A. Type K (Soft) ¾" and 1" Service Lines

Manufacturers:

1. Mueller
2. Cerro
3. CMC Howell Metal
4. Cambridge Lee

B. Type K (Hard) 1 ½" and 2" and Service Lines

Manufacturers:

1. Cambridge Lee
2. Mueller
3. Cerro

#### 4.3.16 Service Saddles

A. No service saddles allowed

#### 4.3.17 Pipe Restraints

A. Must Be UL Listed and FM Approved

Manufacturers:

- a. EBAA Iron, Inc. (Megalug 1100, 1500, and 2000)
- b. Star Pipe Products, Inc. (All Grip and Star Grip)
- c. Ford Uni-Flange (Series 1500 and 1400)
- d. Sigma One-Lok Retainer Glands for C900/C905 and Ductile Iron Pipe
- e. Romac Style 611 (PVC Pipe)
- f. Romac Roma Grip Wedge (PVC and Ductile Iron Pipe)

#### 4.3.18 Sampling Stations

Manufacturers:

- a. Kupferle's MainGuard #94WM

#### 4.3.19 Casing Spacers (Stainless Steel Only)

Manufacturers:

- a. Cascade Style CCS with Style CCES End Seals
- b. PSI Model #C8G-2 and Model #C12G-121
- c. BMW SS Stainless Steel Casing Spaces

#### 4.3.20 Double Check, Double Detector Check and Reduced Pressure Principle Devices

- A. American Society of Sanitary Engineering Seal Approval

Call Spotsylvania County backflow coordinator at (540) 507-7300 for specific applications.

#### 4.3.21 Yoke Bars (Epoxy Coated Only)

- A. For 5/8" x 3/4" meter

Manufacturers:

- a. Ford Y502
- b. Mueller H-5020
- c. AY McDonald 14-2

- B. For 3/4" meter

Manufacturers:

- a. Ford Y503
- b. Mueller H-5030
- c. AY McDonald 14-3

- C. For 1" meter

Manufacturers:

- a. Ford Y504
- b. AY McDonald 14-4
- c. Mueller (H-5040)

#### 4.3.22 Yoke Angle Valve for Copper Service Line

Key or Ball Valve (Ball Valve must be used when static pressure is greater than 100 psi)

- A. For 5/8" x 3/4" Meter

Manufacturers:

- a. Mueller B24273 – B24273N 5/8" x 3/4" x 1"
- b. Ford BA94-324W

- c. AY McDonald 74602BYQ – 1 x  $\frac{3}{4}$  x 02

B. For  $\frac{3}{4}$ " Meter

Manufacturers:

- a. Mueller B24273 – B24273N  $\frac{3}{4}$  x 1
- b. b. Ford BA94-324W
- c. AY McDonald 74602BYQ – 1 x  $\frac{3}{4}$  x 02

C. For 1" Meter

Manufacturers:

- a. Mueller B24273N 1
- b. Ford BA94-444W
- c. AY McDonald – 74602BYQ – 1 x 1 x 04

#### 4.3.23 Yoke Angle Double Check Valve for Copper Service Line

Key or Ball Valve (Ball Valve must be used when static pressure is greater than 100 psi)

A. For  $\frac{5}{8}$ " x  $\frac{3}{4}$ " Meter

Manufacturers:

- a. Ford HHCA 94-424-NL-Q
- b. Mueller P 14466A-AN
- c. AY McDonald 112 3Y2 34 (7112-4YQ 34)

B. For  $\frac{3}{4}$ " Meter

Manufacturers:

- a. Ford HHCA 94-424 – HHCA94-424-NL-Q
- b. Mueller P 14466A H-14466-AN
- c. AY McDonald 112 3Y2 34 (7112-4YQ 34)

C. For 1" Meter

Manufacturers:

- a. Ford HHCA 94-444 – HHCA94-444-NL-Q
- b. AY McDonald 112 4Y2 44 – (7112-4YQ 44)
- c. Mueller H-14466AN

### 4.3.24 Waterline Marker

Note must be on marker: "Call 1-800-552-7001" or Utilities at (540)507-7300 before you dig

Manufacturers:

- a. Carsonite International SCH-2303
- b. Binham and Taylor
- c. Rhino

### 4.3.25 Backflow Preventer Box

Call Spotsylvania County Backflow Coordinator at 540-507-7300 for specifications and regulations.

## 4.4 Sanitary Sewer System

### 4.4.1 Gravity Sewer Pipe

#### 4.4.1.1 Zinc Coated Ductile Iron (DIP)

- A. AWWA C151 Minimum Thickness Class 52
- B. Acid Resistant Interior Lining

Manufacturers

- a. U.S. Pipe and Foundry Company (Protecto 401)
- b. American Cast Iron Pipe Company (Protecto 401)

#### 4.4.1.2 Polyvinyl Chloride (PVC) Pipe

- A. 4" – SDR 26 only
- B. 6"-15": ASTM D3034, SDR 35 and/or SDR 26 minimum
- C. 18"-48": ASTM F679, wall thickness T-1
- D. Fittings: ASTM D1784
- E. Gaskets: ASTM F477

Manufacturers:

- a. Certaineed Corporation
- b. J-M Eagle
- c. Charlotte (Fittings Only)
- d. Plastic Trend (Fittings Only)

- e. National Pipe and Plastics Ever-Green Sewer Pipe
- f. North American Pipe ASTM D3034
- g. Multi Fittings (SDR 35, 26 Fittings Only)
- h. Diamond Plastics (Pipe Only)
- i. Vassallo/Syroco ASTM D3034 SDR 35 and 26 (Fittings Only)
- j. Vassallo/Syroco ASTM D1336 SDR 35 and 26 (Fittings Only)
- k. Harco (Fittings Only)

#### 4.4.2. Pressure Sewer Pipe

##### 4.4.2.1 Zinc Coated Ductile Iron (DIP)

- A. Minimum Thickness Class 52 with Acid Resistant Interior Lining

Manufacturers:

- a. U. S. Pipe and Foundry Company (Protecto 401)
- b. American Cast Iron Pipe Company (Protecto 401)

##### 4.4.2.2 Polyvinyl Chloride (PVC)

- A. AWWA C-900 Minimum Class DR14

Manufacturers:

- a. Diamond Plastics North American Pipe
- b. National Pipe

##### 4.4.2.3 High Density Polyethylene (HDPE)

- A. AWWA: C906, PE3408, Minimum SDR11, Pressure Class 200

Manufacturers:

- a. Performance Pipe
- b. Flying W
- c. Endot
- d. Isco

#### 4.4.3 Manholes: Precast Concrete

- A. ASTM C478, with Rubber O-Ring Gaskets

Manufacturers:

- a. Americast

- b. Contractor's Precast
- c. Hanson
- d. Frederick Precast Concrete

#### 4.4.4 Manhole Frames and Covers

- A. Standard Size Lid – 23" only
- B. Offsite manholes – 26" only
- C. ASTM A48, Class 35B, AASHTO M-306

##### 4.4.4.1 Standard Solid Frame and Cover

Manufacturers:

- a. East Jordan Iron Works #00194410 Manhole Frame for Standard Cover #00194443 Standard Manhole Cover
- b. Capitol Foundry MH-46821\*

##### 4.4.4.2 Watertight Frame and Cover

Manufacturers:

- a. East Jordan Iron Works #00194412 Manhole Frame for Watertight Cover #00194441 Watertight Manhole Cover
- b. Capitol Foundry MH-1682WT\*

#### 4.4.5 Manhole Liners, HDPE

Manufacturers:

- a. AgruGrip
- b. GSE Studliner

#### 4.4.6 Gaskets and Flexible Manhole Connections

- A. Flexible cast-in-place seal or flexible boots installed with hydraulic pressure after manhole manufacture. Manhole openings made by hole-formers inserted during manufacture.

Manufacturers:

- a. Press-Seal Gasket Corp. Model PSX Positive Seal gasket for Installation in Pre-Casters' Plants by Factory Trained Personnel
- b. A-Lok
- c. International Precast Supply with Stainless Steel Adjustable Expansion Ring.
- d. NPC Kor-N-Seal SL

#### 4.4.7 Internal Chimney Seals

Manufacturers:

- a. Not Allowed

#### 4.4.8 Manhole Joint Seals

O-ring gaskets meeting ASTM C-361 & ASTM C-443.

#### 4.4.9 Manhole Joint Wrap (in addition to O-ring specified above)

Manufacturers:

- a. Wrapid Seal
- b. Butyl-Tite by MultiSeal, Inc.

#### 4.4.10 Manhole Joint Sealers

A. Butyl Mastic

Manufacturers:

- a. Ram Nek Pioneer 310 Mastic

#### 4.4.11 Waterproof Manhole Inserts

A. Non-Corrodible with self-cleaning gas relief and vacuum relief valves

Manufacturers:

- a. Parson
- b. Rainstopper by Southwestern Packing & Seals, Inc.

#### 4.4.12 Polyethylene Slope Adjusting Ring

A. ASTM D1248

Manufacturers:

- a. Ladtech Polyethylene Manhole Adjusting Ring Wedge Design
- b. Ladtech Polyethylene Manhole Adjusting Ring Flat Design

#### 4.4.13 Saddles

Manufacturers:

- a. Vasallo – ASTM – F905

#### 4.4.14 Manhole Steps

Manhole steps not Required, see [Sec. 2.3.3](#)

#### 4.4.15 Cleanout Cover

Manufacturers:

- a. East Jordan Iron Works 8555010/06800006
- b. Capitol Foundry WSSC-C/0\*
- c. Bingham & Taylor #8250

#### 4.4.16 Valves

##### 4.4.16.1 Valves – Plug, Full Port

Manufacturers:

- a. DeZurik Fig 100
- b. Clow Eccentric Plug Valve C5413
- c. Val-Matic

##### 4.4.16.2 Valves – Swing Check

Manufacturers:

- a. Golden Anderson Figure 250-D

#### 4.4.17 Backwater Valve or Manhole Vent

Manufacturers:

- a. Josam 67100

#### 4.4.18 Sewage Combination Air/Vacuum Valve

Manufacturers:

- a. ARI No (D-020SS)

#### 4.4.19 Sanitary Sewer Marker

Note must be on marker: “Call 1-800-552-7001 or Utilities at (540)507-7300 before you dig

Manufacturers:

- a. Carsonite International SCH-2932
- b. Bingham & Taylor
- c. Rhino

## 4.5 Water and Sanitary Sewer Systems

### 4.5.1 Modular Wall Seal

EPDM with stainless steel nuts and bolts

Manufacturers:

- a. Link Seal by GPT

### 4.5.2 Vault Doors

Type K heavy duty aluminum double leaf door, H2O rated

Manufacturers:

- a. Bilco
- b. Halliday

### 4.5.3 Electrical Coating for Tracer Wire Connections

Coated solid tracer wire only. Stranded wire is unacceptable.

10-gauge wire only. Continuity test is required.

Manufacturers:

- a. DryConn waterproof connectors or equivalent

### 4.5.4 All Fitting and Utility Hardware

- a. FluoroKote Process #1
- b. Royston R28 Rubberized Mastic
- c. Stainless Steel