

4. APPROVED MATERIALS AND MANUFACTURERS

4.1 Introduction

This document represents a listing of specific manufacturers whose products have been approved for use within Hanover County's water and sanitary sewer systems.

This listing is intended to be used as a reference source for County employees, contractors and vendors. Materials produced by manufacturers not listed herein are not acceptable for use within the County's systems. Manufacturers interested in submitting products for evaluation and possible approval should communicate their interest to the Hanover County Department of Public Utilities, County of Hanover, P.O. Box 470, Hanover, Virginia 23069.

Hanover County reserves the right to perform a comprehensive plant and product evaluation and testing, and at the sole option of the County. The County also reserves the right to limit the number of approved manufacturers and products as it deems necessary to control parts inventory and maintenance/training requirements.

Revisions to this publication will be made periodically. Users should inquire with the County as to availability. Any errors or omissions should be reported to the County immediately.

4.2 Materials For Water System

All materials used must meet AWWA and/or ASTM Standards, and the requirements of the Hanover County Water and Sanitary Sewer Standards, latest revision.

4.2.1 Pipe

- A. C-900 - PVC (DR-18, CL. 150) (sizes up to 12"). If Class 150 pipe is not appropriate for the specific installation, appropriate ductile iron pipe shall be used.
- B. AWWA C-909 (CL. 150) (sizes up to 12"). If Class 150 pipe is not appropriate for the specific installation, appropriate ductile iron pipe shall be used.
- C. Ductile Iron. Ductile iron pipe shall meet the requirements of AWWA C151 and AWWA C150. 3" through 12" pipe shall be, at a minimum, pressure class 350. 14" through 20" pipe shall be, at a minimum, pressure class 250. 24" pipe shall be, at a minimum, pressure class 200. 30" and larger pipe shall be, at a minimum, pressure class 150. Pressure class shall be increased if warranted by design considerations. (Push-on and mechanical joint, allowed in all sizes)

4.2.2 Valves

- A. Gate Valves
 - 1. Kennedy AWWA 571
 - 2. Mueller AWWA
 - 3. Smith Metropolitan
 - 4. M & H Metropolitan
 - 5. M & H AWWA (Requires optional bronze bushing in the thrust bearing area. The seal plate is to be stamped to indicate this option is included.)
 - 6. Clow Corporation AWWA (Requires o-rings above and below the stem collar being sealed in a permanent grease reservoir. A white plastic tag will be placed under the operating nut to indicate the feature is included.)
 - 7. American Flow Control
- B. Resilient Seated Gate Valves (for main sizes 2"-12" only)

1. American Flow Control - Series 500, Gate Valve with Non-Rising Stem (NRS)
 2. Clow R/W Valve
 3. U.S. Pipe - Metroseal 250: with non-rising stem (NRS) and outside stem yoke (OSY)
 3. M&H (Style 3067-NRS; 3068 OSY)
 4. Kennedy (Model Ken Seal II 4571X)
 5. Mueller A-2360 (Resilient Wedge)
- C. Butterfly Valves (For main lines 16" and larger)
1. DeZurik Baw AWWA
 2. Pratt Groundhog Class 150B
 3. Pratt Triton HP-250
 4. M&H Style 4500 (for 16"-24") and Style 1450 (for 30"-54")

4.2.3 Fire Hydrants

- A. Mueller Centurion A-421
- B. Kennedy Figure K-81D
- C. U.S. Pipe - Metropolitan 250
- D. American Flow Control - Mark 73

4.2.4 Meter (Setters) Yokes

- A. For 5/8" Meters:
 1. Ford 5020 (with compression connections for inlet and outlet pipe)
 2. Mueller 502 (with compression connections for inlet and outlet pipe)
 3. McDonald 502 (with compression connections for inlet and outlet pipe)

Note: County requires manufacturer to supply these connections “completely factory assembled” and tightened to proper torque.

B. For 1” Meters:

1. Ford 504 (with compression connections for inlet and outlet pipe)
2. Mueller 504 (with compression connections for inlet and outlet pipe)
3. McDonald 504 (with compression connections for inlet and outlet pipe)

Note: County requires manufacturer to supply these connections “completely factory assembled” and tightened to proper torque.

C. For 1 1/2” and 2” Meters (all with bypass):

- *a. Ford - for 1 1/2” Meter - VBB76-7B-11-66 and for 2” Meter - VBB77-8B-11-77
- *b. Mueller (for both) - H-1423
- *c. A.Y. McDonald - Model 20A609 WWFF 665 for 1 1/2” meter, Model 20A709 WWFF 775 for 2” meter

*These products are acceptable provided manufacturer makes the necessary modifications to comply with the County’s materials specifications for 1-1/2” and 2” water meter setters.

4.2.5 Corporation Stops

Plug type only for 3/4” and 1”, and plug type or ball valves for 1-1/2” and 2”

3/4” through 2” with “cc” thread inlet

A. Mueller

1. H-15000
2. H-15008 (3/4” and 1” corp stop with compression outlet for copper) or

H-15071 (3/4” and 1” connector only to convert a normal H-15000 corp stop to compression, to avoid using special tapping machine adapters)

- B. Ford
 - 1. F-600 (Plug type with flare outlet only for 3/4" and 1")
 - 2. F-1000-3G (3/4" corp stop with compression connection for copper) or

C04-33G (3/4" connector only to convert a normal F-600-3 corp stop to compression, to avoid using special tapping machine adapters)
 - 3. F-1000-4G (1" corp stop with compression connection for copper) or

C04-44G (1" connector only to convert a normal F-600-4 corp stop to compression, to avoid using special tapping machine)
- C. McDonald
 - 1. 4701
 - 2. 4701-T (3/4" and 1" corp stop with compression outlet for copper) or

4700-T (3/4" and 1" connector only to convert a normal #4701 corp stop to compression, to avoid using special tapping machine adapters)
- D. Hays (Cat. #5200)
- E. JJC #J-1500
- F. Ford FB-600 (Ball valve with flare outlet only for 1-1/2" & 2")
- G. Ford FB-1000G (Ball valve with compression outlet only for 1-1/2" & 2")

4.2.6 Compression Fittings

(for 1-1/2" and 2" only)

- A. Mueller 110
- B. McDonald T-Compression
- C. Ford Grip Joint

4.2.7 Curb Stops

3/4" and 1" copper flare, full port, ball or plug type curb stop, with or without check

| | Flare Type | Copper Flare Plug Type | Copper Ball |
|----|--------------------|---------------------------|----------------|
| A. | Ford 3/4" 333 | Z22-333 | B22- |
| B. | Ford 1" 444 | Z22-444 | B22- |
| C. | Mueller 3/4" & 1" | H-15300 | N/A |
| D. | McDonald 3/4" & 1" | 4713 | 6100 |

4.2.8 Curb Stops

3/4" and 1" copper compression, full port, ball or plug type curb stop, with or without check.

| | Compression Type | Compression Plug Type | Ball |
|----|----------------------------|--------------------------|--------|
| A. | Ford 3/4" 333G | Z44-333G | B44- |
| B. | Ford 1" 444G | Z44-444G | B44- |
| C. | Mueller 3/4" & 1" 25209 | H-15207 | B- |
| D. | McDonald 3/4" & 1" | 4713-T | 6100-T |

4.2.9 Curb Stops

1-1/2" and 2" pipe threaded or compression, full port, ball type curb stop, with or without check

| | Threaded <u>Type</u> | Compression <u>Ball Type</u> | Pipe <u>Ball</u> |
|----|------------------------------|---------------------------------|---------------------|
| A. | Ford 1-1/2" 666 | B44-666G | B11- |
| B. | Ford 2" 777 | B44-777G | B11- |
| C. | Mueller 1 1/2" & 2" 20283 | B-25209 | B- |
| D. | McDonald 1 1/2" & 2" | 6100-T | 6101 |

4.2.10 Vaults, Precast Concrete

Requirements and configurations as shown on plans.

- A. CSR Hydro Conduit (formerly Va. Precast & Essroc Materials)
- B. S.E.L.Co. (M-1 Vault)
- C. Elite Fire Protections, Inc.
- D. Tindall Vaults

4.2.11 Tapping Sleeve

- A. Fabricated Steel Sleeves with Epoxy Coating and Stainless Steel Bolts and Nuts
 - 1. Smith Blair (Rockwell Product) #622
 - 2. Industries #412 ESS
 - 3. ROMAC # FTS 420 SS
 - 4. Ford FTSC (4"-30") w/SS bolts
- B. Stainless Steel Sleeves
 - 1. Power Seal - Model 3480 (6"-24")
 - 2. Model 3490 AS
 - 3. ROMAC SST and SST III
 - 4. Ford FAST (4"-24")

5. Cascade - Model CST-EX, Model CST-SL
6. JCM Model 432
- C. M.J. Steel Sleeve
 1. JCM 414 Mechanical Joint
- D. M.J. Cast/Ductile Iron Sleeve
 - a. Mueller (H-615 for 4"-24" on Ductile Pipe and H-619 for 4"-12" C/A Pipe)
 - b. Clow (F-5205)
 - c. American Flow Control - (Model 2800-A for A/C pipe; Model 2800-C for 4"-12" D.I. and PVC pipes; Model 1004 for PVC pipe and 16" and larger ductile iron pipe)

4.2.12 Tapping Valves

- A. Clow F5093
- B. Kennedy C950
- C. Kennedy 4950 Resilient Wedge Valve
- D. Mueller H667
- E. American Flow Series 500 Resilient Wedge Valve
- F. Mueller T-2360 Resilient Wedge Valve

4.2.13 Fittings

Bends, crosses, tees and grade lock offset glands- ductile iron only

- A. Ductile iron compact AWWA C153
- B. Ductile or cast iron fittings AWWA C110.
- C. One Bolt Fitting – One Bolt, Inc.

4.2.14 Couplings

(For pipe sizes 12" and smaller)

- A. Cast Couplings (transition or straight)

1. Stamie E. Lyttle Co., Inc. Meter box lids shall have a 1-3/4" diameter hole located in its center. The hole shall either be cast in place, at the foundry or, after casting, be retrofitted via a plasma arc torch
- B. Round Hi-Density Polyethylene Plastic Box (for 5/8" and 1" water meters and assemblies only in areas not subject to vehicular traffic):
 1. Brooks 2200 (18" depth) NDS, Inc. D-2400 (18" Pit), Mid-States Plastics MS182418, or approved equal.. Meter box lids shall have a 1-3/4" diameter hole located in its center. The hole shall either be cast in place, at the foundry or, after casting, be retrofitted via a plasma arc torch.
- C. Cast Iron Box (for 5/8" and 1" water meters and assemblies in areas subject to vehicular traffic):
 1. Capitol Foundry Design # MBX-10 and MBX-11. Meter box lids shall have a 1-3/4" diameter hole located in its center. The hole shall either be cast in place, at the foundry or, after casting, be retrofitted via a plasma arc torch.

4.2.19 Valve Boxes

(Screw Type Only)

- A. SIGMA
- B. Bingham and Taylor
- C. Capitol Foundry
- D. Star Pipe

4.2.20 Service Saddles

- A. ROMAC - Style 202S with Stainless Steel Strap
- B. Smith-Blair (Rockwell) SB 317 - (with Double Stainless Steel Straps)
- C. Ford FS 202 Series, with cc Threads
- D. JCM 404 (with Double Stainless Steel Straps)
- E. PowerSeal Model No. 3417 (with double straps)

- F. Cascade - Styles CNS2 (for 12" and smaller pipe), CBS2 (for 12" and smaller pipe), and CDSL D (large diameter saddles for 16" and larger pipe)

4.2.21 Pipe Restraints

(must be UL Listed and FM Approved)

- A. For PVC Pipe (Sizes up to 12")

1. Megalug Series 2000 PV (PVC Pipe - MJ Fittings)
2. Megalug Series 1500 (PVC Bell and Spigot Joints)
3. Romac Style 611 (PVC Bell and Spigot Joints)
4. Uni-Flange Series 1390-C (PVC Bell and Spigot Joints)
5. One Bolt Fitting – One Bolt, Inc.
6. Mueller Co. - AquaGrip

- B. For Ductile Iron Pipe:

1. Megalug 1100 Series (MJ Fittings) All Sizes
2. Uni-Flange Series 1400 Block Buster Wedge Action Retainer Glands (MJ Fittings) Sizes 4" - 24"
3. Uni-Flange Series 1390-C (Bell and Spigot Joints) Sizes 6" - 16"
4. STARGRIP (MJ Fittings) Sizes 4" - 24"
5. One Bolt Fitting – One Bolt, Inc.
6. Mueller Co. - AquaGrip

4.2.22 Markers

- A. For All Types of Pipes

1. 66" Carsonite White Utility Marker Post with two (2) factory applied decals (#CW-112 or #CWV-116, whichever is applicable; and Stock #P-101 decal) Must have indicators blue or green as applicable.
2. Greenline Markers - Model #'s FLU1WH66 and DSU1WH66 with factory applied decals 159A, 029A or 094A, whichever is applicable in Hanover County.) Must have indicators blue or green as applicable.

4.2.23 Flushing Hydrants

- A. The Kupferle Foundry Company MainGuard Number 78 Blow-off Hydrant with straight neck. (Reference detail WAT – 3)

4.2.24 Double Check and Double Detector Check Devices

Must be U.L. listed or F.M. approved and meet the requirements of the American Society of Sanitary Engineering and the International Plumbing Code for backflow prevention devices.

4.2.25 Reduced-Pressure Principle Devices

Must be U.L. listed or F.M. approved and meet the requirements of the American Society of Sanitary Engineering and the International Plumbing Code for backflow prevention devices.

4.2.26 Casing Spacers

- A. Cascade
- B. Advance Model SI
- C. PSI Model No. C8G-2, Model No. C12G-2
- D. Power Seal Model No. 4810

4.2.27 Water Quality Sample Station

- A. The Kupferle Foundry Company Truflo Model TF600 Sampling Station Hydrant with removable steel enclosure.

4.3 Materials for Sanitary Sewer System

4.3.1 Pipes

- A. PVC Sanitary Sewer Pipe SDR35 (ASTM D3034 6" - 15")
- B. PVC Sanitary Sewer Pipe SDR 35 (ASTM F679, 18"-48"), T1 Wall Thickness
- C. Ultra Rib (21"-42") (Min. wall thickness .17")
- D. Ductile Iron Pipe Class 52 Minimum or higher classification depending upon design considerations. (Push-On and Mechanical Joint, all sizes) Pipe to have an appropriate interior coating for specific application environment.
- E. Carlon Vylon H.C. - a.k.a. Lamson Pipe (21"-48") (Minimum total wall thickness .17")

4.3.2 Manholes, Precast Concrete (ASTM C478)

- A. Concrete Pipe and Products Company
- B. CSR Hydro Conduit (formerly VA. Precast and Essroc Materials)
- C. Americast
- D. Concrete Specialties, Inc.

4.3.3 Frames and Covers

- A. Manhole
 - 1. Street Type (MH-1-S)
 - a) Neenah Foundry
 - b) Capitol Foundry
 - c) Sigma Corporation
 - d) East Jordan Iron Works
 - 2. Watertight
 - a) Capitol MH 1-S/WT
 - b) East Jordan Iron Works

4.3.4 Fittings (Gasketed)

- A. Concrete
 - 1. Circular Reinforced (ASTM C76)
 - a) Concrete Pipe and Products Company
 - 2. Kor-N-Tee
 - 3. Inserta Tee
- B. PVC Sanitary Sewer Fittings (ASTM D3034 SDR35 6" - 27")
 - 1. Certain-Teed Products Corporation
 - 2. J-M Manufacturing Co.
 - 3. The Harrington Corporation (HARCO)
 - 4. GPK Products, Inc.
 - 5. Vassallo
 - 6. Multi-Fittings
 - 7. Scepter-Canron, Inc. (IPEX)
 - 8. Plastic Trends, Inc.
 - 9. Nyloplast USA, Inc.
 - 10. Freedom Plastics, Inc.

4.3.5 Adapters

- A. Fernco Pipe Adapters - (Used only when installing 6" connections where 6" connection is of Ductile Iron material)
- B. GPK Manhole Adapters (See MAN-17)
 - 1. GPK manhole adapter adapting PVC pipe to concrete with quick quete for manholes with bricked up openings.
 - 2. GPK PVC drop manhole cross with manhole adapters (6" and 8" only) strapped to manhole.

4.3.6 Gaskets & Flexible Manhole Connectors

- A. Kor-n-seal Connector, NPC Systems, Inc.
- B. Ring Gasket
- C. Flat Gasket for Watertight Manholes
- D. Press-Boot Connector, Press-Seal Gasket Corp.
- E. Profile RS Gasket, Press-Seal Gasket Corp.

4.3.7 Saddles

- A. The General engineering Company (GENECO) Sealtite Model H with Bell End for SDR-35 PVC
- B. ROMAC CB Sewer Saddle

4.3.8 Steps, Manhole

- A. MA Industries, Inc. Style No. PS1-PF
- B. Bowco Industries, Inc.
 - 1. Model #93810 (48" and 54" Dia. M.H.'s)
 - 2. Model #93813 (60" Dia. M.H.'s and Larger)
- C. Press Seal
 - 1. Model #P-10938 (48" and 54" Dia. M.H.'s)
 - 2. Model #P-14850 (60" Dia. M.H.'s and Larger)
- D. Cosmos North America Model #US-10-OH
- E. American Step Company Model #ML-10

4.3.9 Stoppers (Plugs)

- A. For PVC Sanitary Sewer Pipe (with wing nuts and ears)
 - 1. Certain-Teed Products Corporation
 - 2. Cherne
- B. For D.I. Pipe (Slip Joint Plug)

1. Griffin Pipe Products
2. Tyler
3. Union Foundry
4. American Cast Iron
5. U. S. Pipe and Foundry

4.3.10 Valves

- A. Sewage Air/Vacuum Release Valves
 1. Crispin “Silverline”
 2. APCO (400 Series only)
- B. Sewage Combination Air Valves
 1. Crispin
 2. APCO (400 Series only)
- C. Plug Valves
 1. DeZurik Series 100 [Figure 118] - (Non-Lubricated Eccentric)
 2. Val-Matic Series 5900 or 5800 Cam-Centric
 3. Milliken - Millcentric (Eccentric Plug Valve)
 4. Homestead Eccentric Plug Valve - Series 120
 5. Clow Eccentric Plug Valve (3” - 24”)