Section A: Pipe	Effective Date: <u>01-01-2025</u>
A 1 PVC Pipe - Schedule 40	
A 2 PVC Pipe - Schedule 80	
A 3 Polyethylene Service Tubing	
A 3.1 Polyethylene 2" Potable Water Main Tubing	
A 3.2 High Density Polyethylene Pipe (HDPE)	
<u>A 4 PVC Pipe (2" &amp; 3" SDR</u> -21)	
A 5 PVC Pipe (AWWA C – 900) – Potable Water (4" thru 24")	
A 5.1 PVC Pipe (AWWA C – 900) – Sewer (4" thru 24")	
A 5.2 PVC Pipe Restrained Joint Pipe & Couplings (AWWA C – 900) (4"thru 16"	")
A 5.3 PVC Pipe Fusible (AWWA C-900) - Potable Water (4" thru 24")	
A 5.3.1 PVC Pipe Fusible (AWWA C-900) - Sewer Force Main (4" thru 24")	
A 6 Ductile Iron Pipe/ Push-On Joint/ Class 350 (3" thru 36")	
A 6.1 Ductile Iron Pipe/ Flanged Joint/ Class 53	
A 6.2 Ductile Iron Pipe/ Restrained Push-On Joint/ TR Flex Joint (3" thru 36")	
A 6.3 Ductile Iron Pipe/ Restrained Push-On Joint/ Flex- Ring Joint (3"thru 48")	
A 7 Stainless Steel Pipe	
A 8 Galvanized Pipe (Temporary)	
A 6 Ductile Iron Pipe/ Push-On Joint/ Class 350 (3" thru 36")  A 6.1 Ductile Iron Pipe/ Flanged Joint/ Class 53  A 6.2 Ductile Iron Pipe/ Restrained Push-On Joint/ TR Flex Joint (3" thru 36")  A 6.3 Ductile Iron Pipe/ Restrained Push-On Joint/ Flex- Ring Joint (3" thru 48")  A 7 Stainless Steel Pipe	



#### A 1 - PVC PIPE - SCHEDULE 40:

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Schedule 40 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1785, dimensional requirements, minimum burst and sustained pressure requirements, maximum operating pressure, and test procedures for determining pipe quality with respect to workmanship and materials.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".
- ASTM D1784, manufactured from compounds with Cell Classification 12454B (Type 1, Grade 1 material).

## **CONNECTIONS:**

- Plain end X plain end.
- Plain end X solvent weld bell.

# **DIMENSIONS:**

· 20' standard joint length.



# **MANUFACTURER:**

- CHARLOTTE PIPE AND FOUNDRY
- COLONIAL
- DIAMOND PLASTICS
- FREEDOM PLASTICS
- NAPCO
- NATIONAL PIPE & PLASTICS
- JM EAGLE
- IPEX
- PIPELIFE

# **RESTRICTIONS:**

Use of this product is limited to:

- Sewer service laterals (DWV)
- 2" Water blow offs
- Water lines



#### A 2 - PVC PIPE - SCHEDULE 80:

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Schedule 80 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1785, dimensional requirements, minimum burst and sustained pressure requirements, maximum operating pressure, and test procedures for determining pipe quality with respect to workmanship and materials.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".
- ASTM D1784, manufactured from compounds with Cell Classification 12454B (Type 1, Grade 1 material).

#### **CONNECTION:**

- Plain end X plain end
- Plain end X solvent weld bell

# **DIMENSIONS:**

· 20' standard joint length

# SIZES:

- 3/4"
- 1"
- 1-1/2"
- 2"



## **MANUFACTURER:**

- CHEMTROL
- CHARLOTTE PIPE AND FOUNDRY
- COLONIAL
- ESLON THERMOPLASTICS
- FREEDOM PLASTICS
- NATIONAL PIPE AND PLASTICS
- WORLD OF PLASTICS, INC.
- JM EAGLE
- **IPEX**
- NORTH AMERICAN PIPE
- PIPELIFE

# **RESTRICTIONS:**

• Pump station chemical feed applications downstream from backflow preventer.



#### A 3 - POLYETHYLENE SERVICE TUBING:

Effective Date: 01-01-2025

# **SPECIFICATION/ MATERIAL:**

PE-3608 High Density Polyethylene, HDPE, tubing shall meet or exceed the performance specifications of:

- PE-3608 Resin listed in Plastic Pipe Institute TR4 Cell classification per ASTM Standards D3350 = 345444 or 345464.
- ASTM Standards D2737 dimensional standard, Copper Tubing Size, CTS, controlled outside diameter.
- AWWA C901
- MFG. Shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements for pipe in this classification.



 Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".

# **PRESSURE RATING:**

• 200-psi. operating pressure @ 73.4 F

#### **COLOR-CODED:**

- Solid blue or blue stripe: potable water
- · Solid green or green stripe: sewer

#### **DIMENSIONS:**

- Copper tubing size, C.T.S. O.D. controlled
- DR-9

# SIZES:

- 1"
- 1.5"
- 2"



# **MANUFACTURER:**

- DURA-LINE PW TUBING
- ADS
- CHARTER PLASTICS
- ENDOT

#### **RESTRICTIONS:**

Use of this product is limited to:

- Water service lines 1" or 2"
- LPS service lines 1.5" or 2"



#### A 3.1 - POLYETHYLENE 2" POTABLE WATER MAIN TUBING:

Effective Date: 01-01-2025

# **SPECIFICATION/ MATERIAL:**

PE-3608 High Density Polyethylene, HDPE, tubing shall meet or exceed the performance specifications of:

- PE-3608 Resin listed in Plastic Pipe Institute TR4 Cell classification per ASTM Standards D3350 = 345444 or 345464E.
- ASTM Standards D3035 dimensional standard, Iron Pipe Size, IPS, controlled outside diameter.
- AWWA C901
- MFG. Shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements for pipe in this classification.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSFpw".



200-psi. operating pressure @ 73.4 F

# **COLOR-CODED:**

- Blue potable water
- Black with minimum of three (3) evenly spaced blue stripes potable water

#### **DIMENSIONS:**

- Iron pipe size, I.P.S. O.D. controlled
- DR-9

# SIZES:

• 2

# MANUFACTURER:

- CHARTER PLASTICS/BLUE STRIPE PIPE
- ENDOPURE/ BLUE WITH CLEAR CORE
- LAMSON VYLON/ PRESSURE FLEX WATER
- ADS

# RESTRICTIONS:

Use of this product is limited to:

• 2" potable water mains



# A 3.2 – HIGH DENSITY POLYETHYLENE PIPE (HDPE) 4"-36":

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

PE-4710 High Density Polyethylene, HDPE, pipe shall meet or exceed the performance specifications of:

- PE-4710 Resin listed in Plastic Pipe Institute TR4.
- Cell classification per ASTM D3350 = 345444C or 345464C for black OR 345444E or 345464E for nonblack & color.
- · ASTM F 714, minimum wall values.
- AWWA C906.
- MFG. Shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements for pipe in this classification.

# **POTABLE WATER REQUIREMENTS:**

 Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".

# **COLOR-CODED:**

- · Blue potable water.
- · Green sanitary sewer/ force main.

#### **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-11, DR-13.5

# **PRESSURE RATING:**

- 200-psi. operating pressure @ 73.4 F for DR-11.
- 160-psi. operating pressure @ 73.4 F for DR-13.5

## JOINING RESTRICTIONS:

- Compression type connections are not acceptable in new installations.
- · Pipe joints shall be butt fusion.
- · No electro fusion coupling joints will be accepted.
- Flange or mechanical joint adapters shall be used for pipe and fitting transitions.

# FIRE MAIN PRESSURE RATING & REQUIREMENTS:

- Dimension Ratio (DR) DR-11, pressure class 200 for fire mains.
- Factory Mutual Approved (FM) pipe.



# **MANUFACTURER:**

- CHARTER PLASTICS/ STRIPE PIPE
- CP CHEMICAL
- PERFORMANCE PIPE DRISCOPLEX
- FLYING W PLASTICS
- JM EAGLE PE PIPE
- LAMSON VYLON/ PRESSURE FLEX WATER
- RINKER MATERIALS-POLYPIPE
- WL PLASTICS

# **RESTRICTIONS:**

 DR-13.5 considered for mains 6" and larger when hydraulic or availability restrictions apply. Submittal to and approval by CFPUA required.



# A 4 - PVC Pipe (2" and 3" SDR 21):

Effective Date: <u>01-01-2025</u>

# **MATERIAL/ SPECIFICATION:**

2" and 3" SDR 21 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- · ASTM D2241 or latest revision thereof.
- ASTM D1784, manufactured from compounds with cell classification 12454B.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".
- Push-on integral bell type supplied with elastomeric gaskets installed.
- Joints per ASTM D3139 testing requirements.
- Gaskets per ASTM F477.
- Pipe shall be clean and ends shall be tarped during shipment.
- Standard Dimension Ratio (SDR) 21.
- No solvent-cement weld pipe or fittings will be accepted.



• 200 psi. at 23 Degrees C (73.4 Degrees F)

#### **COLOR-CODED:**

• Blue - potable water

# **DIMENSIONS:**

- · Iron pipe size (IPS) Outside diameter controlled
- 20' and 21' standard joint length



#### MANUFACTURER:

- CHARLOTTE PIPE AND FOUNDRY
- DIAMOND PLASTICS
- FREEDOM PLASTICS
- JM EAGLE
- WESTLAKE PIPE & FITTINGS
- NATIONAL PIPE & PLASTICS
- PIPELIFE

# RESTRICTIONS:

Use of this product limited to:

- 2" Water Mains
- 3" Sewer Force Mains



## A 5 - PVC PIPE (AWWA C-900) - POTABLE WATER (4" THRU 24"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

AWWA C-900 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1784, manufactured from compounds with cell classification 12454A or 12454B.
- Push-on integral bell type joints per ASTM D3139 testing requirements, supplied with elastomeric gaskets installed.
- Gaskets per ASTM F477.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw".
- Pipe shall be clean and ends shall be tarped during shipment.
- No solvent-cement weld pipe or fittings will be accepted.
- Affidavit of compliance to this specification shall be available upon request.

# **COLOR-CODED:**

• Blue - potable water

## **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-18, DR-14
- · 20' standard joint length

# **PRESSURE RATING:**

- 235-psi. operating pressure @ 73 F for DR-18.
- 305-psi. operating pressure @ 73 F for DR-14.

# FIRE MAIN PRESSURE RATING & REQUIREMENTS:

- Dimension Ratio (DR) 14, pressure class 200 for fire mains.
- Factory Mutual Approved (FM) and Underwriter Laboratory Listed (UL) as noted by (UL/FM) required on DR 14 pipe.
- No solvent-cement weld pipe or fittings will be accepted.



#### **MANUFACTURER:**

- DIAMOND PLASTICS
- FREEDOM PLASTICS
- JM EAGLE/ BLUE BRUTE
- WESTLAKE PIPE & FITTINGS
- NATIONAL PIPE & PLASTICS
- PIPELIFE

# **RESTRICTIONS:**

DR-14 is a design option for special installations.
 CFPUA approval required.



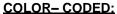
# A 5.1 - PVC PIPE (AWWA C-900) - SEWER (4" THRU 24"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

AWWA C-900 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1784, manufactured from compounds with cell classification 12454A or 12454B.
- Push-on integral bell type joints per ASTM D3139 testing requirements, supplied with elastomeric gaskets installed.
- Gaskets per ASTM F477
- Pigment stabilizers and ultraviolet inhibitors shall be used to prevent fading for a period of six (6) months after delivery.
- Pipe shall be clean and ends shall be tarped during shipment.
- No solvent-cement weld pipe or fittings will be accepted.
- Affidavit of compliance to this specification shall be available upon request.



· Green - sanitary sewer

# **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-18, DR-14
- 20' standard joint length
- Shorter joints acceptable for sewer only

# **PRESSURE RATING:**

- 235-psi. operating pressure @ 73 F for DR-18.
- 305-psi. operating pressure @ 73 F for DR-14.



- DIAMOND PLASTICS
- FREEDOM PLASTICS
- JM EAGLE/ BLUE BRUTE
- WESTLAKE PIPE & FITTINGS
- NATIONAL PIPE & PLASTICS
- PIPELIFE

# RESTRICTIONS:

DR-14 is a design option for special installations.
 CFPUA approval required.





# A 5.2 – PVC PIPE RESTRAINED JOINT PIPE & COUPLINGS (AWWA C-900) (4" THRU 16"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

AWWA C-900, Pipe shall meet or exceed the performance specifications of:

- ASTM D1784, manufactured from compounds with cell classification 12454A or 12454B.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 14, 61 or "NSF-pw" for all blue pipe (potable water installation).
- Joined using separate couplings that have built in sealing gaskets (O-rings) and restraining grooves.
- Shall be joined using high-strength flexible plastic splines inserted into mating precision-machine grooves, which align when the pipe is fully inserted, providing a full 3600 restraint with evenly distributed loading.
- Joints per ASTM D3139 testing requirements.
- Gaskets per ASTM F477.
- Pipe shall be clean and ends shall be tarped during shipment.
- No solvent-cement weld pipe or fittings will be accepted.
- Affidavit of compliance to this specification shall be available upon request.

## **COLOR-CODED:**

- Blue- potable water
- · Green- sanitary sewer/ force main

# **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-18, DR-14.
- 20' standard joint length.

#### **PRESSURE RATING:**

- 235-psi. operating pressure @ 73 F for DR-18.
- 305-psi. operating pressure @ 73 F for DR-14.





# MANUFACTURER:

- CERTAINTEED-CERTA-LOK
- JM EAGLE LOC 900
- DIAMOND LOK-21

#### **RESTRICTIONS:**

- Only for low profile carrier pipes inside casings with prior approval by CFPUA.
- DR-14 is a design option for special installations.
   CFPUA approval required.



# A 5.3 – PVC PIPE FUSIBLE (AWWA C-900) - POTABLE WATER (4" THRU 24"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Fusible AWWA C-900 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1784, manufactured from compounds with cell classification 12454.
- Manufacture shall be listed with the Plastic Pipe Institute (PPI) as meeting the recipe and mixing requirements for pipe in this classification.
- Extruded with a unique formulation, for fusible pipe, that meets all requirements of PPI TR-2 "PPI PVC Range Composition Listing of Qualified Ingredients".
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61 or NSF-pw.
- Pipe shall be clean and ends shall be tarped during shipment.
- Pipe shall be extruded with plain ends. The end shall be square to the pipe and free of any bevel or chamfer.
- Fusible pipe shall be joined per the manufacture's recommendation.
- Installation shall not exceed manufacture's bending radius and safe pulling force.
- No solvent-cement weld pipe or fittings will be accepted.
- Affidavit of compliance to this specification shall be available upon request.

# **COLOR-CODED:**

• Blue - potable water

## **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-18 DR-14
- 20', 30' or 40' standard joint length.

## PRESSURE RATING:

- 235-psi. operating pressure @ 73 F for DR-18.
- 305-psi. operating pressure @ 73 F for DR-14.



# MANUFACTURER:

UNDERGROUND SOLUTIONS

## **RESTRICTIONS:**

DR-14 is a design option for special installations.
 CFPUA approval required.



# A 5.3.1 – PVC PIPE FUSIBLE (AWWA C-900) - SEWER FORCE MAIN (4" THRU 24"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Fusible AWWA C-900 Polyvinyl Chloride, PVC, Pipe shall meet or exceed the performance specifications of:

- ASTM D1784, manufactured from compounds with cell classification 12454.
- Manufacture shall be listed with the Plastic Pipe Institute (PPI) as meeting the recipe and mixing requirements for pipe in this classification.
- Extruded with a unique formulation, for fusible pipe, that meets all requirements of PPI TR-2 "PPI PVC Range Composition Listing of Qualified Ingredients".
- Pipe shall be clean and ends shall be tarped during shipment.
- Pipe shall be extruded with plain ends. The end shall be square to the pipe and free of any bevel of chamfer.
- Fusible pipe shall be joined per the manufacture's recommendation.
- Installation shall not exceed manufacture's bending radius and safe pulling force.
- No solvent-cement weld pipe or fittings will be accepted.
- Affidavit of compliance to this specification shall be available upon request.



· Green - sewer force main

# **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- DR-14, DR-18
- 20', 30' or 40' standard joint length.

#### **PRESSURE RATING:**

- 235-psi. operating pressure @ 73 F for DR-18.
- 305-psi. operating pressure @ 73 F for DR-14.

# **RESTRICTIONS:**

DR-14 is a design option for special installations.
 CFPUA approval required.



# **MANUFACTURER:**

UNDERGROUND SOLUTIONS



# A 6 - DUCTILE IRON PIPE/ PUSH-ON JOINT/ CLASS 350 (3" THRU 36"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

- Pipe shall conform with AWWA C151 (ANSIA21.51).
   Additionally, pipe exterior shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of zinc shall be 200 g/m2 of pipe surface area. A finishing layer topcoat system shall conform to ISO 8179-1 Ductile iron pipes External zinc based coating Part 1: Metallic zinc with finishing layer.
- Gaskets shall be furnished in accordance with AWWA C111 (ANSI–A21.11).
- Pipe supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.
- Factory Mutual Approved (FM) and Underwriter Laboratory Listed (UL) as noted by (UL/FM) for sizes four (4") thru twelve (12") inch.
- Affidavit of compliance to this specification shall be available upon request.

#### **DIMENSIONS:**

• 18' or 20' standard joint length.

#### **PRESSURE RATING:**

- Class 350- psi. for sizes 4" thru 24" pipe.
- Class 250- psi for sizes 30" thru 36" pipe.

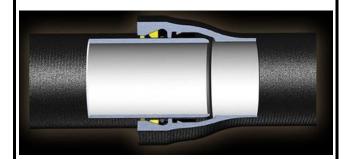
# **COATING & LINING:**

#### **Potable Water:**

- Exterior AWWA C151 (ANSI-A21.51), per above ISO 8179-1 requirements.
- Interior AWWA C104 (ANSI-A21.4), cement mortar lining and asphaltic coating.

# Sanitary Sewers and Force Mains:

- Exterior AWWA C151 (ANSIA21.51) per above ISO 8179-1 requirements.
- Interior Coated (factory applied) or approved equal with an amine cured novolac epoxy, containing at least 20% by volume of ceramic quartz pigment "PROTECTO 401" or "PERMOX CTF" (40 mils nominal) or polyamine ceramic epoxy containing at least 20% by volume ceramic hollow microspheres "tnemec series 431 permashield pl" (40 mils nominal).
- The inside of the bell socket including a portion of the gasket cavity and a portion of the pipe barrel are also coated with the above products (6" mils nominal, 10 maximum).



#### **MANUFACTURER:**

- AMERICAN CAST IRON-FASTITE
- McWANE, INC.- TYTON
- US PIPE & FOUNDRY- TYTON

## RESTRICTIONS:

• 3" to be used for sewer force mains only



#### A 6.1 - DUCTILE IRON PIPE/ FLANGE JOINT/ MINIMUM CLASS 53:

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Flange pipe shall meet or exceed the performance specifications of:

- Pipe shall conform with AWWA C151 (ANSIA21.51).
- Flanges shall conform to the chemical and physical properties specified for ductile iron fittings in ANSI/AWWA C 110/A21.10.
- Shall conform to AWWA C115 (ANSI-A21.15) flange pipe and fitting joints.
- Shall be drilled and faced to conform with ANSI B16.1 Class 125 flanges.

# GASKETS SHALL BE RING OR FULL-FACE TYPE AND PRODUCED FROM ONE OF THE FOLLOWING MATERIALS:

- EPDM (Ethylene Propylene Diene Monomer)
- Nitrile Buna-N (NBR) (Acrylonitrile Butadiene)
- Viton; Fluorel (FKM) (Fluorocarbon)
- Pipe supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.
- Affidavit of compliance to this specification shall be available upon request.

#### **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- 18' or 20' standard joint length or as specified for project.

# **PRESSURE RATING:**

• Class 250-psi. for sizes 4" thru 24" pipe.

#### **RESTRICTIONS:**

- Flange pipe is for use in inside buildings, above ground outside, or inside underground vault or manhole service applications.
- All flanged piping inside vaults must be zinc coated to match CFPUA requirement for direct bury.

# COATING & LINING:

#### **Potable Water:**

- Exterior AWWA C151 (ANSI-A21.51), per above ISO 8179-1 requirements.
- Interior AWWA C104 (ANSI-A21.4), cement mortar lining and asphaltic coating.

# Sanitary Sewers and Force Mains:

- Exterior AWWA C151 (ANSIA21.51). per above ISO 8179-1 requirements.
- Interior Coated (factory applied) or approved equal with an amine cured novolac epoxy, containing at least 20% by volume of ceramic quartz pigment "PROTECTO 401" or "PERMOX CTF" (40 mils nominal) or polyamine ceramic epoxy containing at least 20% by volume ceramic hollow microspheres "TNEMEC SERIES 431 PERMA-SHIELD PL" (40 mils nominal).



# **MANUFACTURER:**

- AMERICAN CAST IRON
- McWANE, INC.
- US PIPE & FOUNDRY



# A 6.2 – DUCTILE IRON PIPE/ RESTRAINED PUSH-ON JOINT/TR FLEX JOINT (3" THRU 36"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Restrained pipe shall meet or exceed the performance specifications of:

- Shall conform with AWWA C150 (ANSI–A21.50) thicknesses and strength.
- Shall conform with AWWA C151 (ANSI-A21.51),
   Additionally, pipe exterior shall be coated with a layer
   of arc-sprayed zinc per ISO 8179. The mass of zinc
   shall be 200 g/m2 of pipe surface area. A finishing
   layer topcoat shall be applied to the zinc. The zinc
   coating system shall conform to ISO 8179-1 "Ductile
   iron pipe External zinc based coating Part 1:
   Metallic zinc with finishing layer.
- Gaskets shall be furnished in accordance with AWWA C111 (ANSI– A21.11).
- Shall use a standard size Tyton gasket.
- Shall use ductile iron locking segments, inserted through a slot (or slots) in the bell face, to provide a positive axial lock between the bell interior surface and a retainer weldment on the spigot end of the pipe.
- Pipe supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.
- Factory Mutual Approved (FM) and Underwriter Laboratory Listed (UL) as noted by (UL/FM) for sizes four (4") thru twelve (12") inch.
- Affidavit of compliance to this specification shall be available upon request.

# **PRESSURE RATING:**

- Class 350-psi. for sizes 4" thru 24" pipe.
- Class 250-psi. for sizes 30" thru 36" pipe.

#### **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- 18' or 20' standard joint length.

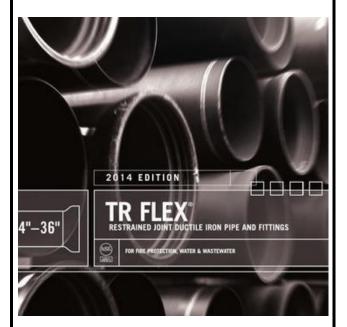
# **COATING & LINING:**

#### **Potable Water:**

- Exterior AWWA C151 (ANSI-A21.51) per above ISO 8179- 1 requirements.
- Interior AWWA C104 (ANSI-A21.4), cement mortar lining and asphaltic coating.

# **Sanitary Sewers and Force Mains:**

- Exterior AWWA C151 (ANSIA21.51) per above ISO 8179-1 requirements.
- Interior Coated (factory applied) or approved equal with an amine cured novolac epoxy, containing at least 20% by volume of ceramic quartz pigment "PROTECTO 401" or "PERMOX CTF" (40 mils nominal) or polyamine ceramic epoxy containing at least 20% by volume ceramic hollow microspheres "TNEMEC SERIES 431 PERMA-SHIELD PL" (40 mils nominal).



# **MANUFACTURER:**

- US PIPE & FOUNDRY- TR FLEX
- McWANE, INC.- TR FLEX

#### **RESTRICTIONS:**

• 3" to be used for sewer force mains only



# A 6.3 – DUCTILE IRON PIPE/ RESTRAINED PUSH-ON JOINT/FLEX- RING JOINT (3" THRU 48"):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

Restrained pipe shall meet or exceed the performance specifications of:

- Shall conform with AWWA C150 (ANSI–A21.50) thicknesses and strength.
- Shall conform with AWWA C151 (ANSI-A21.51),
   Additionally, pipe exterior shall be coated with a layer
   of arc-sprayed zinc per ISO 8179. The mass of zinc
   shall be 200 g/m2 of pipe surface area. A finishing
   layer topcoat shall be applied to the zinc. The zinc
   coating system shall conform to ISO 8179-1- Ductile
   iron pipe External zinc based coating Part 1:
   Metallic zinc with finishing layer.
- Gaskets shall be furnished in accordance with AWWA C111 (ANSI-A21.11).
- Shall use a standard size Fastite gasket.
- Pipe supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.
- Shall comply with and be labeled as approved by the National Sanitation Foundation (NSF) for use in potable water lines meeting NSF 61.
- Factory Mutual Approved (FM) and Underwriter Laboratory Listed (UL) as noted by (UL/FM) for sizes four (4") thru twelve (12") inch.
- Affidavit of compliance to this specification shall be available upon request.

#### **PRESSURE RATING:**

- Class 350-psi. for sizes 4" thru 24" pipe.
- Class 250-psi. for sizes 30" thru 36" pipe.

#### **DIMENSIONS:**

- Ductile iron pipe size O.D., D.I.P.S.
- 18' or 20' standard joint length.

## **ADDITIONAL INFORMATION:**

- · Standard Flex-Ring segments are yellow.
- · Field Flex-Ring segments are black.

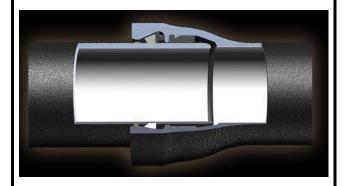
# COATING & LINING:

#### **Potable Water:**

- Exterior AWWA C151 (ANSI-A21.51) per above ISO 8179-1 requirements.
- Interior AWWA C104 (ANSI-A21.4), cement mortar lining and asphaltic coating.

# Sanitary Sewers and Force Mains:

- Exterior AWWA C151 (ANSIA21.51) per above ISO 8179-1 requirements.
- Interior Coated (factory applied) or approved equal with an amine cured novolac epoxy, containing at least 20% by volume of ceramic quartz pigment "PROTECTO 401" or "PERMOX CTF" (40 mils nominal) or polyamine ceramic epoxy containing at least 20% by volume ceramic hollow microspheres "TNEMEC SERIES 431 PERMA-SHIELD PL" (40 mils nominal).



# **MANUFACTURER:**

• AMERICAN CAST IRON-FLEX-RING

#### **RESTRICTIONS:**

3" to be used for sewer force mains only



# A 7 - STAINLESS STEEL PIPE:

Effective Date: <u>01-01-2025</u>

# **MATERIAL/ SPECIFICATION:**

- Schedule 40, 316 stainless steel pipe.
- Specifications shall conform to ANSI/ASME 36.19.

# **CONNECTIONS:**

 Pipe shall have NPT threads on both ends and a coupling on one end making a full joint, mipt X fipt. As required on detail drawings.

# **DIMENSIONS:**

• 21' standard joint length.



# MANUFACTURER:

• OPEN

# **RESTRICTIONS:**

 This material is required for air/vacuum release valve piping or other special uses as noted on detail drawings.



# A 8 – GALVANIZED PIPE (TEMPORARY):

Effective Date: 01-01-2025

# **MATERIAL/ SPECIFICATION:**

- Schedule 40, galvanized steel pipe.
- Specifications shall conform to ASTM A-53 grade-A or latest revision thereof.

# **CONNECTIONS:**

 Pipe shall have NPT threads on both ends and a coupling on one end making a full joint, mipt X fipt.

# **DIMENSIONS:**

• 21' standard joint length.



# MANUFACTURER:

• OPEN

# **RESTRICTIONS:**

- This material is only used for temporary sampling and flushing points during pipeline construction.
- Galvanized pipe is not acceptable for any other use.

