

Evaluation Table

PEP ID:	XXXXX
Manufacturer:	Name of Manufacturer
Product Name:	Name of Product

501 Pipe

501 Type S Corrugated HDPE or PP: Non-Perforated Drainage Plastic Pipe

Additional Specification: High Density Polyethylene: AASHTO M252 (4-10 inch), AASHTO M294 (12-60 inch), ASTM D3350 Cell Classification 424420C (4-10 inch) and 435400C (12-60 inch)

Additional Specification: Polypropylene: AASHTO M330 (12-60 inch) and ASTM F2881

Responsible Section: Roadway Group

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
For High Density Polyethylene: AASHTO M252 Specification Requirements (4-10 in. diameter pipes)				
Extruded Pipe and Blow Molded Fittings	AASHTO M252 ASTM D3350	Pipe and fittings shall be made of virgin PE resin compounds meeting the requirements of ASTM D3350 and cell classification 424420C, except that the carbon black content shall not exceed 4 percent when tested in accordance with D4218. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		
Rotational Molded Fittings and Couplings	AASHTO M252 ASTM D3350 ASTM D4218	Fittings and couplings shall be made of virgin PE resins meeting the requirements of ASTM D3350 and cell classification 213320C, except that the carbon black content shall not exceed 4 percent when tested in accordance with D4218. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Injection Molded Fittings and Couplings	AASHTO M252 ASTM D3350 ASTM D4218	Fittings and couplings shall be made of virgin PE resins meeting the requirements of ASTM D3350 and cell classification 424420C, except that the carbon black content shall not exceed 4 percent when tested in accordance with D4218. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		
Reworked Material	AASHTO M252	In lieu of virgin PE, clean reworked material may be used, provided that it meets the cell class requirements described above.		
Workmanship	AASHTO M252	The pipe and fittings shall be free of foreign inclusions and visible defects as defined herein. The ends of the pipe shall be cut squarely and cleanly so as not to adversely affect joining or connecting.		
Visible Defects	AASHTO M252	Cracks, creases, delamination, and unpigmented or non-uniformly pigmented pipe are not permissible in the pipe or fittings as furnished. There shall be no evidence of cracking or delamination when tested in accordance with AASHTO M252 Section 9.2.		
Liner	AASHTO M252	For Type S pipe, the liner shall be fused to the outer corrugated wall at all internal corrugation crests.		
Liner Thickness	AASHTO M252	For Type S pipe, the liner shall have a minimum thickness of 0.02 in. (0.5mm) for pipe of 4 in. (100mm) and 6 in. (150mm) nominal size and a minimum thickness of 0.025 in. (0.6mm) for pipe of 8 in. (200mm) and 10 in. (250mm) nominal size, when measured in accordance with AASHTO M252 Section 9.5.4		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Fitting and Coupling Dimensions	AASHTO M252	The maximum allowable gap between fitting or coupling and pipe shall not exceed 0.1 in. (3mm) unless otherwise specified.		
Fitting and Coupling Dimensions	AASHTO M252	All fittings and couplings shall be within an overall length dimensional tolerance of ± 0.5 in. (12mm) of the manufacturer's specified dimensions.		
Pipe Stiffness	AASHTO M252	Type S pipe shall have a minimum PS of 50psi (340kPa) at 5 percent deflection when tested in accordance with AASHTO M252 Section 9.1.		
Pipe Flattening	AASHTO M252	There shall be no visual evidence of buckling (a decrease or downward deviation in the load-deflection curve), cracking, splitting, or delamination when the pipe is tested in accordance with AASHTO M252 Section 9.2.		
Environmental Stress Cracking	AASHTO M252	There shall be no cracking of the pipe when tested in accordance with AASHTO M252 Section 9.3.		
Brittleness	AASHTO M252	There shall be no cracking of the pipe wall or liner when tested in accordance with AASHTO M252 Section 9.4.		
Fitting and Coupling Requirements	AASHTO M252	The fittings and couplings shall not reduce or impair the overall integrity or function of the pipe line.		
Fitting and Coupling Requirements	AASHTO M252	Fittings and couplings shall not reduce the inside diameter of the pipe being joined by more than 5 percent of the nominal inside diameter. Reducer fittings shall not reduce the cross-sectional area of the smaller size.		
Fitting and Coupling Requirements	AASHTO M252	The coupling shall not crack or crease when tested in accordance with AASHTO M252 Section 9.6.2.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Fitting and Coupling Requirements	AASHTO M252	The design of the couplers shall be such that when connected with the pipe, the axis of the assembly will be level and true when tested in accordance with AASHTO M252 Section 9.6.3.		
Marking	AASHTO M252	<p>All pipe shall be clearly marked at intervals of not more than 11.5 ft (3.5m), and fittings and couplings shall be clearly marked, as follows:</p> <ol style="list-style-type: none"> 1. Manufacturer's name or trademark 2. Nominal size 3. The specification designation AASHTO M252 4. The plant designation code 5. The date of manufacture or an appropriate code. If a date code is used, a durable manufacturer sticker that identifies the actual date of manufacture shall be adhered to the inside of each length of pipe. 		
For High Density Polyethylene: AASHTO M294 Specification Requirements (12-60 in. diameter pipes)				
Extruded Pipe and Blow Molded Fittings	AASHTO M294 ASTM D3350 ASTM D4218	<p>Pipe and fittings shall be made of virgin PE resin compounds meeting the requirements of ASTM D3350 and cell classification 435400C, except that the carbon black content shall not exceed 4.0 percent when tested in accordance with D4218. Resins that have higher cell classifications in one or more properties, with the exception of density, are acceptable provided product requirements are met. For slow-crack-growth resistance, acceptance of resins shall be determined by using the notched constant ligament-stress (NCLS) test according to the procedure described in AASHTO M294 Section 9.4. For slow-crack-growth resistance, the following two requirements shall be met.</p>		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Extruded Pipe and Blow Molded Fittings	AASHTO M294	<p>To ensure adequate resistance to SCG propagation, Notched Constant Ligament Stress (NCLS) testing shall be conducted on specimens die cut either directly from the finished pipe liner or from ground-up pieces of pipe (from liner or outer wall, or both) that have been compression-molded into a plaque. Testing shall be conducted in accordance with ASTM F2136 and procedures described in AASHTO M294 Section 9.4.</p> <p>Notes: 1. If testing is conducted on specimens taken directly from the finished pipe liner, the average failure time of five specimens shall not be less than 18h.</p> <p>2. If testing is conducted on specimens taken from ground-up pieces of pipe that have been compression molded into a plaque, the average failure time of five test specimens shall not be less than 24h.</p>		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Extruded Pipe and Blow Molded Fittings	AASHTO M294 ASTM F3181	For pipes manufactured with recycled PE materials (PCR or PIR, or both), Un-notched Constant Ligament Stress (UCLS) testing shall be conducted in accordance with ASTM F3181 and the procedures described in AASHTO M294 Section 9.4 to ensure the desired service life is met. The minimum UCLS failure time shall be prescribed based on the service conditions (temperature and factored design stress) and desired service life as detailed in A2 of the Annex. In the absence of design data, a service life of 100 years at a service temperature of 23°C and factored tensile design stress of 500 psi shall be conservatively specified. For this condition, the average UCLS failure time for five specimens shall not be less than 34h, with no single specimen failing in less than 18h.		
Extruded Pipe and Blow Molded Fittings	AASHTO M294 ASTM D3895 ASTM D638 ASTM D4883	Pipes manufactured from recycled PE materials (PCR or PIR, or both) shall have an Oxidation Induction Time (OIT) of 20 minutes when tested in accordance with ASTM D3895 and a break strain of 150 percent when tested in accordance with ASTM D638. Density of pipe compounds containing recycled PE materials (PCR or PIR, or both) should be conducted by the ultrasound technique in accordance with ASTM D4883.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Rotational Molded Fittings and Couplings	AASHTO M294 ASTM D3350	Fittings and couplings shall be made of virgin PE resins meeting the requirements of ASTM D3350 and cell classification 213320C, except that the carbon black content shall not exceed 5 percent. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		
Injection Molded Fittings and Couplings	AASHTO M294 ASTM D3350	Fittings and couplings shall be made of virgin PE resins meeting the requirements of ASTM D3350 and cell classification 314420C, except that the carbon black content shall not exceed 5 percent. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		
Reworked Plastic	AASHTO M294	Clean reworked plastic may be used by the manufacturer, provided that it meets the cell class requirements as described in AASHTO M294 Section 6.1.		
Resin Blending	AASHTO M294	When blended resins are used, the components of the blend must be PE and the final blend must meet all the above requirements for Extruded Pipe and Blow Molded Fittings, Rotational Molded Fittings and Couplings, and Injection Molded Fittings and Couplings.		
Workmanship	AASHTO M294	The pipe and fittings shall be free of foreign inclusions and visible defects as defined herein. The ends of the pipe shall be cut squarely and cleanly so as not to adversely affect joining or connecting.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Visible Defects	AASHTO M294	Cracks, creases, delamination, and unpigmented or non-uniformly pigmented pipe are not permissible in the pipe or fittings as furnished. There shall be no evidence of cracking or delamination when tested in accordance with AASHTO M294 Section 9.7.		
Nominal Size	AASHTO M294	Nominal diameters shall be 12, 15, 18, 21, 24, 27, 30, 36, 42, 48, 54, and 60 in. (300, 375, 450, 525, 600, 675, 750, 900, 1050, 1200, 1350, and 1500 mm)		
Liner Thickness	AASHTO M294	The liner of Type S pipe shall have the following minimum thicknesses when measured in accordance with AASHTO M294 Section 9.6.4:	See below	
		Diameter	Liner Thickness	
		12 in. (300mm)	0.035 in. (0.9mm)	
		15 in. (375mm)	0.04 in. (1.0mm)	
		18 in. (450mm)	0.05 in. (1.3mm)	
		21 in. (525mm)	0.06 in. (1.5mm)	
		24 in. (600mm)	0.06 in. (1.5mm)	
		27 in. (675mm)	0.06 in. (1.5mm)	
		30 in. (750mm)	0.06 in. (1.5mm)	
		36 in. (900mm)	0.07 in. (1.7mm)	
		42 in. (1050mm)	0.07 in. (1.8mm)	
		48 in. (1200mm)	0.07 in. (1.8mm)	
		54 in. (1350mm)	0.08 in. (2.0mm)	
60 in. (1500mm)	0.08 in. (2.0mm)			
Inside Diameter Tolerances	AASHTO M294	The tolerance on the specified inside diameter shall be 4.5 percent oversize and 1.5 percent undersize, but not more than 1.5 in. (37mm) oversize when measured in accordance with AASHTO M294 Section 9.6.1.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Length	AASHTO M294	Lengths shall not be less than 99 percent of the stated quantity when measure in accordance with AASHTO M294 Section 9.6.2.		
Pipe Stiffness	AASHTO M294	The pipe shall have a minimum pipe stiffness at 5 percent deflection as follows when tested in accordance with AASHTO M294 Section 9.1.	See below	
		Diameter	Pipe Stiffness	
		12 in. (300mm)	50 psi (345kPa)	
		15 in. (375mm)	42 psi (290kPa)	
		18 in. (450mm)	40 psi (275kPa)	
		21 in. (525mm)	38 psi (260kPa)	
		24 in. (600mm)	34 psi (235kPa)	
		27 in. (675mm)	30 psi (205kPa)	
		30 in. (750mm)	29 psi (200kPa)	
		36 in. (900mm)	22.5 psi (155kPa)	
		42 in. (1050mm)	21 psi (145kPa)	
		48 in. (1200mm)	20 psi (135kPa)	
		54 in. (1350mm)	18 psi (120kPa)	
		60 in. (1500mm)	15 psi (105kPa)	
Pipe Flattening	AASHTO M294	Pipe specimens shall show no visible evidence of cracking, splitting, or delamination when tested in accordance with AASHTO M294 Section 9.2. Additionally, pipe specimens shall not exhibit decrease or downward deviation in the load-deflection curve prior to the buckling deflection limit calculated in AASHTO M294 Section 9.2.1.		
Brittleness	AASHTO M294	Pipe specimens shall not crack or split when tested in accordance with AASHTO M294 Section 9.3. Five nonfailures out of six impacts will be acceptable.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Sub Compression Test	AASHTO M294	Profile compression capacity in any specimen in the stub compression test shall not be less than 50 percent of the gross cross-sectional area times the minimum specified yield strength when tested in accordance with AASHTO M294 Section 9.8.		
Fitting Requirements	AASHTO M294	The fittings shall not reduce or impair the overall integrity or function of the pipe line.		
Fitting Requirements	AASHTO M294	All fittings shall be within an overall length dimensional tolerance ± 0.5 in. (12mm) of the manufacturer's specified dimensions when measure in accordance with AASHTO M294 Section 9.6.2.		
Fitting Requirements	AASHTO M294	Fittings shall not reduce the inside diameter of the pipe being joined by more than 0.5 in. (12mm). Reducer fittings shall not reduce the cross-sectional area of the smaller size.		
Fitting Requirements	AASHTO M294	Couplings shall be corrugated to match the pipe corrugations and shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints. Couplings shall be bell and spigot or split collar. Split couplings shall engage at least two full corrugations on each pipe section.		
Fitting Requirements	AASHTO M294	The design of the fittings shall be such that when connected with the pipe, the axis of the assembly will be level and true when tested in accordance with AASHTO M294 Section 9.5.2.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Fitting Requirements	AASHTO M294	Only fittings supplied or recommended by the pipe manufacturer shall be used. Fabricated fittings shall be manufactured from pipe meeting the requirements of this specification and all seams must be completely scaled with compatible PE material.		
Fitting Requirements	AASHTO M294	Fabricated fittings shall be supplied with joints compatible with the overall system.		
Joint Requirements	AASHTO M294	All joints shall meet the requirements of a soiltight joint unless otherwise specified by the owner/designer.		
Joint Requirements	AASHTO M294	Soiltight joints are specified as a function of opening size, channel length, and backfill particle size. If the size of the opening exceeds 0.12 in. (3mm), the length of the channel must be at least four times the size of the opening.		
Joint Requirements	AASHTO M294 ASTM F477	Silt-tight joints should be used where the backfill material has a high percentage of fines. Silt-tight bell and spigot joints will utilize an elastomeric rubber seal meeting ASTM F477. Silt-tight joints must be designated to pass a laboratory pressure test of at least 2 psi (14kPa).		
Joint Requirements	AASHTO M294 SATM D3212 ASTM F477	Watertight joints must meet a 10.8 psi (74kPa) laboratory test per ASTM D3212 and utilize a bell and spigot design with a gasket meeting ASTM F477.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Marking	AASHTO M294	<p>All pipe shall be clearly marked at intervals of no more than 10 ft (3m) as follows:</p> <ol style="list-style-type: none"> 1. Manufacturer's name or trademark 2. Nominal size 3. The plant designation code 4. This specific designation, M294 5. If the pipe was manufactured with only virgin materials, it shall be marked with the code "V"; if the pipe was manufactured with recycled PE materials (PCR or PIR, or both), it shall be marked with the code "R" and the phrase "Contains Recycled Resins" 6. The date of manufacture or an appropriate code. If a date code is used, a durable manufacturer sticker that identifies the actual date of manufacture shall be adhered to the inside of each length of pipe. 7. Fittings shall be marked with the designation number of specification M294, and with the manufacturer's identification symbol. 		
For Polypropylene: AASHTO M330 Specification Requirements (12-60 in. diameter pipes)				

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Extruded Pipe and Fittings	AASHTO M330 ASTM D4101 ASTM D790	Pipe and fittings shall be made of virgin polypropylene compounds meeting the minimum properties as shown in AASHTO M330 Table 1. Compounds that have higher performance properties shall be permitted provided the density of the base resin shall not exceed 0.0343 lb/in ³ (0.950 g/cm ³) and all other product requirements are met. Polypropylene compounds shall be comprised of the base polypropylene resin and all additives, colorants, UV inhibitors, and stabilizers. Conditioning, sampling, preparation, and testing of specimens shall be in accordance with the requirements in ASTM D4101, with the exception that Procedure B of ASTM D790 will be used to measure Flexural Modulus.		
Injection Blow Molded Fittings and Couplings	AASHTO M330 ASTM D4101	Fittings and couplings shall be made of virgin polypropylene resins that conform with the requirements of PP 0500 H 464 as defined and described in ASTM D4101 Table 1. Resins that have higher cell classifications in one or more properties are acceptable provided product requirements are met.		
Color and Ultraviolet Stabilization for Pipe and Fittings	AASHTO M330	The pipe shall be colored or black. Black polypropylene compounds shall have between 2.0 and 4.0 percent carbon black. Colored polypropylene compounds shall be protected from ultraviolet (UV) degradation with UV stabilizers.		
Reworked Plastic	AASHTO M330	In lieu of virgin PP, clean reworked plastic may be used by the manufacturer, provided that it meets the requirements as described in AASHTO M330 Section 6.1 and as defined in Section 3.1.5.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Slow Crack Growth	AASHTO M330	For slow-crack-growth resistance of the pipe corrugation, PP resins pipe liner specimens shall be evaluated using the notched constant ligament stress test according to the procedure described in AASHTO M330 Section 9.4. the average failure time of the five test specimens shall exceed 100 hours with no single test specimen's failure time less than 71 hours.		
Long-Term Material Properties	AASHTO M330	When tested in accordance with the procedure described in AASHTO M330 Section 9.8, the 75-year material properties for modulus of elasticity and tensile strength for polypropylene pipe shall be a minimum of 27,000psi (186 MPa) and 1,000psi (7 MPa), respectively.		
Workmanship	AASHTO M330	The pipe and fittings shall be free of foreign inclusions and visible defects as defined herein. The ends of the pipe shall be cut squarely and cleanly so as not to adversely affect joining or connecting.		
Visible Defects	AASHTO M330	Cracks, creases, delamination, and unpigmented or non-uniformly pigmented pipe are not permissible in the pipe or fittings as furnished. There shall be no evidence or cracks, splits, or delamination when tested in accordance with AASHTO M330 Section 9.2.		
Liner	AASHTO M330	For Type S pipe, the inner wall (liner) shall be fused to the corrugations or ribs at all internal corrugation or rib valleys.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Nominal Size	AASHTO M330	The nominal size for pipe and fittings is based on the nominal inside diameter of the pipe. Nominal diameters shall be 12, 15, 18, 21, 24, 27, 30, 36, 42, 48, 54, and 60 in. (300, 375, 450, 525, 600, 675, 750, 900, 1050, 1200, 1350, and 1500 mm).		
Liner Thickness	AASHTO M330	The inner wall (liner) of Type S pipe shall have the following minimum thicknesses, when measured in accordance with AASHTO M330 Section 9.6.4.	See below	
		Diameter	Liner Thickness	
		12 in. (300mm)	0.035 in. (0.9mm)	
		15 in. (375mm)	0.04 in. (1.0mm)	
		18 in. (450mm)	0.05 in. (1.3mm)	
		21 in. (525mm)	0.06 in. (1.5mm)	
		24 in. (600mm)	0.06 in. (1.5mm)	
		27 in. (675mm)	0.06 in. (1.5mm)	
		30 in. (750mm)	0.06 in. (1.5mm)	
		36 in. (900mm)	0.07 in. (1.7mm)	
		42 in. (1050mm)	0.07 in. (1.8mm)	
		48 in. (1200mm)	0.07 in. (1.8mm)	
		54 in. (1350mm)	0.08 in. (2.0mm)	
60 in. (1500mm)	0.08 in. (2.0mm)			
Inside Diameter Tolerances	AASHTO M330	The tolerance on the specified inside diameter shall be 4.5 percent oversize and 1.5 percent undersize, but not more than 1.5 in. (37mm) oversize when measured in accordance with AASHTO M330 Section 9.6.1.		
Pipe Stiffness	AASHTO M330	The pipe shall have a minimum pipe stiffness at 5 percent deflection as follows when tested in accordance with AASHTO M330 Section 9.1.	See below	
		Diameter	Pipe Stiffness	
		12 in. (300mm)	65 psi (450kPa)	

Product Property	Specification/ Test Method	Requirement		Results	Pass/ Fail
		15 in. (375mm)	54 psi (375kPa)		
		18 in. (450mm)	50 psi (350kPa)		
		21 in. (525mm)	49 psi (340kPa)		
		24 in. (600mm)	44 psi (300kPa)		
		27 in. (675mm)	38 psi (265kPa)		
		30 in. (750mm)	36 psi (250kPa)		
		36 in. (900mm)	29 psi (200kPa)		
		42 in. (1050mm)	27 psi (185kPa)		
		48 in. (1200mm)	25 psi (170kPa)		
		54 in. (1350mm)	22 psi (120kPa)		
		60 in. (1500mm)	19 psi (135kPa)		
Pipe Flattening	AASHTO M330	There shall be no evidence of inner wall (liner) or exterior wall cracks, splits, or delamination, when the pipe is tested in accordance with AASHTO M330 Section 9.2.			
Brittleness	AASHTO M330	Pipe specimens shall not crack or split when tested in accordance with AASHTO M330 Section 9.3. Five nonfailures out of six impacts will be acceptable.			
Fitting Requirements	AASHTO M330	The fittings shall not reduce or impair the overall integrity or function of the pipe line.			
Fitting Requirements	AASHTO M330	All fittings shall be within an overall length dimensional tolerance ± 0.5 in. (12mm) of the manufacturer's specified dimensions when measured in accordance with AASHTO M330 Section 9.6.2.			
Fitting Requirements	AASHTO M330	Fittings shall not reduce the inside diameter of the pipe being joined by more than 0.5 in. (12mm). Reducer fittings shall not reduce the cross-sectional area of the small size.			

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Fitting Requirements	AASHTO M330	Couplings shall be corrugated to match the pipe corrugations and shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints. Couplings shall be bell and spigot or split collar. Split couplings shall engage at least two full corrugations on each pipe section.		
Fitting Requirements	AASHTO M330	Pipe connections shall not separate to create a gap exceeding 0.2 in. (5mm) when measured in a radial direction between pipe and coupling, or between bell and spigot portions of pipe, when tested according to AASHTO M330 Section 9.5.1. Fittings shall not crack or delaminate.		
Fitting Requirements	AASHTO M330	The design of the fittings shall be such that when connected with the pipe, the axis of assembly will be level and true when tested in accordance with AASHTO M330 Section 9.5.2.		
Delamination	AASHTO M330	There shall be no delamination nor separation of the structural components of the pipe wall when tested in accordance with AASHTO M330 Section 9.7.		
Stub Compression Test for Finished Pipe	AASHTO M330	Profile compression capacity in any specimen in the stub compression test shall not be less than 50 percent of the gross cross-sectional area times the minimum specified yield strength when tested in accordance with AASHTO M330 Section 9.9. The stub compression test shall be run twice a year on each profile for each diameter of pipe.		

Product Property	Specification/ Test Method	Requirement	Results	Pass/ Fail
Pipe Marking	AASHTO M330	All pipes shall be clearly marked at intervals of no more than 11.5 ft (3.5m) as follows: <ol style="list-style-type: none"> 1. Manufacturer's name or trademark 2. Nominal size 3. This specification designation, AASHTO M 330 4. The plant designation code 5. The date of manufacture or an appropriate code 		
Fittings Marking	AASHTO M330	Fittings shall be marked with the designation number of this specification, AASHTO M 330, and with the manufacturer's identification symbol.		