


City of Owen Sound Approved Manufacturers' Products for Water Distribution System December 8, 2022						
PRODUCT	MATERIAL TYPE	SPECIFICATION	FEATURE	MANUFACTURER	CATALOGUE IDENTIFIER	COMMENTS
PIPE						
Watermain up to and including 300mm diameter	Ductile Iron with Polyethylene encasement	Class 52	6 meters in length, push-on joint pipe rounding per manufacturers specifications	U.S. Pipe	Tyton® Joint Pipe	Ductile iron pipe with "Tyton" joints is to be supplied with bonding straps or lock wedges to maintain electrical continuity. All ductile water main shall be cathodically protected by an anode.
		AWWA C104		Canada Pipe Company ULC	Tyton® Joint Pipe	
		AWWA C111/A21.11				
		AWWA C150				
		AWWA C151				
		AWWA C105				
		ANSI A21.5				
	Polyvinyl Chloride (PVC)	Class 235, SDR 18	Push-on joint, colour coded "blue", 6.1 metres in length. Class 235 DR18 (CIOD)	Ipex	Blue Brute	Factory capped
		AWWA C900		Royal Pipe	CIOD PVC P.P.	
		CSA B137.3				
Molecularary oriented polyvinyl chloride (PVCo)	AWWA C909		IPEX	Bionax		
Watermain 400mm diameter	Polyvinyl Chloride (PVC), DR 18	Class 235, SDR 18	Push-on joint, colour coded "blue", 6.1 metres in length. Class 235 DR18 (CIOD)	IPEX	Centurion	Factory capped
		AWWA C905		Royal Pipe	CIOD PVC P.P.	
		CSA B137.3				
Watermain 400mm diameter and larger	Prestressed Concrete Pressure Pipe - 500mm	AWWA C301 or C303 & C304	Double Gasketed Push on Joints	Hanson, Munro, Forterra	B-303, L-301, PCCP	Mortar Collar Diaper required at all joints, performance bedding required.
	Prestressed Concrete Pressure Pipe - 600mm	AWWA C301 & 304				
	Ductile Iron with Polyethylene encasement	AWWA C104 AWWA C115 AWWA C150 AWWA C151	6 meters in length, push-on joint pipe rounding per manufacturers specifications	U.S. Pipe	Tyton® Joint Pipe	
				Canada Pipe Company ULC	Tyton® Joint Pipe	
	SERVICES					
Water Services	Copper - 19mm to 25mm	AWWA C800 ASTM B88	Type 'k', 3rd party (W.H.) soft copper		as per manufacturer	Kinked, crushed or distorted tubing shall not be used. Soder type fittings shall not be used.
	Cross-linked polyethylene 38mm to 50mm	AWWA C904, ASTM F876/F877, F2023, F2080, F2657 CSA B137.5, 137.18 NSF-14, NSF-61	Cross-linked polyethylene (PEX) tubing	Rehau, IPEX, Aquapure	Municipex, Blue 904, 2399NT	Municipex valves and fittings conform with AWWA C800. C800 applies to "Underground Service Line Valves and Fittings. Appropriate Standard C904 "Cross Linked Poly Services". Suggest NSF Standard 14 and 61. All compression connections must have stainless steel insert stiffners. All PVC cuts must be made with proper tube cutter. All service pipe shall be installed with tracer wire.
Corporation (Main) Stop	No Lead Alloy - 19mm to 50mm	AWWA C800 NSF/ANSI 61, ASTM B-62 ASTM B-584 NSF 372	Ball valve, compression joining.	Mueller	19mm - B - 2500 8.13	
					25mm - B - 2500 8.25	
					38mm - B - 2500 8.38	
					50mm - B - 2500 8.50	
				Ford Meter Box Company	19mm - FB1000-3Q-NL	
					25mm - FB1000-4Q-NL	
					38mm - FB1000-6Q-NL	
					50mm - FB1000-7Q-NL	

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SERVICES (CONT'D)						
Curb Stop	No Lead Alloy - 19mm to 50mm	AWWA C800 NSF/ANSI 61, ASTM B-62 ASTM B-584 NSF/ANSI 372	Ball valve, compression joining, non-draining	Mueller	19mm - H - 15209.13	all Mueller curbstops are Mark II oriseal
					25mm - H - 15209.25	
					38mm - H - 15209.38	
					50mm - H - 15209.50	
				Ford Meter Box Company	19mm - B44 - 333 - Q - NL	
					19mm x 25mm - B44 - 343 - Q - NL	
Service Boxes	Epoxy Coating Cast Iron	N/A	Extension required if special depths are encountered (as per manufacturers recommendations).	Mueller Canada	A728 - Large	
				Clow Canada	D18 / D28 - Large	
				Bibby Ste Crolx	VSB1, VSB2	
Service Box Rods	Stainless Steel	N/A	36" Stainless Steel, self centering, stainless steel cotter pin			
Service Saddles	D.I. Watermain (38mm to 50mm)	AWWA C800 AWWA C-213 ASTM A536, ASTM-D2000 ASTM A240, NSF-61	Type 304 stainless steel including hardware, double bolt, broad band, AWWA tapered thread	Ford	FS 313 (100mm - 300mm)	
				Robar	2616 (100mm - 300mm)	
				Robar	2626 (400mm)	
	PVC Watermain (19mm to 50mm)	NSF-61	Type 304 stainless steel including hardware, double bolt, broad band, AWWA tapered thread	Ford	FS 313 (100mm - 300mm)	Service saddles are mandatory on all PVC watermain
	Asbestos		Type 304 stainless steel including hardware, double bolt, broad band, AWWA tapered thread	Robar	2616 (100mm - 300mm)	
				Robar	2626 (400mm - 450mm)	
				Robar	1616 (14.50 x 1" CC DB)	
Tapping Sleeve	Ductile Iron / Cast Iron / PVC	ASTM D-2000 ASTM A3, AWWA C223, NSF 61	Style fast tapping sleeve, 360 gasket, stainless steel flange	Ford - Fast	Fast x OD x Tap Size	
			6606 - Lifter Bar, T304 SS, full wrap around	Robar - 6606	6606 x Main Size x Outlet x Range High End	
	Asbestos	AWWA C223, AWWA C207, NSF 61, ASTM D-2000	Style fast tapping sleeve, 360 gasket, stainless steel flange	Ford - Fast	Fast 1440 x Tap AC	14:00 - 14:40
			6606 - Lifter Bar, T304 SS, full wrap around	Robar - 6606	S6606	14:10 - 14:50
Service Coupling	No Lead Variety - 25mm to 50mm	AWWA C800, NSF/ANSI61, NSF/ANSI 372, ASTM B-584, ASTM B-62	No Lead, Quick Joint	Ford	C44	i.e. C-44-44-Q-NL = 25mm
				Mueller	¾" - H15403.20	
					1" - H15403.25	
					1" x ¾" - H15403.2520	
					1¼" - H15403.32	
					1½" - H15403.38	
					2" - H15403.50	

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FITTINGS						
Fittings	Ductile Iron	AWWA C110/A21.10, AWWA C153/A21.53, AWWA C111/A21.11, ASTM A536, NSF 61, AWWA C115/A21.15, ANSI B16.1, AWWA C104/A21.4	Mechanical Joint, Ductile Iron Body and Glands cement lined seal coat to AWWA C104/A21.4	Tyler/Union/Bibby	as per manufacturer	All fittings must have Anode attached with thermoweld. Thermocap or Royston Handicap overweld.
				Sigma		
				Star		
				Mueller		
Service 90° Elbows	No Lead 19mm to 50mm		No Lead, Quick Joint	Ford	L-44	i.e. L-44-44-Q-NL = 25mm 90°
			No Lead, MUELLER 110 Compression Connection	Mueller	H-15526	
MJ & MJ Adapters				Star	MJ & MJ Adapter Series 100	For MJ to MJ connction when space is limited 100mm to 300mm
Couplings	Ductile Iron	AWWA C110/A21.10, AWWA C153/A21.53, AWWA C111/A21.11, ASTM A536, AWWA C115/A21.15, CSA B16.1 AWWA C104/A21.4	Mechanical Joint, Ductile Iron Body and Glands cement lined seal coat to AWWA C104/A21.4	Tyler/Union/Bibby	as per manufacturer	Anode installed on all fittings as per City of Owen Sound Specification 3.14.2
				Sigma		
				Star		
				Meuller		
	For Asbestos Pipe		Fusion Epoxy with 3" Stainless Steel Nuts and Bolts 14" lay length	Romac Industries	12" Yellow 14.03 to 14.40 B AC x Black 13.15 to 13.55 B x 14" B only Fusion Epoxy with 316SS bolt and nuts	
Restraining Glands	Ductile Iron Water Main	ASTM A536, AWWA C111/A21.11, AWWA C153/A21.53, AWWA C110/A21.10, AWWA C104/A21.4, AWWA C150/A21.50,	Colour Code "black" for Ductile Iron use. Tie rods stainless steel	EBAA Iron	Megalug Series 1100	
				ROMAC Grip Ring	GR-DI	
				SIGMA	One-lok Series Slde	
				Star	Stargrip Series 3000	
	PVC Watermain	AWWA C110/A21.11, ASTM A536, AWWA C151/A21.51, AWWA C111/A21.11, AWWA C153/A21.53, AWWA C909	Tie rods stainless steel 304 or better. The split ring restraint design shall incorporate a series of non-directional machined serrations (not "as cast") on the inside diameter to provide positive restraint, exact fit, 360 degree contact and support of the pipe wall. "If machined serrations are directional, additional safeguards must be built into casting	Star	PVC Stargrip - Series 4000	
				Sigma	One-Lok, Series SLCE	
				ROMAC Grip Ring	GR-DI	
				EBAA Iron	Series 2000 PV Mega Lug	
	PVCo Watermain			Star	PVC Stargrip - Series 4000	
				Sigma	One-lok Series for PVCo	
Repair Clamps	Stainless Steel		All repair clamps to be supplied with stainless steel (passive 304) nuts and bolts. Tapered gaskets, conductive strip	Ford	FS1	

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Valves						
Gate Valve	Resiliant Seated Gate Valve M.J. x M.J.	AWWA C509, ASTM A536-84, AWWA C515-09, AWWA C550-13, ASTM A126-04, NSF 61	Valves shall be M.J. non rising stems, close clockwise, 52mm square nut, M.J. x M.J. (100mm - 600mm) open counter clockwise, resilient seated gate, epoxy coating, stainless steel bolts	Mueller	A-2362-23W40L	
				Clow Canada	F6100	
Bell Joint Restrainers	Ductile	AWWA C110/A21.11, ASTM A536, AWWA C151/A21.51, AWWA C111/A21.11, AWWA C153/A21.53, AWWA C909	Tie rods stainless steel 304 or better. The split ring restraint design shall incorporate a series of non-directional machined serrations (not "as cast") on the inside diameter to provide positive restraint, exact fit, 360 degree contact and support of the pipe wall. "If machined serrations are directional, additional safeguards must be built into casting	Romac	Style 611	
				EBAA Iron	Series 1700 Mega Lug	
				Sigma	One-Lok Series SLDEH	
	PVC C-900			Romac	Style 611	
				Star	1100 G2	
				EBAA Iron	Series 1900	
				Star	1100 G2	
PVCo C-909						
Tapping Valve	Resiliant Seated Valves Tapping	C509, ASTM A536-84,	Flange x M.J. 150mm to 300mm, 150mm to 300mm, open counter clockwise, 52mm square nut, epoxy coating, stainless steel bolts	Mueller	T2362-19L	
Butterfly Valve		AWWA C504	>600mm only	Pratt	Groundhog	As per City Recommendation
Air Release	Air Release Valve Combination/Direct Bury	AWWA C512, ASTM A-126 CLASS B ASTM D429-08, AWWA C515-09, AWWA C550-13, ASTM A126-04, NSF 61, AWWA C606-11	I.P. Thread x 1.P. (ball type) 150 mm Cover Stainless Steel thread	A.R.I. ValMatic	D-040-C (c\w stainless steel threads) 1" = 201C.2 Single Body	
Pressure Reducing	Pressure Reducing and Check Valve	AWWA C510, ASTM A216, ASTM A536, ASTM B148, ASTM B62, NSF 61		Singer	Contact Syntec	Syntec (Process Equipment Ltd.)
Valve Boxes		N/A	5 ¼” Guide Plate Extension 305mm Extension 457mm Extension 756 Slide Style Upper Lower 914mm Lower 1346mm Lower 1568mm Cover	Bibby;		All slide style boxes
					VB 875 - Guide Plate	
					VB 725 - 305mm ext.	
					VB 730 - 457mm ext.	
					VB 625 - upper	
					VB 525-L-914 mm	
					VB 530-L - 1346 mm	
					VB 535-L - 1568mm	
					VB 825 - Cover	

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Valves (CONT'D)						
Valve Boxes		N/A	4 ¼” Guide Plate Extension 305mm Extension 457mm Extension 710mm Upper Lower 914mm Lower 1346mm Lower 1568mm Cover	Bibby;		All slide style boxes
					VB 875 - Guide Plate	
					VB 700 - 305mm ext.	
					VB 705 - 457mm ext.	
					VB 710 - 710mm ext.	
					VB 600 - upper	
					VB 500-L-914 mm	
					VB 505-L - 1346 mm	
					VB 510-L - 1568mm	
					VB 800 - Cover	
			5 ¼” Guide Plate Top Bottom 1219mm = 48" Bottom 1524 mm = 60" Cover	Star;		
					VBD FGP - Guide Plate	
					VBD FT 5140 - Top	
					VB 514-48B - Bottom	
					VB 514-60B - Bottom	
					VB DF 514 Lid - Cover	
			4 ¼” Guide Plate Top Bottom 1219mm = 48" Bottom 1524 mm = 60" Cover	Star;		
					VBD FGP - Guide Plate	
					VBD FT 414D - Top	
					VB 414-48B - Bottom	
					VB 414-60B - Bottom	
					VB DF 414 Lid - Cover	
HYDRANTS						
Hydrant		ASME B16.1 OPSS 441 CAN/ULC-S520-07, ASTM A536 ASTM B62, AWWA C502, AWWA C550	Hydrants shall meet CSA specification B89-6 and AWWA C-502 latest revision. Hydrants shall be M67B McAvity Brigadier or Mueller Century hydrant. Hydrants shall be complete with 2-68.5mm nozzles with CSA standard thread and 1 CSA standard storz quick 100mm pumper connection coupler. Hydrant to be chrome yellow. Storz pumper to be black. Drain ports are NOT to be plugged. Hydrants must open left and shall have bronze to bronze seat. Hydrants shall be mounted with break away flange 150mm maximum above finish grade to a minimum of 100mm on finished hard surface i.e. asphalt/cement, minimum of 50mm grass area.	Mueller - Canada valve century hydrant		*Note - Storz connections must be supplied manufacturer specific to the Hydrant. All valve box top sections for tracer wire to be located 150mm directly behind hydrant.
				McAvity Brigadier M67B		
CHAMBERS						
Pressure Reducing Chamber Station	Steel - Fusion Bonded Epoxy	ASTM A-36, ASTM A-500, CSA C22.1-09/C22.2 NO 108 National Electrical Code	Minimum plate thickness 6mm	Syntec Process Control	as per manufacturer	H-20 Vehicle Loading As per City Recommendation
Water Chambers	Watertight Precast Concrete	OPSD 1108.010	2 piece monolithic construction		as per manufacturer	H-20 Vehicle Loading As per City Recommendation

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CATHODIC PROTECTION								
Anodes	High Potential Magnesium Anode	ASTM B843,		Maple Industries		WATERMAIN MAIN SIZE	ANODE SIZE (kg)	SPACING
						100mm	2.3	Per length over 3.0 m or fitting of similar size
						150mm	2.3	Per length over 3.0 m or fitting of similar size
						200mm	5.5	Per length over 3.0 m or fitting of similar size
						250mm	5.5	Per length over 3.0 m or fitting of similar size
		OPSS 422		Bren Technology		300mm	11.0	Per length over 3.0 m or fitting of similar size
						Copper service	2.3	at each curb stop
						Hydrant	5.5	at hydrant base
						Tees, elbows etc.	2.3	On each fitting for 100mm-150mm pipe
						Tees, elbows etc	5.5	On each fitting for 200mm-300mm pipe
Test Station for Tracer Wire	Valve Box Top Only		5 ¼” Valve Box Top and Cover	Star	VB DF 514 Lid - Cover	All valve box top sections for tracer wire to be located 150mm directly behind hydrant		
					VP DFT 514D - Upper			
				Bibby	VB 825 - Cover			
					VB 625 - Upper			
Sacrificial Caps	Cathodic Protection (Nuts and Caps)	ASTM B418 Type II	99.9% high grade zinc, steel core, coated with low resistant depolarizing material: 175 grams	Maple Agencies - Exothermal Industries	Protecto Caps 175P190			
				Bren Technology	SAP CAP			
Protective Coatings	Protective Coatings for metal fittings, polyethylene encasement for ductilleiron watermain pipe and fittings, poly-tube with overlap	AWWA C105/A21.5-99 AWWA C217-04		Denso North America	Denso Wrap			
MISCELLANEOUS								
Insulation	Extruded Polystyrene	ASTM C578CAN ULC S701 Type 4	Styrofoam Highload 40	Dow Chemical Canada	as per manufacturer	minimum strength 275kPa		
Tracer Wire			Solid Copper-Stainless Steel Clad	Copperhead	HF-CCS PE45			
					as per manufacturer			
Tracer Wire Connectors		ASTM D-1248, ASTM B910/B910M	Water proof connector	Copperhead,	Snake-Bit			
				King Innovation	DryConn-DBSR or Direct Bury Lug			
Casing Spacers	Casing End Seals		Seal-Virgin SBR & Bands, T-304 Stainless Steel	Cascade;	as per manufacturer			
				PSI	as per manufacturer			
				Advance (APS)	Model SI & SSI			
	Casing Spacers		Fusion Coated Steel Casing Insulators	Cascade;	as per manufacturer			
				PSI	as per manufacturer			
				Advance (APS)	Model SI & SSI			
Metallic Caution Tape			Blue "Caution Watermain Buried Below"			To be layed 18" above watermain and 18" above services. Tied knot at tees, services etc.		