

CITY OF ORILLIA

MATERIAL SPECIFICATIONS FOR WATERMAIN & APPURTENANCES

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NOTE: SPECIFIC TYPES OF ITEMS SUCH AS PVC DR-35 PIPE AS IDENTIFIED IN THE ITEMS IN THE FORM OF TENDER OR SPECIAL PROVISIONS SHALL GOVERN OVER THIS MATERIAL SPECIFICATIONS LIST.

<u>MATERIAL</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>
PVC (Open Cut)	Tyton Joint, colour code blue, 6m in length AWWA C900 for diameters 100mm to 300mm (4" to 12") AWWA C905 for diameters 350mm to 900mm (14" to 36")	Ipex, Royal Pipe, Diamond Plastics (Class 150, 4" to 16")
PVC (Trenchless Installation)	colour code blue Minimum Pressure Class of DR-18 Class 150 or greater if required to handle pull strength demands	Terrabrute by Ipex Cobra Lock System by Royal Pipe
<u>FITTINGS</u>		
Ductile Iron	Mechanical Joint, Ductile Iron Body and Glands cement lined seal coat to AWWA C104/A21.4	Canada Pipe, Star, Sigma/Nappco, Bibby
PVC	Injection molded push-on fittings may be used with AWWA C900 Class 150 pipe	Ipex, Le-Ron, Harco
Transition Couplings for D.I. and PVC	D.I. bodies and restraining glands; stainless steel nuts and bolts.	Robar, Smith-Blair, Dresser, Ford.
Tapping Sleeve	Order with stainless steel bolts, epoxy coated body; M.J. x Flange outlet.	Robar, Ford, Smith-Blair, Concord
<u>VALVES</u>		
Resilient Seated Gate Valves	52mm square nut, M.J. x M.J. (150mm - 300mm) open counter clockwise	Mueller, Clow, AVK
Resilient Seated Valves Tapping	Flange x M.J. 150mm-300mm open counter clockwise 52mm square nut	Mueller, Clow, AVK
Pressure Reducing & Check Valve	Flange x Flange (Note: C. of O. to supply contractor with the appropriate pressure range).	Roll Seal, Cla-val, Watts

<u>MATERIAL</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>
Combination Air Release and Vacuum Valve	F.I.P. Thread x F.I.P. Thread (Ball type).	Golden Anderson Ind. Inc., Cla-val Val-matic, Apco, A.R.I.
Valve Boxes (grass surface)	130mm cover extension 300mm (12) extension 450mm (18) screw or slider type, upper/lower section.	Bibby
Valve Boxes (asphalt surface)	MVB Composite Valve Box	Mueller Canada
<u>HYDRANTS</u>		
Fire Hydrant	Open left. Cap chains or cables. 1.98m (6½ ft) Trench Hydrant Red. Bonnet & caps to have primary base coat paint only (not the epoxy top coat), post type dry barrel, compression shutoff with ball valve closing with flow. M.J. elbow, 130mm or 115mm valve ball, 2 CSA standard hose connections (62mm nominal) 1 CSA pumper connection 4½" for Storz nozzle, breakaway flange, plugged.	Mueller B50-B24 A.V.K. Model 2780 D-67-M Concord Premier Canada Valve Century
<u>MISCELLANEOUS</u>		
Restraining Glands (DI)	Colour code black for Ductile Iron use.	EBBA Iron, Canada Pipe, Romac
Restraint Device (PVC)	Colour code primer for PVC and uses as per manufacturer recommendation.	EBBA Iron, Concord, Clow, Romac, Tyler Union (TUF GRIP).
Cathodic Protection (nuts and caps)	99.9% high grade zinc, steel core, coated with low resistant depolarizing material, 175 grams ASTM B-418-73-type II. Sac washers and nuts required on every other bolt or restraining rod.	Protecto Caps, Bren-Tech, Interprovincial
Metallic CautionTape	Mylar marking tape c/w metallic backing; Lineguard type 2 max bury of 150mm. "Caution Watermain" colour code orange.	Lineguard Mtn Systems, Heath Survey Consultants, Enviro Supply.
Tie Rods (19mm)	Galvanized or Painted with Bituminous Paint c/w sac washers, nuts and caps, wrapped with Denso product	N/A

<u>MATERIAL</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>
Tracer Wire (for Open Cut Construction)	#12 AWG (0.0808" diameter) high strength copper clad steel conductor (HS-CCS) insulated with a 30mm, high density polyethylene (HDPE) insulation, rated for direct burial use at 30 volts. Wire to be Colour Coded Blue	Electrical Suppliers, HF-CCS PE45 Canada Wire, Phillips, Maple, Pirrelli, Copperhead, Pro-Line, as per manufacturer
Tracer Wire (for Directional Drilling)	For Water x=B, Minimum of 4 wires to be pulled.	Copperhead, 845x-EHS
Tracer Wire Connectors (New installation)	Water Proof Connector ASTM D1248 ASTM B910/B910M To be used for new tracer wire systems	Copperhead Snakebite Locking Connector – 12 AWG
Tracer Wire Connectors (Existing connecting to new)	Water Proof Connector ASTM D1248 ASTM B910/B910M To be used only for wires of dissimilar diameters or connecting into existing systems	Copperhead Low Voltage Ace Connectors (SC-PB-01)
Test Station, dead end with no hydrant	Post to be Colour Coded Blue Post to contain warning sticker "Warning Water Pipeline"	Rhino Triview Ultimate Locate Test Station (GD-1332)

<u>MATERIAL</u>	<u>FEATURES</u>	<u>MANUFACTURER</u>
Hydrant Three Terminal Test Station	5/8", Blue in Colour	Copperhead Cobra T3 Hydrant Flange Package
Flushmount Test Station	RB14, Blue	Copperhead Snake Pit Access Box, Roadway
Anodes	Magnesium, 42.5 cm (17') length, ANO-12, Anode, Magnesium Drive	Copperhead Ground Rod 12-AWG

WATER SERVICE MATERIALS

Service Tees (Pre-tapped)	Injection molded PVC push-on fittings for 150mm dia. and 200mm dia. PVC pipe Allowable Service Sizes: 20mm, 25mm, 40mm and 50mm dia.	Ipex, Royal Pipe
Service Boxes	Cast Iron boots only.	Domestic Fdry, Mueller, Emco, Clow.
Service Box Rods	Stainless steel with brass cotter pins.	Mueller, Hepsur, Clow.
Service Saddles (DI) (If permitted)	a) For Ductile Iron Watermain, to be Double Bolt, Broad Band, Stainless Steel Service Saddles for tapings 38mm to 52mm. Approved manufacturers are: Smith & Blair (catalogue 372 DB for up to 300mm dia. watermain), Cambridge Brass (catalogue Teck 403 DB for up to 400mm watermain) and Robar (catalogue 2616 DB for watermain up to 300mm and 2626 DB for 400mm dia. watermain).	
Service Saddles (PVC) (if permitted)	b) For P.V.C. Watermain, to be AWWA thread, Broad Band, Stainless Steel Service Saddles for tapings 19mm to 52mm. Approved manufacturers are: Smith & Blair (catalogue 372 DB for use up to 300mm dia. watermain), Ford (catalogue FS 303 DB for use up to 400mm dia. watermain), Cambridge Brass (catalogue 403 DB for use up to 400mm watermain) and Robar (catalogue 2616 DB for use up to 300mm dia. watermain and 2626 DB on 400mm dia.	

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	Watermains). For 19mm to 25mm single bolt accepted. For 38mm to 52mm double bolt required.	
Blue 904 Pex or Municipex Water Services	To be c/w tracer wire	IPEX, Rehau
Main Stop	AWWA thread. Compression 19mm, 25mm, 38mm, 52mm. NO LEAD	Cam. Brass, Mueller, Emco, Ford
Curb Stops	Compression, ball type. 19mm, 25mm, 38mm, 52mm. NO LEAD	Cam. Brass, Mueller, Emco, Ford
Couplings	Compression 19mm, 25mm, 38mm, 52mm. NO LEAD	Cam. Brass, Mueller, Emco, Ford
Sampling Station	Installed with 150mm dia. PVC pipe around stand pipe with Ferno coupling to connect 150mm dia. PVC to station base	Kupferle Model 88 for freezing climates