



# APPROVED PRODUCTS



## Design and Construction Manual Linear Municipal Infrastructure Standards



# REVISION TRACKING

Date	Revision Number
October 2017	N: V1 – Original Final Submission
March 2018	Rev: V2 - 2018 Review
December 2018	V3
February 2020	V4
January 2021	V5
May 2022	V6 Accessible
February 2023	V7
February 2024	V8

## 2024 Revisions

Section	Modification & Commentary
<b>1.0 General Purpose</b>	<p>The products listed on the APL are approved for use, subject to the following conditions:</p> <ul style="list-style-type: none"> <li>The City reserves the right to remove any product from the Approved Products List upon poor performance, product failure, or any other concerns that may arise. If changes to materials or design have been made, products shall be resubmitted for further review and approval.</li> </ul>
<b><u>Watermain</u> – Joint Restraints</b>	<p><b><u>Star Pipe</u></b>  <del>Allgrip Series 3000</del>  Allgrip Series 4000  Allgrip Series 4300</p>
<b><u>Watermain</u> - Couplings</b>	<p>Broke into two sections  Coupling – Service  Coupling - Pipe</p>
<b><u>Watermain</u> - Water Service Materials Service Saddles (ductile iron, hyprotec coated and asbestos cement watermain)</b>	<p><b><u>Cambridge Brass</u></b>  Series #8413 Teck (integrated with Corporation Stop)</p>
<b><u>Watermain</u> - Water Service Materials Service Saddles (PVC Watermain Pipe)</b>	<p><b><u>Cambridge Brass</u></b>  Series #8413 Teck (Integrated with Corporation Stop)</p>
<b><u>Watermain</u> - Petrolatum Coating Systems</b>	<p><b><u>Specification:</u></b>  All material for two-part petrolatum coating systems shall be in accordance with OPSS and AWWA.</p>
<b><u>Watermain</u> – Various</b>	<p><b><u>Specification:</u></b>  NSF 372 added to the following products to align with Watermain Linear Design Manual</p> <ul style="list-style-type: none"> <li>Water Service Materials Corporation Stops 19mm</li> <li>Water Service Materials Corporation Stops 25mm</li> <li>Water Service Materials Corporation Stops 38mm</li> <li>Water Service Materials Corporation Stops 50mm</li> <li>Water Service Materials Curb Stops 19mm</li> <li>Water Service Materials Curb Stops 25mm</li> <li>Water Service Materials Curb Stops 38mm</li> <li>Water Service Materials Curb Stops 50mm</li> <li>Caps and Plugs</li> <li>Temporary Watermain and Servicing Material</li> <li>Hydrants</li> </ul>

## 2024 Revisions

<b><u>Storm</u> - Concrete Pipe 300mm and Larger</b>	Decast, Mcon
<b><u>Storm</u> - Precast Maintenance Holes 1200mm to 3000mm</b>	Decast, Mcon
<b><u>Storm</u> - Maintenance Holes Frames and Covers</b>	Cedar, Domcast
<b><u>Storm</u> - Catch Basin Frames and Covers</b>	Cedar, Domcast
<b><u>Storm</u> - Catch Basins</b>	Decast, Mcon
<b><u>Storm</u> – Ditch Inlet</b>	Decast, Mcon
<b><u>Sanitary</u> - Concrete Pipe 200mm to 250mm</b>	Decast, Mcon
<b><u>Sanitary</u> - Concrete Pipe 300mm and Larger</b>	Decast, Mcon
<b><u>Sanitary</u> - Precast Maintenance Holes 1200mm to 3000mm</b>	Decast, Mcon

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# INTRODUCTION

## INTRODUCTION

### 1.0 GENERAL PURPOSE

The Approved Product List (APL) is available for each section of the manual. The APL is intended for reference by Proponents who are providing services or performing work for the City, which entails supplying or providing materials.

The APL identifies specific brands of products or Suppliers of products which the City considers generally meet the requirements of this manual.

The absence of a particular brand of product or Supplier from this list does not necessarily imply that it does not meet the requirements.

The APL is not to be construed as an endorsement of a given product, or in any way a guarantee of adequate performance relative to specific Contract requirements.

Use of any product on the APL by proponent shall in no way relieve the Proponent from any contractual obligations.

The products listed on the APL are approved for use, subject to the following conditions:

- The products meet the specific requirements of the project design and are not used in a manner that is contrary to the manufacturers' intended use or warranty conditions, without prior written approval from the City.
- Appropriate safe work procedures and precautions are to be taken in accordance with Occupational Health and Safety, WHMIS and the manufacturers' guidelines for the material's use.

### 2.0 PRODUCT REVIEW ADVISORY PANEL (PRAP)

The City of Brantford has established a Product Review Advisory Panel (PRAP) to facilitate the review and approval of products which are to be used within the City.

The PRAP is comprised of Managers and Supervisors who evaluate submittals for products pertaining to Water Treatment & Distribution, Wastewater Treatment & Collection, Roads, Storm Water Systems, Lighting and Traffic. Staff members will be involved with the review of products specific to their area of expertise.

The panel will typically meet on a quarterly basis to review products submitted for approval. The approved products list will be updated on a yearly basis in concurrence with revisions made to the Linear Design and Construction Manual. These revisions will typically be made in February of each year.

### 3.0 SUBMISSION

To apply to have a product considered for the Approved Product List, refer to the Product Application Form section of this manual. Before submitting the request, make sure that all of the supporting documents are included as only complete submissions will be considered.

Requests for product review and subsequent approval or rejection for all products must be submitted in accordance with the guidelines as outlined in the **General Information & Instructions** section of the form.

Presentations may include a power point presentation and/or physical display and the vendor shall have up to 25 minutes to present the product with another 20 minutes for questions and answers, a total allotted time of a maximum of 45 minutes. Please allow for 10 minute setup if required.

The applicant will be notified of the outcome of the review of the product; approved, further information is required, or rejected no later than three (3) weeks after the presentation.

# **PRODUCT APPLICATION FORM**



**PRODUCT APPLICATION FORM**  
*Roads, Watermain, Sewers and Traffic*



GENERAL INFORMATION & INSTRUCTIONS

1. Submittal of this form enables the Product Review Advisory Panel (**PRAP**) to assess the product identified.
2. Application must be completed in full in order for it to be considered for review.
3. A separate application **MUST** be submitted for each product.
4. Supporting documentation **MUST** be submitted with the application.
5. Incomplete applications will be returned to the applicant.
6. The vendor will be contacted if additional information is required.
7. The application form will be returned to the vendor with a file number and date to present.
8. Attach this application and supporting documentation in **ONE combined PDF document.**

Date of submission (mm/dd/yyyy): \_\_\_\_\_

Submission (name) by: \_\_\_\_\_

PLEASE submit your application by email : [PRAP@brantford.ca](mailto:PRAP@brantford.ca)

Email title should take the following format:

**ProductCategory\_CompanyName\_Product**

Example: WaterDistribution\_ABCWaterCo.\_Pumps

**PRODUCT APPLICATION FORM**

1. Company Profile		
Name	Address	City/Town
Province/State/Territory	Postal/Zip Code	Country
Contact Person	Title	Email
Telephone Number	Cellular Number	Fax Number
Company Website		
Type of Business: <ul style="list-style-type: none"> <li><input type="radio"/> Manufacturer</li> <li><input type="radio"/> Supplier</li> <li><input type="radio"/> Other(Specify): _____</li> </ul>		

2. Product Details (Attach Specifications) (PDF)				
Product Name		Model No.		
Manufacturer Name		Location of Manufacturer		
<u>Check</u> Product Category				
Water Distribution	Wastewater Collection	Road	Traffic	Miscellaneous
Water Treatment	Wastewater Treatment	Storm		
Year Introduced	Number of Years Available			
Product Description/Function and Special features				

**PRODUCT APPLICATION FORM**

3. Current Approvals (Ontario Only) (If Applicable)		
Municipality	Contact Person	Phone Number

4. Compliance with Industry Standard (Attach Proof of Certification) (AWWA, OPSS, OPSD, etc...)			
Standard	Section No.	Standard	Section No.

5. Product Suppliers and/or Distributors (If Applicable)			
Vendor Name	City	Contact Person	Phone Number

6. Locations for Product Service (If Applicable)

7. FOR OFFICE USE ONLY		
File Number	Reply to Submission Date (mm-dd-yyyy)	
Status <input type="radio"/> Approved <input type="radio"/> Denied <input type="radio"/> Pending	Date (mm-dd-yyyy)	Comments:

**PRODUCT APPLICATION FORM**

# **APPROVED PRODUCTS LIST**

## WATERMAIN APPROVED PRODUCTS

WATERMAIN APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Ductile Iron Pipe (DI)	Project specific basis as accepted by the City and determined by design review process. AWWA C104, C105, C110, C111, C115, C150, C151, C153	<b>Canada Pipe Company</b> Class 52&54, Pressure Class 350, Tyton Joint, AWWA C104/A21.3, C110/A21.10, OPSS 441 Cement Lined
Concrete Pressure Pipe (CPP)	AWWA C301 (L), C303, 304, 400 mm & 500 mm AWWA C301(E) & C304, > 1350 mm	<b>Rinker (Formerly Forterra)</b> AWWA C300, C301, C302 & C303, OPSS 441 Plant prequalified by OCPA All pipe and grout for diaphraging must be Type 50 Cement
Molecularly Oriented Polyvinyl Chloride Pipe (PVCO) 150 - 300mm	Pipe: NSF 14, 61 ASTM D1784, D3139, F477 & F1483 AWWA C909, CSA B137.3.1 FM1612. Fittings: Match PVC (Use of PVCO for distribution main only. Service saddles or service tees shall be used when connecting services to PVCO mains)	<b>IPEX</b> Bionax AWWA C909-DR18 PC150, OPSS 441
Polyvinyl Chloride Pipe (PVC) ≤ 300mm	Pipe: AWWA M23, AWWA C900, CSA 137.3 FM 1612 approved UL 1285 listed NSF 61 certified Fittings: (100 to 300mm) AWWA C907, CSA B137.2 (250 to 300mm) AWWA C900, CSA B137.3 FM 1612 approved UL 1285 listed NSF 61 certified (Designer shall determine pressure class and rating based on project requirements. Use of PVC for distribution main only. Service saddles or service tees shall be used when connecting services to PVC mains)	<b>IPEX</b> Blue Brute, Centurion, TerraBrute AWWA C905-DR18, OPSS 441 <b>Westlake (Formerly Napco)</b>
High Density Polyethylene (HDPE)	AWWA C906 (Project specific basis as accepted by the City and determined by design review process.)	N/A
Metallic Fittings	Cast iron or ductile iron as per A.W.W.A. Specification C110 Cement lined as per A.W.W.A. C104 Mechanical joint type as per A.W.W.A. C111 or "Tyton" rubber gasket joints conforming to A.W.W.A. Specification C104	<b>Sigma</b> <b>Bibby</b> <b>Star Pipe</b>
PVC Fittings	100mm-200mm AWWA C907, B137.3, OPSS441, Injection moulded 250mm and 300mm AWWA C900 and C905, B137.3, OPSS441 Bonded and over-wrapped with fiberglass and reinforced polyester	<b>IPEX</b> <b>Westlake (Formerly Napco)</b> <b>Galaxy/Tigre</b>

**WATERMAIN APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Joint Restraints	Ductile Iron Pipe PVC	<p><b>EBAA Iron, Inc.</b> Mega-lug Series 1100 (Ductile Iron) Series 2000 PV (PVC)</p> <p><b>Ford Meter Box Company, Inc.</b> Uni-flange restrainers Series 1300, 1350, 1390, &amp; 1400 (Ductile Iron) Series 1300, 1350, 1390 &amp; 1500 (PVC)</p> <p><b>US Pipe Mueller Co.</b> M.J. Field Lok</p> <p><b>Romac</b> Grip Ring Restrainer</p> <p><b>Tyler Union</b> TufGrip Restrainer Series 1000 (Ductile Iron) Series 2000 (PVC)</p> <p><b>Clow</b> Series 300</p> <p><b>Sigma</b> One-Lok Wedge Action Restraint, Series SLDE (Ductile Iron) Series SLCS, PWM, PWP-C &amp; PWPF-C (PVC)</p> <p><b>IPEX</b> Bionax PVCO</p> <p><b>Star Pipe</b> Stargrip Series 3000, Allgrip Series 4000, Allgrip Series 4300</p> <p><b>Smith-Blair</b> Cam-Lock 111/120 Service</p>
Couplings - Service	N/A	<p><b>Georg Fischer</b> Multi Joint 3000 Plus</p> <p><b>Smith-Blair</b> Top-Bolt Coupling Model 421</p> <p><b>Krausz Industries</b> Hymax 2</p>
Couplings - Pipe	N/A	<p><b>Georg Fischer</b> Multi Joint 3000 Plus</p> <p><b>Smith-Blair</b> Top-Bolt Coupling Model 421</p> <p><b>Krausz Industries</b> Hymax 2</p>
Gate Valves (100mm - 300mm)	Gate valves as per A.W.W.A. Standard C-500 Resilient seat gate valves as per A.W.W.A. Standard C-509	<p><b>McAvity</b> 20075-0 &amp; 20075-R</p> <p><b>Mueller</b> A-2360</p> <p><b>Clow</b> F6100</p> <p><b>AVK</b> Series 25 Resilient Seated Gate Valve</p> <p><b>EJ</b> Flowmaster resilient seated gate valve</p>

**WATERMAIN APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
≥ 300mm - Butterfly Valves	N/A	<p><b>Mueller</b> Line Seal III <b>Pratt</b> 2FI <b>Val-Matic</b> <b>Keystone</b> <b>M&amp;H</b></p>
Combination Air Release / Vacuum Valves	N/A	<p><b>Dezurik</b> Model D-040 (metal clad) <b>Vent-O-Mat</b> Series RBX - Model RBX 2521 &amp; 2531</p>
Check Valves	All valves shall conform to and meet the latest version of A.W.W.A. C508 for Swing Check Valves	<p><b>Mueller</b> A-2600-6 <b>Ludlow</b> <b>Val-Matic</b> Series 500 <b>Kennedy Valve</b> Ken Flex(FIG.506)</p>
Valve Boxes	130mm (5 1/4") slide type only	<p><b>Mueller</b> A759TF <b>Bibby</b> VB625 <b>Star</b> VBDF514-48 <b>Sigma</b> VB5400, VB5401, VB5253, VB4500</p>
Road Leveller	N/A	<p><b>Star</b> VB514AP <b>McCoy</b> VB919TW-D mushroom <b>Sigma</b> VB6500-D lid</p>
Caps and Plugs	<p>NSF 61 &amp; 372 certified epoxy coated All mechanical joint/tyton caps or plugs used on watermain installations are to be epoxy coated on the inside</p>	N/A



**WATERMAIN APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Water Sampling Station	N/A	<p><b>Kupferle</b> ECLIPSE #88-SS <b>Regal Water Works</b> TEST TAP</p>
Automated Flusher	c/w 50mm connect from the Watermain and a 100mm drain to the Sanitary Sewer.	<p><b>Kupferle</b> Eclipse #9800 <b>Mueller</b> Hydro-Guard</p>
<p>Tapping Sleeves (Ductile Iron ≥ 100mm) (Ductile iron Hyprotec coated ≥ 100mm) (PVC and Cast Iron Watermain ≥ 100mm)</p>		<p><b>Mueller</b> H615 M.J. Tapping Sleeve M.J. Tapping Sleeve Canada Valve <b>Ford</b> Fast <b>Robar</b> 6606 Stainless Steel Tapping Sleeve <b>Romac</b> SST <b>Smith-Blair</b> 663 All Stainless Steel Tapping Sleeve <b>Power Seal</b> 3480 All Stainless Steel Tapping Sleeve</p>
<p>Tapping Sleeves (Asbestos Cement Watermain ≥ 100mm)</p>	N/A	<p><b>Robar</b> 6606 Stainless Steel Tapping Sleeve Rockwell <b>Smith-Blair</b> 622 Tapping Sleeve 663 All Stainless Steel Tapping Sleeve</p>
<p>Tapping Sleeves (Concrete Pressure Pipe ≥ 100mm)</p>	<p>Gasket: 1" dia. on Gland Flange (EPDM). Grout seal – ¼" x ¼" Rubber Gasket Studs &amp; Nuts: Stainless Steel Type 304 Coating: An average of 20 ml thick of Thermoplastic A-571 is applied on sleeve, gland and straps with extra thickness in the waterway of gland. Body: Mild Steel ASTM A36 Flange: Combination Flange with ANSI 150 lb. drilling recessed for Tapping Valves MSS SP-60</p>	<p><b>Forterra</b> <b>Ayotte</b> A-900 Saddle and A-Saddle</p>

WATERMAIN APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Water Service Materials Pipe-Copper (New service min. 25mm)	All service pipe shall be Type 'K' soft copper tube, nominal diameter of 19mm, 25mm, 38mm or 50mm Kinked, crushed or distorted tubing shall not be used Solder type fittings shall not be used.	Type 'K' Soft Copper
Water Service Materials (Pipe-Cross-linked polyethylene min. 25mm)	CSA B137.5, NSF 61, and ASTM F876, F877 and F2023	<b>Rehau</b> <b>Iplex</b> Blue904 SDR9 PEX <b>American Legend</b> Aquadure 502
Water Service Materials Service Saddles (ductile iron, hyprotec coated and asbestos cement watermain)	Service saddles shall be used on all services larger than 25mm on ductile iron watermain pipe All service saddles will use a double bolt closure	<b>Rehau</b> <b>Robar</b> 2616 DB <b>Cambridge Brass</b> Series #403 teck clamp (S.S. Double Bolted) Series #8413 Teck (Integrated with Corporation Stop) <b>Romac</b> 306 <b>Smith-Blair</b> 373-375 (Double Bolted) <b>Powerseal</b> 3412 AS (Double Bolted)
Water Service Materials Service Saddles (PVC Watermain Pipe)	Service saddles shall be used on all services installed off of PVC C900 or C905 and asbestos cement watermain pipe All service saddles will use a double bolt closure	<b>Rehau</b> <b>Robar</b> 2606 DB <b>Cambridge Brass</b> Series #403 teck clamp (S.S. Double Bolted) Series #8413 Teck (Integrated with Corporation Stop) <b>Romac</b> 306 <b>Smith-Blair</b> 373-375 (Double Bolted) <b>Powerseal</b> <b>Ford</b> RS 303 (Double Bolted) <b>Preper</b> H-Tech (S.S. Double Bolted)
Water Service Materials (PVC Watermain Pipe Service Tee)	N/A	<b>IPEX</b> Blue Brute Tapped Coupling

WATERMAIN APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Water Service Materials Corporation Stops 19 mm	CSA Classified to NSF Standard 61 & 372 A.W.W.A. inlet thread and copper flare or compression style outlet. Corporation ball stops are required to use No-Lead brass	<b>Mueller Ball Main (Low Lead)</b> B25008.20NPB <b>Cambridge Brass Ball N/L</b> 301NL-A3H3 <b>Ford Ball Main No Lead</b> FB1000-3-NL
Water Service Materials Corporation Stops 25 mm	CSA Classified to NSF Standard 61 & 372 A.W.W.A. inlet thread and copper flare or compression style outlet. Corporation ball stops are required to use No-Lead brass	<b>Mueller Ball Main (Low Lead)</b> B25008.25NPB <b>Cambridge Brass Ball N/L</b> 301NL-A4H4 <b>Ford Ball Main No Lead</b> FB1000-4-NL
Water Service Materials Corporation Stops 38 mm	CSA Classified to NSF Standard 61 & 372 A.W.W.A. inlet thread and copper flare or compression style outlet. Corporation ball stops are required to use No-Lead brass	<b>Mueller Ball Main (Low Lead)</b> B25008.38NPB <b>Cambridge Brass Ball N/L</b> 301NL-A8H6 <b>Ford Ball Main No Lead</b> FB1000-6-NL
Water Service Materials Corporation Stops 50 mm	CSA Classified to NSF Standard 61 & 372 A.W.W.A. inlet thread and copper flare or compression style outlet. Corporation ball stops are required to use No-Lead brass	<b>Mueller Ball Main (Low Lead)</b> B25008.50NPB <b>Cambridge Brass Ball N/L</b> 301NL-A7H7 <b>Ford Ball Main No Lead</b> FB1000-7-NL
Water Service Materials Curb Stops 19 mm	Curb stops are required to use No-Lead brass All Ball curb stops shall come complete with an electrical grounding clamp Curb stops are required to be CSA Classified to NSF Standard 61 & 372	<b>Mueller Ball Main (Low Lead)</b> B25008W88.20NPB <b>Cambridge Brass Ball N/L</b> 202NL-H3HE3 <b>Ford Ball Main No Lead</b> B44-333-Q-NL

WATERMAIN APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Water Service Materials Curb Stops 25 mm	Curb stops are required to use No-Lead brass All Ball curb stops shall come complete with an electrical grounding clamp Curb stops are required to be CSA Classified to NSF Standard 61 & 372	<b>Mueller Ball Main (Low Lead)</b> B2500W88.25NPB <b>Cambridge Brass Ball N/L</b> 202NL-H4HE4 <b>Ford Ball Main No Lead</b> B44-444-Q-NL
Water Service Materials Curb Stops 38 mm	Curb stops are required to use No-Lead brass All Ball curb stops shall come complete with an electrical grounding clamp Curb stops are required to be CSA Classified to NSF Standard 61 & 372	<b>Mueller Ball Main (Low Lead)</b> B2500W88.38NPB <b>Cambridge Brass Ball N/L</b> 202NL-H6HE6 <b>Ford Ball Main No Lead</b> B44-666-Q-NL
Water Service Materials Curb Stops 50 mm	Curb stops are required to use No-Lead brass All Ball curb stops shall come complete with an electrical grounding clamp Curb stops are required to be CSA Classified to NSF Standard 61 & 372	<b>Mueller Ball Main (Low Lead)</b> B2500W88.50NPB <b>Cambridge Brass Ball N/L</b> 202NL-H7HE7 <b>Ford Ball Main No Lead</b> B44-777-Q-NL
Water Service Materials Service Boxes 19 and 25 mm services	Service boxes shall be for 1.7m to 2.0m bury, but shall be extended if special depths are encountered. Service boxes will come complete with type 304 stainless steel rods and stainless steel cotter pins	<b>Mueller</b> A726 <b>Bibby</b> VSB1 <b>Clow</b> D1-9 <b>Sigma</b> CBA 178 <b>Star Pipe</b> D & D1 - #9

**WATERMAIN APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
<p>Water Service Materials Service Boxes 38 and 50 mm services</p>	<p>Service boxes shall be for 1.7m to 2.0m bury, but shall be extended if special depths are encountered. Service boxes will come complete with type 304 stainless steel rods and stainless steel cotter pins</p>	<p><b>Mueller</b> A753 <b>Bibby</b> VSB2 <b>Clow</b> D2-9 <b>Star Pipe</b> D2 - #9</p>
<p>Zinc Anodes</p>	<p>The anode must have a metallic core, or fusion bonded sleeve and have a depolarizing gypsum base material surrounding the anode An insulated copper (AWG 10-14) wire 3 metres in length shall be brazed to the end of the core wire. High Purity Zinc 99.99% pure as per A.S.T.M. B-418-73 type 11</p>	<p><b>Packaged Zinc Anodes</b></p>
<p>Test Points</p>	<p>Colour coded grey and the cover labelled 'WATER' City's Standard Drawings W-308-B and W-308-C</p>	<p><b>Mueller</b> A753 <b>Bibby</b> VSB2 <b>Clow</b> D2-9 <b>Star Pipe</b> D2 - #9</p>
<p>Tracer Wire</p>	<p>#8 gauge, stranded, insulated copper wire with 60mil of white, cross-linked polyethylene (XLPE) insulation specifically manufactured for direct burial applications.</p>	<p><b>N/A</b></p>
<p>Tracer Wire (Coating Pad for Cadweld connection)</p>	<p>N/A</p>	<p>Royston Handy Cap IP</p>

WATERMAIN APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Tracer Wire (Spliced or Repaired)	N/A	Dryconn Waterproof Connector Wing Nut Wire Connector, Model Number 454, Catalogue Number 30-454 Klik-It II Number C8816 Buried Service Wire Closure Raychem GHFC-2-90 H-Frame Gel Closure Approved equivalent
Temporary Watermain and Servicing Material	All materials will be delivered new to the site or used material will be pressure washed and capped at the site prior to installation. NSF/ANSI Standards 61, NSF 372	Victaulic International Pipe Aquamine high impact PVC as per OPSS 493 Yelomine CertainTeed Impact PVC Polyethylene DR 9 pipe PEX pipe Copper Type 'K' pipe
Petrolatum Coating Systems	All material for two-part petrolatum coating systems shall be in accordance with OPSS and AWWA.	<b>Denso</b> Petrolatum Tapes and Paste <b>Premier Coatings</b> Premtape Systems <b>Trenton Tape Products</b> Petrowrap Anti-Corrosion System
Hydrants	Hydrants shall have two (2) 63.5mm (S.A.A.B.-89-2) male hose connections and one (1) 100mm quick-connect (STORZ) male front pumper port. Hydrant barrel to be manufactured to a 2.0m trench depth from the ground line to the boot. The inside of the hydrant boot will be epoxy coated complying with AWWA C550 and certified to NSF 61 & 372. All hydrants must have a 32mm square operating nut, tapped drain ports, be painted yellow, and must open clockwise. The hydrant lead shall be equivalent in size to the hydrant inlet (150mm). NOTE: All hydrants installed on private property will be painted a City approved red colour. Storz connection to remain black.  Approved Red – Safety Red #OM2221 supplied by Mayfair Paint Approved Yellow – Safety yellow #KM2215 supplied by Benjamin Moore	<b>Canada Valve</b> Century <b>McAvity</b> M-67 <b>Bibby</b> Sentinel <b>AVK</b> High Pressure Dry Barrel Hydrant

## STORM APPROVED PRODUCTS

### STORM APPROVED PRODUCTS

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Polyvinyl Chloride (PVC) Pipe <b>200mm to 600mm</b>	SDR35, CSA B182.2 ,320 KPa Stiffness, 50 psi Joints	IPEX, Next, Westlake (Formerly Napco)
Polyvinyl Chloride (PVC) Pipe <b>100mm and 150mm Service Laterals</b>	SDR28, CSA B182.2 ,625 KPa Stiffness, 50 psi Joints	IPEX, Next, Westlake (Formerly Napco)
Concrete Pipe <b>200mm to 250mm</b>	Non-Reinforced, CSA A257.1 Extra Strength	Rinker (Formerly Forterra), Concast, Coldstream
Concrete Pipe <b>300mm and Larger</b>	Reinforced, CSA A257.2	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Precast Maintenance Holes <b>1200mm to 3000mm</b>	CSA A257.4, OPSS 407 and 1351	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Maintenance Holes Frames and Covers	OPSS 1850, OPSD 401.010 Type A	Bibby, EJ (McCoy), Mueller Canada, Sigma, Star, Cedar, Domcast
Maintenance Hole Adjustment Units	Precast Concrete	Armtec, Rinker (Formerly Forterra)
Maintenance Hole Adjustment Units	Polyethylene or Polypropylene (adjustment rings for top lift asphalt)	IPEX, Turner
Fittings	PVC CSA B182.2	IPEX, Westlake (Formerly Napco), Galaxy/Tigre
Saddles	compatible with PVC CSA B182.2 pipe	ADS Canada, Fernco, IPEX
Couplings and Adapters	ASTM D 5926, C 1173 and CSA B602	Fernco
Catch Basin Frames and Covers	OPSD 400.010, OPSD 400.020 and OPSD 400.082 (inlet)	Bibby, EJ (McCoy), Mueller Canada, Sigma, Star, Cedar, Domcast
Catch Basins	OPSS 407 and OPSS 1351 Form 700	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Ditch Inlet	OPSS 407 and OPSS 1351 Form 700	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Culvert Pipe	High Density Polyethylene CSA B182.6, 320 Kpa Stiffness	Armtec, Ideal Pipe

**SANITARY APPROVED PRODUCTS**

**SANITARY APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER/MODEL
Polyvinyl Chloride (PVC) Pipe <b>200mm to 600mm</b>	SDR35, CSA B182.2, 320 KPa Stiffness, 50 psi Joints	IPEX, Next, Westlake (Formerly Napco)
Polyvinyl Chloride (PVC) Pipe <b>100mm and 150mm Service Laterals</b>	SDR28, CSA B182.2, 625 KPa Stiffness, 50 psi Joints	IPEX, Next, Westlake (Formerly Napco)
Concrete Pipe <b>200mm to 250mm</b>	Non-Reinforced, CSA A257.1 Extra Strength	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Concrete Pipe <b>300mm and Larger</b>	Reinforced, CSA A257.2	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Precast Maintenance Holes <b>1200mm to 3000mm</b>	CSA A257.4, OPSS 407 and 1351	Rinker (Formerly Forterra), Concast, Coldstream, Decast, Mcon
Maintenance Hole Frames and Covers	OPSS 1850, OPSS 401.010 Type A	Bibby, EJ (McCoy), Mueller Canada, Sigma, Star
Maintenance Hole Adjustment Units	Precast Concrete	Armtec, Rinker (Formerly Forterra)
Maintenance Hole Adjustment Units	Polyethylene or Polypropylene (adjustment rings for top lift asphalt)	IPEX, Turner
Fittings	PVC CSA B182.2	IPEX, Westlake (Formerly Napco), Galaxy/Tigre
Saddles	compatible with PVC CSA B182.2 pipe	ADS Canada, Fernco, IPEX
Couplings and Adapters	ASTM D 5926, C 1173 and CSA B602	Fernco
Test Points	Test Boxes Colour coded grey labelled 'SANITARY' City's Standard Drawings W-308-B and W-308-C	Distributed by: Hall Telecommunications Ltd. Manufactured by: Brooks and marketed by: Fargo MFG Company (Canada) Ltd. and supplied by: Bel Volts Sales Ltd. Manufactured by: NDS Inc. and marketed by: Gravenhurst Plastic Ltd.
Tracer Wire	#8 gauge, stranded, insulated copper wire with 60mil of white, cross-linked polyethylene (XLPE) insulation specifically manufactured for direct burial applications.	N/A
Tracer Wire (Coating Pad for Cadweld connection)	N/A	Royston Handy Cap IP
Tracer Wire (Spliced or Repaired)	N/A	Dryconn Waterproof Connector Wing Nut Wire Connector, Model Number 454, Catalogue Number 30-454 Klik-It II Number C8816 Buried Service Wire Closure Raychem GHFC-2-90 H-Frame Gel Closure Approved equivalent



## ROADS APPROVED PRODUCTS

TRAFFIC APPROVED PRODUCTS		
PRODUCT	SPECIFICATION	APPROVED MANUFACTURER
Traffic Signal Pole	1.5m aluminum pole for pedestrian push button	Sentinel Pole & Traffic Equipment Ltd.
Traffic Signal Pole	4.0m poles complete with base - steel sectional	Polefab Inc.
Traffic Signal Pole	5.3m poles complete with base - steel sectional	Polefab Inc.
Traffic Signal Pole	7.0m poles complete with base - steel sectional	Polefab Inc.
Traffic Signal Pole	8.7m poles complete with base - steel sectional	Polefab Inc.
Traffic Signal Pole	10.5m poles complete with base - steel sectional	Polefab Inc.
Pole Base Anchor	1-1/4 inch DRG-2FS, 279mm x 279mm x 457mm (11" x 11" x 18") – no loctite appropriate size according to pole base	Polefab Inc. Sentinel Pole & Traffic Equipment Ltd.
Pole Base Reinforcing Cage	30" diameter only	Ace Welding
Pole Base Reinforcing Cage	30" diameter only	I.E.C. Group
Pole Base Reinforcing Cage	30" diameter only	Savory Electrical Ltd.
Traffic Signal Arm	Aluminum complete with pole plate	Sentinel Pole & Traffic Equipment Ltd.
Traffic Signal Hangers	Rubber cushioned arm hanger	Traffic Hardware and Design
Traffic Signal Hangers	Rubber cushioned arm hanger	Fortran Traffic Systems Ltd.
Traffic Signal Hangers	Astro bracket	Sentinel Pole & Traffic Equipment Ltd.
Traffic Signal Hangers	Astro bracket	Traffic Hardware and Design
Traffic Signal Housing	Polycarbonate traffic signal head (yellow), with yellow back, complete with stainless steel reinforcing plates in the top and bottom sections with cowl visors. Yellow metal backboard with a 3" (76mm) reflective strip around perimeter using 40-91 diamond grade yellow reflective tape	Fortran Traffic Systems Ltd. Econolite Canada Ltd.
Traffic Signal LED	30 cm red, 30 cm amber, 30 cm green, 30 cm bi-modal LED arrow	Econolite Canada Ltd. / Innovative Traffic Solutions / Tacel Ltd. / Fortran Traffic Systems Ltd.
Pedestrian Signal Arm	Model # R2JA	Sentinel Pole & Traffic Equipment Ltd.
Pedestrian Signal Housing	Yellow polycarbonate signal head, with yellow back, complete with stainless steel reinforcing plates in the top with visors	Fortran Traffic Systems Ltd.
Pedestrian Signal LED	30 cm walk/don't walk; round	Econolite Canada Ltd. / Innovative Traffic Solutions / Tacel Ltd. / Fortran Traffic Systems Ltd.
Pedestrian Pushbutton	Polara iNAV System	Tacel Ltd.
Countdown Signal LED	LEDCS121	Fortran Traffic Systems Ltd.
Handwells / Junction Boxes	Synertech, Quazite	Tacel Ltd.
Traffic Control Cabinet	8 phase, TS2 Type 1	Econolite Canada Ltd.
Traffic Control Cabinet	9 phase, TS2 Type 1	Tacel Ltd.
Traffic Controller	Cobalt	Econolite Canada Ltd.
Uninterrupted Power Supply (UPS)	Alpha FXM1100 series complete with transfer switch (hot swap)	Tacel Ltd.
Disconnect / Power Supply	CAPDBRN - 60 amp main breaker; 40 amp traffic breaker; 20 amp street lighting breaker	Tacel Ltd.
Conductor Cables	IMSA 19 Traffic Signal cable; IMSA 7 conductor; IMSA 4 conductor	Electrical Supplier
Push Button Intersection Cable	35DB1605 push button intersection cable	Electrical Supplier
Push Button Riser Cable	C4204A.30.10 pushbutton riser cable	Electrical Supplier
Direct Earth Burial Cable	#6 RWU-90 electrical cable	Electrical Supplier
Conduit	Rigid PVC conduit; elbows and fittings	Electrical Supplier
Ground Plates / Rods	19 mm x 3048 mm (3/4" x 10') rods or galvanized plates	Electrical Supplier

**ROADS APPROVED PRODUCTS**

<b>TRAFFIC APPROVED PRODUCTS</b>		
<b>PRODUCT</b>	<b>SPECIFICATION</b>	<b>APPROVED MANUFACTURER</b>
Fire Pre-emption Detector	Tomar detector 4090-22-ST	Fortran Traffic Systems Ltd.
Fire Pre-emption Detector	Tomar card 4104	Fortran Traffic Systems Ltd.
Traffic Detection	Miovision (small/large intersections)	Miovision
Traffic Detection	Sensys (small intersections)	Tacel Ltd.
Traffic Detection	Auto Scope small/large intersections)	Econolite Canada Ltd.
Traffic Detection	Sedco (small intersections)	Innovative Traffic Solutions
Traffic Detection	Wavetronics (small/large intersections)	Fortran Traffic Systems Ltd.
Traffic Detection	Grid Smart (small/large intersections)	Electromega Ltd.
Traffic Detection	Trafficware (small intersections)	Trafficware Group Inc.
Concrete	32MPA	Concrete Supplier

**ROADS APPROVED PRODUCTS**

<b>STREET LIGHTING APPROVED PRODUCTS</b>		
<b>PRODUCT</b>	<b>SPECIFICATION</b>	<b>APPROVED MANUFACTURER (SUPPLIER)</b>
Street Light Pole	40 ft concrete pole	StressCrete Group
Street Light Pole	35 ft concrete pole	StressCrete Group
Street Light Pole	35 ft octagonal concrete pole	StressCrete Group
Street Light Pole	22 ft octagonal concrete pole (version 1)	StressCrete Group
Street Light Pole	22 ft octagonal concrete pole (version 2)	StressCrete Group
Street Light Pole	13 ft concrete pole (downtown)	StressCrete Group
Street Light Pole	40 ft aluminum pole	Sentinel Pole and Traffic Equipment Ltd.
Street Light Pole	35 ft aluminum pole	Sentinel Pole and Traffic Equipment Ltd.
Street Light Pole Frangible Base	Frangible safety base assembly 1" couplers, 13.5" reaction plate and aluminum shroud	Sentinel Pole and Traffic Equipment Ltd.
Cobra Head LED Luminaire	ELR luminaire of various wattages (ERL1, ERL2, ERLH)	General Electric(Anixter Canada / Robertson Electric / Westburne Electric)
Post Top LED Luminaire	Holophane LED post top luminaire	(Gerrie Electric / Westburne Electric)
Lantern Style LED Luminaire	Post top / side mount lantern LED luminaire	King Luminaire (King Luminaire / Gerrie Electric / Westbourne Electric) Acuity Brands (King Luminaire / Gerrie Electric / Westbourne Electric)
Acorn LED Luminaire	LED Acorn Luminaire (Downtown)	King Luminaire (King Luminaire / Gerrie Electric / Westbourne Electric)
Globe LED Luminaire	Globe LED luminaire	Lumec (Anixter Canada)
Mounting Bracket	Elliptical arm - various lengths	Aluminous Lighting Systems
Mounting Bracket	Decorative scroll arm with support	King Luminaire (Anixter Canada / Robertson Electric / Westburne Electric)
LED Photocell	LED photocell - CUL1	(Anixter Canada / Robertson Electric / Westburne Electric)
LED Photocell	Standard Twist Lock - Button Type	DTL Fisher-Pierce (Anixter Canada / Robertson Electric / Westburne Electric)
Fuse Kit	600V Inline waterproof fuse holder	(Anixter Canada / Robertson Electric / Westburne Electric)
Fuse	10 AMP 600V fuse for fuse holder	(Anixter Canada / Robertson Electric / Westburne Electric)
Street Light Power Supply	Pedestal / pedestal base (metered)	Pedestal Solutions Inc.
Street Light Power Supply	Pedestal / pedestal base (non metered)	Pedestal Solutions Inc.
Street Light Power Supply	In pole double breaker	Eaton (Anixter Canada / Robertson Electric / Westburne Electric)
Junction Box	Large	Quazite (Tacel Ltd.)
Junction Box	Small	Quazite (Tacel Ltd.)
Junction Box	Street lighting' identified on the lid - Large Lid	Quazite (Tacel Ltd.)
Junction Box	"Street lighting" identified on the lid - Small Lid	Quazite (Tacel Ltd.)
Street Light Power Supply Wire	#2 AWG wire	Electrical Supplier
Street Light Power Supply Wire	#6 AWG wire	Electrical Supplier
Street Light Riser Wire	#12 AWG wire	Electrical Supplier
Duplex Wire	Street light overhead power supply wire	Electrical Supplier
Street Light Ground Wire	Ground wire #6 AWG	Electrical Supplier
Street Light Ground Wire Bare	Ground wire #6 AWG BARE	Electrical Supplier
Grounding Rod	Street light grounding rod	Electrical Supplier
50mm Conduit	Rigid PVC 50mm conduit	Electrical Supplier

**ROADS APPROVED PRODUCTS**

**STREET SIGN APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER
Street Name Signs	The signs shall be white lettering on a green street name blank and follow the OTM standards	Strada Sign Supply Inc.
Signalized Street Name Signs	Shall be white lettering on a green background and have a minimum size of 120cm x 45 cm and follow the OTM standards	Strada Sign Supply Inc.
Telespar	Telespar galvanized tubing. Per-punched complete with 30" ground insert	Strada Sign Supply Inc. / Cedar Signs Inc.

**MISC. ROADS APPROVED PRODUCTS**

PRODUCT	SPECIFICATION	APPROVED MANUFACTURER
Cast Iron Detectable Warning Plate/ Tactile Surface Walking Indicator	OPSD 310.031 OPSD 310.033 OPSD 310.039	EJ Duralast
Noise Attenuation Barrier	MOECC Accoustical Standards Ontario Building Code and CSA Materials: Precast Concrete Wood and Vinyl	Alcuf International Inc. Homeland Vinyl Fence Limited Durisol Inc., National Vinyl Products Design Concrete Systems Ltd. Atlantic Industries Limited
Coloured Concrete	Charcoal Grey Synthetic Oxide Pigment as per ASTM C979 and C494, Type A, Cement Dispersing/ Water Reducing	ColorTech
Bollard (Fixed)	High Strength Steel Tube Size: 178 mm Diameter x 2438 mm Length Install: 1219 mm buried w/ concrete footing Color: Black with White reflective tape-2 stripes @ 76 mm wide Bollard Cover: 178 mm inner diameter, 186 mm outer diameter	N/A
Precast Block Retaining Wall	Gravity Wall System designed by a Professional Engineer Colour: Natural Stone	Permacon
Cold Plastic Durable Pavement Marking Material	OPSS 1713 Thermoplastic Pavement Marking; and OPSS 1714 Field Reacted Polymeric Paevment Marking	N/A
Traffic Paint	Unleaded Waterborne Paint Only M.T.O. Approved and as per OPSS 532, OPSS 1712, OPSS 1716 and OPSS 1750	N/A

## APPROVED PRODUCTS

- END APPROVED PRODUCTS -