Grounded in Strength!

Product Catalogue

Durability is a beautiful thing.

Forterra Pipe & Precast Canada
Forterra is one of North America’s largest manufacturers of concrete products, offering strong, durable and sustainable products to designers and builders. The quality of our products and the expertise of our people are simply unparalleled. We are innovators and creators.
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Maintenance Holes
Catch Basins & Ditch Inlets
Bridges
Headwalls, Endwalls & Wingwalls
Stormwater Quality & Management
Appurtenances

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OUR VISION
To build the longest-lasting foundations for our communities' infrastructure, today and tomorrow.

OUR MISSION
Responsible delivery of industry-leading service, quality, and innovation, reinforced with passion and commitment.

OUR VALUES
Lead with Safety
Demonstrate Integrity
Invest in Talent
Exceed Expectations
Create Value
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For self-lubricating gasket
For “O” ring gasket
For single offset gasket
For elliptical pipe
For Micro-Tunneling

Forterra Pipe & Precast
Realize the power of product diversity
<table>
<thead>
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<th>Nominal Internal Diameter</th>
<th>Wall Thickness</th>
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<th>kg/pc</th>
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**NOTES:**
1. Manufactured in accordance with CSA.
2. Two lift anchors are provided in 975mm and larger diameter pipe.
3. Special design pipe is available. For more information contact our engineering department.

* - Manufactured at Ottawa Plant only.
** - Manufactured at Cambridge Plant only.
Approximate Mass & Dimensions of Elliptical Pipe

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### NOTES:

1. Manufactured in accordance with ASTM.
2. A variety of fittings can be manufactured for special applications.
   Please contact our Engineering department for detailed information about
   bends, tee and wye junctions, maintenance hole tees, reducers and increasers,
   radius pipe, plugs and caps etc.
Approximate Mass & Dimensions of Box Sections

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<th>DESIGNATED SIZE</th>
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<th>Standard Truckloads</th>
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NOTES:
1. Designed to CHBDC and manufactured in accordance to OPSS 1821.
2. Shorter lengths can be manufactured for special applications.
3. For joint details see page B-8.
### 90° BEND

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1. SPECIAL ANGLE BENDS or bends having dimensions other than those shown above can be manufactured upon request.
2. All dimensions are in millimeters, unless otherwise shown.

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</table>

\[ \text{NOTES:} \]

1. SPECIAL ANGLE BENDS or bends having dimensions other than those shown above can be manufactured upon request.
2. All dimensions are in millimeters, unless otherwise shown.
### 90° TEE

<table>
<thead>
<tr>
<th>Diameter of Branch</th>
<th>Diameter of Main</th>
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<tbody>
<tr>
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<td>B</td>
</tr>
<tr>
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<td>300 and Greater</td>
</tr>
<tr>
<td>375</td>
<td>375 and Greater</td>
</tr>
<tr>
<td>450</td>
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<tr>
<td>825</td>
<td>825 and Greater</td>
</tr>
<tr>
<td>900</td>
<td>900 and Greater</td>
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### 45° WYE

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<td>300 and Greater</td>
</tr>
<tr>
<td>375</td>
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<td>675 and Greater</td>
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<tr>
<td>750</td>
<td>750 and Greater</td>
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<tr>
<td>825</td>
<td>825 and Greater</td>
</tr>
<tr>
<td>900</td>
<td>900 and Greater</td>
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**NOTES:**

1. Special angle junctions having dimensions other than those shown above can be manufactured upon request.
2. Sizes and dimensions are based on the standard pipe lengths listed on page A-1. For Meter Tees (1m long) with 3 Stage Core Tees see page A-6, and for 3 Stage Cored Tees see page A-7 & A-8.
3. Dimensions C and D are plus or minus 50mm.
4. All dimensions are in millimeters unless otherwise shown.
**Ø300, Ø375, & 450mm METER CONCRETE PIPE**

<table>
<thead>
<tr>
<th>Diameter of Main A</th>
<th>Branch Depth B</th>
<th>Approx. Mass Kg/pc</th>
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</thead>
<tbody>
<tr>
<td>300</td>
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<td>249</td>
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<tr>
<td>375</td>
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<tr>
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<td>365</td>
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**Ø100- Ø300mm PVC BRANCH**

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<tr>
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<th>Dimension C</th>
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<tr>
<td>250</td>
<td>251.46</td>
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<tr>
<td>300</td>
<td>301.75</td>
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**NOTES:**
1. Branch opening manufactured in accordance with CSA.
2. Maximum PVC branch size with 3 stage Core is Ø300mm.
3. All dimensions are in millimeters, unless otherwise shown.
Ø300-Ø600mm
CONCRETE PIPE

<table>
<thead>
<tr>
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<th>Wall Thickness (WT)</th>
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<tr>
<td>525</td>
<td>109.54</td>
<td>27.54</td>
</tr>
<tr>
<td>600</td>
<td>109.54</td>
<td>27.54</td>
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Ø100-Ø300mm PVC BRANCH

<table>
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<th>Dimension B</th>
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<tbody>
<tr>
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<td>99.44</td>
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<tr>
<td>250</td>
<td>251.46</td>
</tr>
<tr>
<td>300</td>
<td>301.75</td>
</tr>
</tbody>
</table>

NOTES:
1. Branch opening manufactured in accordance with CSA.
2. Maximum PVC branch size with 3 stage Core is Ø300mm.
3. All dimensions are in millimeters, unless otherwise shown.
4. 100 to 150mm branch holes accept SDR35 & SDR28, and 200 to 300mm branch holes accept SDR35.
Ø675- Ø3000mm CONCRETE PIPE

<table>
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<th>Wall Thickness (WT)</th>
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<td>825</td>
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<td>70.40</td>
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<tr>
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<td>165.10</td>
<td>83.10</td>
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Ø100- Ø300mm PVC BRANCH

<table>
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<th>Dimension B</th>
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<td>251.46</td>
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<tr>
<td>300</td>
<td>301.75</td>
</tr>
</tbody>
</table>

NOTES:
1. Branch opening manufactured in accordance with CSA.
2. Maximum PVC branch size with 3 stage Core is Ø300mm.
3. All dimensions are in millimeters, unless otherwise shown.
4. 100 to 150mm branch holes accept SDR35 & SDR28, and 200 to 300mm branch holes accept SDR35.
<table>
<thead>
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<th>Approximate Mass (kg/pc)</th>
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<tr>
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**NOTES:**

1. There is one lift anchor in the plugs and caps for 300 - 1500mm pipe.
   There are two lift anchors in the plugs and caps for 1650 - 3000mm pipe.
2. Plugs and caps can be precast into the pipe. For more information contact our Engineering department.
NOTES:
1. Manufactured in all sizes of pipe.
2. Project specific detailed drawings can be obtained by contacting our Engineering Dept.
NOTES:
1. Manufactured in accordance with OPSD and CSA.
2. Maintenance hole to be completed with standard 1200mm diameter components (see page C-2).
3. Maintenance hole tees are also available for:
   - Box section applications (see page B-5).
   - Elliptical pipe applications (contact our Engineering Department).
4. For special designs contact our Engineering Department.
5. Maintenance hole tees can be built on pipe from 1200 - 3000mm diameter.
6. All dimensions are in millimeters, unless otherwise shown.
### Nominal Diameter ID Actual Diameter ID OD WT JT L A B C D E F
| 300  | 304.80 | 444.50 | 69.85 | 88.90 | 165.10 | 498.48 | 387.55 | 374.62 | 22.23 | 8.28 | 3.20 |
| 375  | 381.00 | 533.40 | 76.20 | 88.90 | 165.10 | 587.38 | 475.21 | 462.28 | 22.23 | 8.28 | 3.20 |
| 450  | 457.20 | 584.20 | 63.50 | 88.90 | 165.10 | 676.27 | 551.41 | 538.48 | 22.23 | 8.28 | 3.20 |
| 525  | 533.40 | 711.20 | 88.90 | 88.90 | 177.80 | 752.48 | 627.61 | 614.68 | 22.23 | 8.28 | 3.20 |
| 600  | 609.60 | 800.10 | 95.25 | 88.90 | 177.80 | 828.68 | 703.81 | 690.88 | 22.23 | 8.28 | 3.20 |
| 675  | 685.60 | 889.00 | 101.60 | 98.43 | 152.40 | 1006.48 | 834.34 | 821.11 | 15.88 | 8.28 | 3.20 |
| 750  | 762.00 | 977.90 | 107.95 | 98.43 | 152.40 | 1038.23 | 885.65 | 872.21 | 15.88 | 8.28 | 3.20 |
| 825  | 838.20 | 1066.80 | 114.30 | 98.43 | 152.40 | 1139.83 | 974.55 | 961.31 | 15.88 | 8.28 | 3.20 |
| 900  | 914.40 | 1155.70 | 120.65 | 98.43 | 152.40 | 1228.73 | 1050.75 | 1037.51 | 15.88 | 8.28 | 3.20 |
| 975  | 990.60 | 1244.60 | 127.00 | 98.43 | 152.40 | 1317.63 | 1126.95 | 1113.71 | 15.88 | 8.28 | 3.20 |

**NOTES:**
1. The taper on 300 - 600mm pipe is 2° and for 675 - 975mm pipe the taper is 1.83°
2. All dimensions are in millimeters, unless otherwise shown.
### Nominal Diameter ID

<table>
<thead>
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<th>Nominal Diameter ID</th>
<th>Actual Diameter ID</th>
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<th>WT</th>
<th>JT</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<td>146.05</td>
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**NOTES:**

1. All dimensions are in millimeters, unless otherwise shown.
2. Designed for Self Lubricating rubber Gasket.

* * - Manufactured at Ottawa Plant only.
** ** - Manufactured at Cambridge Plant only.
<table>
<thead>
<tr>
<th>Nominal Diameter ID</th>
<th>Actual Diameter ID</th>
<th>OD</th>
<th>WT</th>
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<th>B</th>
<th>C</th>
<th>D</th>
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NOTES:
1. All dimensions are in millimeters, unless otherwise shown.
2. Designed for Confined "O" Ring Rubber Gasket.
3. Lube must be applied to spigot, gasket, & bell before installation.
<table>
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<th>OD</th>
<th>WT</th>
<th>JT</th>
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**NOTES:**

1. All dimensions are in millimeter, unless otherwise shown
2. Designed for Single Profile Offset Rubber Gasket.
### DESIGNATED

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<th>SPAN ID B</th>
<th>RISE OD C</th>
<th>SPAN OD D</th>
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<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
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### NOTES:
1. Actual dimensions for span and rise as per ASTM.
2. All dimensions are in millimeters, unless otherwise shown.
3. Gaskets are available for 730x1150 to 1340x2110 sizes.
### Joint Design
**Microtunneling Pipes**

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**NOTES:**
1. Jacking pipe is available in sizes 1200mm and greater.
2. All dimensions are in millimeters, unless otherwise shown.
DO NOT USE LUBRICANT

Step 1
Ensure that the bell and spigot of the pipe are clean, and free of debris.

Step 2
Place self-lubricating gasket on the spigot end of the pipe, with the flap portion facing to outside. The bottom of the gasket should rest firmly against the spigot shoulder.

Step 3
When joining the pipe, align the spigot of the pipe with the bell of the pipe previously laid.

Step 4
Join the pipe. Up to 600mm Diameter, the pipe can usually be barred home. Place a block of wood across the pipe invert to protect the bell. For larger pipe use a come-along to join the pipe. The mantle section of the gasket rolls over the compression area of the gasket and comes to rest in the annular space.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
Lubrication Required

Step 1
Ensure that the bell and spigot of the pipe are clean, and free of debris.

Step 2
Use the lubricant supplied, lubricate the bell of the pipe thoroughly. Also lubricate the gasket groove in the spigot of the pipe being joined.

Step 3
Place the gasket in the spigot groove. A well lubricated groove will automatically equalize the tension in the gasket.

Step 4
When joining the pipe align the spigot of the pipe with the bell of the pipe previously placed. The gasket must contact the flared end of the bell around the complete circumference.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
Lubrication Required

Step 1
Ensure that the bell and spigot of the pipe are clean, and free of debris.

Step 2
Use the lubricant supplied, lubricate the bell of the pipe thoroughly. Also lubricate
the gasket groove in the spigot of the pipe being joined.

Step 3
Place the gasket in the spigot groove. A well lubricated groove will automatically equalize
the tension in the gasket.

Step 4
When joining the pipe align the spigot of the pipe with the bell of the pipe previously placed.
The gasket must contact the flared end of the bell around the complete circumference.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
DO NOT USE LUBRICANT

Step 1
Ensure that the bell and spigot of the pipe are clean, dry and free of debris.

Step 2
Ensure the bedding is level and at proper grade for the pipe.
Lay filter cloth on the bedding where the next joint will be placed.

Step 3
Align the spigot of the pipe with the bell of the pipe previously placed.

Step 4
Join the pipe. A come along can be used to join the pipe. Use a heavy wooden block across the bell to pull the pipes together and prevent damage to the bell of the pipe.

Step 5
1. Wrap the filter cloth over the joint and overlap.
Step 1
Ensure that the steel end ring and spigot of the pipe are clean, and free of debris.

Step 2
Using the lubricant supplied, lubricate the inside of the steel end ring.

Step 3
Place the gasket on the spigot end of the pipe with the white stripe on the outside and the tapered end of the gasket towards the leading end of the spigot.

Step 4
Lubricate the outside of the gasket.

Step 5
The pipe are now ready to be joined.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
**Index**

**Box Sections**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
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<td>Special Sections &amp; Fittings</td>
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<td>B-10</td>
</tr>
<tr>
<td>X stream Retention System Sample</td>
<td>B-11</td>
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</table>
**NOTES:**
1. Designed to CHBDC and manufactured in accordance to OPSS 1821.
2. Shorter lengths can be manufactured for special applications.
3. For joint details see page B-8.
NOTES:
1. For typical end treatments of box sections see pages B-6 and B-7.
2. For information about box sections or box section fittings, not detailed on the following pages, please contact our engineering department.
NOTES:
1. Maximum and minimum dimensions are based on manufacturing and handling constraints.
2. Please contact our Engineering Department for detailed information.
3. A + B must not exceed 2.5 meters.
NOTES:
1. Manufactured in accordance with OPSS and CHBDC.
2. For joint details see page B-8.
3. All dimensions are in millimeters, unless otherwise shown.
NOTES:

1. Transitions to other manhole diameters are also available. Please contact our engineering department.
NOTES:
1. Threaded dowels complete with inserts are also available (see B-7). Please contact our engineering department.
Threaded inserts installed into box section to accommodate threaded rebar (for header and wing wall tie-in)

Ø50mm holes through floor slab for tie-in to cut-off wall (spacing as specified)
**ACTUAL**

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**NOTES:**
1. Dimensions for span and rise as per OPSS.
2. All dimensions are in millimeters, unless otherwise shown.
DO NOT USE LUBRICANT

Step 1
Ensure that the bell and spigot of the box sections are clean, dry and free of debris.

Step 2
Ensure the bedding is level and at proper grade for the box sections.
Lay filter cloth on the bedding where the next joint will be placed.

Step 3
Align the spigot of the box section with the bell of the box section previously placed.

Step 4
Join the box sections. A come along can be used to join the box sections. Use a heavy wooden block across the bell to pull the sections together and prevent damage to the bell of the box section.

Step 5
1. Wrap the filter cloth over the joint and overlap.
Buried precast concrete stormwater detention and retention structures have become critical elements of the 21st century stormwater management that accommodates low impact development (LID) and contribute to sustainable drainage systems in a time of climate change and extreme weather conditions.

Benefits of the X-Stream

- Precast detention/retention systems mitigate the overload of downstream stormwater pipelines.
- X-stream can accommodate access opening for inspections & maintenance.
- Design and manufactured in accordance to OPSS 1821 for CHBDC truck loading.
- X-stream can be used in combination with stormwater quality products, such as Stormceptor & Jellyfish Filtration Systems.
- Boxes are joined at several locations to avoid surcharging & equalize the water level throughout the entire structure.
- An X-stream estimator program for optimizing price with volume is available.
- Standard sizes of dry cast concrete boxes for high quality & short delivery lead-time.
- Multiple box units can be delivered to site for assembly in a single day meeting the accelerated precast construction method.
- Combinations of vertical and/or horizontal assembly determined by space & storage volume.
- Multiple uses of space above the buried structure for ICI development or additional residential lots.

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Visit our website for further information on the Xstream at:
www.forterrab.com
NOTES
- DESIGNED TO CHBDC CSA-S6-14 AND MANUFACTURED IN ACCORDANCE TO OPSS 1821
- EARTH COVER ABOVE: 0.6 TO 3.6m
- DIMENSIONAL TOLERANCE = ±8mm
- TO BE INSTALLED AS PER OPSS 422 AND OPSD 803.010
- RESPONSIBILITY FOR CONSTRUCTION REVIEW, ADEQUACY, AND SUITABILITY OF EXCAVATION, DEWATERING, SHORING, HANDLING EQUIPMENT, AND SOIL STABILITY BY OTHERS
- KENT SEAL SUPPLIED FOR JOINTS

PRECAST CONCRETE
- DRYCAST - fc = 40 MPa
- MIN. STRIPPING STRENGTH = 24 MPa

WWF FOR PRECAST
- ASTM A1064 fy = 500MPa
- INSIDE DIAMETER OF BENDS = 4 WIRE DIAMETERS
- CLEAR COVER TO WWF = 40 ± 5mm

REBAR FOR PRECAST
- CSA G30.18-M92 GRADE 400W
- INSIDE DIAMETER OF BENDS = 6 BAR DIAMETERS
- CLEAR COVER TO REBAR = 50 ± 10mm

LIFTING
- 4pcs - 4T SWIFT LIFT ANCHORS
- SWIFT LIFT DIMENSIONAL TOLERANCE = ±10mm
- DISTRIBUTE LIFTING LOADS EVENLY ON ALL 4 LIFTING POINTS

APPROXIMATE MASSES:
- 2438x1829mm X 2.5m BOX CULVERT = 12,310 kg/pc
- 2438x1829mm X 2.5m BOX CULVERT w/ BULKHEAD = 15,529 kg/pc
- 18 PIECES OF 2.4x1.8 x 2.5m BOX CULVERTS
- TOTAL FOOTPRINT = 129.79 m²
- TOTAL VOLUME CAPACITY = 191.8 m³

{ (2.4x1.8 Box C: waterway cm² x 2.5m x 18) - (6 x bulkhead volume) } =
{ (0.36cm² x 2.5m x 18) - (6 x 0.25m³ x 0.3m) } =
{ (10.35m³ x 18) - (6 x 0.314m³) } = |0.871m³|, |5.256m³| =
191.844m³
Index

Maintenance Holes

Maximum Pipe Sizes for Maintenance Holes
1200mm Ø Maintenance Hole components
1200mm Ø Maintenance Hole flat cap with 600x600mm Ditch Inlet Top
1500mm Ø Maintenance Hole components
1500mm Ø Single & twin inlet cap
1500mm Ø Flat cap with 600x1200mm Ditch Inlet Top
1800mm Ø Maintenance Hole components
1800mm Ø Single & twin inlet cap
1800mm Ø Flat cap with 600x1200 Ditch Inlet top
2400mm Ø Maintenance Hole components
2400mm Ø Single & twin inlet cap
2400mm Ø Flat cap with 600x1200mm Ditch Inlet
3000mm Ø Maintenance Hole components
3000mm Ø Single & Twin inlet cap
3000mm Ø Flat cap with 600x1200mm Ditch Inlet
3600mm Ø Maintenance Hole components
3600mm Ø Single inlet flat cap
2400 x 1800mm
3000 x 2400mm
1200 x 1200mm
1800 x 1500mm
2400 x 1800mm
2400 x 2400mm
3000 x 2400mm
3000 x 3000mm
3800 x 2400mm
3800 x 3000mm
3800 x 3800mm

Forterra Pipe & Precast
Realize the power of product diversity
Index

Maintenance Holes

1500mm Ø Monotop C-29
1500mm Ø Extended Monobase C-30
1500mm Ø Extended Monobase with sump C-31
1800mm Ø Monotop C-32
1800mm Ø Monobase-Chimney opening C-33
1800mm Ø Monobase C-34
1800mm Ø Extended Monobase C-35
1800mm Ø Extended Monobase with Sump C-36
Pipe Maintenance Hole tee C-37
External precast drop structures C-38

Joint Design

Self-Lubricating for 1200-3000mm Ø C-39
Single Offset Gasket for 3600mm Ø C-40
2400x1800mm & 3000 x 2400mm Ø Maintenance Hole joint design C-41

1200 x 1200, 1800 x 1500, 2400 x 2400, 3000 x 3000, 3800 x 2400, 3800 x 3000, 3800 x 3000 & 3800 x 3800 Maintenance Holes C-42

Installation Procedure

Self-Lubricating Gaskets for 1200 to 3000mm Ø Maintenance Hole C-43
Single offset gasket for 3600mm Ø Maintenance Hole C-44
2400mm & Larger Ø Maintenance Holes C-45
<table>
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<th>Max. Pipe Size for Straight Through and Right Angles</th>
<th>MH SIZE (mm)</th>
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**General notes:**
1. All dimensions are for concrete pipe.
2. Knockouts of small diameter catch basin leads 300mm and smaller could be provided in addition to what is shown.
NOTES:

1. Manufactured in accordance with OPSD.
2. Maximum hole sizes: Straight through - 860mm diameter (600mm Concrete).
   Right angle - 700mm diameter (450mm Concrete).
3. Available riser heights are: 0.305, 0.610, 0.762, 0.914, 1.219, 1.524, and 1.829m.
4. Available monobase heights (H) are: 0.457, 0.610, 0.762, 0.914, 1.219, and 1.372m.
5. All dimensions are in millimeters, unless otherwise shown.
Monolithic Base or Base Slab and Riser Section

(Mass: Flat cap - 720 kg/pc)
(Ditch inlet - 1220 kg/m)

NOTES:
1. Manufactured in accordance with CSA.
2. To be used in conjunction with components detailed on page C-2.
3. All dimensions are in millimeters, unless otherwise shown.

Ø1200mm MH Flat Cap with 600 x 600mm Ditch Inlet Top
NOTES:
1. Manufactured in accordance with OPSD.
2. Maximum hole sizes: Straight through - 1170mm diameter (825mm Concrete pipe).
   Right angle - 860mm diameter (600mm Concrete pipe).
3. Available riser heights are: 0.305, 0.610, 0.914, 1.219, 1.524, 1.829m, and 2.438m.
4. Available monobase heights (H) are: 1.219, 1.372, 1.524, and 1.676m.
5. See page C-5 and C-6 for Flat Cap details.
6. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-4.
3. See page C-6 for Flat Cap with 600 x 1200mm opening.
4. For special design flat caps contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.

Ø1500mm MH
Single & Twin Inlet Flat Caps
**TYPE B**

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<tr>
<td>Horizontal</td>
<td>1200 73</td>
</tr>
</tbody>
</table>

(Mass: Flat Cap - 1590 kg/pc  Mass: Ditch Inlet - 1785 kg/m)

**TYPE A**

<table>
<thead>
<tr>
<th>Slope of Grate</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:1</td>
<td>670 52</td>
</tr>
<tr>
<td>3:1</td>
<td>632 71</td>
</tr>
<tr>
<td>4:1</td>
<td>618 78</td>
</tr>
<tr>
<td>Horizontal</td>
<td>600 87</td>
</tr>
</tbody>
</table>

(Mass: Flat Cap - 1590 kg/pc  Mass: Ditch Inlet - 1785 kg/m)

**NOTES:**

1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-4.
3. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. Maximum hole sizes: Straight through - 1420mm diameter (1050mm Concrete pipe). Right angle - 1170mm diameter (825mm Concrete pipe).
3. Available riser heights are: 0.610, 0.914, 1.067, 1.219, 1.372, 1.524, 1.676, 1.829, 1.981, 2.134, and 2.438m.
4. See page C-8 and C-9 for Flat Cap details.
5. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-7.
3. See page C-9 for Flat Cap with 600 x 1200mm opening.
4. For special design flat caps contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-7.
3. All dimensions are in millimeters, unless otherwise shown.

Ø1800mm MH Flat Cap with
600 x 1200mm Ditch Inlet Top
NOTES:
1. Manufactured in accordance with OPSD.
2. Maximum hole sizes:
   - Straight through - 2020mm diameter (1500mm Concrete pipe).
   - Right angle - 1485mm diameter (1050mm Concrete pipe).
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, 2.134, and 2.438m.
4. See page C-11 and C-12 for Flat Cap details.
5. See page C-45 for recommended installation procedure.
6. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-10.
3. See page C-12 for Flat Cap with 600 x 1200mm opening.
4. For special design flat caps contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-10.
3. All dimensions are in millimeters, unless otherwise shown.
NOTES:

1. Manufactured in accordance with OPSD.
2. Maximum hole sizes:
   - Straight through - 2450mm diameter (1950mm Concrete pipe).
   - Right angle - 2020mm diameter (1500mm Concrete pipe).
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, 2.134, and 2.438m.
4. See page C-14 and C-15 for Flat Cap details.
5. See page C-45 for recommended installation procedure.
6. All dimensions are in millimeters, unless otherwise shown.
TWIN INLET FLAT CAP
(MASS 7860 Kg/pc)

PLAN

SECTION A - A

FLAT CAP
(MASS 8142 Kg/pc)

PLAN

SECTION B - B

NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-13.
3. See page C-15 for flat cap with 600 x 1200mm opening.
4. For special design flat caps contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.

Ø3000mm MH
Single & Twin Inlet Flat Caps
**NOTES:**

1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-13.
3. All dimensions are in millimeters, unless otherwise shown.
TRANSITION SLAB
(Mass - 10,500 kg/pc)

BASE SLAB
(Mass - 10,500 kg/pc)

SECTION B-B

RISER SECTION
(Mass - 11,042 kg/m)

SECTION D-D

SECTION C-C

NOTES:
1. Manufactured in accordance with OPSD.
2. Maximum hole sizes:
   Straight through - 3050mm diameter (2400mm Concrete pipe)
   Right angle - 2450mm diameter (1950mm Concrete pipe)
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, and 1.829m.
4. See page C-17 for flat cap details.
5. See page C-45 for recommended installation procedure.
6. All dimensions are in millimeters, unless otherwise shown.

Ø3600mm Maintenance Hole Components
NOTES:
1. Manufactured in accordance with OPSD.
2. To be used in conjunction with components detailed on page C-16.
3. Twin inlet and ditch inlet flat caps are available upon request.
4. For special design flat caps contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Designed to CHBDC and CSA Specifications.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.676, 1.829, 2.134, and 2.5 m.
4. Flat caps designed for special applications are available. Please contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, 2.134 and 2.5 m.
4. Flat caps designed for special applications are available. Please contact our Engineering Department.
5. All dimensions are in millimeters, unless otherwise shown.
TOP VIEW

SECTION A-A
FLAT CAP
(Mass - 1800 kg/pc)

SECTION A-A
MONOTOP
(Mass - see below table)

SECTION C-C
BASE SLAB
(Mass - 1800 kg/pc)

SECTION C-C
RISER SECTION
(Mass - 3277 kg/m)

SECTION C-C
MONOBASE
(Mass - see below table)

NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE/MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200x1200 X 610</td>
<td>3800 kg/pc</td>
</tr>
<tr>
<td>1200x1200 X 914</td>
<td>4800 kg/pc</td>
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<tr>
<td>1200x1200 X 1219</td>
<td>5800 kg/pc</td>
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<tr>
<td>1200x1200 X 1524</td>
<td>6800 kg/pc</td>
</tr>
<tr>
<td>1200x1200 X 1829</td>
<td>7800 kg/pc</td>
</tr>
</tbody>
</table>
1800 x 1500mm
Maintenance Hole

Notes:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available, please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE /MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800x1500 X 610</td>
<td>5500 kg/pc</td>
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<tr>
<td>1800x1500 X 914</td>
<td>6800 kg/pc</td>
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<tr>
<td>1800x1500 X 1219</td>
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<tr>
<td>1800x1500 X 1524</td>
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<tr>
<td>1800x1500 X 1829</td>
<td>10700 kg/pc</td>
</tr>
</tbody>
</table>
NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monobase/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE/MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400x1800 X 610</td>
<td>7500 kg/pc</td>
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<tr>
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<td>9100 kg/pc</td>
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<tr>
<td>2400x1800 X 1219</td>
<td>10700 kg/pc</td>
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<td>12300 kg/pc</td>
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<tr>
<td>2400x1800 X 1829</td>
<td>13900 kg/pc</td>
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</tbody>
</table>

2400 x 1800mm Maintenance Hole
NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monopod/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE /MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400x2400 X 610</td>
<td>8870 kg/pc</td>
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<tr>
<td>2400x2400 X 914</td>
<td>10690 kg/pc</td>
</tr>
<tr>
<td>2400x2400 X 1219</td>
<td>12515 kg/pc</td>
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<tr>
<td>2400x2400 X 1524</td>
<td>14341 kg/pc</td>
</tr>
<tr>
<td>2400x2400 X 1829</td>
<td>16166 kg/pc</td>
</tr>
</tbody>
</table>
NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

### MONOBASE SIZE | MONOBASE /MONOTOP MASS
---|---
3000x2400 X 610 | 10400 kg/pc
3000x2400 X 914 | 12400 kg/pc
3000x2400 X 1219 | 14400 kg/pc
3000x2400 X 1524 | 16500 kg/pc
3000x2400 X 1829 | 18500 kg/pc
3000 x 3000mm
Maintenance Hole

SECTION A-A
FLAT CAP
(Mass - 9200 kg/m)

SECTION A-A
MONOTOP
(Mass - see below table)

SECTION B-B
TRANSITION SLAB
(Mass - 9200 kg/m)

SECTION C-C
RISER SECTION
(Mass - 7323 kg/m)

SECTION C-C
MONOBASE
(Mass - see below table)

SECTION C-C
BASE SLAB
(Mass - 9200 kg/m)

NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, and 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE /MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13700 kg/m</td>
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<td>3000x3000 X 914</td>
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<td>3000x3000 X 1219</td>
<td>18200 kg/m</td>
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<tr>
<td>3000x3000 X 1524</td>
<td>20400 kg/m</td>
</tr>
<tr>
<td>3000x3000 X 1829</td>
<td>22600 kg/m</td>
</tr>
</tbody>
</table>
3800 x 2400mm
Maintenance Hole

NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, & 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE /MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3800x2400 X 610</td>
<td>13800 kg/pc</td>
</tr>
<tr>
<td>3800x2400 X 914</td>
<td>16100 kg/pc</td>
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<tr>
<td>3800x2400 X 1219</td>
<td>18400 kg/pc</td>
</tr>
<tr>
<td>3800x2400 X 1524</td>
<td>20700 kg/pc</td>
</tr>
<tr>
<td>3800x2400 X 1829</td>
<td>22900 kg/pc</td>
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</tbody>
</table>
**NOTES:**

1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, & 2.134 m.
4. Available monotop/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available. Please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE/MONOTOP MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3800x3000 X 610</td>
<td>16200 kg/pc</td>
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<tr>
<td>3800x3000 X 914</td>
<td>18700 kg/pc</td>
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<tr>
<td>3800x3000 X 1219</td>
<td>21200 kg/pc</td>
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<tr>
<td>3800x3000 X 1524</td>
<td>23700 kg/pc</td>
</tr>
<tr>
<td>3800x3000 X 1829</td>
<td>26200 kg/pc</td>
</tr>
</tbody>
</table>
NOTES:
1. Designed to CHBDC.
2. Concrete strength - 40 MPa.
3. Available riser heights are: 0.610, 0.914, 1.219, 1.524, 1.829, & 2.134 m.
4. Available monobase/monobase heights are: 0.610, 0.914, 1.219, 1.524, and 1.829.
5. Flat Caps designed for special applications are available, please contact our Engineering Department.
6. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>MONOBASE SIZE</th>
<th>MONOBASE / MONOTOP MASS</th>
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</thead>
<tbody>
<tr>
<td>3800x3800 X 610</td>
<td>19200 kg/pc</td>
</tr>
<tr>
<td>3800x3800 X 914</td>
<td>21900 kg/pc</td>
</tr>
<tr>
<td>3800x3800 X 1219</td>
<td>24600 kg/pc</td>
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<tr>
<td>3800x3800 X 1524</td>
<td>27400 kg/pc</td>
</tr>
<tr>
<td>3800x3800 X 1829</td>
<td>30100 kg/pc</td>
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</table>
Ø1500mm Monotop Maintenance Hole

### Table: Monotop Approximate Mass

<table>
<thead>
<tr>
<th>Monotop Size</th>
<th>Approximate Mass</th>
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</thead>
<tbody>
<tr>
<td>Ø1500 X 305</td>
<td>2,308 kg/pc</td>
</tr>
<tr>
<td>Ø1500 X 610</td>
<td>2,896 kg/pc</td>
</tr>
<tr>
<td>Ø1500 X 914</td>
<td>3,481 kg/pc</td>
</tr>
<tr>
<td>Ø1500 X 1219</td>
<td>4,069 kg/pc</td>
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</tbody>
</table>
Ø1500mm Extended Monobase
Maintenance Hole

<table>
<thead>
<tr>
<th>EXTENDED MONOBASE SIZE</th>
<th>EXT. MB APPROXIMATE MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø1500 X 914</td>
<td>4,113 kg/pc</td>
</tr>
<tr>
<td>Ø1500 X 1066</td>
<td>4,406 kg/pc</td>
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<tr>
<td>Ø1500 X 1219</td>
<td>4,701 kg/pc</td>
</tr>
<tr>
<td>Ø1500 X 1372</td>
<td>4,996 kg/pc</td>
</tr>
</tbody>
</table>
TOP VIEW

SECTION A-A

EXTENDED MONOBASE SIZE | EXT. MB APPROXIMATE MASS
------------------------|---------------------------
Ø1500 X 914             | 5,385 kg/pc
Ø1500 X 1066            | 5,678 kg/pc
Ø1500 X 1219            | 5,973 kg/pc
Ø1500 X 1372            | 6,268 kg/pc

Ø1500mm Extended Monobase with Sump Maintenance Hole
TOP VIEW

SECTION A-A

MONOBASE SIZE | APPROXIMATE MASS
---|---
Ø1800 X 914 | 5,322 kg/pc
Ø1800 X 1066 | 5,732 kg/pc
Ø1800 X 1219 | 6,144 kg/pc

Ø1800mm Monobase Maintenance Hole
EXTENDED MONOBASE SIZE | EXT. MB APPROXIMATE MASS
---|---
Ø1800 X 914 | 7,108 kg/pc
Ø1800 X 1066 | 7,518 kg/pc
Ø1800 X 1219 | 7,930 kg/pc
Ø1800 X 1372 | 8,343 kg/pc

SECTION A-A
Ø1800mm Extended Monobase with Sump Maintenance Hole
NOTES:
1. Manufactured in accordance with OPSD and CSA.
2. Maintenance hole to be completed with standard 1200mm diameter components (see page C-2).
3. Maintenance hole tees are also available for:
   Box section applications (see page B-5).
   Elliptical pipe applications (contact our Engineering Department).
4. For special designs contact our Engineering Department.
5. Maintenance hole tees can be built on pipe from 1200 - 3000mm diameter.
6. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. Pipe Tee / Wye
2. Repair Coupler
3. Straight Pipe
4. 90° Bend
5. 45° Bend
6. PRECAST DROPS AVAILABLE FOR Ø1200mm & Ø1500mm MANHOLES.
### Nominal Diameter vs. Actual Diameter

<table>
<thead>
<tr>
<th>Nominal Diameter ID</th>
<th>Actual Diameter ID</th>
<th>OD</th>
<th>WT</th>
<th>JT</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>1219.20</td>
<td>1473.20</td>
<td>127.00</td>
<td>107.95</td>
<td>1343.33</td>
<td>1325.07</td>
<td>64.135</td>
<td>11.48</td>
<td>3.71</td>
<td>19.05</td>
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<tr>
<td>1500</td>
<td>1524.00</td>
<td>1828.80</td>
<td>152.40</td>
<td>120.65</td>
<td>1653.44</td>
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<td>76.835</td>
<td>11.48</td>
<td>3.71</td>
<td>22.23</td>
</tr>
<tr>
<td>1800</td>
<td>1828.80</td>
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<td>177.80</td>
<td>127.00</td>
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<td>66.802</td>
<td>11.33</td>
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<tr>
<td>2400</td>
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<td>228.60</td>
<td>127.00</td>
<td>2638.42</td>
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<td>13.34</td>
<td>4.44</td>
<td>31.75</td>
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<tr>
<td>3000</td>
<td>3048.00</td>
<td>3606.80</td>
<td>279.40</td>
<td>152.40</td>
<td>3269.51</td>
<td>3247.72</td>
<td>69.850</td>
<td>13.34</td>
<td>4.44</td>
<td>31.75</td>
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</tbody>
</table>

### Notes:

1. All dimensions are in millimeters, unless otherwise shown.
2. For jointing procedure, see page C-43.
3. Designed for self-lubricating rubber gasket.
NOTES:
1. All dimensions are in millimeters, unless otherwise shown.
2. For jointing procedure, see page C-44.
### ACTUAL

<table>
<thead>
<tr>
<th>LENGTH A</th>
<th>WIDTH B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
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</thead>
<tbody>
<tr>
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<td>1829</td>
<td>2635</td>
<td>2026</td>
<td>2648</td>
<td>2038</td>
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<td>108</td>
<td>54</td>
<td>6.4</td>
<td>101.6</td>
<td>95.3</td>
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<tr>
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<td>2699</td>
<td>254.0</td>
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<td>108</td>
<td>54</td>
<td>6.4</td>
<td>127.0</td>
<td>120.6</td>
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</tbody>
</table>

### NOTES:

1. All dimensions are in millimeters, unless otherwise shown.
NOTES:
1. All dimensions are in millimeters, unless otherwise shown.
Step 1
Ensure that the bell and spigot of the pipe are clean, and free of debris.

Step 2
Place self-lubricating gasket on the spigot end of the pipe, with the flap portion facing up. The bottom of the gasket should rest firmly against the spigot shoulder.

Step 3
Center the bell over the spigot and lower the maintenance hole component into place. The mantle section of the gasket rolls over the compression area of the gasket and comes to rest in the annular space.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
2. Used for 1200, 1500, 1800, 2400, and 3000mm Ø Maintenance Holes.
Step 1
Ensure that the bell and spigot are clean, and free of debris.

Step 2
Using the lubricant supplied, thoroughly lubricate the bell end of the maintenance hole component being joined and the gasket groove in the spigot of the component previously installed.

Step 3
Place the gasket in the gasket groove. A well lubricated groove will ensure that the gasket rolls properly and equalizes the tension in the gasket.

Step 4
Center the bell around the spigot, ensuring that the gasket contacts the flared end of the bell around complete circumference, and lower the maintenance hole component into place.

NOTES:
1. Compliance with the above procedures helps ensure good joints.
2. Used for 3600mm Ø Maintenance Hole.
Step 1
Lay pipe in usual manner to within 2 pipe lengths of the structure location.

Step 2
Measure the required distance "A" and place the base slab and riser section at the proper grade and location.

**Warning:** The riser section must be placed with the cut-outs in place using properly designed equipment. If the installation is not performed in this manner, there is a danger of structural failure during handling.

Step 3
Remove their cut-outs.

Step 4
Proceed with the pipe bedding from pipe #1 to the structure.

Step 5
Place pipe #3 into the riser a sufficient distance such that pipe #2 may be placed.

Step 6
Place pipe #2. Slide pipe #3 out and join to pipe #2.

Step 7
Proceed with upstream side of sewer pipe in usual manner.
Index

**Catch Basins & Ditch Inlets**

**Catch Basins**

600 x 600mm Single Catch Basin-OPSD 705.010  
600 x 1450mm Twin Inlet Catch Basin-OPSD 057.020  
600 x 840mm Curb Inlet Catch Basin-ASTM C478  
Goss Trap Detail

**Ditch Inlet**

600 x 600mm Ditch Inlet-OPSD 705.030  
600 x 1200mm Ditch Inlet-OPDS 705.040

Forterra Pipe & Precast

Realize the power of product diversity
NOTES:
1. Manufactured in accordance with OPSD 705.010.
2. Available with 150mm wall thickness. (Mass - 1220 kg/m)
4. Riser sections are available with 0.305, 0.457, 0.610, 0.914 and 1.219m heights.
5. Standard outlet opening is 350mm diameter.
6. "Quick-Drain Connect" insert to accommodate subdrain connection. Location can vary if required.
7. 25mm weepholes can be added if required.
8. All dimensions in millimeters, unless otherwise shown.

600 x 600mm
Single Catch Basin
NOTES:
1. Manufactured in accordance with OPSD 705.020.
3. Overall height can be increased using two single catch basin risers placed side by side. See page E-1 for available riser heights.
4. Standard outlet opening is 400mm diameter.
5. “Quick-Drain Connect” insert to accommodate subdrain connection. Location can vary if required.
6. 25mm weepholes can be added if required.
7. All dimensions in millimeters, unless otherwise shown.

600 x 1450mm
Twin Inlet Catch Basin
NOTES:
1. Manufactured to OPSS specification.
2. Concrete strength - 30 MPa
4. Riser sections are available with 0.305, 0.457, 0.610, 0.914 and 1.219m heights
5. Standard outlet opening is 400mm diameter.
6. "Quick-Drain Connect" insert to accommodate subdrain connection.
   Location can vary if required.
7. All dimensions in millimeters, unless otherwise shown.
NOTES:
1. As illustrated in the diagram above, the goss trap helps prevent substances floating on the surface (i.e. gas, oil, leaves, branches, etc.) from entering the pipe.
2. For other applications contact our Engineering Department.
3. All Dimensions in millimeters, unless otherwise shown.
600 x 600mm
Ditch Inlet

NOTES:
1. Manufactured in accordance with OPSD 705.030. Depth - 4.0 m maximum.
2. Riser sections are available in heights of 0.305, 0.610, 0.914 and 1.219 m.
3. Standard outlet opening is 400 mm diameter.
4. All dimensions are in millimeters, unless otherwise shown.

<table>
<thead>
<tr>
<th>Slope of Grate</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>2:1</td>
<td>670</td>
</tr>
<tr>
<td>3:1</td>
<td>632</td>
</tr>
<tr>
<td>4:1</td>
<td>618</td>
</tr>
<tr>
<td>6:1</td>
<td>608</td>
</tr>
<tr>
<td>8:1</td>
<td>605</td>
</tr>
<tr>
<td>10:1</td>
<td>603</td>
</tr>
<tr>
<td>Horizontal</td>
<td>600</td>
</tr>
</tbody>
</table>
NOTES:
1. Manufactured in accordance with OPSD 705.040.
2. Riser sections are available in heights of 0.305, 0.457, 0.610, 0.762, 0.914, 1.067 and 1.219m.
3. Standard outlet opening is 500mm diameter.
4. All dimensions are in millimeters, unless otherwise shown.
Index

Bridges

Quickspan Bridge-CHBDC & CSA S6-14  F-1
Forterra Arch-CHBDC & CSA S6-14  F-2
TYPICAL BRIDGE SECTION
FRONT VIEW

TYPICAL BRIDGE SECTION
PLAN VIEW

SKEWED BRIDGE SECTION
PLAN VIEW

NOTES:
1. Designed to CHBDC CSA S6.
2. Footings can be precast with the engineer’s approval.
3. Wingwalls are available with variable slopes.
4. Maximum weight per piece is 22 tonnes.
5. Dimensions will vary with soil conditions.
6. For special designs please contact our Engineering Department.
7. All dimensions are in millimeters, unless otherwise shown.
TYPICAL BRIDGE SECTION
FRONT VIEW

TYPICAL BRIDGE SECTION
PLAN VIEW

NOTES:
1. Designed to CHBDC CSA S6.
2. Footings can be precast with the engineer's approval.
3. Wingwalls are available with variable slopes.
4. Maximum weight per piece is 27 tonnes.
5. Dimensions will vary with soil conditions.
6. For special designs please contact our Engineering Department.
7. All dimensions are in millimeters, unless otherwise shown.
Index

Headwalls, Endwalls & Wingwalls

Small Quick Wall for 600-825mm Ø pipe-OPSD 804.040 G-1
Medium Quick Wall for 900-1200mm Ø pipe-OPSD 804.040 G-2
Large Quick Wall for 900-1200mm Ø pipe-OPSD 804.040 G-3
OPSD 804.040 Alternative Head wall for 300-900mm Ø pipe G-4
Wingwalls G-5
Small Quick Headwall
for Ø600 - Ø825mm Pipes

NOTES:
1. Headwall grates and handrails are available upon request.
2. Bolt on plate and sockets are available for fence installation.
3. All dimensions are in millimeters unless otherwise shown.
4. Top piece approximate mass = 8296 Kg/pc.
5. Bottom piece approximate mass = 9414 Kg/pc

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>600</td>
<td>610</td>
</tr>
<tr>
<td>675</td>
<td>686</td>
</tr>
<tr>
<td>750</td>
<td>762</td>
</tr>
<tr>
<td>825</td>
<td>836</td>
</tr>
</tbody>
</table>
NOTES:
1. Headwall grates and handrails are available upon request.
2. Bolt on plate and sockets are available for fence installation.
3. All dimensions are in millimeters unless otherwise shown.
4. Top piece approximate mass = 10163 Kg/pc.
5. Bottom piece approximate mass = 9914 Kg/pc

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE</th>
<th>NOMINAL PIPE SIZE</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>730x150</td>
<td>900</td>
<td>A: 914</td>
</tr>
<tr>
<td></td>
<td>975</td>
<td>A: 891</td>
</tr>
<tr>
<td></td>
<td>1050</td>
<td>A: 1067</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>A: 1219</td>
</tr>
</tbody>
</table>

Medium Quick Headwall for Ø900 - Ø1200mm Pipes
NOTES:
1. Headwall grates and handrails are available upon request.
2. Bolt on plate and sockets are available for fence installation.
3. All dimensions are in millimeters unless otherwise shown.
4. Top piece approximate mass = 13860 Kg/pc.
5. Bottom piece approximate mass = 11077 Kg/pc
SECTION A-A

FRONT VIEW

DANGER KEEP OUT

| PIPE NOMINAL ID | PIPE OD | A (BACK HOLE) | AA (PIPE ACTUAL ID) (FRONT HOLE) | CC | DD | EE | B | F | G | H | L | Kg |
|----------------|---------|---------------|----------------------------------|----|----|----|---|---|---|---|---|----|----|
| 300            | 445     | 508           | 305                              | 1531| 520| 847| 3366| 1672| 440| 800| 1000| 5090|
| 375            | 533     | 610           | 381                              | 1492| 526| 765| 3366| 1672| 440| 800| 956 | 5043|
| 450            | 585     | 660           | 457                              | 1455| 514| 701| 3366| 1672| 440| 800| 930 | 4964|
| 525            | 711     | 760           | 533                              | 1818| 539| 867| 4168| 1939| 462| 1000| 1134| 7342|
| 600            | 800     | 864           | 610                              | 1779| 545| 784| 4168| 1939| 462| 1000| 1089| 7277|
| 675            | 890     | 940           | 686                              | 1741| 552| 701| 4168| 1939| 462| 1000| 1044| 7174|
| 750            | 978     | 1050          | 762                              | 2103| 558| 866| 4968| 2206| 484| 1000| 1267| 10124|
| 825            | 1066    | 1170          | 836                              | 2065| 564| 804| 4968| 2206| 484| 1000| 1223| 9985|
| 900            | 1156    | 1270          | 914                              | 2027| 571| 721| 4968| 2206| 484| 1000| 1178| 9834|

NOTES:
1. Each headwall to have 2-8T swift lift anchors.
2. Precast Alternative to OPSD 804.030.
3. Headwall grates available upon request.
4. All dimensions are in millimeter.
NOTES:
1. Designed to CHBDC.
2. All dimensions are in millimeters.
3. For special design requests please contact our engineering department.

Wingwalls
Index

Storm water Quality & Management

Inlet Stormceptor
Model STC 300i H-1

In-Line Stormceptor
Model STC 750 H-2
Model STC 1000 H-3
Model STC 1500 H-4
Model STC 2000 H-5
Model STC 3000 H-6
Model STC 4000 H-7
Model STC 5000 H-8
Model STC 6000 H-9

Series Stormceptor
Model STC 9000 H-10
Model STC 10000 H-11
Model STC 14000 H-12

Stormceptor EF
Model EF 4 H-13
Model EF 6 H-14
Model EF 8 H-15
Model EF 10 H-16
Model EF 12 H-17

Stormceptor EF
Model EFO4 H-18
Model EFO6 H-19
Model EFO8 H-20
Model EFO10 H-21
Model EFO12 H-22
Index

Storm water Quality & Management

Jellyfish offline
Offline configuration H-23
JF4 General drawing H-24
JF6 General drawing H-25
JF8 General drawing H-26
JF10 General drawing H-27
JF12 General drawing H-28

Filterra
Filterra general assembly H-29
Model FT0404 H-30
Model FT0506 H-31
Model FT0605 H-32
Model FT0808 H-33
Model FT1010 H-34
**Inlet Stormceptor Model STC300i Capacities**

<table>
<thead>
<tr>
<th>DOWN PIPE DIAMETER/ ORIFICE (mm)</th>
<th>SEDIMENT CAPACITY (L)</th>
<th>OIL CAPACITY (L)</th>
<th>TOTAL HOLDING CAPACITY (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>1,453</td>
<td>420</td>
<td>1,756</td>
</tr>
</tbody>
</table>

OUTLET PIPE, SIZE BASED ON SEWER DESIGN, FLEXIBLE BOOT OR GROUTED TO CONCRETE RISER SECTION.

CONCRETE RISER AND BASE COMPONENTS GOW NITRILE GASKETS FOR JOINTS, MANUFACTURED TO CSA AND OPS STANDARDS.
THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:

CANADIAN PATENT NO. 2,009,208
CANADIAN PATENT NO. 2,137,942
CANADIAN PATENT NO. 2,175,277
CANADIAN PATENT NO. 2,180,305
CANADIAN PATENT NO. 2,180,383
CANADIAN PATENT NO. 2,206,338

SECTION VIEW

<table>
<thead>
<tr>
<th>STC 750 CAPACITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEDIMENT CAPACITY (L)</td>
</tr>
<tr>
<td>3000</td>
</tr>
</tbody>
</table>

In-Line Stormceptor Model STC750
The Stormceptor System is protected by one or more of the following patents:

Canadian Patent No. 2,009,208
Canadian Patent No. 2,137,942
Canadian Patent No. 2,175,277
Canadian Patent No. 2,180,305
Canadian Patent No. 2,180,383
Canadian Patent No. 2,206,338

In-Line Stormceptor
Model STC3000

STC 3000 Capacities

<table>
<thead>
<tr>
<th>Sediment Capacity (L)</th>
<th>Oil Capacity (L)</th>
<th>Total Capacity (Imp Gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11963</td>
<td>2890</td>
<td>15270 (3355)</td>
</tr>
</tbody>
</table>

Legend:
- 203° Orifice Plate
- Safety crate to be installed over riser pipe
- Access opening to be oriented over oil cleanout port and riser pipe
- Recessed trough collects standing water on top of insert
- Plan View
- Frame and cover embossed "Stormceptor"
- Grade adjusters to suit finished grade
- 152° Oil cleanout port to be raised to elevation as close to the underside of the flat cap
- Outlet pipe, size based on sewer design, flexible boot or crouched to concrete riser section
- Transition slab Ø2400mm to Ø1800mm
- 600° riser pipe, notched and tapered for installation
- Concrete riser and slab components c/w nitrile gaskets for joints, manufactured to CSA and OPS standards
- 300° drop tee, notched and tapered for installation

Cambridge Ottawa ON JAN 2021 H-6
THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:

CANADIAN PATENT NO. 2,009,208
CANADIAN PATENT NO. 2,137,942
CANADIAN PATENT NO. 2,175,277
CANADIAN PATENT NO. 2,180,305
CANADIAN PATENT NO. 2,180,383
CANADIAN PATENT NO. 2,206,338

<table>
<thead>
<tr>
<th>STC 4000 CAPACITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment Capacity</td>
</tr>
<tr>
<td>(L)</td>
</tr>
<tr>
<td>Oil Capacity</td>
</tr>
<tr>
<td>(L)</td>
</tr>
<tr>
<td>Total Capacity</td>
</tr>
<tr>
<td>(L (MP GAL))</td>
</tr>
<tr>
<td>16490</td>
</tr>
<tr>
<td>3380</td>
</tr>
<tr>
<td>24710 (54.35)</td>
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</tbody>
</table>

In-Line Stormceptor
Model STC4000
THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:

CANADIAN PATENT NO. 2,009,208
CANADIAN PATENT NO. 2,137,942
CANADIAN PATENT NO. 2,175,277
CANADIAN PATENT NO. 2,180,305
CANADIAN PATENT NO. 2,180,383
CANADIAN PATENT NO. 2,206,338

In-Line Stormceptor
Model STC5000

<table>
<thead>
<tr>
<th>Sediment Capacity (L)</th>
<th>Oil Capacity (L)</th>
<th>Total Capacity (IMP GAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20940</td>
<td>3360</td>
<td>24710 (5430)</td>
</tr>
</tbody>
</table>
RECESSSED TROUGH COLLECTS STANDING WATER ON TOP OF INSERT

SAFETY GRATE TO BE INSTALLED OVER RISER PIPE

ACCESS OPENING TO BE ORIENTED OVER OIL CLEANOUT PORT AND RISER PIPE

PLAN VIEW

FRAME AND COVER EMBOSSED "STORMCEPTOR"

GRADE ADJUSTERS TO SUIT FINISHED GRADE

1520# OIL CLEANOUT PORT TO BE RAISED TO ELEVATION AS CLOSE TO THE UNDERSIDE OF THE FLAT CAP

OUTLET PIPE, SIZE BASED ON SEWER DESIGN, FLEXIBLE BOOT OR GROUTED TO CONCRETE RISER SECTION

TRANSITION SLAB #350mm TO #1800mm

300# DROP TEE, NOTCHED AND TAPERED FOR INSTALLATION

CONCRETE RISER AND SLAB COMPONENTS C/W NITRILE GASKETS FOR JOINTS, MANUFACTURED TO CSA AND OPS STANDARDS.

SECTION VIEW

THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS:

CANADIAN PATENT NO. 2,009,208
CANADIAN PATENT NO. 2,137,942
CANADIAN PATENT NO. 2,175,277
CANADIAN PATENT NO. 2,180,305
CANADIAN PATENT NO. 2,180,383
CANADIAN PATENT NO. 2,206,338

STC 6000 CAPACITIES

<table>
<thead>
<tr>
<th>Sediment Capacity (L)</th>
<th>Oil Capacity (L)</th>
<th>Total Capacity (L, IMP. GAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26945</td>
<td>3930</td>
<td>31285 (6883)</td>
</tr>
</tbody>
</table>

Series Stormceptor
Model STC6000
Series Stormceptor
Model STC10000
Stormceptor EF
Model EF-8

OUTLET RISER VANE
WEIR
DROP PIPE
SINGLE OR MULTIPLE INLET PIPES
25mm [1"] DIFFERENCE BETWEEN INLET INVERT AND OUTLET INVERT
OPTIONAL INLET FRAME AND GRATE
MIN. 610x610 mm [24"x24"]
TO BE LOCATED OVER DROP PIPE.
FRAME AND COVER
TO BE LOCATED OVER MAINTENANCE ACCESS, OIL INSPECTION PORT.

PLAN VIEW

FRAME AND COVER
EMBOSSED "STORMCEPTOR"
GRADE ADJUSTERS
TO SUIT FINISHED GRADE.
CONCRETE RISER AND BASE COMPONENTS C/W RUBBER GASKETS FOR JOINTS.
MANUFACTURED TO CSA AND OPS STANDARDS.
WEIR
OUTLET PIPE SIZE BASED ON SEWER DESIGN, FLEXIBLE BOOT OR GROUTED TO CONCRETE RISER SECTION.

SECTION VIEW

STORAGE SUMP
Outlet Riser Vane

Weir

Drop Pipe

Outlet Riser & Maintenance Access

Oil Inspection Port

Optional inlet frame and grate to be located over drop pipe.

Frame and cover, min. #710 [28"] to be located over maintenance access & oil inspection port.

Plan View

Frames and covers embossed "Stormceptor"

Grade adjusters to suit finished grade

Concrete riser and base components c/w rubber gaskets for joints, manufactured to CSA and OPS standards.

Outlet pipe size based on sewer design, flexible boot or grouted to concrete riser section.

Section View

Stormceptor EF
Model EF-10
Stormceptor EF
Model EFO-8
SINGLE OR MULTIPLE INLET PIPES 25mm [1"] DIFFERENCE BETWEEN INLET INVERT AND OUTLET INVERT.

OPTIONAL INLET FRAME AND GRATE TO BE LOCATED OVER DROP PIPE.

FRAME AND COVER, MIN. #710 [28"] TO BE LOCATED OVER MAINTENANCE ACCESS & OIL INSPECTION PORT.

OUTLET PIPE SIZE BASED ON SEWER DESIGN, FLEXIBLE BOOT OR GROUTED TO CONCRETE RISER SECTION.

GRADE ADJUSTERS TO SUIT FINISHED GRADE

CONCRETE RISER AND BASE COMPONENTS C/W RUBBER GASKETS FOR JOINTS. MANUFACTURED TO CSA AND OPS STANDARDS.

FRAMES AND COVERS EMBOSSED "STORMCEPTOR"

STORAGE SUMP

OUTLET RISER VANE

OUTLET RISER & MAINTENANCE ACCESS

OIL INSPECTION PORT

INLET

OUTLET

DROP PIPE

PLAN VIEW

SECTION VIEW
SIZING INFORMATION AVAILABLE UPON REQUEST
Index

**Appurtenances**

Flexible pipe to Maintenance Hole connectors (Kor-N-Seal assemblies) L-1
Maintenance Holes & Catch Basins adjustment units L-2
Maintenance Hole safety landing-OPSD 404.020 L-3
Maintenance Hole Steps-OPSD 405.010 L-3

**Castings**

Ditch Inlet Grate-OPSD 403.010 L-5
Maintenance Hole Frame & Cover-Closed-OPSD 410.010-Type A L-6
Catch Basin Frame & Grate-Flat-OPSD 400.020 L-7
Catch Basin Frame & Grate-Dished-OPSD 400.010 L-8
Catch Basin Frame & Grate- “V” Type-OPSD 400.030 L-9
NOTE:
Kor-N-Seal assemblies are primarily used with pipes ranging in outside diameter from 107mm to 558mm. The charts below show the types of Kor-N-Seal assemblies required for use with some of the most common applications. For information regarding the use of this type of flexible connector with larger diameter pipe and/or with other pipe materials, please contact our Engineering Department.

<table>
<thead>
<tr>
<th>CONCRETE PIPE</th>
<th>PVC PIPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Diameter (mm)</td>
<td>Kor-N-Seal Number</td>
</tr>
<tr>
<td>150</td>
<td>S106-12A</td>
</tr>
<tr>
<td>200</td>
<td>S406-12</td>
</tr>
<tr>
<td>250</td>
<td>S106-16A</td>
</tr>
<tr>
<td>300</td>
<td>S106-20</td>
</tr>
<tr>
<td>375</td>
<td>S206-24</td>
</tr>
</tbody>
</table>

PIPE INSTALLATION PROCEDURE:

Step 1: Insert pipe into rubber boot. (bring pipe to approximately the lip of the interior diameter of the maintenance hole)

Step 2: Position pipe to approximately center of seal.

Step 3: Place the pipe clamp in the groove provided.

Step 4: The area between the clamping ridges and the pipe must be clean and free of debris.

Step 5: Tighten the pipe clamp with a torque wrench.

Step 6: Adjust pipe to invert elevation.
**CONCRETE GRADE RING**

**SECTION C - C**

**PLAN**

**SECTION A - A**

**CATCH BASIN MODULOC**

**SECTION B - B**

**MAINTENANCE HOLE MODULOC**

---

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DIMENSIONS (mm)</th>
<th>NOMINAL THICKNESS (mm)</th>
<th>STEP RUNG</th>
<th>MASS PER PIECE (kg)</th>
<th>BUNDLE PIECES</th>
<th>MASS (KG)</th>
<th>LIFTING CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>715</td>
<td>991</td>
<td>51</td>
<td>NO</td>
<td>52</td>
<td>12</td>
<td>624</td>
<td>HAND SLOTS</td>
</tr>
<tr>
<td>715</td>
<td>991</td>
<td>76</td>
<td>NO</td>
<td>75</td>
<td>8</td>
<td>600</td>
<td>HAND SLOTS</td>
</tr>
<tr>
<td>685</td>
<td>1085</td>
<td>76</td>
<td>YES</td>
<td>75</td>
<td>8</td>
<td>600</td>
<td>HAND SLOTS</td>
</tr>
<tr>
<td>CB</td>
<td>610 x 610</td>
<td>834 x 834</td>
<td>NO</td>
<td>36</td>
<td>12</td>
<td>432</td>
<td>HAND SLOTS</td>
</tr>
<tr>
<td></td>
<td>610 x 610</td>
<td>834 x 834</td>
<td>NO</td>
<td>51</td>
<td>8</td>
<td>408</td>
<td>HAND SLOTS</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Grade rings are primarily used to raise existing or new maintenance holes for which a 305mm riser is available.
2. Please contact our Engineering Department for additional information.
3. All dimensions in millimeters, unless otherwise shown.
ALUMINUM SAFETY PLATFORM

SECTION A - A

SEE PLAN FOR DETAILS

3 STEPS ABOVE THE SAFETY LANDING

SEE BELOW FOR STEP DETAILS

SAFETY PLATFORM GRATE & "BOLT ON" SUPPORT

PLAN VIEW

BEAM DETAIL

SELF LOCK HINGE

SAFETY LANDING GRATE @ OPEN POSITION SIDE VIEW

CIRCULAR ALUMINUM STEP

PLAN VIEW

SIDE VIEW

POLYETHYLENE ANCHOR INSULATING SLEEVE

#20

EXTRUDED HOLLOW CIRCULAR SECTION

NOTES:
2. Circular aluminum steps for MH conform to OPSD 405.010.
3. All Dimensions in millimeters, unless otherwise shown.

Aluminum Safety Platform and Circular Aluminum Step
**Ditch Inlet Grates**

**NOTES:**
1. Conforms to OPSD 403.010.
2. Type "A" grates are used on 600x600mm ditch inlets. See page E-5.
3. Type "B" & "C" grates are used on 600x1200mm ditch inlets. See page E-6.
4. All Dimensions in millimeters, unless otherwise shown.
TWO 29X13 KEYWAYS

FRAME PLAN

COVER PLAN

LUG DETAIL

SECTION A - A

SECTION B - B

(Mass - 180kg/set)

SECTION C - C

NOTES:
1. Conforms to OPSD 401.010 Type A.
2. All Dimensions in millimeters, unless otherwise shown

Maintenance Hole Frame and Cover
Closed
NOTES:
1. Conforms to OPSD 400.020.
2. All Dimensions in millimeters, unless otherwise shown

Catch Basin Frame and Grate
Flat
(Mass - 225 kg/set)
NOTES:
1. Conforms to OPSD 400.010.
2. All Dimensions in millimeters, unless otherwise shown
NOTES:
1. Conforms to OPSD 400.030.
2. All Dimensions in millimeters, unless otherwise shown
Forterra Pipe & Products has supplied reinforced concrete pipe and structural precast since the early 1900s. Our pipe is available in round and elliptical shapes and in all strength classes. Our product line includes sanitary and storm sewer products, as well as water quality and interceptor chambers. And our technical resource engineers and in-house design teams are here to help make your job easier.

Spec Forterra Pipe & Products for the pipe, drainage technology, bridge systems, and other products you need. And on the off chance we don’t have it, we can build it — all to the toughest specs and regulations in the industry. So you can get what you need, when and where you need it.

Forterra Pipe & Precast

2099 Roseville Road
Cambridge, On
N1R 5S3
Phone 519.622.7574

3374 Rideau Road
Ottawa, On
K1G 3N4
Phone 613.822.0160

www.forterrabp.com