



A division of
WGI Westman Group Inc.



CULTEC[®]
Stormwater
Chamber Systems
Retention / Detention

Managing high levels of stormwater is a challenge facing municipalities across the country. In built-up areas buildings and paved surfaces inhibit the natural infiltration of stormwater into the ground. With expanding urbanization, existing infrastructure is unable to accommodate the increased peak flows and runoff volumes which lead to ponding and flooding problems. Conventional stormwater management systems such as ponds, swales, pipe and concrete structures capture water but are labour intensive, expensive to maintain and occupy valuable land. CULTEC Stormwater Chambers provide a cost-effective solution for underground detention and infiltration.



Armtec is excited to be the Exclusive Canadian Distributor of CULTEC underground stormwater storage and infiltration chambers.



In urban areas, rising land costs require developers to look for innovative stormwater management products that optimize land usage and meet local environmental regulations.

CULTEC - The Founder of Plastic Chamber Technology

Back in 1986 CULTEC introduced its Contactor® and Recharger® septic and stormwater chambers to the industry and helped to begin a revolution towards the usage of plastic construction products. Since then, several product developments and strategic alliances have made CULTEC a cutting edge R&D-based manufacturer.

CULTEC's chambers are dome shaped, open-bottomed corrugated plastic structures with perforated side walls. They function like conventional stormwater ponds and work in conjunction with existing storm sewer infrastructure to provide underground retention/detention and infiltration of rainwater into the ground. Infiltration methods have been proven to be the most effective way to remove phosphorous, nitrogen, lead, zinc, suspended solids and organic carbon from water compared to wetlands, water quality ponds, filtering systems and water quality swales.



CULTEC Contactor® & Recharger® Chambers

CULTEC Contactor® and Recharger® chambers can be used as detention systems, infiltration systems or a combination of both. With a wide range of sizes and models available, their advanced design and ease of installation makes them an ideal alternative to ponds, swales, concrete structures or pipe installations. CULTEC chamber systems can be installed with a Separator™ Row, consisting of a row of chambers surrounded by filter fabric on all sides. It is designed to capture the first flush of a rain event and is a cost effective means of removing Total Suspended Solids (TSS) that may pass through the upstream water quality structures. In addition to removing solids and debris, the Separator Row provides easier access for inspection and maintenance of the total system.

TYPICAL APPLICATIONS

- Commercial Developments
- Residential Developments
- Industrial Areas
- Athletic Fields

✓ QUALITY

- Made of durable and chemically resistant HDPE or impact-modified polypropylene
- Perforated sidewalls and full open bottom maximize infiltration capability and performance

✓ EASE OF INSTALLATION

- Lightweight components can be hand-carried into position
- Overlapping ribs provide a fast and secure connection
- Internal manifold system allows flexibility in design and on-site reconfiguration

🚛 EASE OF TRANSPORTATION AND STORAGE

- Units nest on pallets for convenient shipping and reduced freight costs
- Less space required in staging areas

💰 COST EFFECTIVE

- Valuable land becomes available for further development
- Less area and less crushed stone required for installation compared to conventional systems



CULTEC Stormwater Chambers

CONTACTOR® SERIES

The Contactor® series consists of lower profile chambers and are typically used for installations with depth restrictions or when a larger infiltrative area is required.

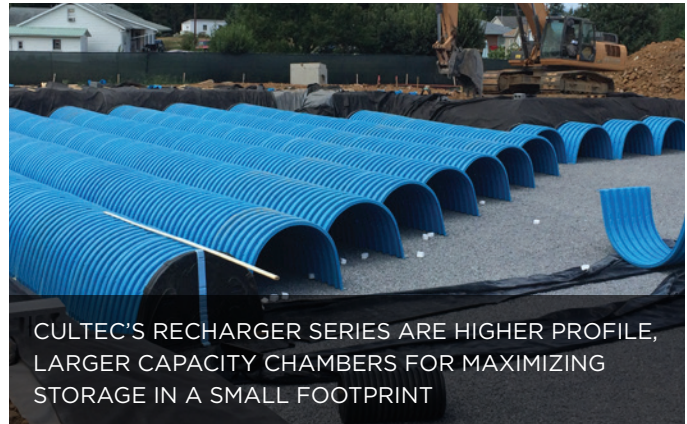
Sizes range from 216 - 318 mm (8.5 - 12.5 in) in height. Available models are the **Contactactor® Field Drain C-4HD** and **Contactactor® 100HD**.



THE CULTEC LOW PROFILE CONTACTOR SERIES CAN ACCOMMODATE SYSTEMS WITH HIGH WATER TABLES OR OTHER DEPTH CONSTRAINTS

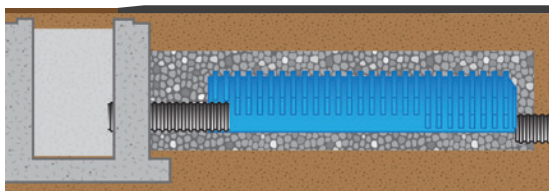
RECHARGER® SERIES

CULTEC's Recharger® series includes higher profile, larger capacity chambers. Sizes range from 470 - 1219 mm (18.5 - 48 in) in height. Chamber capacities vary from 0.246 - 1.64 m³/m (2.65 - 17.66 ft³/ft). Available models within this series are the **Recharger® 150XLHD, 180HD, 280HD, 330XLHD, 360HD** and **902HD**.



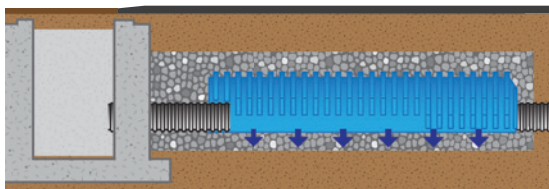
CULTEC'S RECHARGER SERIES ARE HIGHER PROFILE, LARGER CAPACITY CHAMBERS FOR MAXIMIZING STORAGE IN A SMALL FOOTPRINT

Detention Systems



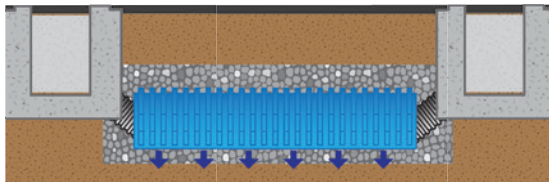
Stormwater runoff exceeding a site's allowable discharge rate is temporarily stored in chambers connected to a control structure (manhole). Downstream flows are restricted to a set rate using an orifice.

Detention/Infiltration Systems



Detention volume is set by the elevation of the outlet pipe to the control structure. Water remaining below the outlet pipe invert will infiltrate providing groundwater recharge.

Infiltration Systems



Water enters the chambers via the storm sewer network where it is held until the water infiltrates into the surrounding soils. Systems provide pollutant removal, total downstream volume reduction and temperature control of the downstream flow.

CULTEC Contactor® & Recharger® Chambers

Specification Information

MODEL	Length (m / ft)	Width (mm / in)	Height (mm / in)	Installed Length (m / ft)	Chamber Storage		Compatible End Cap
Contactor® Field Drain C-4HD	2.59 / 8.5	1219 / 48	216 / 8.5	2.44 / 8	0.16 m ³ /m 0.38 m ³ /unit 383.28 L	1.69 ft ³ /ft 13.54 ft ³ /unit 101 gal	N/A
Contactor® 100HD	2.44 / 8	914 / 36	318 / 12.5	2.29 / 7.5	0.17 m ³ /m 0.40 m ³ /unit 396.88 L	1.87 ft ³ /ft 14.00 ft ³ /unit 105 gal	N/A
Recharger® 150XLHD	3.35 / 11	838 / 33	470 / 18.5	3.35 / 11 3.12 / 10.25	0.25 m ³ /m 0.77 m ³ /unit 769.12 L	2.650 ft ³ /ft 27.16 ft ³ /unit 203 gal	N/A
Recharger® 180HD	2.23 / 7.33	914 / 36	521 / 20.5	1.93 / 6.33	0.32 m ³ /m 0.62 m ³ /unit 617.47 L	3.45 ft ³ /ft 21.81 ft ³ /unit 163 gal	N/A
Recharger® 280HD	2.44 / 8	1194 / 47	673 / 26.5	2.13 / 7	0.56 m ³ /m 1.21 m ³ /unit 1204.91 L	6.079 ft ³ /ft 42.55 ft ³ /unit 318 gal	N/A
Recharger® 330XLHD	2.59 / 8.5	1321 / 52	775 / 30.5	2.13 / 7	0.69 m ³ /m 1.48 m ³ /unit 1478.44 L	7.459 ft ³ /ft 52.21 ft ³ /unit 391 gal	N/A
Recharger® 360HD	1.25 / 4.1	1525 / 60	914 / 36	1.12 / 3.67	0.93 m ³ /m 1.04 m ³ /unit 1038 L	10.00 ft ³ /ft 36.66 ft ³ /unit 274 gal	Recharger 360HD End Cap
Recharger® 902HD	1.25 / 4.1	1981 / 78	1219 / 48	1.12 / 3.67	1.64 m ³ /m 1.84 m ³ /unit 1833.53 L	17.66 ft ³ /ft 64.75 ft ³ /unit 484 gal	Recharger 902HD End Cap

NOTES:

- Based on installed length. Stone void is calculated at 40%. Most models include 152 mm (6 in) stone base, 152 mm (6 in) stone layer above chamber crown and stone around units based on typical minimum centre-to-centre spacing.
- Recharger 902HD assumes 229 mm (9 in) stone base, 305 mm (12 in) stone layer above and typical centre-to-centre spacing.



MAINTENANCE

To ensure a well-functioning system, regularly scheduled cleaning of catch basins and pre-treatment devices is required. We suggest the inclusion of a CULTEC StormFilter® 330 or CULTEC Separator™ Row in the design for water quality and particulate removal.



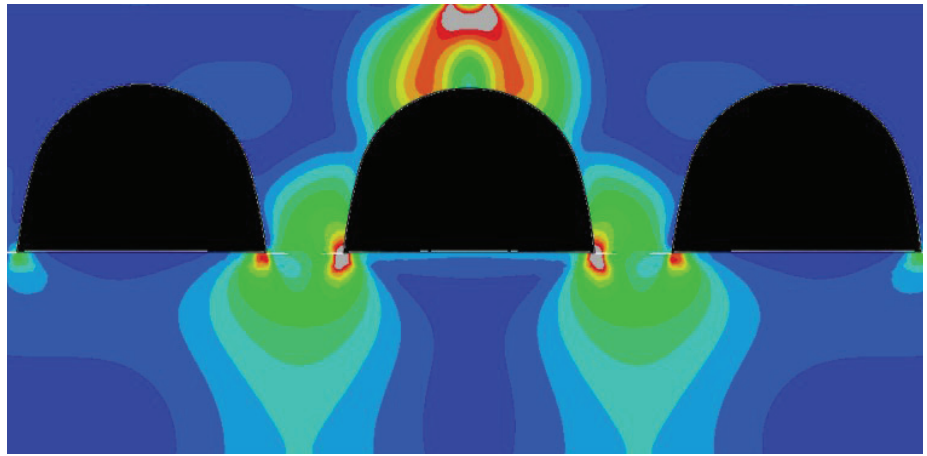
SAFETY FIRST!

Eliminate flooding with CULTEC stormwater chambers

- Reduce road accidents, washouts and driver delays
- Minimize building and property damage, sewer backup and foundation settlement
- Lower clean-up costs, health hazards and environmental damage

Chamber Design

The arched shape and corrugated design of the chamber effectively transfers live and dead loads to the subgrade. Stone columns between chamber rows also share in the load transfer. CULTEC chambers undergo rigorous testing. Select profiles meet the performance requirements of the American Society for Testing and Materials (ASTM) F2418, and meet the loads defined by the American Association of State Highway and Transportation Officials (AASHTO) (Section 12) Load Resistance Factor Design (LRFD) and the CAN/CSA-S6-14 CL-625 Design Truck. The Recharger 902HD has achieved third-party certification to the Canadian Standards Association (CSA) B184 standard for polymeric subsurface stormwater management structures. Chambers are constructed of impact-modified and long-term creep resistant polymers, ensuring that the chambers achieve a minimum 50-year service life.



Let us help you with your next project!

Contact an Armtec-Canada Culvert Representative to arrange complimentary design assistance. You'll receive stage-storage calculations, CAD layouts, details and product submittal packages.

CULTEC's intuitive design tools are also available to complete your own design. Download the CULTEC Stormwater Design Calculator, Incremental Storage Calculator and CAD design templates to complete an accurate, site-specific layout complete with stage-storage calculations. CULTEC's Automated StormGenie® Program quickly generates CAD layouts, material lists and calculations for preliminary designs.

Visit www.cultec.com/stormwater-design.html for design assistance.



Installation

Minimum Fill Requirements for Paved Traffic Applications

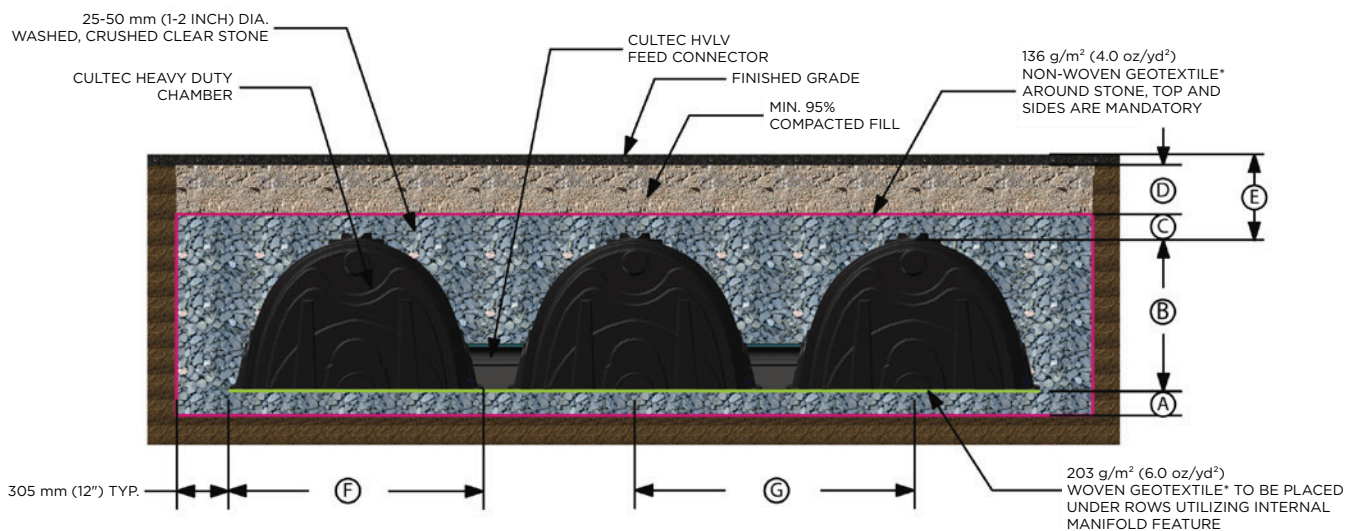
Refer to CULTEC's most current installation instructions for further details including but not limited to acceptable fill materials and vehicle loads.

If these models and design parameters do not meet your site parameters, please contact an Armtec-Canada Culvert Sales Representative for further information.

	Ref.	Contactor [®] Field Drain C-4HD	Contactor [®] 100HD	Recharger [®] 150XLHD	Recharger [®] 180HD	Recharger [®] 280HD	Recharger [®] 330XLHD	Recharger [®] 360HD	Recharger [®] 902HD
Min. depth of stone base	A	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	229 mm 9 in
Chamber height	B	216 mm 8.5 in	318 mm 12.5 in	470 mm 18.5 in	521 mm 20.5 in	673 mm 26.5 in	775 mm 30.5 in	914 mm 36 in	1219 mm 48 in
Min. depth of stone required above units for traffic applications	C	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	152 mm 6 in	305 mm 12 in
Min. depth of 95% compacted fill required for paved traffic applications	D	203 mm 8 in	203 mm 8 in	203 mm 8 in	203 mm 8 in	203 mm 8 in	254 mm 10 in	305 mm 12 in	305 mm 12 in
Max. depth of cover allowed above crown of chamber	E	3.66 m 12 ft	3.66 m 12 ft	3.66 m 12 ft	3.66 m 12 ft	3.66 m 12 ft	3.66 m 12 ft	3.66 m 12 ft	2.53 m 8.3 ft
Chamber width	F	1219 mm 48 in	914 mm 36 in	838 mm 33 in	914 mm 36 in	1194 mm 47 in	1321 mm 52 in	1525 mm 60 in	1981 mm 78 in
Typical centre-to-centre spacing	G	1.22 m 4 ft	1.02 m 3.33 ft	0.99 m 3.23 ft	0.99 m 3.23 ft	1.32 m 4.33 ft	1.47 m 4.83 ft	1.75 m 5.75 ft	2.21 m 7.25 ft

NOTES:

- Structurally designed to withstand HS-20/HS-25 live loads in accordance with AASHTO



*Contact Armtec-Canada Culvert for specific models of Geotextiles.



Armtec is environmentally conscious
by supporting limited paper usage.

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Platinum member

Find out how **CULTEC's Stormwater Chamber Systems** can
be used on your next project.

Call **1-800-565-1152** or visit **armtec.com**