Stormwater360®

Plastic Detention / Water Re-Use / Infiltration Chambers

CHAMBERMaxx™

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ChamberMaxx is the latest in corrugated, open-bottom arch systems designed to economically collect, detain, retain and infiltrate stormwater runoff. The below-grade system maximises available land for development, and can support traffic loading for installation under parking lots and roadways. The chambers are injection molded using structurally efficient and corrosive-resistant polypropylene resin.

In Infiltration applications, the ChamberMaxx system effectively recharges groundwater to achieve reduced discharge objectives, including **Low Impact Design (LID)**, and **Water Sensitive Urban Design (WSUD)**. The system is most effective on sites where the depth from finished grade to storm sewer outlet is less than 1.4-meters.

With 1.39 m^3 of available storage per chamber, ChamberMaxx is the most cost efficient of its kind. Innovative sub-corrugations provide greater strength and the chambers utilise a resin efficient design. A short height profile optimises stormwater storage on shallow sites. Lightweight chambers allow for placement without the use of heavy equipment.

Install a Stormwater360 pre-treatment water quality unit, upstream of the ChamberMaxx system for the highest level of performance at the lowest cost. This combined water quality and quantity system reduces maintenance costs by capturing the pollutants in one confined location, and extends the performance life of the overall system by reducing occlusion of the void space within the surrounding stone.

Contact your local representative for assistance in selecting the most efficient pre-treatment solution.

Going Green?
Looking for LID or WSUD Solutions?

Specify ChamberMaxx on Your Next Project!

Performance Testing

ChamberMaxx has undergone a thorough structural analysis by structural engineers and full scale in-ground field burial tests have been performed. The chambers are structurally designed to exceed New Zealands HN-HO 72 highway heavy loading standards. Structural performance is dependent on proper installation as per the ChamberMaxx installation guidelines.

Design

ChamberMaxx has a multitude of layout and configuration options. Contact your local representative for assistance optimising your system to meet your site specific design requirements.

For flow routing see the ChamberMaxx stage-storage curve (available in this brochure) or download the ChamberMaxx stage-storage calculator at www.stormwater360.co.nz.

Design Your Own Detention System

Our DYODS™ (Design Your Own Detention System) sizing calculator, makes it is easy to design the right ChamberMaxx for your site.

Visit www.stormwater360.co.nz to:

- Size system and layout footprint
- Quantify construction materials
- Receive graphic plan view layout

DYODS™
Design Your Own Detention System

Make your job easier with our design tools!

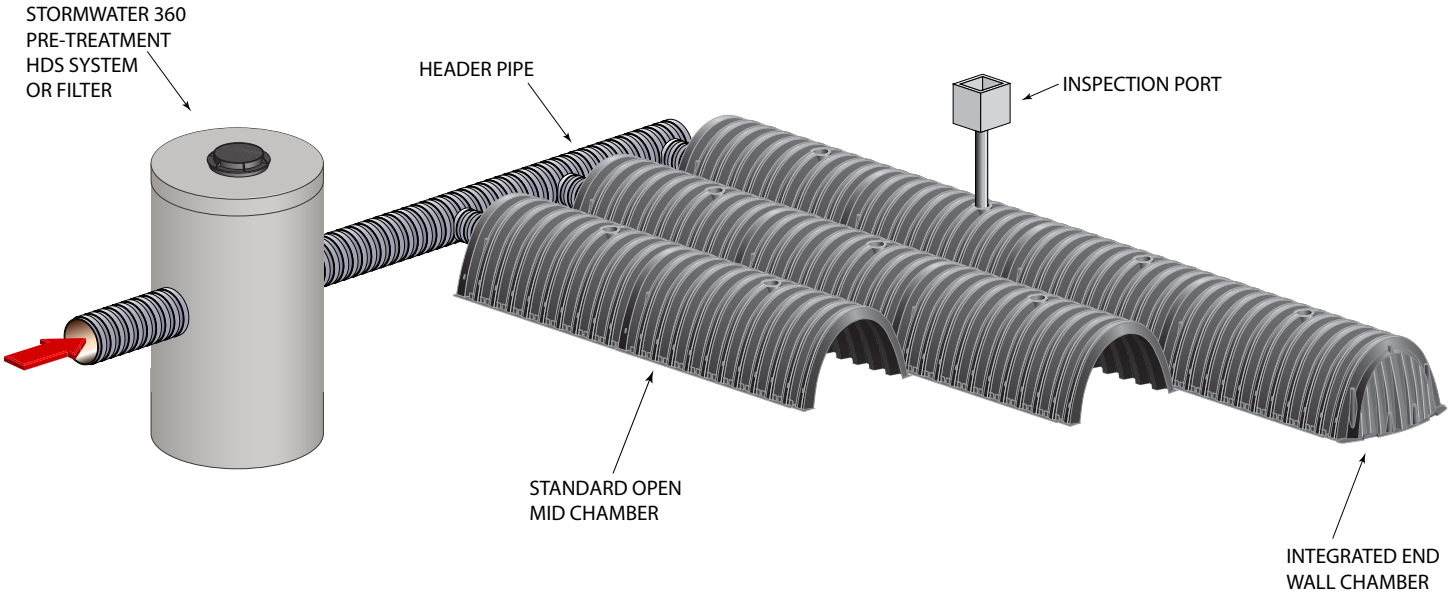
Sizing

The ChamberMaxx system combines middle chambers, which are open on both ends, with start and end chambers, which include an integral end wall. All chambers have sidewall perforations that allows water to equalise throughout the system.

ChamberMaxx utilises a header manifold system that can be manufactured from various materials. Commonly utilised header pipe materials are corrugated metal pipe (CMP) and HDPE plastic pipe. The start and end chambers can accept up to a 600mm diamter inlet pipe.

Chamber Part	Width		Height		Weight		Actual Length		*Installed Length		Storage Volume		*Installed Storage Volume	
	in	(m)	in	(m)	lbs	(kg)	in	(m)	in	(m)	cf	(m^3)	cf	(m^3)
Start	51.4	(1.31)	30.3	(0.77)	85.0	(38.55)	98.4	(2.50)	96.2	(2.44)	52.5	(1.48)	78.7	(2.22)
Middle	51.4	(1.31)	30.3	(0.77)	77.0	(34.92)	91.0	(2.31)	85.4	(2.17)	49.3	(1.40)	76.7	(2.17)
End	51.4	(1.31)	30.3	(0.77)	76.0	(34.47)	92.0	(2.34)	88.5	(2.25)	48.2	(1.36)	76.1	(2.15)

*0.15 meters of stone below and above chamber and 0.13 meters chamber spacing and 40% stone porosity.



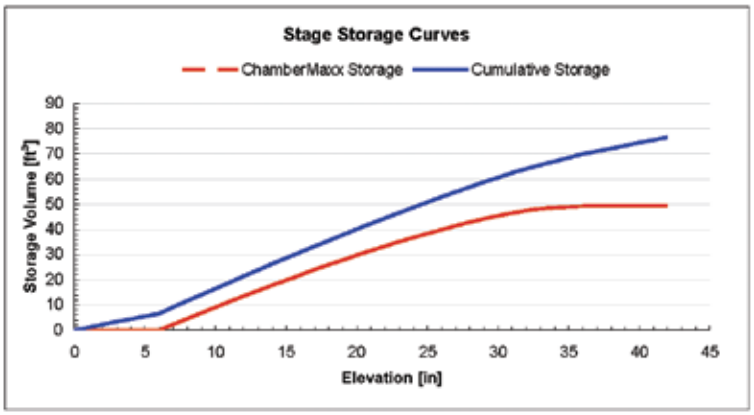
CHAMBERMaxx™

ChamberMaxx Flow Routing

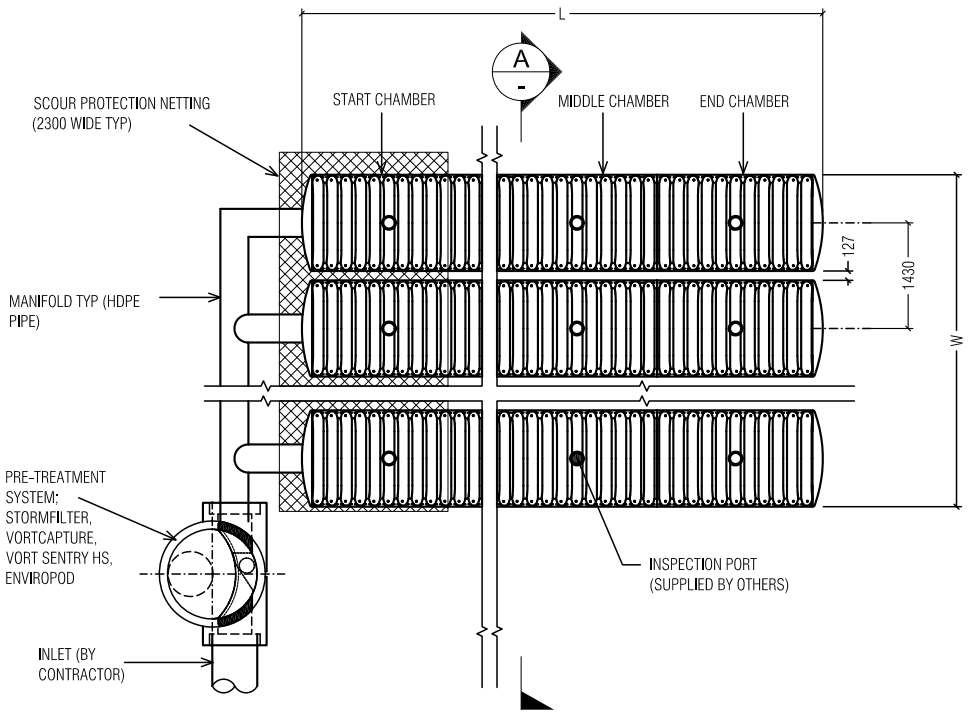
Stage Storage Table

Elevation			Storage Volume Including 12" of Stone		Chamber Storage Volume		Cumulative Volume Increment		*Cumulative Storage Volume	
in	(m)		ft³	(m³)	ft³	(m³)	ft³	(m³)	ft³	(m³)
42.0	(1.07)		62.6	(1.77)	49.3	(1.40)	1.3	(0.04)	76.7	(2.17)
40.8	(1.04)	Standard 6" Stone	61.3	(1.74)	49.3	(1.40)	1.3	(0.04)	75.3	(2.13)
39.6	(1.01)		59.9	(1.70)	49.3	(1.40)	1.3	(0.04)	74.0	(2.10)
38.4	(0.98)		58.6	(1.66)	49.3	(1.40)	1.3	(0.04)	72.6	(2.06)
37.2	(0.94)		57.3	(1.62)	49.3	(1.40)	1.3	(0.04)	71.3	(2.02)
36.0	(0.91)		55.9	(1.58)	49.3	(1.40)	0.2	(0.01)	70.0	(1.98)
34.8	(0.88)		55.7	(1.58)	49.0	(1.39)	0.5	(0.01)	68.2	(1.93)
33.6	(0.85)		55.2	(1.56)	48.6	(1.38)	0.7	(0.02)	66.5	(1.88)
32.4	(0.82)		54.5	(1.54)	47.8	(1.35)	1.1	(0.03)	64.8	(1.84)
31.2	(0.79)		53.5	(1.52)	46.8	(1.33)	1.3	(0.04)	62.8	(1.78)
30.0	(0.76)		52.2	(1.48)	45.5	(1.29)	1.5	(0.04)	60.7	(1.72)
28.8	(0.73)		50.7	(1.44)	44.0	(1.25)	1.6	(0.05)	58.5	(1.66)
27.6	(0.70)		49.0	(1.39)	42.4	(1.20)	1.8	(0.05)	56.1	(1.59)
26.4	(0.67)		47.3	(1.34)	40.6	(1.15)	1.9	(0.05)	53.8	(1.52)
25.2	(0.64)		45.4	(1.29)	38.8	(1.10)	1.9	(0.05)	51.3	(1.45)
24.0	(0.61)		43.5	(1.23)	36.8	(1.04)	2.0	(0.06)	48.8	(1.38)
22.8	(0.58)		41.5	(1.18)	34.8	(0.99)	2.1	(0.06)	46.3	(1.31)
21.6	(0.55)		39.4	(1.12)	32.7	(0.93)	2.2	(0.06)	43.7	(1.24)
20.4	(0.52)		37.2	(1.05)	30.5	(0.86)	2.2	(0.06)	41.0	(1.16)
19.2	(0.49)		35.0	(0.99)	28.3	(0.80)	2.3	(0.07)	38.3	(1.09)
18.0	(0.46)		32.7	(0.93)	26.0	(0.74)	2.4	(0.07)	35.6	(1.01)
16.8	(0.43)		30.3	(0.86)	23.6	(0.67)	2.4	(0.07)	32.9	(0.93)
15.6	(0.40)		27.9	(0.79)	21.2	(0.60)	2.5	(0.07)	30.1	(0.85)
14.4	(0.37)		25.4	(0.72)	18.7	(0.53)	2.5	(0.07)	27.2	(0.77)
13.2	(0.34)		22.8	(0.65)	16.2	(0.46)	2.6	(0.07)	24.4	(0.69)
12.0	(0.30)		20.3	(0.58)	13.6	(0.39)	2.6	(0.07)	21.5	(0.61)
10.8	(0.27)		17.6	(0.50)	10.9	(0.31)	2.7	(0.08)	18.6	(0.53)
9.6	(0.24)		14.9	(0.42)	8.3	(0.24)	2.7	(0.08)	15.6	(0.44)
8.4	(0.21)		12.2	(0.35)	5.6	(0.16)	2.8	(0.08)	12.7	(0.36)
7.2	(0.18)		9.5	(0.27)	2.8	(0.08)	2.8	(0.08)	9.7	(0.28)
6.0	(0.15)		6.7	(0.19)	0.0	(0.00)	1.3	(0.04)	6.7	(0.19)
4.8	(0.12)	Standard 6" Stone	5.3	(0.15)	0.0	(0.00)	1.3	(0.04)	5.3	(0.15)
3.6	(0.09)		4.0	(0.11)	0.0	(0.00)	1.3	(0.04)	4.0	(0.11)
2.4	(0.06)		2.7	(0.08)	0.0	(0.00)	1.3	(0.04)	2.7	(0.08)
1.2	(0.03)		1.3	(0.04)	0.0	(0.00)	1.3	(0.04)	1.3	(0.04)
0.0	(0.00)		0.0	(0.00)	0.0	(0.00)	-	-	0.0	(0.00)

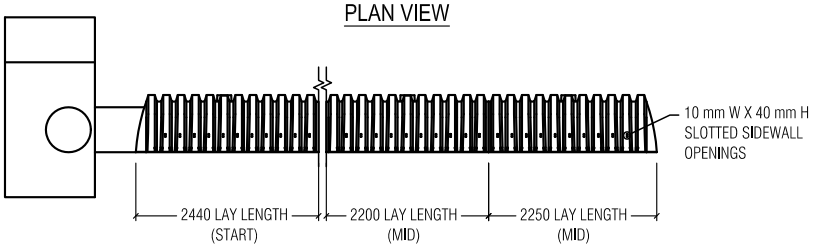
*Six-inches (0.15 meters) of stone below and above chamber and 5-inch (0.13 meters) chamber spacing and 40% stone porosity.



Proper design of any detention system typically requires that flow routing be performed. Engineers at Stormwater360 can be a valuable resource when designing a ChamberMaxx retention system. Typically stage-storage curves like those shown are utilised in the analysis. Stormwater360 stage-storage calculator is available for download at www.stormwater360.co.nz. This information can simply be inserted into common hydrology/hydraulic software such as HydroCAD, HydroFlow, PondPack, or TR20. This makes a flow routing design with ChamberMaxx just as simple as an above-ground pond design.



PLAN VIEW

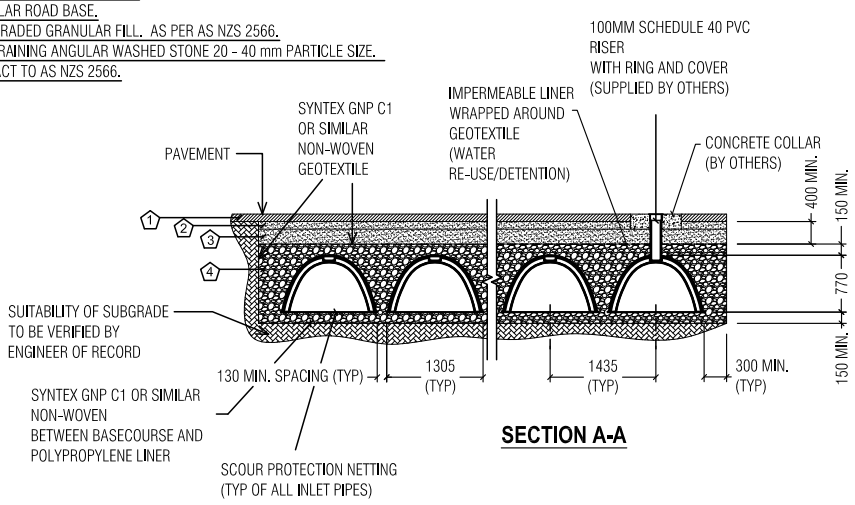


ELEVATION VIEW

TYPICAL LAYOUT

KEY

1. RIGID OR FLEXIBLE PAVEMENT.
2. GRANULAR ROAD BASE.
3. WELL GRADED GRANULAR FILL. AS PER AS NZS 2566.
4. FREE DRAINING ANGULAR WASHED STONE 20 - 40 mm PARTICLE SIZE. COMPACT TO AS NZS 2566.



SECTION A-A

Installation

ChamberMaxx retention systems require adherence to the installation procedure for the structural integrity of the system to be maintained. Full installation instructions are available at www.stormwater360.co.nz, or contact your local Stormwater360 representative.

ChamberMaxx systems can include chambers, fabricated header/manifold components, scour protection netting, inspection port materials, and geotextile material.

Typical Installation Sequence:

1. Excavate and prepare
2. Install pre-treatment system
3. Place liner and geotextile
4. Prepare foundation & bedding
5. Set header pipe/manifold system
6. Place scour protection netting underneath all chambers with inlet pipes
7. Set Start, Mid and End chambers into place by hand
8. Connect header and other required inlet and outlet piping
9. Backfill
10. Wrap geotextile fabric and liner (if detention/water re-use) and complete backfill

Maintenance

Each chamber is manufactured with inspection portals. Location of inspection portals to be specified by the project design Engineer.

It is recommend that the system is inspected annually and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities and the type of pre-treatment rather than the size or configuration of the system.

For more details please refer to the ChamberMaxx operations and maintenance guideline at www.stormwater360.co.nz or contact your local Stormwater360 representative.

Support

- Drawings and specifications are available upon request
- Site-specific design support is available from our engineers.

HEAD OFFICE : [NEW ZEALAND] (AKL) +64 9 476 5586 or 0800 STORMWATER

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