

StormTank[®] Urban Root System Comparison Sheet

Background

This document will provide the comparable data for the primary structural soil cells on the market.

Structural Soil Cell Basic Dimensions

Manufacturer	Brentwood		Silva Cell 2.0		StrataVault	
	in.	mm	in.	mm	in.	mm
Length	36	914	48	1,219	24	610
Width	18	457	24	610	24	610
Height	18	457	16.7	424	16	406
	24	610	30.9	785		
	30	762	43.0	1,092		
	36	914				

Structural Soil Cell Load Performance

Manufacturer	Brentwood*				Silva Cell 2.0			StrataVault	
Height (in.)	18	24	30	36	16.7	30.9	43.0	30 Series	60 Series
Max. Applied Load (lbs.)	70,202	62,468	58,994	44,984	24,302**	26,597**	22,616**	25,062	50,124
Max. Applied Load (kN)	312.27	277.87	262.42	200.10	108.10	118.31	100.60	111.48	222.96
Max. Applied Pressure (psi)	108.34	96.40	91.04	69.42	21.10	23.09	19.63	43.51**	87.02**
Max. Applied Pressure (kPa)	746.98	664.65	627.70	478.63	145.48	159.20	135.34	300	600

* Brentwood test methodology performed identical to Silva Cell 2.0 report.

** Silva Cell 2.0 data from test report prepared by Innova Engineering. StrataVault data from StrataVault specifications.

The test results indicate the Brentwood units have superior strength. It is important to note that steel press tests do not account for soil/structure interaction, and full-scale, installation-based testing is recommended to characterize the product.

Structural Soil Cell Soil Capacities

Manufacturer	Brentwood				Silva Cell 2.0			StrataVault	
	18	24	30	36	16.7	30.9	43.0	30 Series	60 Series
Height (in.)	18	24	30	36	16.7	30.9	43.0	30 Series	60 Series
Total Void (ft ³)	6.44	8.66	10.88	13.10	10.0*	20.0*	30.0*	4.80*	4.80*
Total Void (m ³)	0.182	0.245	0.308	0.371	0.283	0.566	0.850	0.136	0.136
Soil Capacity (ft ³)**	4.87	7.00	9.13	11.25	8.27	17.12	24.66	3.94	3.94
Soil Capacity (m ³)	0.138	0.198	0.259	0.319	0.234	0.485	0.698	0.112	0.112

* Data from manufacturer's specifications.

** Data calculated based on not filling columns, providing space for top platen, and 1" air gap.

Note: Brentwood footprint = 4.5 ft², Silva Cell 2.0 footprint = 8.0 ft², StrataVault footprint = 4.0 ft².

Some manufacturers report total void space (filling all voids, including column cores), while others provide true soil storage space. The table provides a comparison of both values.

Structural Soil Cell Product Materials

Manufacturer	Brentwood	Silva Cell 2.0	StrataVault	
			30 Series	60 Series
Deck/Base	PP	Reinforced PP	PP	Reinforced PP
Vertical Supports	PVC	PP	PP	Reinforced PP
Sides	PP Lattice Plate	Geogrid	Geogrid	Geogrid

Notes:

Brentwood uses 100% virgin PP and 100% post-manufacture recycled PVC.

Silva Cell 2.0 no type (virgin vs. recycle) provided.

StrataVault uses 100% post-manufacturer recycled material.

The material utilized in the product has impacts on performance. Reinforced materials contain small glass fibers to provide additional strength but have negative impacts. Reinforcement material can be clumped or not uniformly spread throughout the part because of mold design and thin walls, and the material may also be more brittle. Additionally, glass reinforced materials present issues in the reprocessing and recycling phases.