

Wavin  
Brochure

# AquaCell

Stormwater Management System



# AquaCell

Our next-generation AquaCell helps control and alleviate rainwater flooding, infiltrating it into groundwater reserves or storing it for reuse. Manufactured from 100% recycled polypropylene resin, our AquaCell is an environmentally friendly solution for water management.



## Climate-resilient cities

Climate change is a reality in our world today. Urbanization alters surface hydrology, affecting infiltration, evaporation, and surface runoff.

The latter causing waterlogging and flooding in low-lying areas or locations with heavy rainfall accumulation, wreaking havoc on local infrastructure and putting its inhabitants at risk.

With AquaCell, Wavin® has once again taken on these global challenges with tried, tested, and versatile answers to the effective management of water resources.

The system is made of 100% recycled polypropylene geocellular units that can be used as below ground storage tanks and can mitigate rainwater runoff by reusing/infiltrating it into the subsoil. It provides a comprehensive solution for controlled water management that reduces risks to urban infrastructures and their populations.

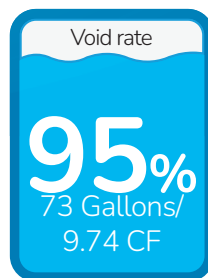
## Solution for Sustainable Projects

**Environmental Product Declarations (EPDs)** are available, making AquaCell ideal for projects seeking water efficiency or LEED certifications. AquaCell has the environment in mind every step of the way, beginning with its manufacturing process with highly resistant and durable 100% recycled raw material. It significantly reduces the water footprint and the dependence on potable water networks, does not pollute the subsoil and is environmentally friendly during storage and installation, thereby reducing CO<sub>2</sub> emissions.



## Hydraulic function

AquaCell is a geocellular unit used to build subsurface rainwater detention, retention, infiltration and storage tanks. It's the optimal solution for faster installation and full access to inspection and cleaning activities.



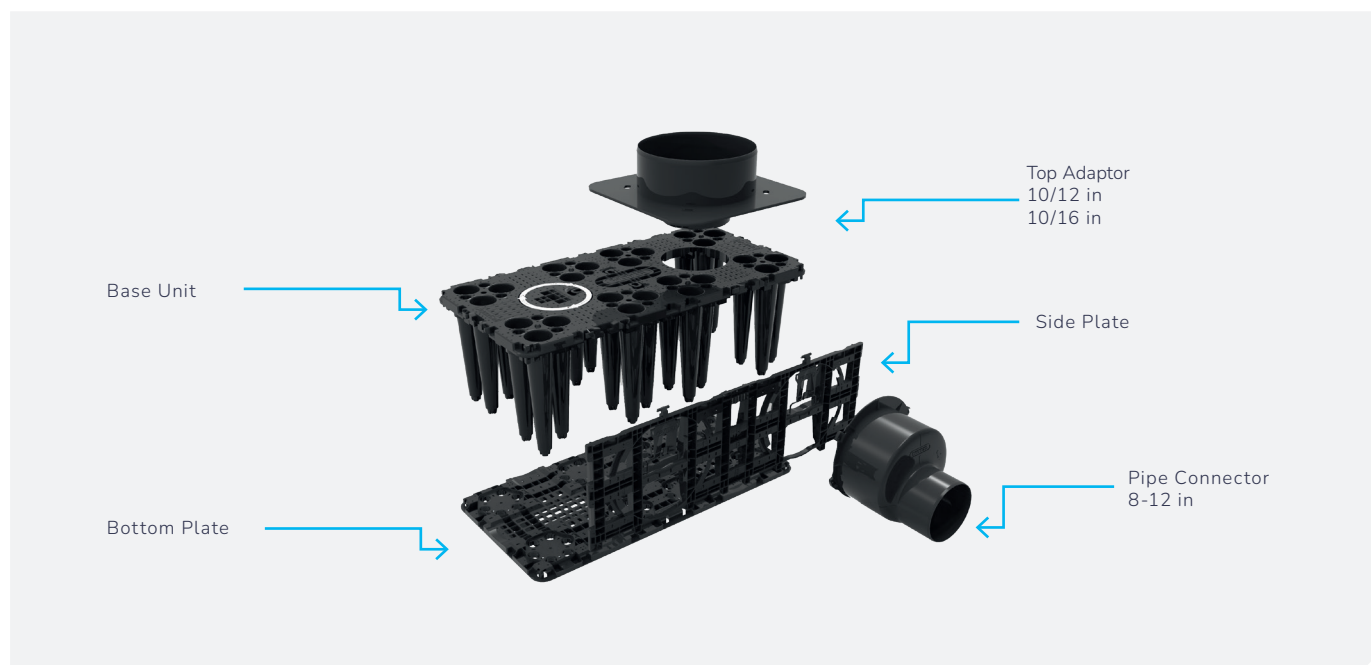
Water storage  
for reuse



Infiltration to recharge  
groundwater



Temporary storage  
to prevent flooding



## Product Features



Lightweight  
100% plastic



Long  
service life



100% recycled  
material



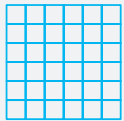
High vertical  
and horizontal  
loading capacity



No tools needed  
for connection



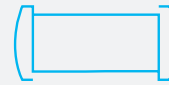
Large storage  
capacity



Safe and stable  
installations



Modular  
system



Compatible with most  
pipe sizes & types

## Application

AquaCell is a highly versatile solution that users can tailor to new and existing residential, commercial, industrial and infrastructure projects.



BMP (Best Management Practice &  
LID (Low Impact Development)



Airports



Educational Institutions



Hospitals



Shopping Malls



Horizontal and Vertical Structures



Public Infrastructure



Industrial Parks and Plants



Urban Centers

**Note:** (Other structures requiring cisterns/tanks for rainwater management may be included in the design. AquaCell's flexibility makes it possible to build underground tanks in different geometric configurations, recovering the ground surface thanks to its positive loading capacity.)

## Support



On-site training for  
installers and engineers

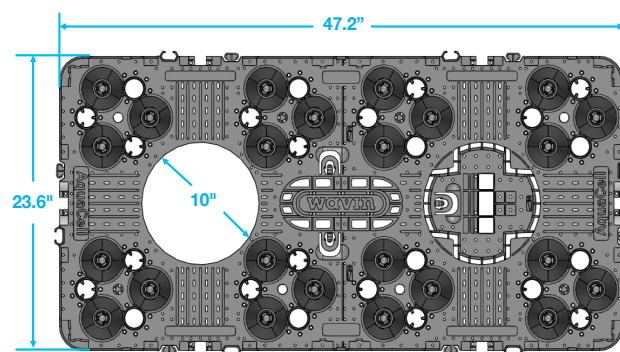
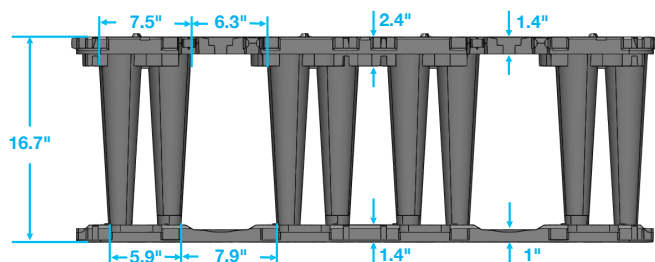


On site consulting  
services available



Maintenance  
Training

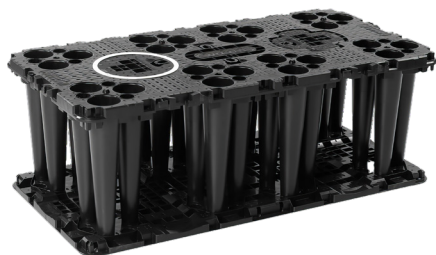
## AquaCell Technical Specifications



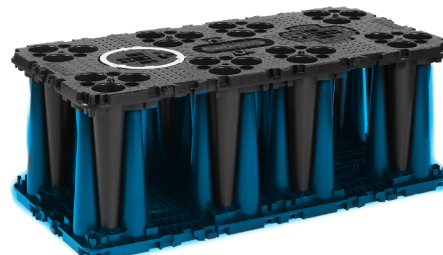
## Mechanical resistance (versions)

Interlocking two base units can create an extra strong version of the system.

### Standard Configuration



### Extra Strong Configuration



Designed to support AASHTO load standards H-20 and H-25.

## Storage capacity

| Regular Configuration                            |           |
|--------------------------------------------------|-----------|
| Gross Volume / (without bottom plate)            | 10.25 cf  |
| Net volume / (without bottom plate)              | 9.74 cf   |
| Void Ratio / (varies by layer/side plates added) | 94% - 96% |

| Extra strong Configuration          |           |
|-------------------------------------|-----------|
| Gross Volume                        | 11.70 ft³ |
| Net Volume                          | 10.84 ft³ |
| Void Ratio / (without bottom plate) | 92.7%     |

## Weight, pipe connections and number of layers

|                                                                                        |            |
|----------------------------------------------------------------------------------------|------------|
| Base Unit Weight (lbs)                                                                 | 24         |
| Pipes NPS (in)                                                                         | 6 - 8 - 12 |
| Vertical Access (in)                                                                   | 10         |
| Maximum number of layers<br>(with a minimum cover depth of 30 cm for landscaped areas) | 8 layers   |

## Performance and installation

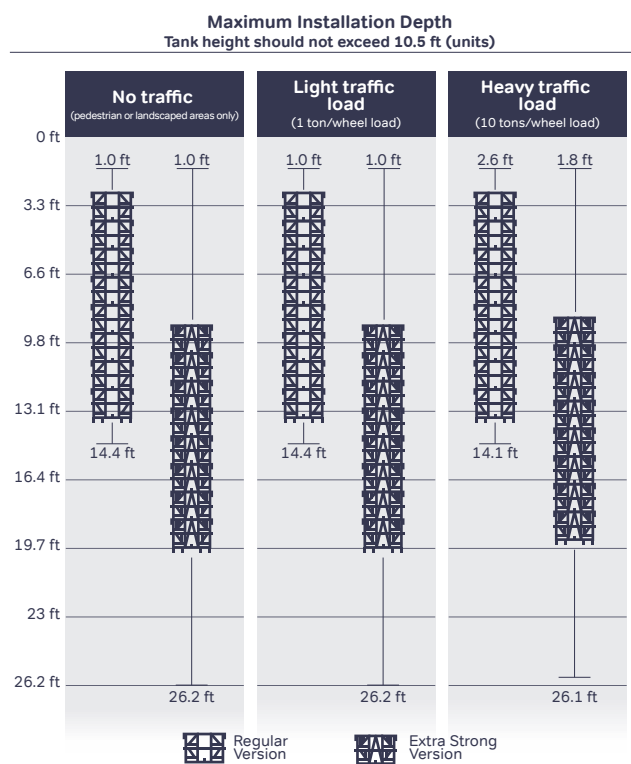
|                                      |                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------|
| Installation speed <sup>1</sup>      | 1413 ft³/ hour/ per person                                                    |
| Coupling mechanism                   | Manual – Push fit                                                             |
| Bedding material (base)              | Sand, Stone<br>or other approved backfill<br>(Compacted and leveled material) |
| Minimum depth (base)                 | 4 in                                                                          |
| Percent Compaction (SP) <sup>2</sup> | 90% - 95% - 98%                                                               |

**Note:** (1) Measured performance for cell assembly, obtained with material supplies and trained personnel on-site. Based on tank size (20' L x 10' W x 4' H)  
(2) Percent compaction varies according to the type of loads (no traffic, light traffic and heavy traffic, respectively).

## Installation depth by load<sup>3</sup>

| Minimum/<br>(Maximum Cover Depth) | Regular           | Extra strong      |
|-----------------------------------|-------------------|-------------------|
| H-10 Traffic Loading              | 12 in. / 14.4 ft. | 12 in. / 26.2 ft. |
| HS-20 Traffic Loading             | 24 in / 14.4 ft.  | 18 in. / 26.2 ft  |
| HS-25 Traffic Loading             | 32 in / 14.1 ft.  | 22 in. / 26.1 ft. |

**Note:** (3) Each project must conduct a stress analysis to ensure the system's stability based on the acting loads, soil type and water table involved. Wavin recommends a minimum cover of 12 inches over the top of the tank. For details on use in the regular or extra strong versions, or if you need further information, contact your Designated Technical Marketing Consultant



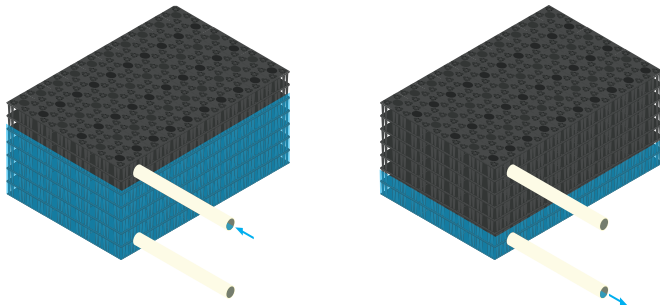
## Hydraulic function

AquaCell modular solution can be tailored to three types of applications.

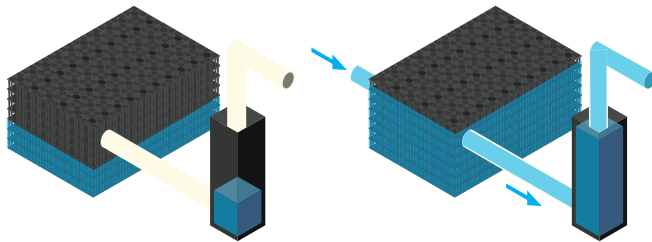
- **Retention and detention:** a volume of rainwater is temporarily stored for gradual release to the public sewer network or receiving medium. Tank wrapped with Non-Woven Geotextile + Geomembrane + Non-Woven Geotextile.
- **Reuse:** rainwater is temporarily stored in the tank and extracted through a pumping system for another purpose. Tank wrapped with Non-Woven Geotextile + Geomembrane + Non-Woven Geotextile.
- **Infiltration<sup>4</sup>:** temporary storage in the tank and gradual rainwater infiltration into the soil. Tank wrapped with Non-Woven Geotextile

**Note:** (4) Soil characteristics should be assessed to ensure this application is feasible. Variables such as rainfall intensity, tributary areas, runoff coefficient and soil typology are used to design any of these applications. Other data may be required depending on the specifics of each project.

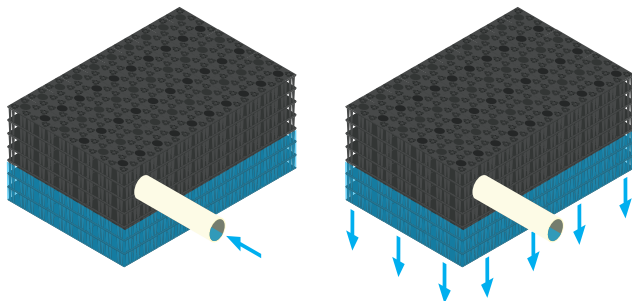
## Retention and Detention System



## Reuse System



## Infiltration System



## System Benefits



### Environmental:

- Ideal for rainwater reuse.
- Reduces the water footprint.
- Does not contaminate the subsoil.
- Does not alter water characteristics.
- Low installation impact.



### Structural:

- On-site performance is superior to concrete and metal.
- Manual installation, no accessories required.
- The solution can be tailored to any geometric structure.
- It is ideal for areas with limited access and heavy rainfall.
- Access for inspection and cleaning activities.



### Urban Development:

- Mitigates the effects of flooding.
- Ideal for sustainability certifications.
- Reduces dependence on potable water.
- Reduces saturation of drainage networks.
- Alternative source for non-potable uses.



### Product Quality:

- Long service life.
- Lightweight and highly structurally resistant.
- Large storage capacity: stackable cells.
- Resistant to water and soil activities.

## Wavin AquaCell vs other systems

| Feature/ Method                                     | Wavin AquaCell | Other Geocellular Storage | Arched Chamber Systems | CMP Pipe Systems | Reinforced Concrete Vaults | Above ground pond storage |
|-----------------------------------------------------|----------------|---------------------------|------------------------|------------------|----------------------------|---------------------------|
| 100% recycled plastic                               | ✓              | —                         | ✗                      | ✗                | ✗                          | N/A                       |
| Reduces installation / construction times           | ✓              | ✓                         | —                      | ✗                | ✗                          | ✓                         |
| Push-fit connection                                 | ✓              | ✗                         | ✗                      | ✗                | ✗                          | N/A                       |
| Ergonomic handgrips to maximize worker safety       | ✓              | ✗                         | ✗                      | ✗                | ✗                          | N/A                       |
| No clips, pins, tools needed for unit installation  | ✓              | ✗                         | ✓                      | ✗                | ✗                          | N/A                       |
| Sand / native soil allowed for bedding              | ✓              | ✗                         | ✗                      | ✗                | ✗                          | ✗                         |
| No embedment stone required                         | ✓              | ✗                         | ✗                      | ✗                | ✓                          | N/A                       |
| Access for inspection and maintenance               | ✓              | ✓                         | ✓                      | ✓                | ✓                          | N/A                       |
| Stackable system optimizes transport & site storage | ✓              | ✓                         | —                      | ✗                | ✗                          | N/A                       |
| Optimizes excavation & backfill volumes             | ✓              | ✓                         | ✓                      | ✗                | ✗                          | ✓                         |
| 12 in. minimum cover for non-traffic installs       | ✓              | —                         | ✗                      | ✓                | ✓                          | N/A                       |
| Multi-layer, stackable system                       | ✓              | ✓                         | ✗                      | ✗                | ✓                          | N/A                       |
| Deep burial installation options available (> 10')  | ✓              | ✓                         | ✗                      | ✓                | ✓                          | N/A                       |



## Case Studies: AquaCell Installations in Latin America

### Attenuation tanks in the retail sector

Jamundí, Colombia

**Application:** Attenuation/Detention

**Capacity:** 207 m<sup>3</sup>

**Tank assembly time:** 4 days

**Year:** 2023



### Infiltration tanks in the industrial sector

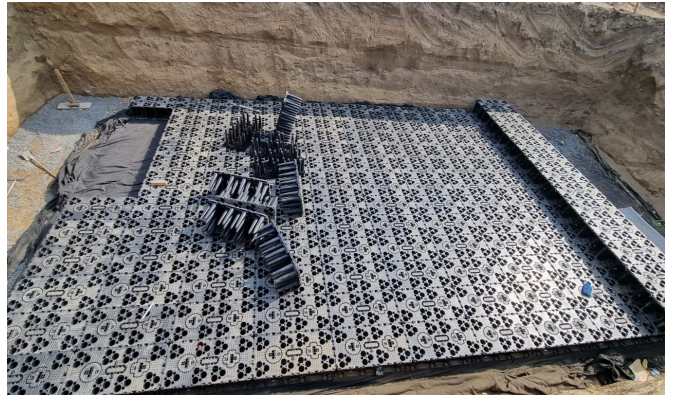
Guatemala

**Application:** Infiltration

**Capacity:** 600 m<sup>3</sup> (4 tanks of 150 m<sup>3</sup>)

**Tank assembly time:** 4 days

**Year:** 2023



Ecuador

**Application:** Attenuation/Detention and Reuse

**Capacity:** 10 m<sup>3</sup>

**Tank assembly time:** 1 day

**Year:** 2023



México

**Application:** Attenuation/Detention

**Capacity:** 600 m<sup>3</sup> & 700 m<sup>3</sup>

**Tank assembly time:** TBC

**Year:** 2023



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- Heating and cooling
- Water and gas distribution
- Waste water drainage



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