

# Structural strength of the AquaCell Lite rainwater cassette

## Product description

AquaCell Lite rainwater cassette is used as attenuation and infiltration tanks of rainwater. It can be used for non-trafficked areas as well as for private car parking's (1 ton/wheel load).

## Characteristics

Length [mm]	1000
Width [mm]	500
Height [mm]	390
Weight [kg]	7
Gross volume [l]	195
Net volume [l]	187
Void ratio [%]	96%
Material	Recycled PP
Color	Black
Certifications	BBA <sup>1</sup>

Table 1: Characteristics.

## Structural strength

BBA (1) approval (03/4018) values for characteristic compressive strength and equations for estimation of long-term deflection can be used as basis for defining structural strength and window of application for the AquaCell Lite.

For loads up to (kN/m <sup>2</sup> ):	Equations for estimation of long-term deflection (mm)
52	Vertical deflection = $0.1069 \ln [\text{time (days)}] + 1.2561$
13	Lateral deflection = $0.9344 \ln [\text{time (days)}] + 1.3841$

Table 2: Equations for estimation of long-term deflection.

Based on BBA values and using the Rankine theory for soil pressure and Boussinesq Theory for traffic load distribution the AquaCell Lite unit can be used with 1 ton wheel load as described in table three.

## Applications

Min. cover depth without traffic load (m)	0,30
Min. cover depth with LKW3* load (m)	0,45
Max. installation depth with LKW3* load (m)	1,50
Max. number of cassettes (layers)	2

Table 3: Window of application.

<sup>1</sup> The British Board of Agrément (BBA)

\* LKW3 equals to 1 ton wheel load per m<sup>2</sup> (passenger car)