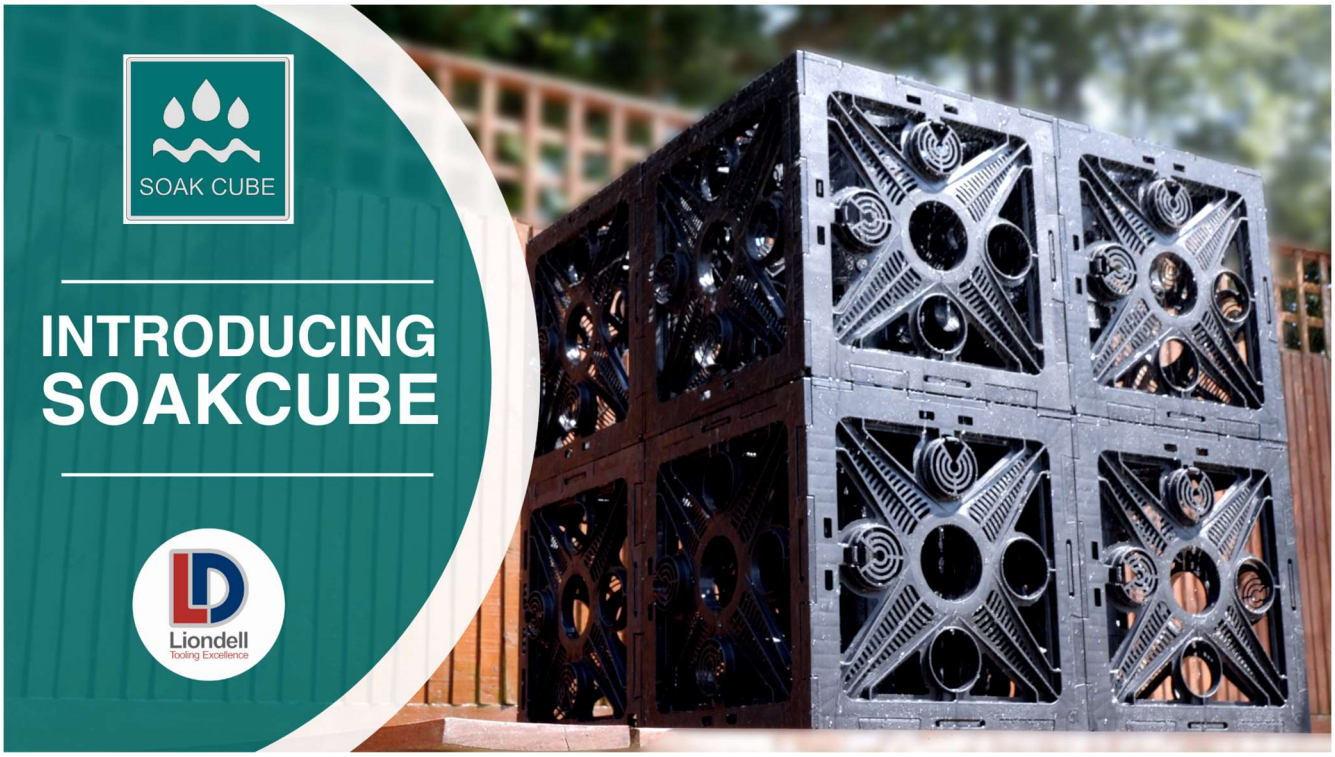


Contact us

+44 (0)7469 706549

projects@liondell.com

soakcube.co.uk

linkedin.com/showcase/soakcube

facebook.com/liondelllimited

Facts and Figures

Dimensions (Assem)	500 x 500 x 500	mm
Volume	125,000	cm^3
Void Ratio	96	%
Capacity	120	l
Load Bearing	Vertical 31.4 Lateral 16.8	t/m^2
Capacity / Pallet	6.875 6.600	m^3 l
Tools / Fixings	Not Required	NA

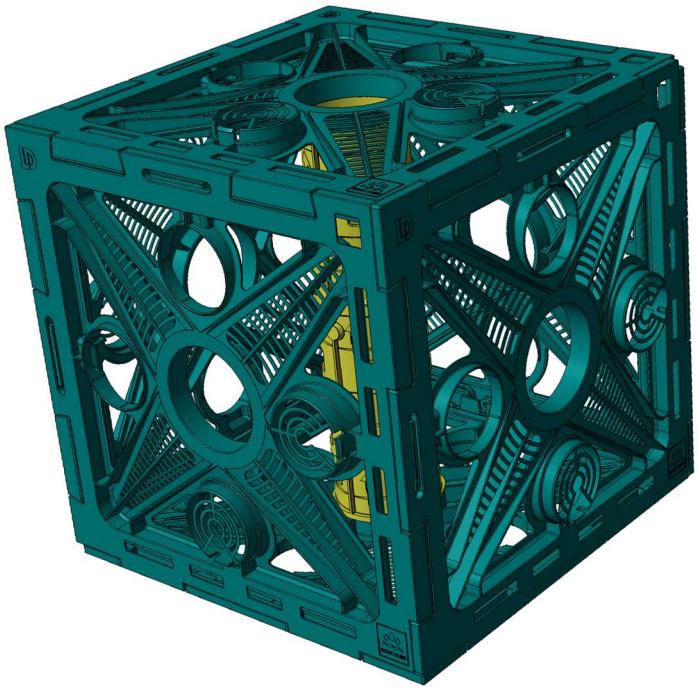
Applications A to Z

➢ Campsite	➢ Golf Course
➢ Car Park	➢ Housing Development
➢ Drive	➢ Lawn
➢ Factory	➢ Patio
➢ Farm	➢ Playground
➢ Football Pitch	➢ Precinct

Patents:
Granted: **GB2615175**
Applied: **European Patent EP22209939.2**

SOAKCUBE 500 **Issue 1_Rev00_2024 10 22**

Table of Contents



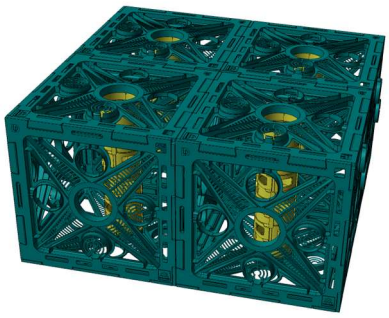
About the Product

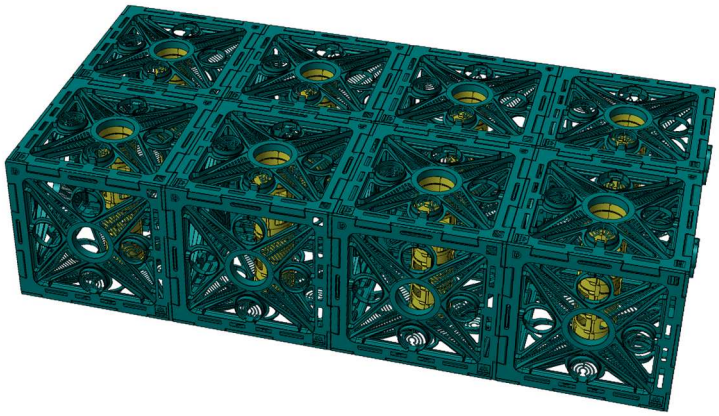
Soakcube is an attenuation product that creates a void in the subbase for storm water collection. The 500 version is the first version to enter the market. However, there are larger and smaller versions in the design pipeline.

Unlike other products on the market, the Soakcube is supplied as a 'Flat-Pack', unit for onsite assembly. It can be used under hardscaping which would also require pipe drainage from surface to the attenuation assembly. It can also be used under a permeable surface (blocks, turf, soil, gravel etc.)

Depending on the application, a trench or hole of adequate dimensions (specified on a separate document) would be excavated so that the attenuation assembly would be supported on the underside by compacted gravel, leaving sufficient depth above to cover the assembly with a further layer of gravel and then the finishing surface.

- The assembly of the unit itself is simple. There are no secondary fixings and tools are not required.
- Another unique feature is that the cubes (when assembled) are designed to lock onto adjacent cubes with an integral clipping system.
- Simply arrange the cubes in the configuration required and push them together.
- Prior to installation underground, the whole unit is wrapped in a geo-textile membrane to prevent soil ingress.



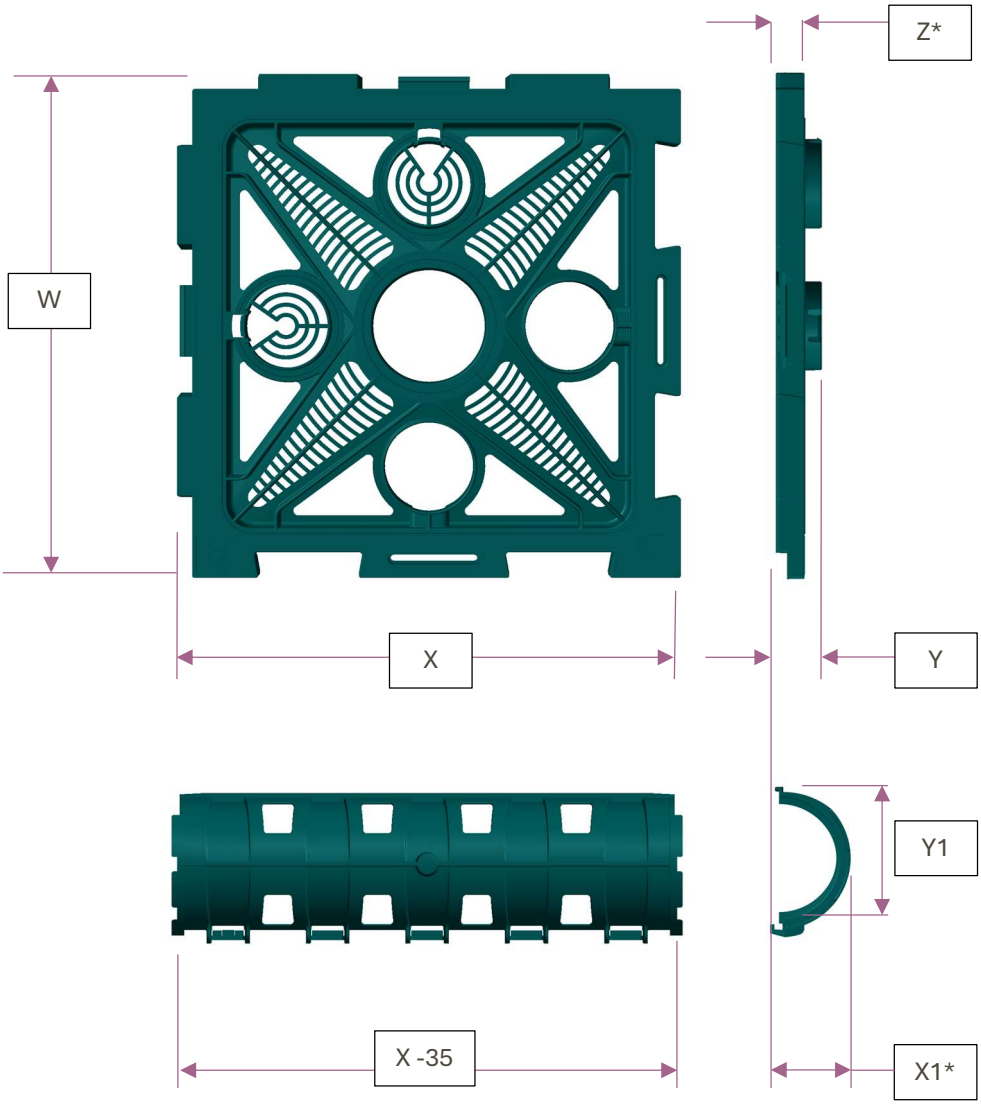


Product Design

Soakcube 500 – INDIVIDUAL COMPONENTS

The cube itself comprises of 6 identical moulded plastic panels.
The 500 designates the X & Y dimensions of the panel.

Inside the cube, assembled to sit vertically on the centerline, is a central support known as Support 500 comprising 2 identical half pipe mouldings.



*Stackable height

Dims. (mm)	W	X	Y	Y1	X1*	Z*	Weight(g)
Panel 500	500	500	40			25	1,170
Support 500		465		136	73		0.390

Product Design

Soakcube 500 - Assembly

Below is an overview of the assembly stages.
Full assembly instructions shown on a separate document.

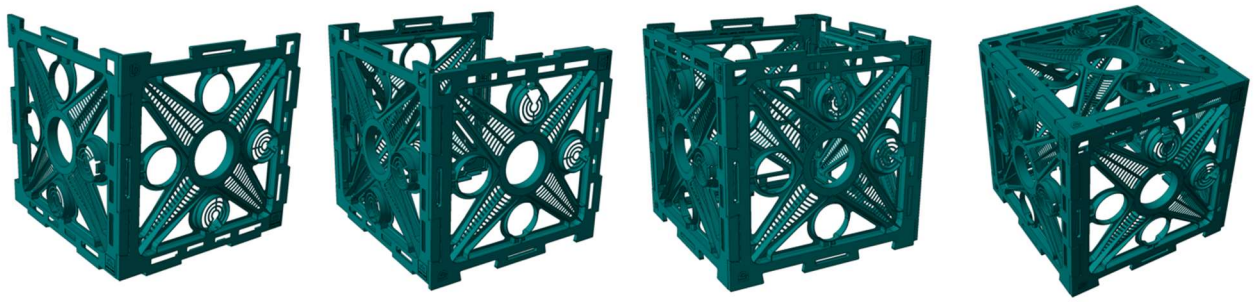


Fig. 1: showing 5 panels assembled and centre support in place
Fig. 2: showing fully assembled cube

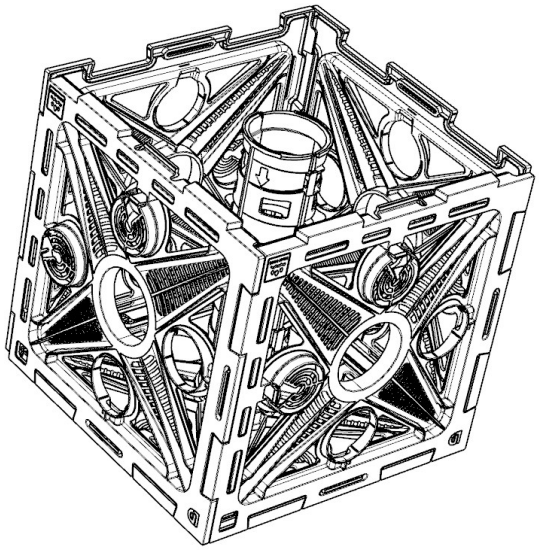


Fig. 1

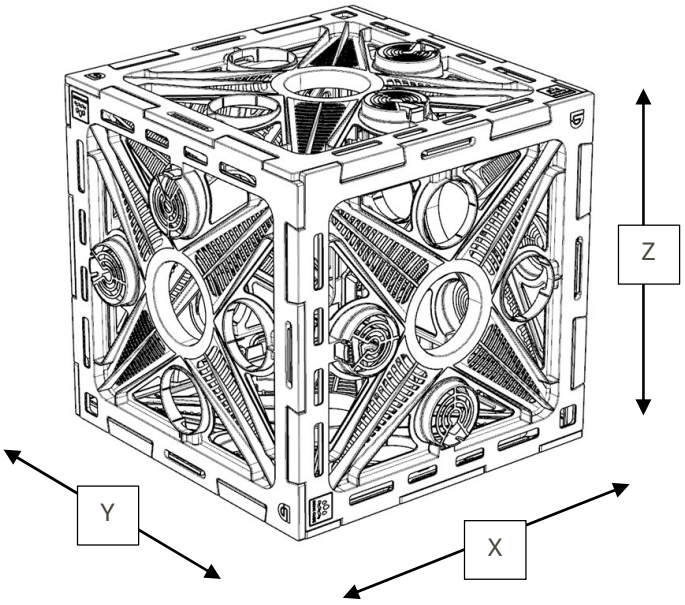


Fig. 2

TECHNICAL INFORMATION

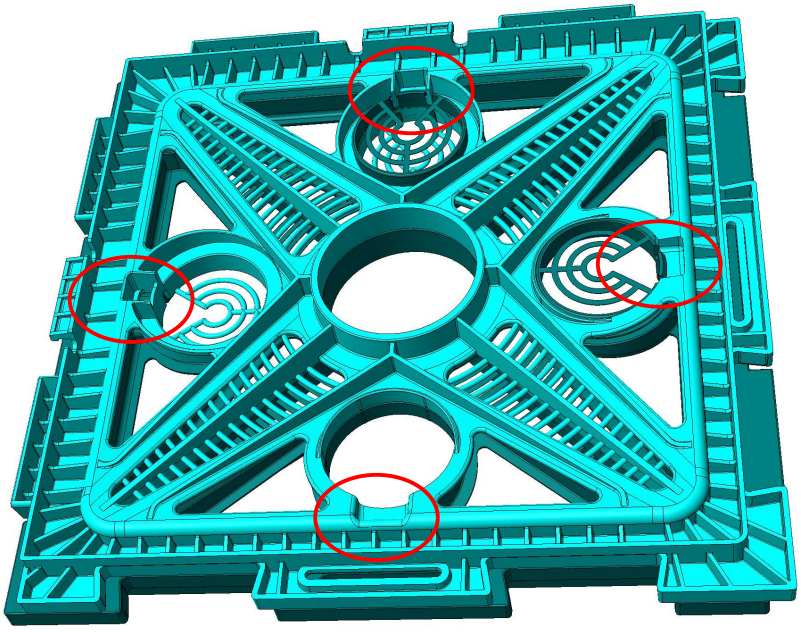
PART	Weight(kg)	Void Ratio	Volume (Litres)
Soakcube 500	7.8	96%	120

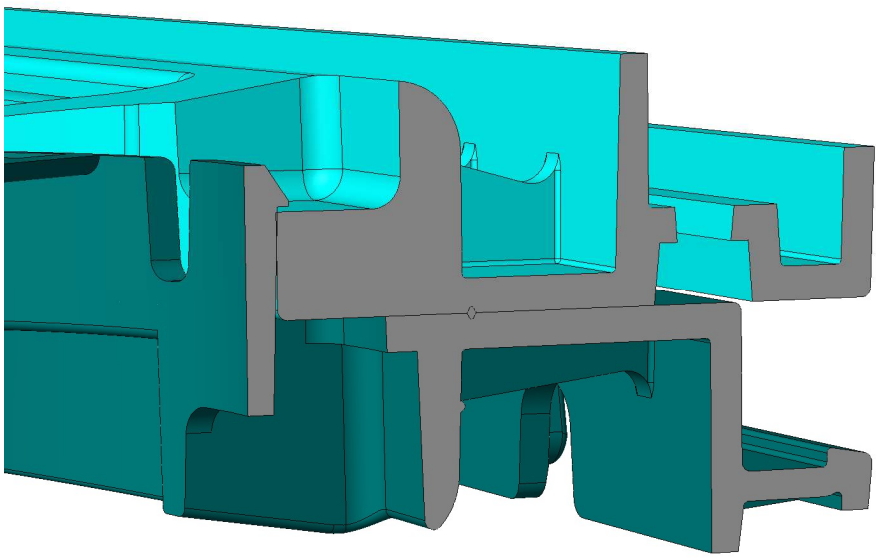
Product Design

Soakcube 500 – Locking Features

See below images of how the product locks together.

Face-to face orientation of panels will present 4 x clips (Red circles) on each face which gives a robust location. Promo Video https://youtu.be/PQpE4rhK0Mc



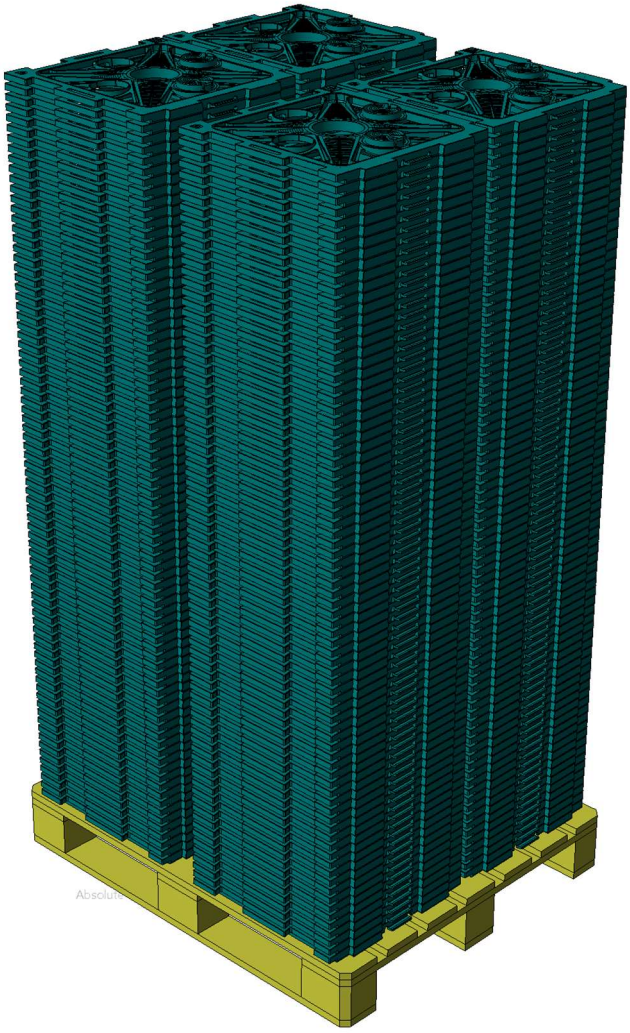


Section through one of the clip features

Product Design

Soakcube 500 – Transport Benefits

The Soakcube has been designed as a flat-pack product.
As each panel is identical, they nest / stack in increments of 25mm.
The image below shows 4 x stacks of 82 parts



The table below provides some guidelines based on individual product.
6 x Panel 500 / 2 x Support 500 are required to build a single unit.

TECHNICAL INFORMATION			
PART	Parts on Pallet (2m)	40' Truckload	Build Volume (Litres)
Panel 500	328	7500	150,000
Support 500	400	9600	600,000*

*For every truckload of panels only 6 pallets of Supports are required

Installation / Location

The location and installation of the product should consider the following:

1. The subbase will allow storm water to drain through it.
2. The soakcube assembly should have sufficient volume to cope with the amount of storm water expected, allowing for drain off time through the subbase.
3. The soakcube assembly has sufficient strength to withstand expected loads put upon it during its lifetime in its buried location.

Items 1 & 2 fall outside of the product design scope and need to be assessed or calculated on a project-by-project basis.

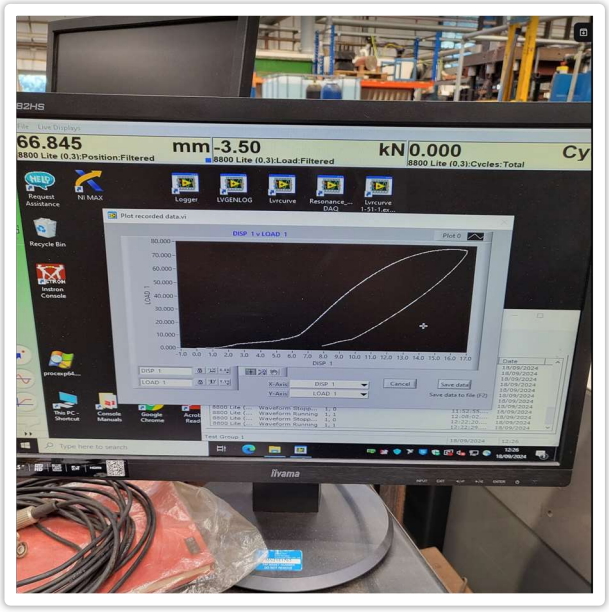
However, item 3 can be established from physical testing in a laboratory.

Load Testing

Compression testing of assembled products to determine the maximum resistance to a uniform load applied at a constant displacement rate.

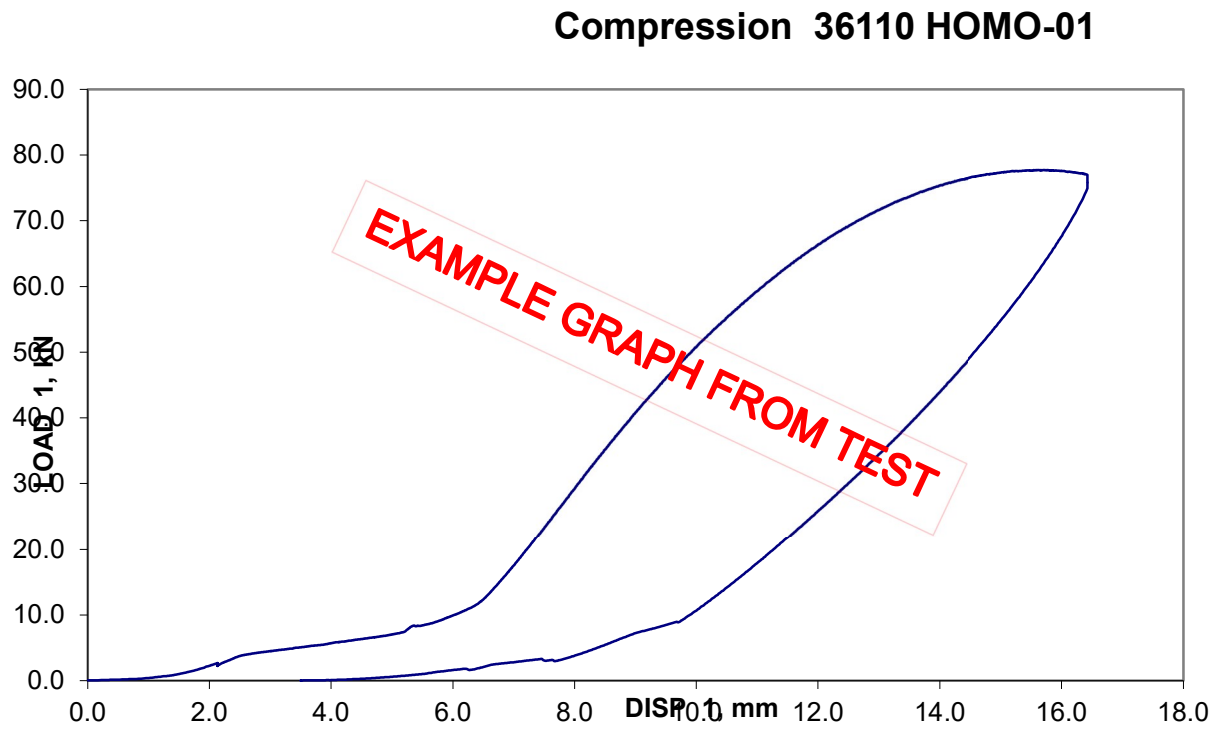
Six (6) compression tests to BS EN 17150:2019 Method B, utilising a fixed upper plate and a displacement rate of 1 mm/min until maximum load was achieved.

- Temperature: 22.5°C
- Humidity: 57%
- Weight of the metal top plate: 8.365 kg



Results:

Compression testing of assembled cube to determine the maximum resistance to a uniform load applied at a constant displacement rate.



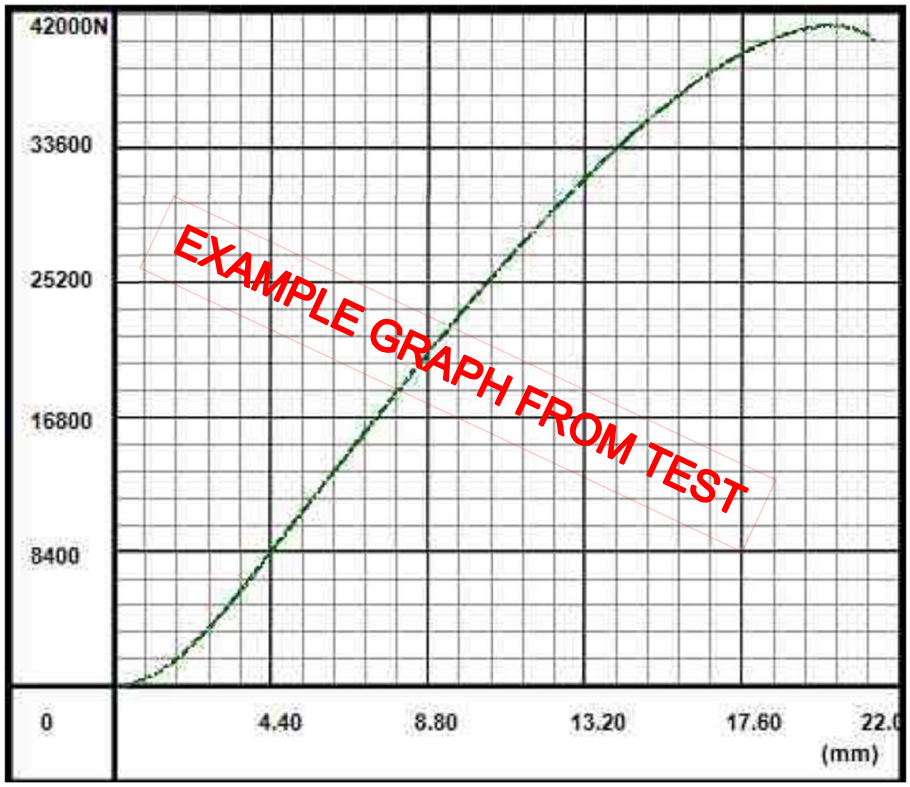
The table below shows a summary of compressive strength results.

	Maximum Load **Vertical**	Corresponding displacement	Area	Maximum Stress
	kN / Metric Tonnes	mm	m^2	kPa
Average	77.11 7.86	15.31	0.25	308.77
	308.44 **31.44**	15.31	**1**	308.77

Note: Results for 1m² Area are derived from testing of single unit of 0.25m²

Results:

Compression testing of assembled cube to determine the maximum resistance to a uniform load applied at a constant displacement rate.



Below table shows a summary of compressive strength results without centre support to replicate side (Lateral) loads

	Maximum Load **Lateral**	Corresponding displacement	Area	Maximum Stress
	kN / Metric Tonnes	mm	m^2	kPa
Average	41.33 **4.21**	20.5	0.25	165.32
	165.32 **16.85**	20.5	1	165.32

Note: Results for 1m² Area are derived from testing of single unit of 0.25m²

For further information Contact:

Andrew Hogg
Managing Director
Liondell Limited

+44 (0)7469 706549

andy@liondell.com
projects@liondell.com

https://www.soakcube.co.uk

https://www.linkedin.com/showcase/soakcube

https://www.facebook.com/liondelllimited