Product: Genus SubTerra™

GENUS SubTerra™

Next Generation Pre-formed Structural Access Chambers & Covers

PLURA INNOVATIONS

GENUS jĕn’-us

(in philosophical) to have pedigree.

(in general use) a class of things which have common characteristics and which can be divided into subordinate kinds.

GENUS SubTerra™

Next Generation Structural Underground Access Chambers & Covers

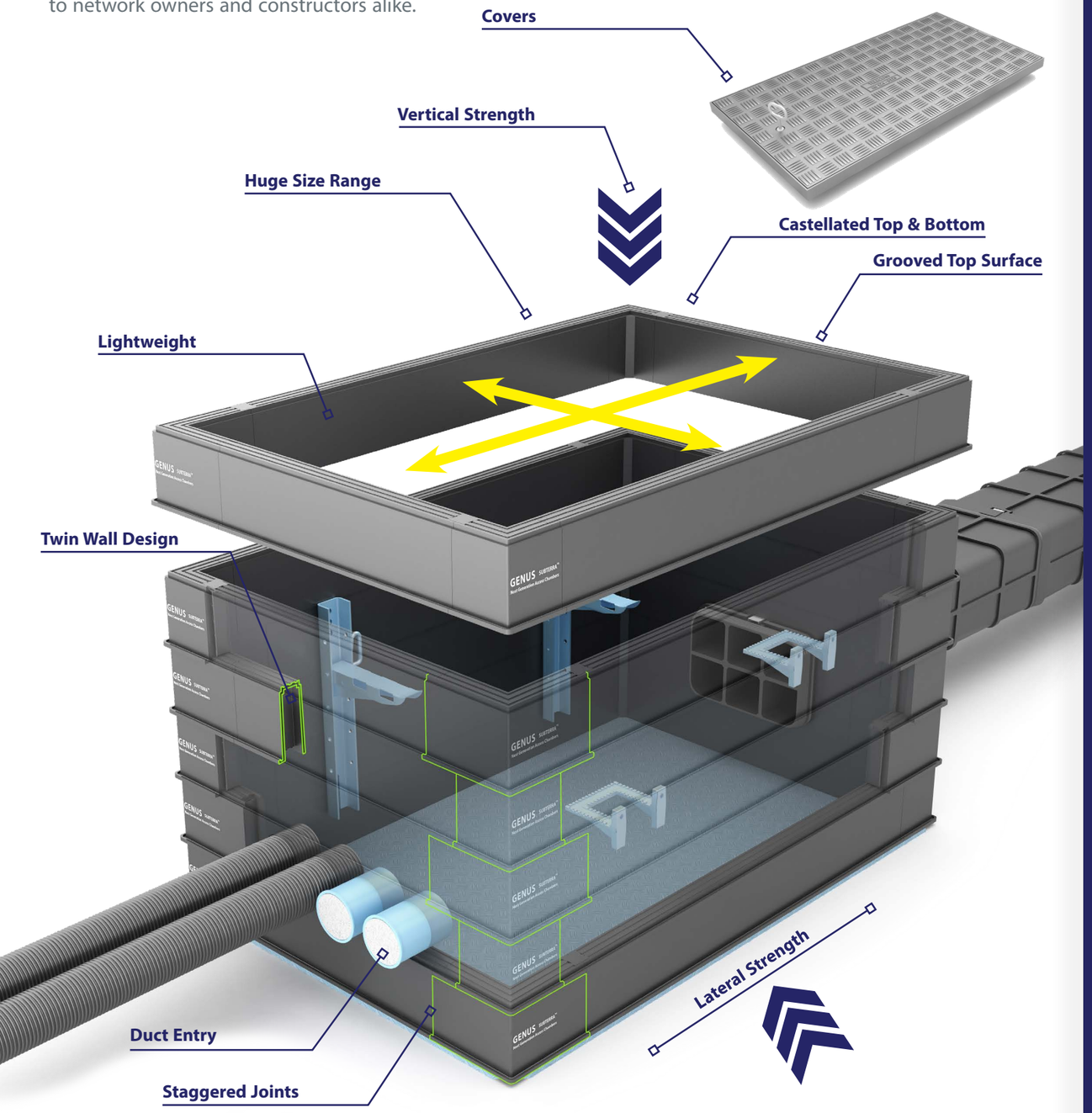
Contents

PLURA INNOVATIONS

GENUS SubTerra™

GENUS SubTerra™ has been developed from a deep understanding and knowledge of many years experienced in the design, production and most importantly; use, of underground access chambers.

It brings in the next generation of Pre-formed, Structural design, offering many benefits to network owners and constructors alike.



SubTerra™ Explained

Key Features

Hybrid System Enhancements

PP and GRP sections.

Light Weight

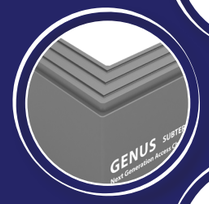
Sections are easy to handle without lifting equipment.

Twin Wall Design

Provides for structural chamber walls, with loads up to 60 Tonnes.

Castellated Top & Bottom

Provides for a positive interlock between each section.

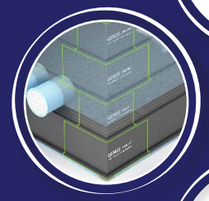


Grooved Top Surface

For bedding of the surface frame and covers.

Vertical Strength

Tested up to 90 Tonnes.

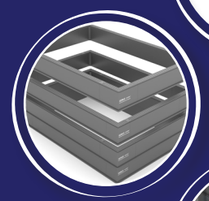


Staggered Joints

The Staggering of the corner sections and sidewalls creates a very strong 'brick-worked' effect.

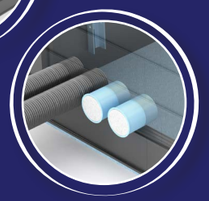
Lateral Strength

Tested up to 50kN/m^2.



Huge Size Range

From 150mm^2 to over 6 metres side walls.



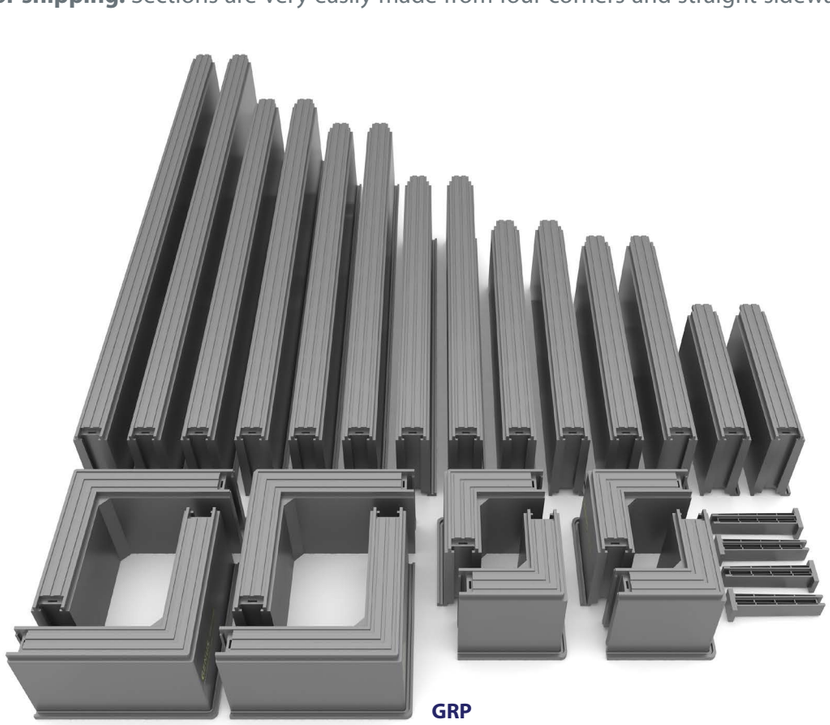
Duct Entries

Are easily made on site with a hole saw or factory fitted, capped and ready for use. (See more under accessories).

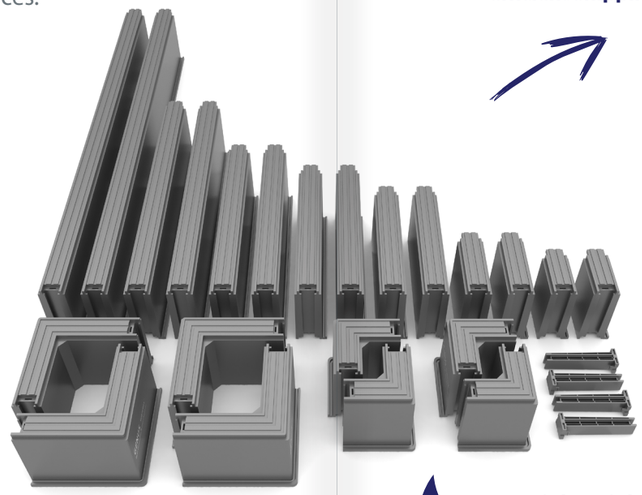
PLURA
INNOVATIONS

GENUS SubTerra™

GENUS SubTerra™ is a component-based stacking ring section chamber system. This offers users a huge size range and the ability for our distribution partners to ship around the world at little cost of transport or shipping. Sections are very easily made from four corners and straight sidewall pieces.



GRP



PP

Feature Focus - Only one connector needed per side wall

Design & Innovation

Each sidewall has a male and a female end that slide together to form a strong connection without the need for glue or fixings. Then when fitting to the corners, which are both female ends; one connector per sidewall is used; drastically cutting down on the number of connectors required in other systems.

SubTerra™- A Component based system

Feature Focus

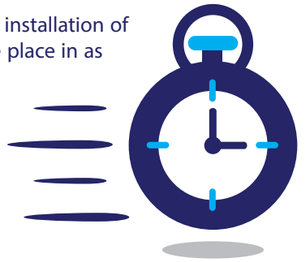
Designed for efficient shipping

Economical Shipping

Designed to be packaged effectively and save on national and global shipping costs.

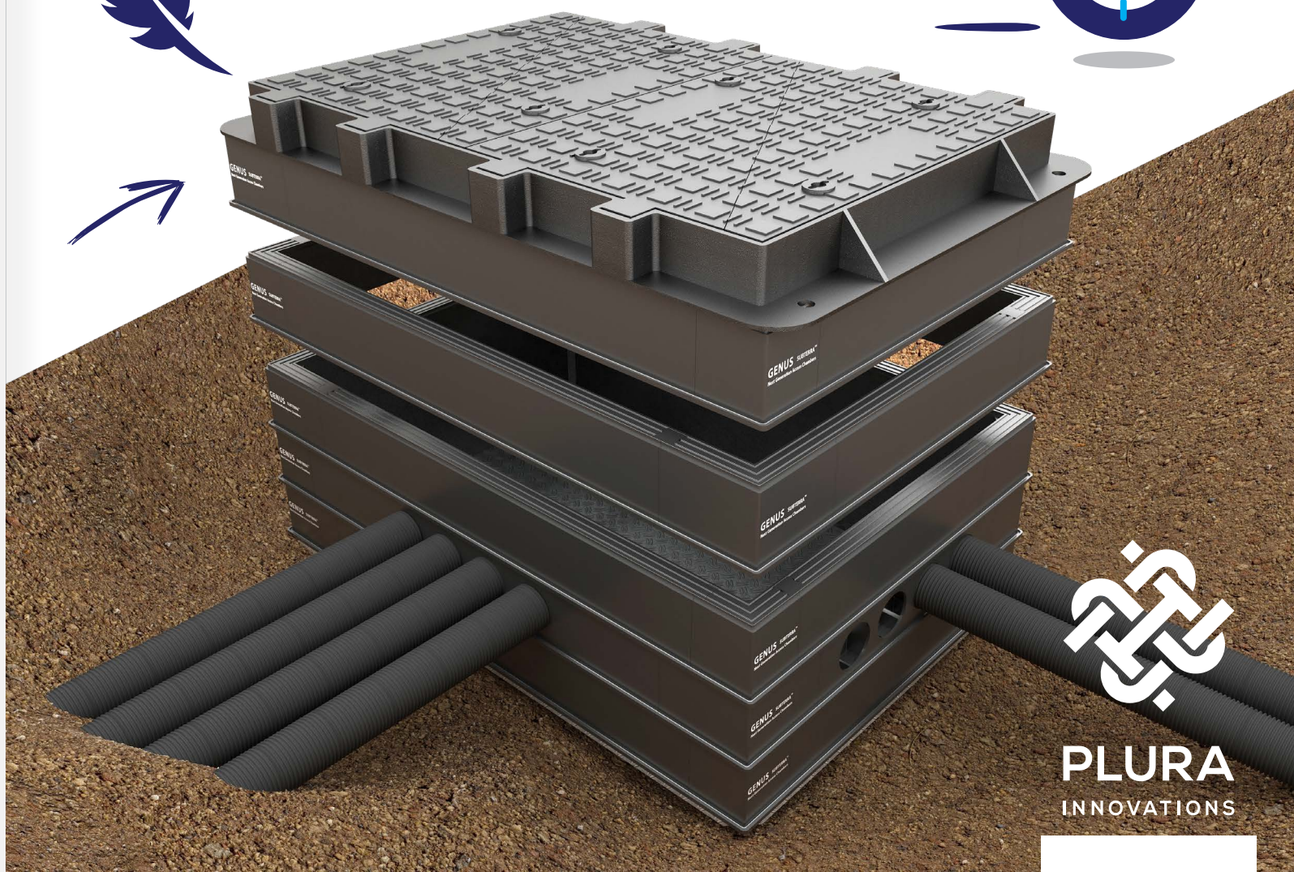
Fast Installation

Once the hole is dug; installation of the chamber can take place in as little as 30 minutes.



Lightweight Sections

Stack on each other to build access chambers of any depth.* Typically up to 2.5 metres.



GENUS SubTerra™

"GENUS SubTerra™ is the perfect balance between High End Technical performance and Commercial Competitiveness."

Available in two, totally compatible and interchangeable materials each offering its own advantages when used to construct a single material chamber.

When these are combined in a single Hybrid unit; these individual advantages can be used to create a chamber that has the perfect balance in strength and cost.

Add in the additional N-Force GFRP Profile Beams and Designers have a complete solution for tailoring Pre-Formed Access chambers to their needs.

Why GRP & PP?	GRP	PP
Chemical Resistance	Excellent	Excellent
Fire Resistance	Yes	Can be made to be
Temperature Stability	Highly Stable	Stable
UV Stability	Excellent	Very Good
Stiffness	Very High	Medium
Recycled Materials	No, but high level of fillers	Yes
Recyclable	Yes	Yes

Glass Re-enforced Polyester Resin (GRP)

Commonly known as GRP; brings excellent stability and strength to the SubTerra™

Ideal for use in chambers from 1 metre clear openings and above it excels all the way up to over 4 metre sidewall lengths. Providing for minimum 40 tonnes vertical loads up to 90 tonnes, without the need to surround with concrete,

Lateral load resistance is also excellent; designed to support 50kN/m^2 and higher; which represents heavy surface surcharge loadings and surrounding ground weight.

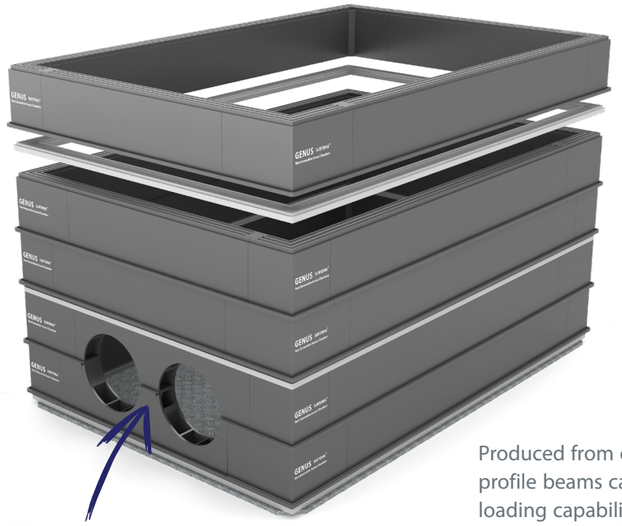
When used in combination with the PP version it can significantly increase the lateral resistance capability for medium sized chambers with a 900mm side wall and longer.

I'm made from GRP

Great for side wall loadings on large chambers or long wall lengths.

SubTerra™: Why is it better?

N-Force



Re-enforcement Piece

Unlike steel - it will not corrode or degrade over time.

Produced from continuous Glass Fibre Re-enforced Polyester; the N-Force profile beams can be used on any chamber to provide un-paralleled lateral loading capabilities, where site conditions require an enhancement in sidewall resistance.

Designed to interlock with the castellation of either top or bottom of ring sections; the profile is coloured to draw attention to installers where they are to avoid drilling for duct entries or wall furniture.

An added feature of the N-Force beam is that it can be used to attach a base unit or alternatively; at the top of the chamber it offers a means of increasing depth in small increments.

Feature Focus

Where many or large duct entries are to be made; the N-Force can also be used as a 'lintel' to protect the entry point from vertical load transference.

Foamed Polypropylene; PP

When used in the twin wall structural design; it offers a low-cost way of constructing small to medium chambers.

Whilst not as strong as GRP: With minimum 40 tonnes unsupported vertical loading capability; the PP version is by no means inferior and it will readily provide a strong alternative to building chambers in concrete.

When used in combination with the GRP version it can significantly reduce the cost of medium sized chambers from 900mm in side wall and longer.

I'm made from PP

Still very strong but I can reduce the cost of your chamber significantly in areas where side load is not as great, for example, the shorter ends of big chambers or sandwiched by GRP above and below.

PLURA INNOVATIONS

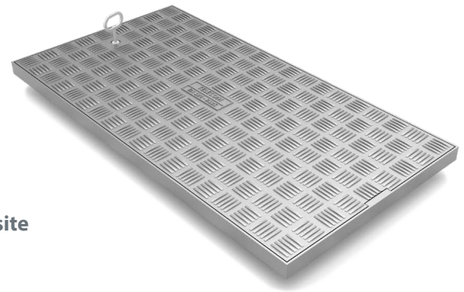
GENUS SubTerra™

The innovative chamber body is only part of the system; with a range of surface covers and accessories available the GENUS system is complete. Providing network owners and installers with peace of mind that everything is covered whilst saving time during planning, through logistics and during installation.

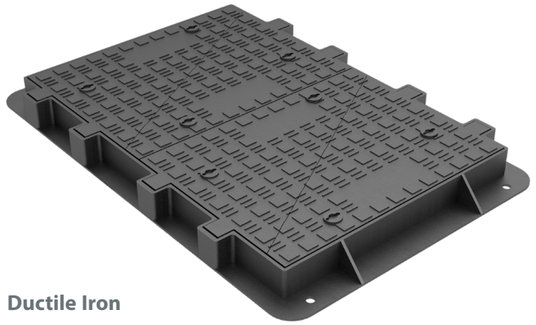
NB* Please refer to our DATA Sheet CM002 for Full Details on Surface Covers & Frames

Surface Covers

Conforming to EN124 for Manhole Tops and Gully Grates, our surface covers are available in various materials to suit customer requirements and in loading classes from A15 (1.5 Tonnes pedestrian loads) up to F900 (90 Tonnes for areas imposing particularly high wheel loads, for example Aircraft Aprons).



Composite



Ductile Iron

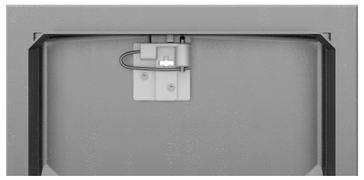
Steel

Concrete Infill

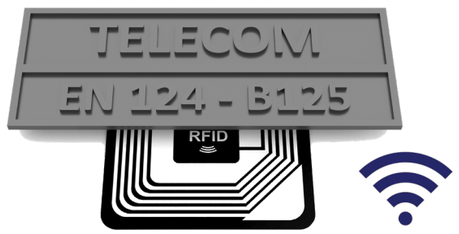
Cover & Frame Options

Surface Frames are available in many formats to suit site conditions

Security can be provided up to Loss Prevention Certification Board (LPCB) Levels. From our unique 'Slam it & Forget' lock to security heads and bolts, to full sub surface & surface security covers.



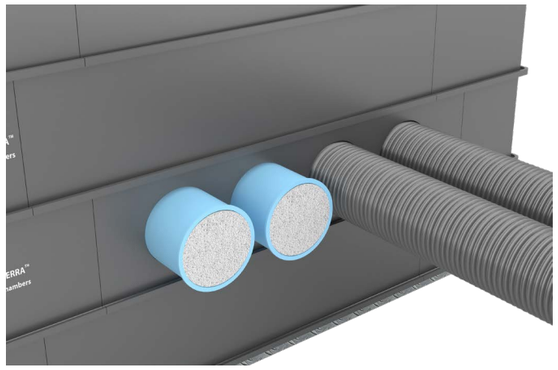
Badging to suit generic sector requirements to RF tagged customer specific badges are available to comply with BIM.



NB* Please refer to our DATA Sheet CM003 for Full Details on Chamber Accessories

Duct Entry Accessories

Duct entry Knock-outs / Pre-made duct entry holes



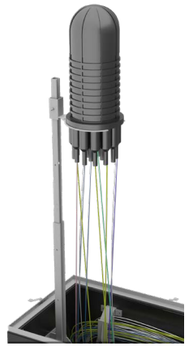
Base Units and Floors

Non-Slip Base SRV 63

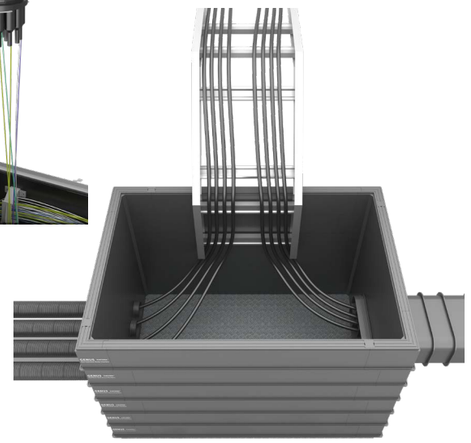
Sump Base

Cable Management

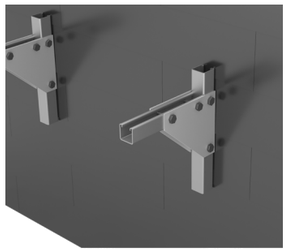
GRP Fibre Joint Managers

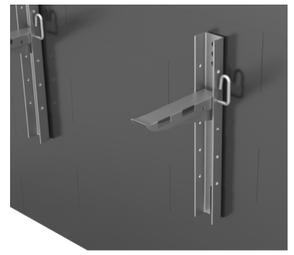


GRP Cable Ladders



GRP & Metal Cable Brackets

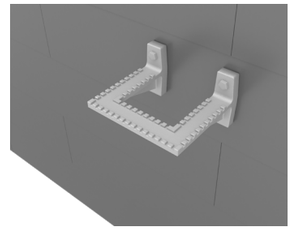




Access Products

GRP Access Ladders

Metal Access Steps



Kit-Out Service

Simply dig the hole, install the chamber, plug in the pipes or ducts and set the surface covers; everything else is already done; wall furniture fitted, duct entries made and flooring complete.

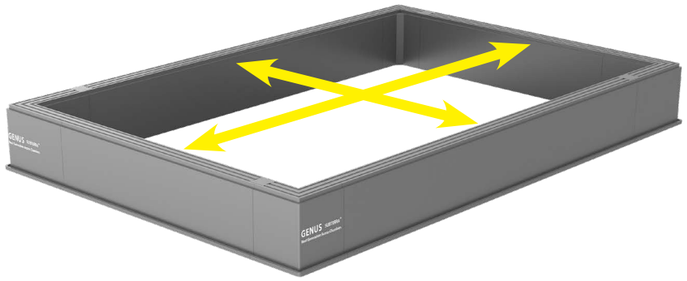
PLURA INNOVATIONS

GENUS SubTerra™

When sizing SubTerra™ the key dimensions are the Clear Opening size and the External Dimensions. Clear Opening is the internal measurement across both internal widths and/or lengths from side wall to side wall.

External dimensions should also be noted to assist with the size of hole to dig out (plus the recommended backfill within our Installation Guide). This is simply the Clear Opening PLUS 70mm (x2) to the outside horizontal rib(s).

Clear Opening



External Dimensions

End User? - We can specify your section make-up.

Measure your clear opening size (as above) and provide us with this information.

Distributors / Network Designers? - Want to see the full size range?

Simply use the tables of information below, and follow our three steps to create your section make-up.

1. Choose a corner pair combination.
2. Choose the side wall pieces to add to the corners.
3. Add 1 & 2 together to give you your clear opening size.

SubTerra™ GRP Components

Corners	100mm + 100mm	100mm + 200mm	200mm + 200mm
Corner Pair combination resultant length	200mm	300mm	400mm
Sidewalls			
300mm	500mm	325mm	700mm
500mm	700mm	375mm	900mm
550mm	750mm	525mm	950mm
700mm	900mm	600mm	1100mm
900mm	1100mm	675mm	1300mm
1000mm	1200mm	850mm	1400mm
1200mm	1400mm	1300mm	1600mm

SubTerra™ PP Components

Corners	75mm + 75mm	75mm + 150mm	150mm +150mm
Corner Pair combination resultant length	150mm	225mm	300mm
Sidewalls			
100mm	250mm	325mm	400mm
150mm	300mm	375mm	450mm
300mm	450mm	525mm	600mm
375mm	525mm	600mm	675mm
450mm	600mm	675mm	750mm
625mm	775mm	850mm	925mm
1075mm	1225mm	1300mm	1375mm

Clear Opening Sizes

NB* You can use more than one side wall piece to make longer lengths as shown in Example 2 opposite.

Create your section clear opening

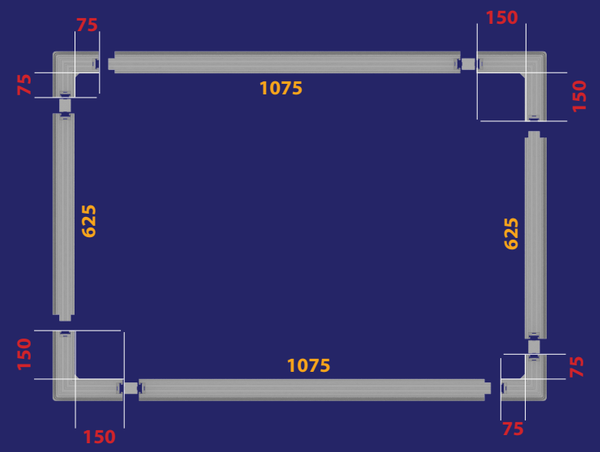
Example 1

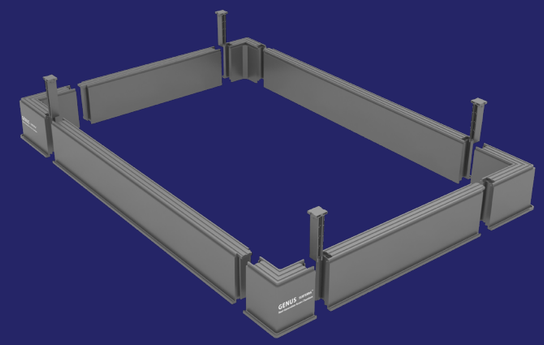
1300mm x 850mm (UK Motorway Communications 'A' Chamber)

PP Corners (75mm + 150mm) = 225mm + PP Sidewall of 1075mm = 1300mm Clear Opening

X

PP Corners (75mm + 150mm) = 225mm + PP Sidewall of 625mm = 850mm Clear Opening





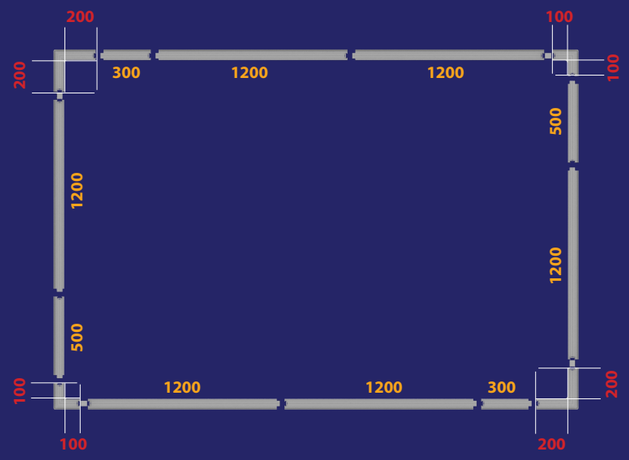
Example 2

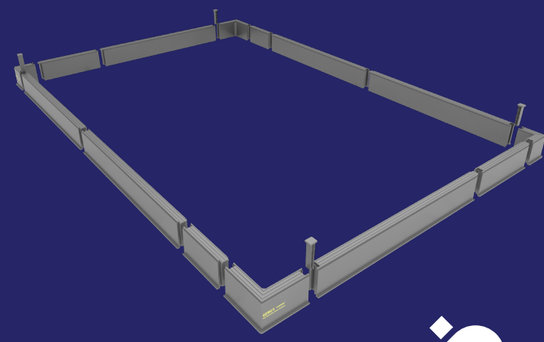
3000mm x 2000mm (Power Networks Joint Chamber)

GRP Corners (100mm + 200mm) = 300mm + GRP Sidewalls of 1200mm + 1200mm + 300mm = 3000mm Clear Opening

X

GRP Corners (100mm + 200mm) = 300mm + GRP Sidewalls of 1200mm + 500mm = 2000mm Clear Opening



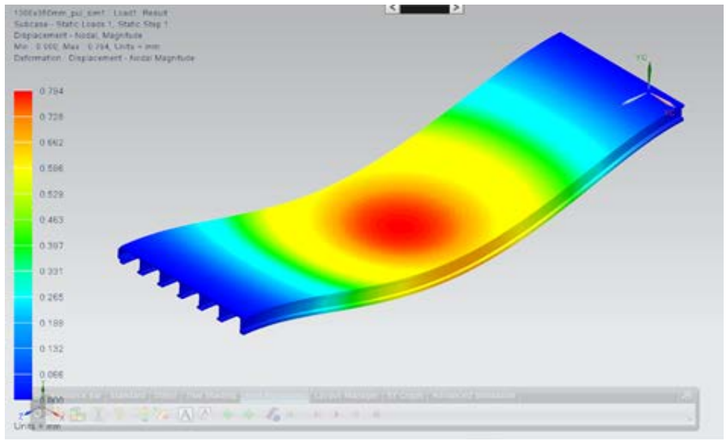


NB* Please refer to our Chamber Installation Guide for a comprehensive understanding.

PLURA INNOVATIONS

GENUS SubTerra™

GENUS SubTerra™ was born out of a deep understanding and experience in the field of Pre-formed Access Chambers. Taking initial concept ideas that were based on over 30 years in the field by the pioneers in the design of pre-formed access chambers and optimising them through the use of Finite Element Analysis.



When the product became a physical reality, it was put through its paces at a state of the art Advanced Manufacturing Research Centre endorsed by Boeing.

We don't just say 'its a strong product'; we can prove it!

…but PLURA will not stop until we bring World Class real world testing to an area that has been too laboratory lead for too long.

Enter; our new 'real world testing facility'; access chambers and covers tested in a live environment, where we can not only apply loads into any area of the chambers' structure but we can also cycle these loads both through independently accredited apparatus but also through just driving big things over them!

Through the use of strain gauges, we record the long term impact of backfill materials, surface make up and other such nuances that can affect an installed chambers performance and life.

Technical Performance Endorsement

PLURA
INNOVATIONS

Contact us:

Plura Innovations
Unit 5 Johnsons Estate
Tarran Way South
Tarron Way Industrial Estate
Moreton
Wirral
CH46 4TP

Telephone: 0151 522 0535
Email: info@plurainnovations.com

www.plurainnovations.com

PLURA
INNOVATIONS