



Innovating Underground Network Access





**CUBIS is the World leader in preformed access chamber systems.**

# compli

Active in Australia & New Zealand and more than 20 countries throughout Europe and the Middle East, CUBIS has a customer base that includes water and power utilities, telecommunications operators, rail networks and highway operators.



Our unrivalled range of products is available either directly from one of our manufacturing plants or via one of our many local stockists and distributors.

This brochure will introduce you to our range of Access Chambers, Covers and Frames and the accessories to complete your system.

Strong customer service is fundamental to our business and if there are any questions related to any aspect of this brochure, we ask you to get in contact using the details on the back cover.





# ete system

design & manufacture



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# Preformed Access Chambers

## why use CU access



### FAST

- Installed in as little as 30 mins.
- Quicker re-opening of roads, footways or rail tracks.

### STRONG

- Unsupported 60 tonne vertical loads achievable.
- Side loads comparable with concrete.

### SAFE

- All parts below 25kg.

### VALUE

- No skilled labour or specialist lifting equipment necessary.

### SUPERIOR

- Consistently factory produced to ISO 9001.
- Not affected by frost, acids, alkalis or diesel - all concrete killers.

### FLEXIBLE

- Available in a range of fixed depth or modular designs.
- Duct entries quickly and safely formed on site or factory prepared.
- Overbuilding or benching is easily achieved.
- Clear opening sizes from 300mm x 300mm to 6000mm x 6000mm.



# UBIS chambers?



## PEDIGREE

- Products approved by many high profile blue chip clients.

## ENVIRONMENTAL

- All chambers are recyclable.
- Chambers make use of recycled material where possible.

## COMPLETE

- Everything you need for underground access chamber construction.

## Typical install

STAKKAbOX™ Ultima chamber - 30 minutes



02.00

Area for chamber is excavated and prepared



05.00

Base placed in hole and STAKKAbOX™ sections placed on top



09.00

Build chamber to finished height.



19.00

Backfill and compact surrounding material.



20.00

Bed the surface frame.



30.00

Install surface covers and reinstate.

outperforming traditional methods

# STAKKAbox™

**STAKKAbox™** is a range of sectional, modular and structural preformed access chambers. Each chamber is made from 150mm deep stacking sections which interlock to offer flexibility in finished chamber depths.

The range has variants for footway and carriage/roadway installations. To help choose the most appropriate chamber for your installation please refer to the strength definition to the left of each description.

The strength definitions correspond with the load classes shown on page 14.



## ULTIMA

**MATERIAL** Glass Reinforced Polyester Resin (GRP)

**STRENGTH** 6



The **ULTIMA** is ideal for roadway installations as the material used does not suffer from creep, the process where an unsupported or non-compacted sidewall can move over time due to loading from traffic. In addition it provides a much more rigid sidewall in larger chambers and has good thermal stability in extremes of temperature. **ULTIMA** is available in a fire retardant material to UL94 5VA.



Offering extreme flexibility, **ULTIMA** can be fabricated to manufacture any chamber dimension.

## MODULA

**MATERIAL** Talc filled Polypropylene (PP)

**Component Ring STRENGTH** 4

**Solid Ring STRENGTH** 4



Subject to installation specification

The **MODULA** is mostly utilised for footway installations but due to its excellent vertical load capability it can also be installed in trafficked areas.

It is available in two sub-types: **component rings**, made from corner pieces which can be used alone to form a 300mm square section or in combination with side-wall pieces measuring 100mm, 150mm and 300mm to produce a wide range of chamber sizes.



**Solid rings** are the most popular component ring sizes, moulded in a single solid piece.

## FORTRESS



**MATERIAL**

Foamed High Density Polyethylene (HDPE)

**Footway STRENGTH**



**Carriageway STRENGTH**



The **FORTRESS** is available in two sub-types. **Footway** is designed for installation into footway environments although it can be installed in kerbside channels. It is moulded in complete sidewall panels which are assembled to form complete ring sections. It is designed with preformed slots on the inside wall for fitting cable management brackets.



Fortress Footway

Fortress Carriageway

The **FORTRESS Carriageway** is supplied in a complete ring and has been designed and extensively tested to resist vertical and sidewall loadings experienced in the roadway.

## RAD



**MATERIAL**

Foamed High Density Polyethylene (HDPE)

**STRENGTH**



The **RAD** is produced from sidewall panels, which are made into complete ring sections using corner connector columns. These panels are available in 450, 600, 750, 900 and 1050mm sections which can be joined to offer many different clear opening combinations. Ring sections are available



in 150mm and 500mm deep variants, which like all of the STAKKAbox™ range, can be stacked to build deeper chambers.

# MONObox™

**MONObox™** is our range of single piece, structural preformed access chambers. Each chamber is produced in a single piece to allow the installer to very quickly and easily place the chamber, connect ducts and backfill.

The MONObox™ range does not require a frame to keep the cover in place as all are designed to fit the cover directly.

MONObox™ is available in two varieties:

## POLYvault™

**MATERIAL** Foamed High Density Polyethylene (HDPE)



**STRENGTH** 2

**POLYvault™** is a modular design suitable for footway installations but is equally suited alongside rail tracks. The single wall design means the product remains very light even though it is a single piece construction. Structural ribs on the outside provide

resistance to vertical and sidewall loadings and this can be complemented with internal stiffening bars to accommodate higher specifications.



## CARSON™

**MATERIAL** Foamed High Density Polyethylene (HDPE)



**STRENGTH** 1

The **CARSON™** range of single piece chambers has been produced and installed for 40 years. The single wall design product has its own complementary range of drop-in HDPE lightweight covers. This world renowned brand has been used widely on golf courses throughout the USA, Europe, the Middle East and Australasia.

The high quality nitrogen foamed HDPE material used means it remains the best quality irrigation and water valve box on the market.



2

Subject to installation specification



Our **unique flat pack designs** allow for the best of both worlds, providing the ability to ship chambers with a minimum of pallet space yet still have the strength and quality associated with a STAKKAbOX™

Refer to Data Sheet 002 for further information on MONObox™.



# AX-S™ Covers

The CUBIS AX-S™ range of surface covers provide customers with a complete underground network access system as they are designed and manufactured from a range of materials to compliment our chamber ranges. The AX-S™ range can be tailored to meet specified loading requirements from pedestrian up to carriageway duty (please refer to Standards on page 14) and are available in a wide range of clear opening dimensions and depths.

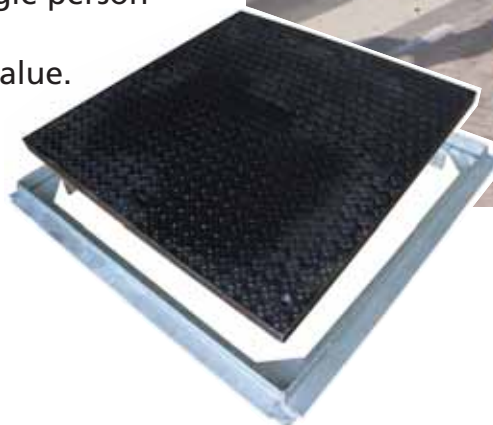
## AX-S™ Concrete

- 15 tonnes (C150kN) loading available.
- Covers lift and slide out for one-person operation.
- Covers can be produced in any size range.
- No inherent scrap value.



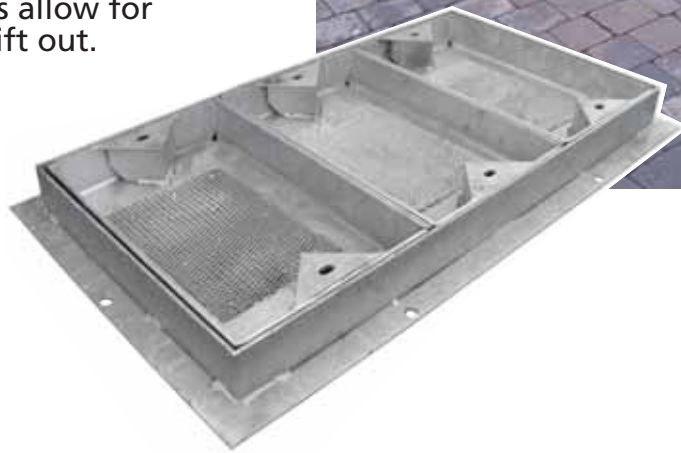
## AX-S™ Composite

- Produced from Sheet Moulding Compound (SMC), a type of glass reinforced polyester resin (GRP).
- 21 tonnes (D 210kN), 15 tonnes (C 150kN), 8 tonnes (B 80kN) and 1 ton (A 10kN) loadings available.
- Covers are light in weight and fall below the 25kg single person safe lifting weight.
- No inherent scrap value.



### AX-S™ Recessed

- Designed to be filled with any type of landscaping material, such as blocks, tile and stone to match surrounding surfaces.
- 21 tonnes (D 210kN), 15 tonnes (C 150kN), 8 tonnes (B 80kN) and 1 ton (A 10kN) loadings available.
- Tapered cover sides and centralised lifting keyholes allow for single person lift out.



### AX-S™ Ductile

- Produced from high quality 500/7 grade Ductile Iron.
- 40 tonnes (E 400kN), 21 tonnes (D 210kN) and 15 tonnes (C 150kN) loadings available.
- E400 Covers are available in hinged design for easy one-person access.



## AX-S™ Steel HYDROloc

- Widely used in water treatment and pumping station chamber locations and general construction.
- 21 tonnes (D 210kN), 15 tonnes (C 150kN), 8 tonnes (B 80kN) and 1 ton (A 10kN) loadings available.
- Spring assisted single person lift covers.
- Integral safety grids, access ladder, neoprene seal and safety stay options.
- High security, unauthorised entry prevention options.
- Hot dip galvanised to AS1650/1980 & EN1461 standard and/or aesthetic powder coated.
- Full site survey and installation service available.



## AX-S™ Steel

- Galvanised steel range to fit any size of chamber.
- 21 tonnes (D 210kN), 15 tonnes (C 150kN), 8 tonnes (B 80kN) and 1 ton (A 10kN) loadings available.
- Many innovative designs available.



## AX-S™ Options



The following options are available throughout the AX-S™ range:

- Badging can be created to meet the customer's requirements, such as name and company logo.
- Locking, in a number of forms; turnbuckle latches, bolts and slamlocks all with secure key heads (see page 12)
- Many types of frame option are available to provide for easier installation and maintenance of the frame and cover to the access chamber (see page 11).

Refer to Data Sheet 003 for further information on AX-S™ Covers.

# AX-S™ Frames

**AX-S™ frames** are bespoke manufactured to meet the exact specification of projects. The range has been developed to offer installers tailored solutions to problems experienced on site. On the whole they are faster to install and provide for easier maintenance over their installed life.

CUBIS is dedicated to providing effective solutions that match your exact needs. Making use of our design and manufacturing expertise, we would be delighted to develop a new frame design to overcome your particular issue.

## AX-S™ Raising Frame

- Galvanised steel frame with internal or external locating skirt.
- Can be supplied with holes for securing to the chamber with self-tapping screws.
- Rising skirt assists with reinstatement and prevents ingress of debris if the frame is raised in the future.



## AX-S™ BLOKadjust™

- Locates the surface frame to the top of the chamber.
- Available for AX-S™ Concrete, AX-S™ Composite and AX-S™ Recessed.
- Steel frame with patented block height adjustment in 5mm and/or 10mm increments.
- Allows installers to very quickly and simply set the finished height of the AX-S™ Frame and Cover.
- Can also be used for post installation rising of frame if paving is re-surfaced to a new height.
- Internal skirt prevents debris falling into the chamber.



## AX-S™ Block Paving

- Steel frame with smooth outer vertical face to allow for block paving etc. to be placed right up to the frame.
- Can be provided in Raising or BLOKadjust™ formats detailed above.



## AX-S™ Floating

- Available for AX-S™ Ductile E400 covers.
- Designed so covers can be raised by the local authority without having to access the chamber, avoiding accidental damage to operator's plant within.



Refer to Data Sheet 003 for further information on AX-S™ Frames.









# Security

**Protecting** underground networks from unauthorised access or even terrorist attack has become a major issue for operators in recent times.

In line with this increased threat CUBIS has worked hard to bring customers a wide range of security solutions to match the level of perceived threat.

Many high profile companies already rely upon our security systems to protect their cable and/or water networks.

To assist customers in choosing the appropriate security product and to eliminate wasteful over-specification, we have composed a four lock level.

Security Level	Protecting From	Attack Time	Typical Tools
 Low	Curious opening - Casual vandalism	 5 minutes	Tools at hand, fingers, car keys, penknives
 Medium	Theft of service - Vandalism	 10 minutes	Screw drivers, hammers, hacksaw, pliers
 High	Sustained vandalism	 15 minutes	Cordless power tools, crowbars, wedges, hammers
 Extreme	Prepared attack	 25 minutes	Sledge hammers, disc grinder, bolt cutters


Full details of attack tools are available on request

Our chamber security is provided in one or a combination of:

## SURFACE COVER LOCKING

Our range of AX-S™ covers can be supplied with locking options to match the level of security required and surface covers can be complemented with a further layer of high security plates.





 **TURNBUCKLE BOLTS** are opened by turning the key which moves the latch out from a locked to unlocked position. The latch is retained in the cover, removing the risk of loss of the bolt by site operatives. Keys are designed to meet customer requirements.



 **SECURITY BOLTS** are also available in a number of key types and are simply bolted down into place to secure the cover. Standard types of key are available in flat head, penta head, offset circle and snake eye. As with the turnbuckle bolts, we can also match your existing key type if it differs from our standard types.



 **HASP AND STAPLE LOCKS** are secured using a SEAP approved padlock. The padlock itself is protected using a shroud or flap.

 **SUB-SURFACE COVER SECURITY PLATES** can be fitted to access chambers to prevent damage or unauthorised access to networks. Components have been designed to meet stringent Loss Prevention and manual handling standards and are secured by means of a SEAP approved padlock system. Once fitted, all bolts, fixings and entry points are hidden from view.

 **COMBINATION SYSTEM**  
Being a mixture of Locking Surface Covers  and/or  Sub-Surface Cover Security Plate .

Refer to Data Sheet 005 for further information on Security products.

# Options & Accessories

Using a **CUBIS** Access Chamber system can save even more time with our Options and Accessories range, allowing installers to simply place, connect up tubes or ducts, backfill and walk away.

CUBIS have therefore developed our **X-TRAS™** range to cater for all network operator requirements.

Focusing on customers needs, we have developed the parts required and offer a pre-fitting service, saving further time on site and providing a consistent build quality.



## X-TRAS™ Bases

- We extrude 100% recycled Low Density Polyethylene chamber bases to suit any chamber size. These are securely fitted to a ring section or bottom of a chamber to provide a clean easy finish to the floor of the chamber. There is no requirement to 'float' a floor on site and the floor prevents vegetation and silt from entering.
- Bases are available with an anti-slip finish, grated drainage holes with silt block, sumps to provide a low point for removal of water and built in cable pulling eyes.

## X-TRAS™ Access

- Chambers deeper than 600mm will usually require steps or ladders for access. We supply high quality drop-in or bolt-on steps to suit customer requirements.

## X-TRAS™ Duct Entry

- Ducts, tubes and pipes come in many size and wall configurations and we have developed fittings which provide for the simple transit of these into our chambers. Whilst duct entries can always be made very easily on site, our pre-fit service gives consistent spacing and internal wall finish every time.
- The addition of cable glands means they will also stop sand, silt and if required, water ingress at the point of entry.

## X-TRAS™ Cable Management

- Whether based upon Telecom accredited galvanised steel cable and joint management or our own high-strength plastic fittings, these accessories will keep cables dressed perfectly within the chamber.

Refer to Data Sheet 004 for further information on Options and Accessories.









# Standards

## Surface Covers AS3996 Standard

Surface manhole covers installed in Australia should meet the requirements of the Australian Standard AS3996 (road gully and inspection chamber covers). Products designed to AS3996 are grouped depending on their place of installation.

### Load Classes

1	2	3	4	5	6
					
<b>A. 10kN</b>	<b>B. 80kN</b>	<b>C. 150kN</b>	<b>D. 210kN</b>	<b>E. 400kN</b>	<b>F. 600kN</b>
Pedestrian applications inaccessible to motor vehicles.	Footpath and areas where vehicles mount accidentally or for light vehicles such as tractors or livestock.	Light vehicular traffic. Minor roads such as cul-de-sacs and parking areas.	Roads carrying fast moving, heavy vehicles	Very heavy wheel loads as found on construction sites, mining and industrial areas	Extra heavy wheel loads as encountered on container terminals, docks and mining areas.

## Chambers Access Chamber Standards

Unlike for manhole covers, there is no Australia-wide Standard for non-concrete preformed access chambers. CUBIS has created its own vigorous range of tests to replicate a range of scenarios our chambers may experience when installed. Some of these tests have then been applied on a cyclic basis to further demonstrate our products resilience and strength against site conditions. Wherever possible these tests have been carried out and verified by NAMAS Accredited test houses.

### Help us build a new standard

Consistently aiming to be at the forefront of preformed non-concrete access chamber technology and development, CUBIS is seeking to develop a new Australian Standard, pertinent to this well established means of construction. We seek to provide specifiers, industry users and installers with the confidence that they are buying the best quality and most appropriate product available. We plan to create an uncomplicated, reliable standard as a reference for clarity and reliability, thus ensuring a quality installation and long product life.

We look to receive industry and user feedback and to aim to be the catalyst for the new Standard being written.

A copy of the Standard is available from our Technical Department and we welcome your comments.



Cubis 2.10

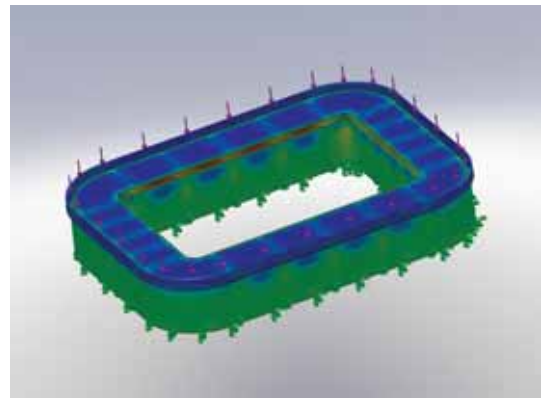
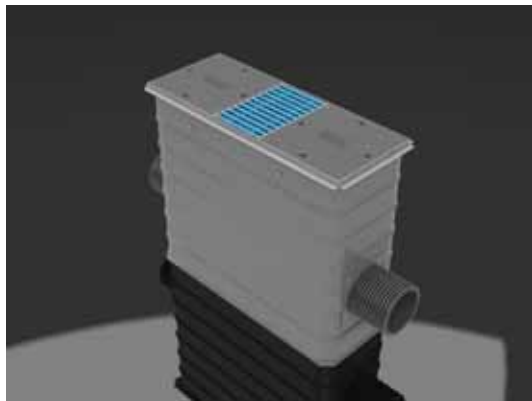
# Technical

# design & production

CUBIS is ready to work on bespoke projects and has a successful track record in taking a project from inception to production. CUBIS launches new products on the marketplace every year, highlighting our commitment to innovating new systems and fulfilling customer needs.

## Design Capabilities

**Full CAD design** and 3D part generation



**Finite Element Analysis (FEA)** for proving of product loading and other performance criterion. Simulation software to test products for load bearing and stress.



**In-house load testing** facilities, capable of testing chambers up to 1500mm x 2500mm x 1500mm in size with loads of up to 40 tonnes, vertically and laterally.

**Rapid prototyping**



# to duction

## Manufacturing Capabilities

**Plastics:** Compression moulding, injection moulding, sheet extrusion and fabrication capability

**Steels:** Fabrication, fully robotic welding cell, dedicated welding booths, rolling line for steel angles

**Others:** Automated concrete pour line, ductile iron foundry with 35,000 tonnes per year output.

## Technical Assistance

**CUBIS** technical staff can provide support to specifiers, engineers and contractors regarding our products. This service includes detailed CAD design, installation support and technical guidance. They can be contacted by phone, fax or e-mail, using the details supplied on the back cover.



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