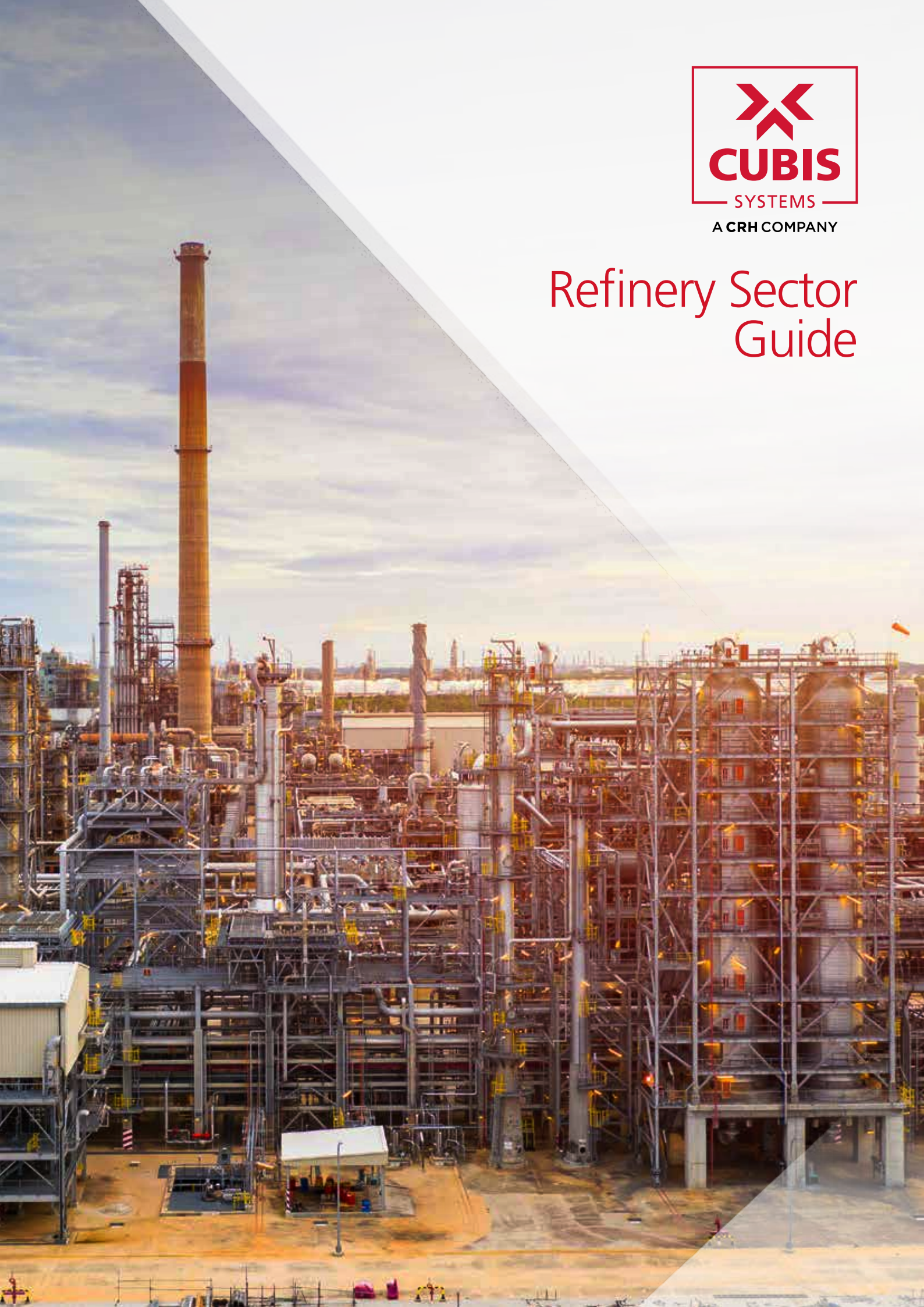




Refinery Sector Guide





Global Leaders in Network Access Products

As Europe's leading manufacturer of innovative, lightweight, structural access chambers and cable protection systems, Cubis has worked closely with some of the largest refinery business' throughout the Middle East in the provision of integrated systems for fibre telecoms, perimeter protection and under road crossing applications.

Cubis' systems are widely used throughout the construction of refinery infrastructure networks due to their integrated product approach and intelligent technical design features that deliver modular, scalable and lightweight composite access chambers, access covers and cable protection products. All systems work seamlessly together and can be built on site safely, quickly and with ease.

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Specifiable, Bespoke, Secure Integrated Systems – Supporting the Delivery of Complex Refinery Infrastructure Networks Worldwide

The Cubis approach to innovation in a well-established industry has been to develop products from multiple lightweight material types that incorporate intelligent technical design features that integrate together to replace more traditional construction materials such as brick and concrete. These unique features provide clients with an adaptable approved system to suit the needs of their specific installation.

Product Overview



Cubis' integrated product approach offers clients a complete range of access chambers, access covers and cable protection systems that have been designed to offer seamless integration for use in the delivery of refinery infrastructure networks.

STAKKAbox™ Access Chambers:

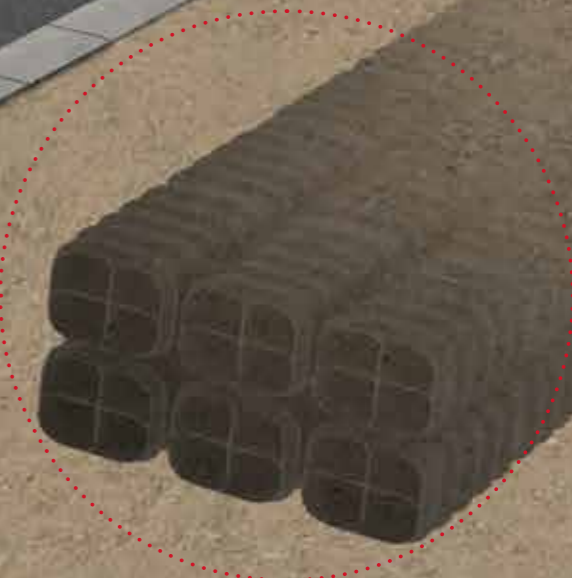
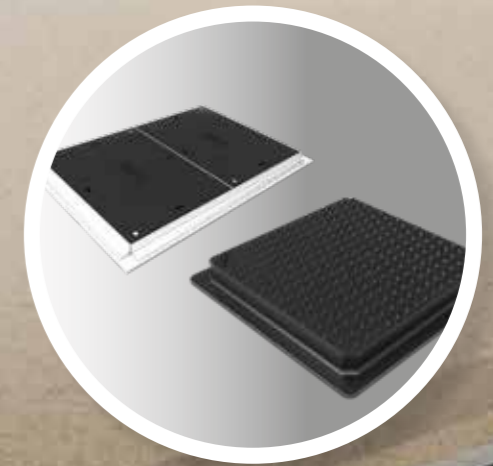
Providing clients with a complete network access solution and available in a variety of sizes, these lightweight and structural STAKKAbox™ access chambers are easily adaptable and fast to install. Delivering a 150mm deep stackable unit that can be constructed to the desired height and achieve unsupported vertical load test results of 90 tonnes, chambers can be supplied with a range of time-saving compatible accessories including, steps, cable management, MULTIduct™ spigots, duct entries and bases.

Cable Protection:

A multiple duct cable protection system, MULTIduct™ is used primarily in the construction of underground ducting systems under roads, tunnels, bridge crossings and buried linear cable routes. Units are assembled quickly and with ease by connecting metre long sections with a unique push-fit system and are available with a supporting range of accessories to address tight turns, elevations and additional obstacles.

AX-S™ Access Covers:

Designed and manufactured to compliment Cubis' range of chambers and to provide customers with a complete underground network access system. AX-S™ access covers can be tailored to meet specified loading requirements from pedestrian (B125) up to carriageway (F900) duty and are available in an extensive variety of clear opening dimensions and depths.



Network Access Chamber

Significantly reduce costs of in-situ construction through modular scalable solutions with easily connectable components through time savings.

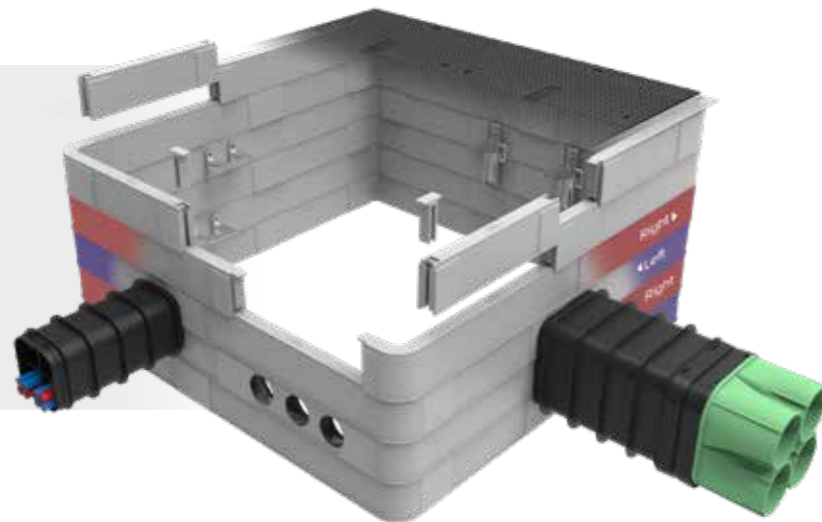


STAKKAbox™ ULTIMA Connect

Featuring a twin-wall, sectional design incorporating GRP corner pieces (hockey sticks) and sidewall lengths. Parts are connected using a jointing peg, forming a variety of clear opening sizes. Additional chamber sizes can be specified when sidewall lengths are used in conjunction with GRP corner pieces. Cubis' ULTIMA Connect and Fortress access chambers stack on top of each other to reach specified depths. Each ring section is castellated to secure positively with units above and below.

How it's Built:

ULTIMA Connect corner pieces are manufactured in left and right handed designs. This provides the capability to offset joints between sections to create a brickwork design, ensuring a strong sidewall performance, once the chamber is installed.



How it Works:

The Cubis ULTIMA Connect and Fortress access chambers are manufactured in 150mm deep sections that stack one on top of each other to reach the specified depth. Each ring section is castellated to positively with the unit above and below.

Lightweight: ULTIMA Connect and Fortress sections weigh under 25kg, thanks to the sectional twin wall design, and are, therefore suitable for a single person to lift when adhering to manual handling regulations.

Quick and Easy Installation: In comparison to conventional and timely alternatives, typically taking one hour to install, both ULTIMA Connect and Fortress Chambers provide clients with significant reductions in costs when utilised.

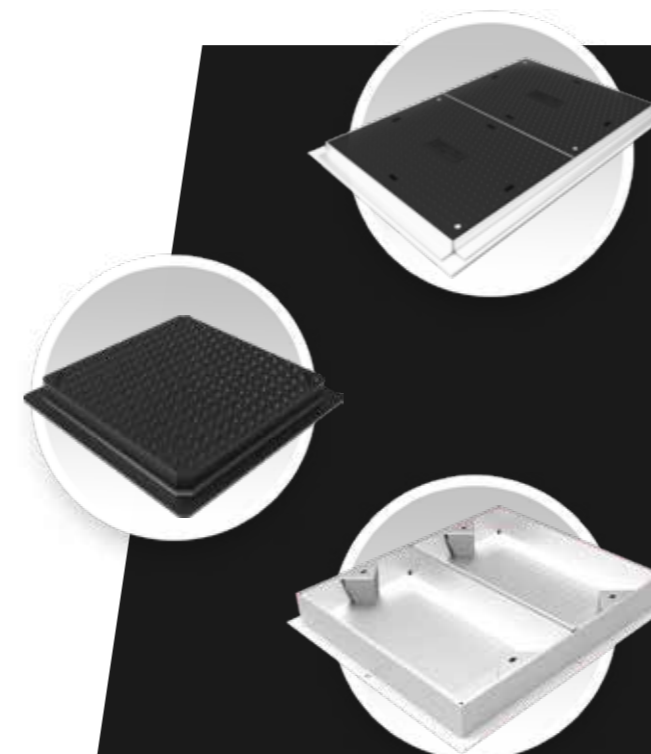
Chemical Resistance: Once installed, chambers have a greater life span, due to chemical resistance, in comparison with traditional

STAKKAbox™ Fortress

STAKKAbox™ Fortress is a range of modular and structural preformed access chambers, suitable for use in carriageway and footway environments. STAKKAbox™ Fortress chambers are formed by combining four interconnecting component parts to form each ring section. Using standard component parts allows for greater flexibility in chamber size and clear opening.

How it's Built:

STAKKAbox™ Fortress chambers are formed by combining four interlocking sidewall pieces to form a chamber ring section. These ring sections are then stacked on top of each other to reach the specified height required.



Accessories:

Cubis has designed and manufactured an extensive range of access covers and supporting accessories to enhance performance and to further reduce installation timescales. Our chamber options & accessories range allows installers to simply place, connect up tubes or ducts, backfill and walk away.

Cover Options:

Our AX-S™ range of access covers, designed from materials including composite and ductile iron, can be tailored to meet specified loading requirements to provide customers with a complete underground network access system.

Cable Protection Systems

MULTIduct™

An easily deployed and accessible cable management system presenting a modern, efficient alternative to traditional cable ducting systems. Lightweight and structural MULTIduct™ can be utilised in the construction of under road crossing (URX), tunnels, bridge crossings and buried linear routes.

MULTIduct™ has been designed to offer seamless integration with Cubis' range of chamber access products such as STAKKAbOX™ ULTIMA Connect, enabling enhanced cable management and access. MULTIduct™ can be integrated into the STAKKAbOX™ access chamber on-site, or alternatively spigots can be pre-assembled and delivered as a single unit.

Manufactured from a high-density polythene ensures a lightweight (below 20kg) high strength to weight unit, affording significant health and safety advantages, as this allows for a single person to lift and install. Units are assembled rapidly in the connection of metre long sections, utilising a unique push-fit system. These advantages have a huge impact, reducing installation times and costs significantly.

Applications:

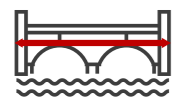
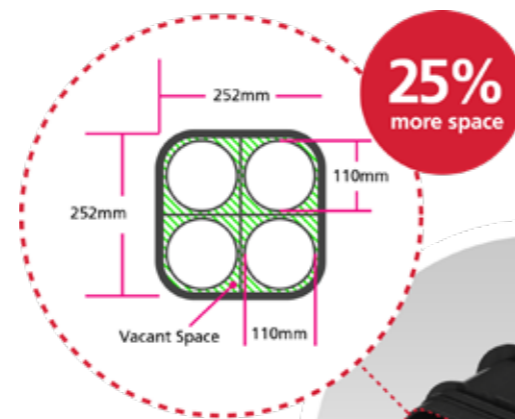
MULTIduct™ holds numerous global approvals and has been installed in various applications and environments across the world.



Multi-bank



Tunnels



Bridge Crossing



Under Road Crossings



Buried Cable Routes

Applications

MULTI-BANK



MULTIduct™ can be installed in formations to achieve multiple duct banks. Stacked to desired height, Multi-banks provide a smooth course of linear buried ducting. Allowing for two degrees of flexibility when connected, MULTIduct™ creates a natural bend able to follow the curvature of a perimeter fence, road or tunnel installation. This straight lay flat feature, negates the requirement for spacers and eliminates the possibility of twisting which is hugely beneficial when compared with traditional ducting systems during installation.

Accessories:

MULTIduct™ integrates with the Cubis range of cable protection and access chamber systems to further enhance cable management and access. Additional accessories are also available to address engineering challenges encountered, including tight turn elevations, natural curvature and to allow for height adjustment on site.

4 Way 22.5° Y-Lateral
(Type 2 for 160mm Port)



*Other variances can be supplied.

4 Way 45° Y-Lateral
(Type 2 for 160mm Port)



*Other variances can be supplied.

4, 6, 9 & 4 XL Rubber Gasket



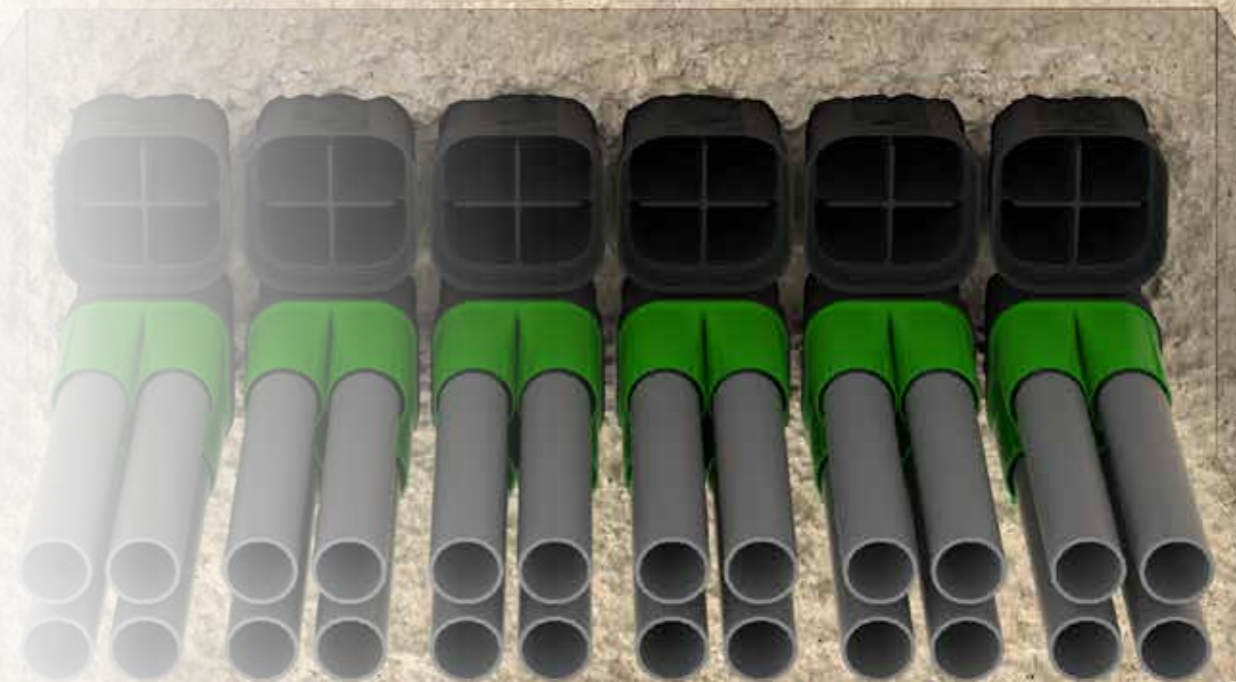
Split Repair Kit

Should it become necessary to repair a damaged or faulty cable within a linear run, a split repair kit can be used once the excavated area and MULTIduct™ unit has been removed. The split repair kit is used to replace the parts of the MULTIduct™ that have been removed.



Feature & Benefits

- Increase ducting capacity in limited space
- Rapid installation reducing installation costs
- Reduced trench depth and width
- Easier to pull cables through than traditional ducting systems
- Enhanced security
- Future-proofed infrastructure
- High crush strength MULTIduct™ units
- No spacers or graded backfill material required



Applications

UNDER ROAD CROSSING (URX)

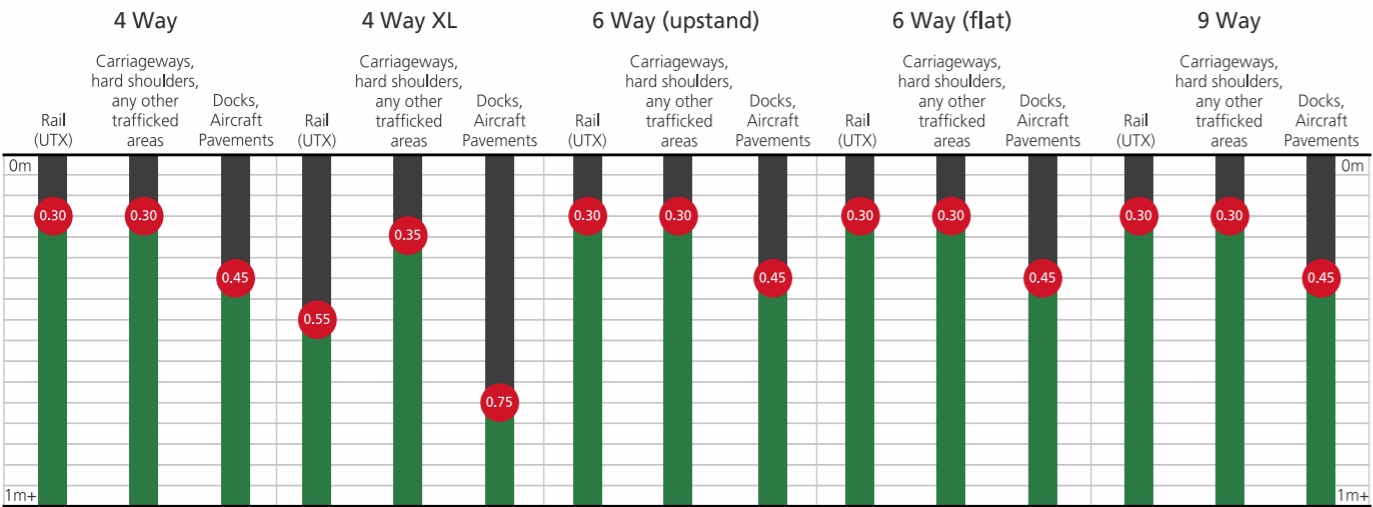
URX systems provide a modern method of building an under road crossing in a rapid, yet safe manner significantly reducing road closure times. Incorporating STAKKAbOX™ chambers with MULTIduct™, the Cubis URX system is easy to handle as the 1m long 4, 6 or 9 way units are incredibly lightweight at under 20kg. Shallow and narrow burial depths, due to the high crush strength of the MULTIduct™, negates the need for concrete or specialist surround, and excavated material can be utilised during re-installation, thereby saving time and reducing costs in relation to disposal of excess material.

How it's built

MULTIduct™ units are quickly assembled by connecting metre long sections with a unique push-fit system. The system offers a wide range of accessories to deal with tight turns, elevations, adjustable height on-site, natural curvature and other obstacles.

MULTIduct™ Burial Depth Table

The table below shows the recommended burial depths for each MULTIduct™ product in various applications:



MULTIduct™ **CAN NOT** be buried at this depth (0m-●)
 Soil Depth (h) Meter (m) MULTIduct™ **CAN** be buried at this depth

MULTIduct™ **CAN** be buried at this depth (●-1m)

*For carriageway installations, the minimum required depth of cover shall comply with the guidance notes from the Utility Regulations.



- Features & Benefits:**
- Rapid Installation
 - Minimal disruption due to reduction in road closure times
 - Lightweight
 - Future-proofed infrastructure
 - High crush strength MULTIduct™ Units
 - Shallow burial depths
 - No spacers or graded backfill material required

Applications

PERIMETER PROTECTION



Cubis' perimeter protection network access systems have been designed and developed to offer a modern alternative to traditional methods of ducting. Cubis system enables an enhanced security for telecommunications and power networks that run around some of the world's largest refinery's.

Providing a seamless integration between Cubis' STAKKAbOX™ chamber access and MULTIduct™ cable protection products, Cubis' network access system utilise the MULTIduct units buried under the ground providing easier and safer installation, assembly of system and improved build quality.



Features & Benefits

- Rapid installation, reducing installation costs
- Easier to pull cables through than traditional ducting systems
- Enhanced security
- Future-proofed infrastructure
- High crush strength MULTIduct™ units
- Requires shallower burial depths
- No spacers or graded backfill material required

Applications

FIBRE TELECOMS

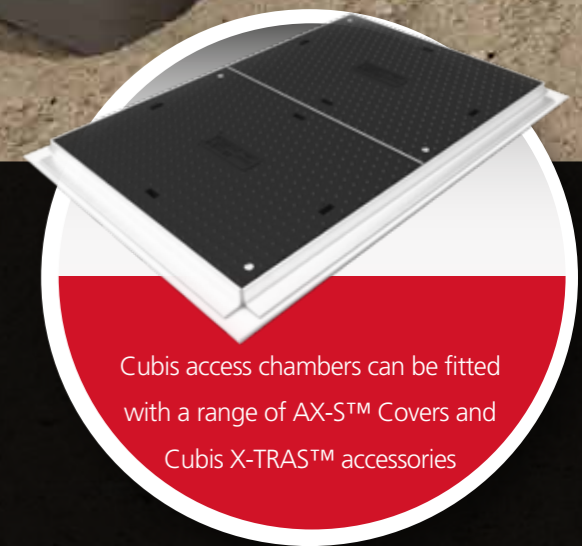
Developed to replace traditional procedures for the storage of fibre optic, CCTV and power cabling, Cubis' telecommunication system provides enhanced security through lockable AX-S™ composite and ductile access covers. The fibre telecoms system seamlessly integrates between Cubis' STAKKAbox™ chamber access and MULTIduct™ cable protection products to deliver a safe and easy installation, coupled with a straightforward assembly and improved build quality when compared to alternative methods.

Both the STAKKAbox™ ULTIMA Connect and Fortress systems are manufactured from materials that are unaffected by diesel, ground acids or alkaline - unlike traditionally constructed chamber systems. Both chambers are lightweight, modular scalable solutions, built and adjusted on site to support loadings caused by vehicles. Allowing storage for up to 450m of cabling.



Features & Benefits

- Lightweight GRP and HDPE material
- Reduced installation costs
- Fully customisable, flexible and adjustable on site
- Future-proofed infrastructure
- Storage capability of 450m



Cubis access chambers can be fitted with a range of AX-S™ Covers and Cubis X-TRASTM accessories

Chamber & Cover Sizes



STAKKAbox™ Fortress:

Internal Dimensions		External Dimensions		Weight (kg)
Length (mm)	Width (mm)	Length (mm)	Width (mm)	
445	445	557	557	4.5
610	610	740	740	7.2
915	915	1045	1045	11.7
1220	610	1328	740	11.4
1310	1310	1480	1480	13.6

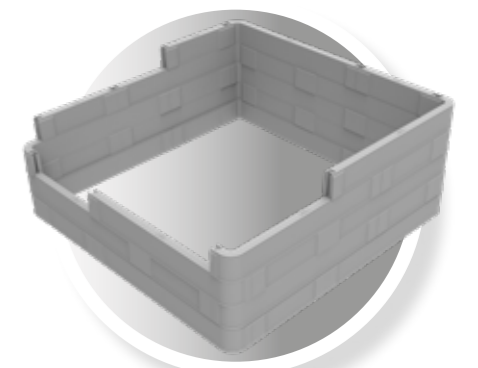
Other sizes available, check our website or contact our sales team for more info



STAKKAbox™ ULTIMA Connect:

Internal Dimensions		External Dimensions		Weight (kg)
Length (mm)	Width (mm)	Length (mm)	Width (mm)	
800	800	935	935	20
1500	750	1635	885	27
1500	1500	1635	1635	34
1800	1800	1935	1935	43
2000	2000	2135	2135	86
3000	3000	3135	3135	146

Other sizes available, check our website or contact our sales team for more info



AX-S™ Frames - Composite Cover Details (B125 & C250):

Clear Opening Dimensions		Cover Weight (kg) and Quantity					
Length (mm)	Width (mm)	B125			C250		
		Weight (kg)	Quantity	Weight (kg)	Quantity	Weight (kg)	Quantity
300	300	4.1	1	7.2	1		
450	300	6.5	1	10.9	1		
600	600	20.5	1	27.9	1		
900	450	11.6	2	15.8	2		
1310	610	15.6	3	21.2	3		
1200	1200	20.5	4	21.2	4		
1900	1200	20.5	6	27.9	6		
2000	1000	11.6	3	15.6	4	20.5	15.8
		each (3No)		each (4No)		each (1No)	each (3No)
						21.2	27.9
						each (4No)	each (1No)
2000	2000	11.6	9	15.6	6	20.5	15.8
		each (9No)		each (6No)		each (1No)	each (9No)
						21.2	27.9
						each (6No)	each (1No)

Other sizes available, check our website or contact our sales team for more info



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Driven by Innovation

Cubis is Europe's leading manufacturer of network access chamber and ducting systems, used in the construction of infrastructure networks for rail, telecoms, water, construction and power markets.

Cubis has developed an innovative approach in an old-fashioned industry. This has been achieved by developing quality products which replace traditional construction materials, like bricks and concrete, with lightweight plastics incorporating intelligent design features. These can then be installed faster and ultimately save our customers both time and money.

Cubis manufactures preformed network access chamber systems STAKKAbOX™, AX-S™ access covers, MULTIduct™ multiple duct system and PROtrough cable trough at its manufacturing sites throughout the UK and Ireland these products are exported to more than 25 countries throughout the World.

At Cubis we pride ourselves on delivering technical customer support, new innovation, product quality and the highest levels of customer satisfaction.