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A CRH COMPANY

Rail Sector Guide



Innovative access chambers, cable
management and troughing systems



Rail Industry Experts

Cubis Systems is Europe's leading manufacturer of innovative, lightweight structural access chamber and cable protection systems used in the construction of rail infrastructure networks. Cubis works closely with some of the largest Rail network operators in Europe to provide integrated systems for telecoms, drainage, signalling and power applications.

Cubis' Network Rail PADS approved products offer clients the ideal solution to a wide range of rail and light rail applications. Cubis' composite range of products offer a modular, lightweight and scalable system that can be built on-site, significantly reducing costs of in-situ construction through time savings.



Rail



Light Rail

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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, and integrate together to replace more traditional construction materials such as brick and concrete. These unique features provide clients an adaptable approved system to suit the needs of their installation.

Amongst other valued customers, Cubis also has long-standing approvals with SNCF (France) and Network Rail (UK). Cubis has Link-up approval for working directly with Network Rail. Supplier ID: 26055.

Product Overview

Cubis Systems integrated product approach offers our 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 rail and light rail markets.

STAKKAbox™ Access Chambers

STAKKAbox™ access chambers offer an innovative, lightweight, structural and scalable network access solution. Available in a variety of sizes that are easily adaptable and fast to install on-site. The Network Rail approved STAKKAbox™ access chambers offer a 150mm deep stackable unit that can be built to the desired height required achieving unsupported vertical load test results of 60 tonnes.

Using Cubis access chamber systems accessories can save even more time for installers. A range of compatible accessories including steps, cable management, MULTIduct™ spigots, duct entries and chamber bases is available.

MULTIduct™ Cable Protection

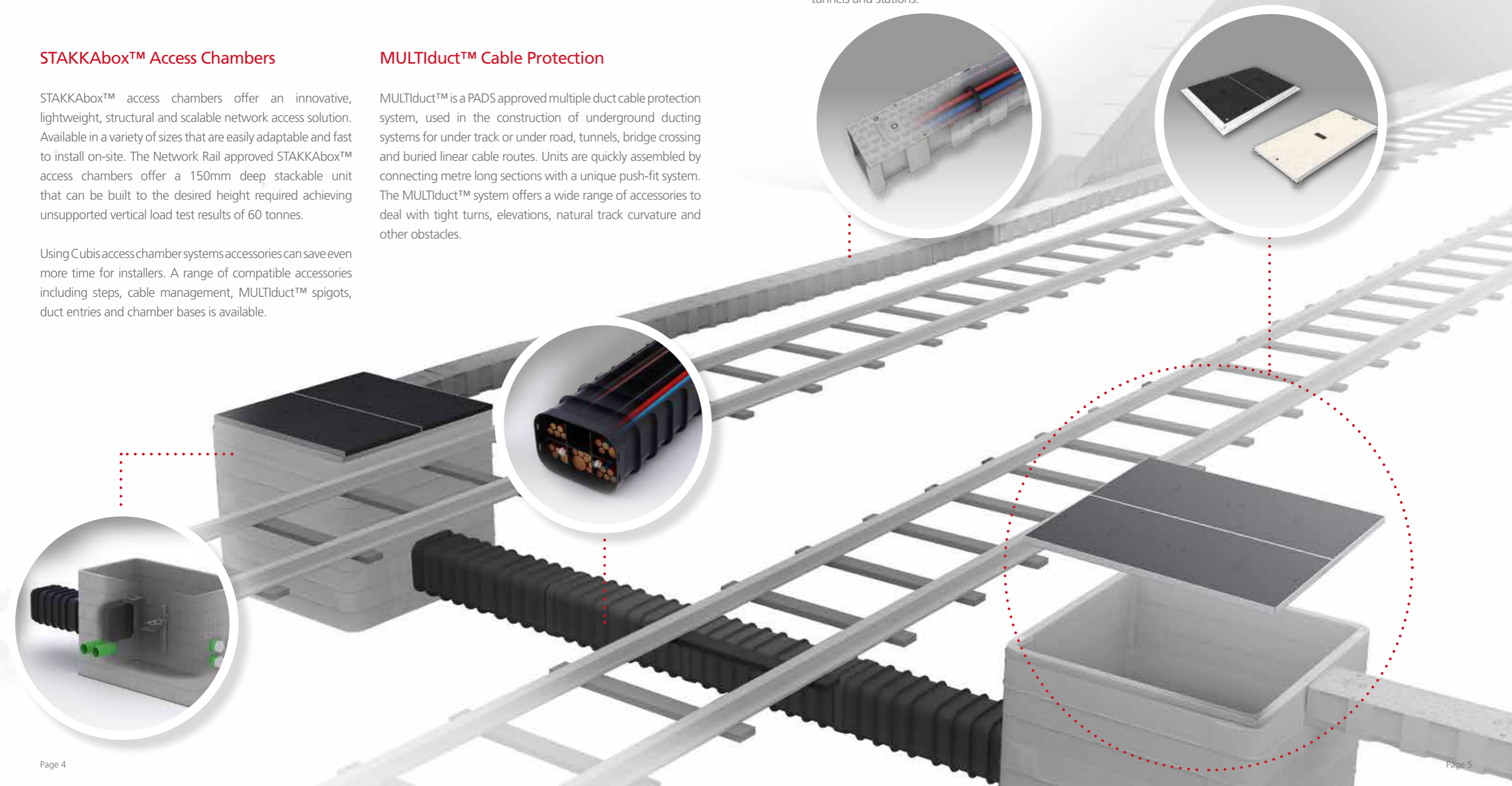
MULTIduct™ is a PADS approved multiple duct cable protection system, used in the construction of underground ducting systems for under track or under road, tunnels, bridge crossing and buried linear cable routes. Units are quickly assembled by connecting metre long sections with a unique push-fit system. The MULTIduct™ system offers a wide range of accessories to deal with tight turns, elevations, natural track curvature and other obstacles.

PROtrough Cable Protection

PROtrough is an innovative, lightweight, fire retardant cable troughing system that offers a modern alternative to traditional concrete trough systems for when easily deployed and accessible cable management systems are required. PROtrough is a GRP cable management trough that has been designed to comply with all major European fire retardancy specifications, eliminating common heat distortion and thermal expansion issues, including those for tunnels and stations.

AX-S™ Access Covers

The Cubis range of access covers are designed and manufactured from a range of materials to complement our chamber ranges, to provide customers with a complete underground network access system. The AX-S™ range can be tailored to meet specified loading requirements from pedestrian (B125) up to carriageway (D400) duty and are available in a wide range of clear opening dimensions and depths.



Applications

CABLE MANAGEMENT

Fixed Telecommunication Network (FTN)

Cubis' Network Rail approved trackside FTN system has been designed and developed to offer a modern alternative to traditional methods for storage of trackside cabling, offering enhanced security to power, telecommunications and signalling cables. Providing a seamless integration between Cubis' STAKKAbox™ chamber access and MULTIduct™ cable protection products, the FTN system delivers reduced track possession times through easier and safer installation, assembly of system and improved build quality.

The FTN system utilizes the STAKKAbox™ ULTIMA access chambers. A lightweight modular scalable solution that can be built and adjusted on-site. The STAKKAbox™ system significantly reduces costs through reduced construction times, whilst providing a structural unit that will support loadings imparted from vehicles and passing trains.

The STAKKAbox™ ULTIMA system is made from a GRP material that is not affected by diesel, ground acids, alkalines or frost unlike traditional access chamber systems such as brick and concrete. Cubis' FTN system provides storage of up to 450m of cabling allowing clients easy and safe access.

Features & Benefits:

- Lightweight GRP material
- Reduced installation costs
- Pre fitted bracketry
- Pre formed duct entry with bellmouth
- Rapid installation
- Composite or concrete B125 access cover options available
- Compatible with existing ducting and troughing networks
- Stores up to 450m of cable
- Future proofed infrastructure

PADS Approved Certificate: PA05/02301



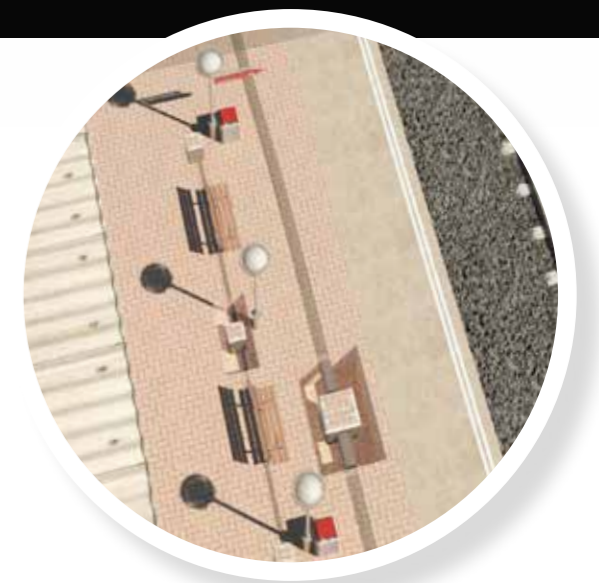
Station platform access chambers:

Cubis' access chamber systems can be utilised to provide a modular scalable solution for stations and platforms access to lighting columns, ticketing machines, information boards, communication and power cables. The lightweight and easy to adjust STAKKAbox™ access chamber systems enable easier manual handling and build in restricted spaces.

Cubis AX-S™ range of access covers are designed and manufactured from a range of materials to complement our chamber ranges. Cubis' AX-S™ access covers are manufactured to EN124 loadings incorporating unique 'slide-out' design for safe lift and removal. Secure locking and badging options allow easy identification for operatives. Cubis' AX-S™ recessed covers can enhance the aesthetic's of landscaped areas such as stations, allowing network access systems to blend into the surrounding surface.

Features & Benefits:

- Rapid installation resulting in reduced installation costs
- Lightweight and safe
- Fully customisable, flexible and adjustable on-site
- Future-proofed infrastructure
- B125 load rated access cover options available: composite, concrete or recessed



Applications

CABLE MANAGEMENT

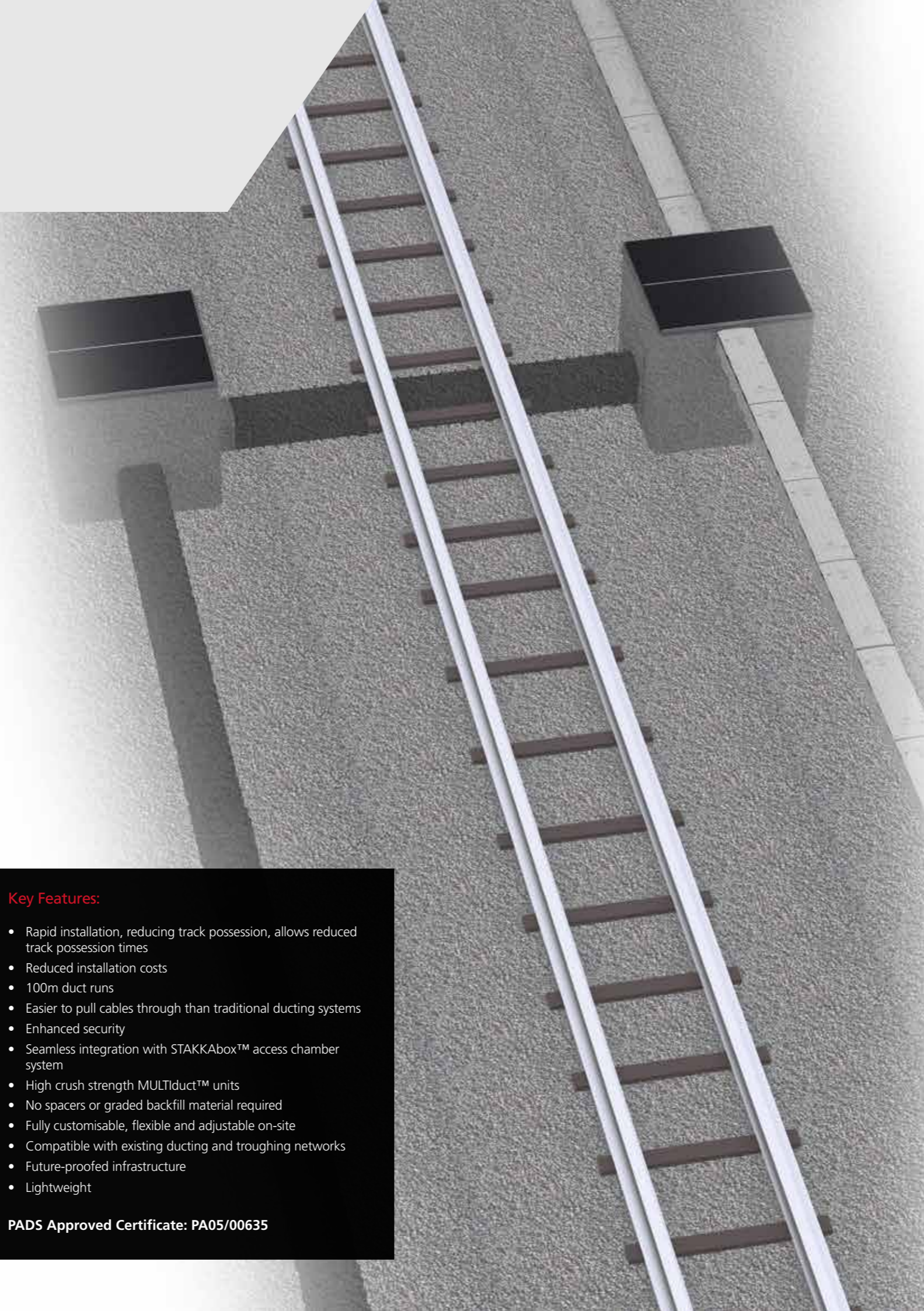


Buried Cable Routes:

Cubis' Network Rail approved buried cable route system has been designed and developed to offer a modern alternative to traditional methods for burying trackside cabling offering. This enables enhanced security for telecommunications, power and signalling networks. Providing a seamless integration between Cubis' STAKKAbOX™ chamber access and MULTIduct™ cable protection products, the buried cable route system delivers reduced track possession times through easier and safer installation, assembly of system and improved build quality.

The buried cable route system utilises Cubis MULTIduct™, an innovative, lightweight, structural, multiple duct system. The easy to handle 1m long 4, 6 or 9 way units are lightweight under 20kg and offer a unique 'one click' push fit connection that is fast and easy to install. MULTIduct™ has an extensive range of flexible accessories that enables the system to deal with tight turns, elevations and other obstacles.

MULTIduct™ provides 2° of flexibility within its connection, resulting in the creation of a natural bend that can follow the curvature of a track. Due to its high crush strength MULTIduct™ requires a shallower and narrower burial depth and does not require any concrete or specialist surround. Minimum cover for Network Rail of 0.6m is easily achievable. Excavated material can be reused during re-installation reducing time, cost, heavy plant and disposal of excess material.



Cable Troughing:

PROtrough is an innovative, lightweight, cable trough system that offers a modern alternative to traditional concrete troughing systems for the use in rail and light rail markets. Used when easily deployed and accessible cable management systems are required.

Cubis' PROtrough unit comprises of 1 metre long units that connect together allowing for 3° of vertical and horizontal flexibility within its connection, resulting in the creation of a natural bend that can follow the curvature of a track. The PROtrough system has an extensive range of flexible accessories that enables the system to deal with tight turns, elevations and other obstacles. PROtrough has been designed to offer seamless integration with Cubis' range of cable protection and access chamber products such as STAKKAbOX™ ULTIMA Connect and MULTIduct™ enabling enhanced cable management and Network access.



Key Features:

- Rapid installation, reducing track possession, allows reduced track possession times
- Reduced installation costs
- 100m duct runs
- Easier to pull cables through than traditional ducting systems
- Enhanced security
- Seamless integration with STAKKAbOX™ access chamber system
- High crush strength MULTIduct™ units
- No spacers or graded backfill material required
- Fully customisable, flexible and adjustable on-site
- Compatible with existing ducting and troughing networks
- Future-proofed infrastructure
- Lightweight

PADS Approved Certificate: PA05/00635

Key Features:

- Rapid installation resulting in reduced installation costs
- Lightweight design 5 times lighter than concrete
- Superior structural integrity compared to thermoplastic alternatives
- Designed to comply with major European fire retardancy specifications
- Eliminates common heat distortion and thermal expansion issues
- Extensive range of accessories to enable flexibility and ease of deployment
- Seamless integration with Cubis access chamber and cable protection systems

Applications

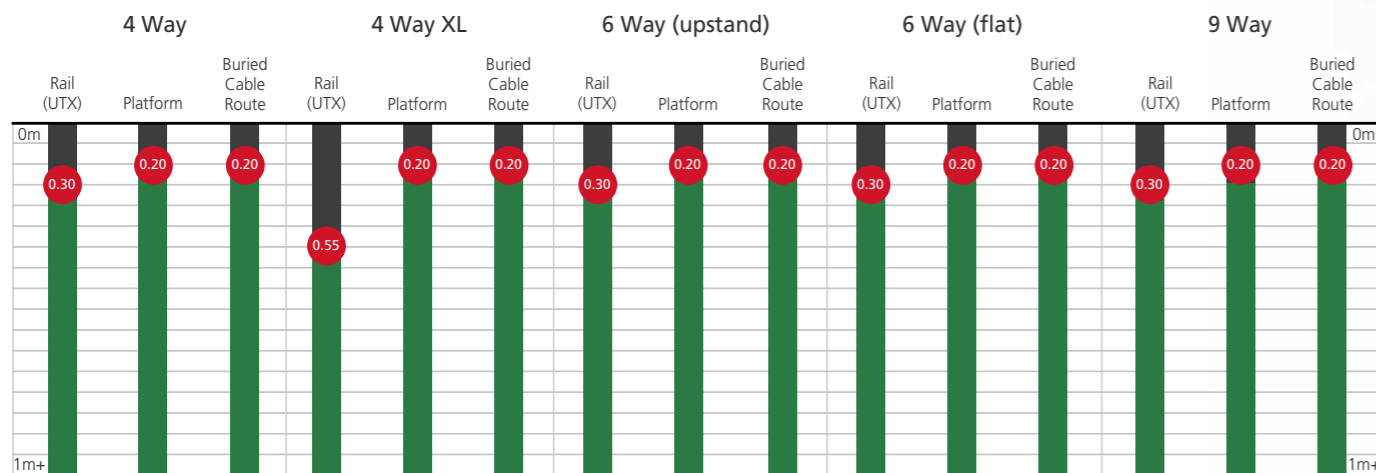
UNDER TRACK/ROAD CROSSING

Cubis' under tracking crossing (UTX) system has been approved for use with Network Rail. This modern method of building an under track crossing creates a faster, safer construction system which reduces track possession times. The UTX system seamlessly incorporates Cubis' STAKKAbOX™ access chambers with MULTIduct™ cable protection system.

The UTX system utilises MULTIduct™ an innovative, lightweight, structural, multiple duct system. The easy to handle 1m long 4, 6 or 9 way units are lightweight under 20kg and offer a unique 'one click' push fit connection that is fast and easy to install. Due to its high crush strength MULTIduct™ requires a shallower and narrower burial depth and does not require any concrete or specialist surround. Minimum cover for Network Rail UTXs of 0.6m is easily achievable. Excavated material can be reused during re-installation reducing time, cost, heavy plant and disposal of excess material.

MULTIduct Burial Depth Table

The following shows recommended burial depths for each MULTIduct product in various applications

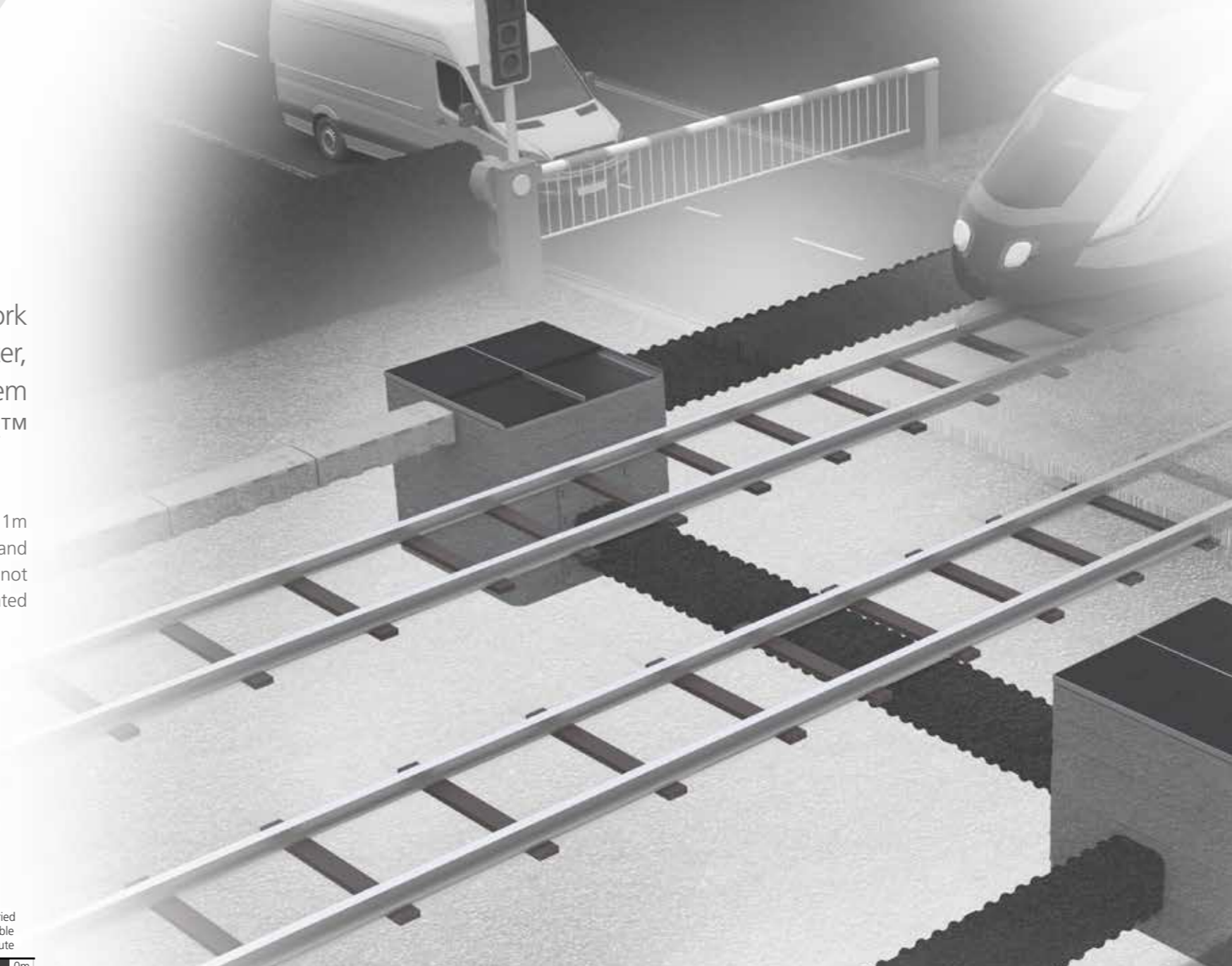


■ MULTIduct™ CAN NOT be buried at this depth (0m-●)

● Soil Depth (h) Meter (m)
● MULTIduct™ CAN be buried at this depth

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

* Minimum cover for Network Rail UTXs will be 0.6m for Carriageway Installations, the minimum required depth of the cover shall comply with the guidance notes from the Utility Regulations.



Key Features:

- Rapid installation, reducing track possession time
- Reduced installation costs
- Lightweight
- High crush strength MULTIduct™ units
- Requires shallower burial depths
- No spacers or graded backfill material required
- Future-proofed infrastructure
- No additional tooling required with only hand adjustment required for backfill barrier adjustment
- B125 load rated access cover options available: composite, concrete or recessed

PADS Approved Certificate: PA05/00635

Applications

TRACK-SIDE DRAINAGE



Cubis' Network Rail approved track-side drainage inspection chamber system FLEXI-Pit™ has been designed and developed to offer easily adjustable duct positions for varying pipe invert levels.

The system incorporates a unique sliding backfill barrier that is easily adjusted on-site during installation. The backfill barrier allows for up to 150mm vertical adjustment to achieve the correct pipe invert level required and can accommodate pipes from 150mm to 450mm (internal dimension). This unique system removes the need for individual detailed technical drawings. Another added benefit of the system is to enable chamber height alterations by adding 150mm STAKKAbox™ ULTIMA ring sections until the desired depth is achieved. This allows for quicker install times and reduced track possession requirements.

The FLEXI Pit drainage system is created from Cubis' STAKKAbox™ ULTIMA access chamber system. The ULTIMA provides a modular scalable solution available in a variety of sizes that are easily adaptable, lightweight, fast and easy to install. Seamless integration with Cubis' chamber accessories and AX-S™ concrete and composite access covers provides clients with a complete underground drainage system solution.



Key Features:

- Rapid installation & reduced track possession time
- Reduced installation costs
- Lightweight and safe
- Fully customisable, flexible and adjustable on-site
- Compatible with existing drainage networks
- Compatible with both smooth and twin wall pipes (150mm, 225mm, 300mm and 375mm)
- Access cover options available: Full and part composite covers or full isophthalic grate cover for ease of inspection
- No additional tooling required with only hand adjustment required for backfill barrier adjustment

PADS Approved Certificate: PA05/04067

The adjustable back fill board can be altered up to 150mm when varying duct entry levels occur on-site. Vertical height alteration on the backfill barrier frame allows for fully customisability removing the need for chamber adjustment or individual technical drawings saving time and money on installation and assembly.

Industry Experts

Cubis Systems products are innovative, lightweight and significantly reduce costs of in-situ construction through time savings. The Cubis integrated systems approach offers clients a complete range of access chambers, access cover and cable protection systems. These products have been installed worldwide in Telecoms, Highways, Rail/Light Rail, Water and Power & Energy applications. Cubis' products are used within many different applications within each sector from buried cable routes to network access solutions.

Access Chamber System:

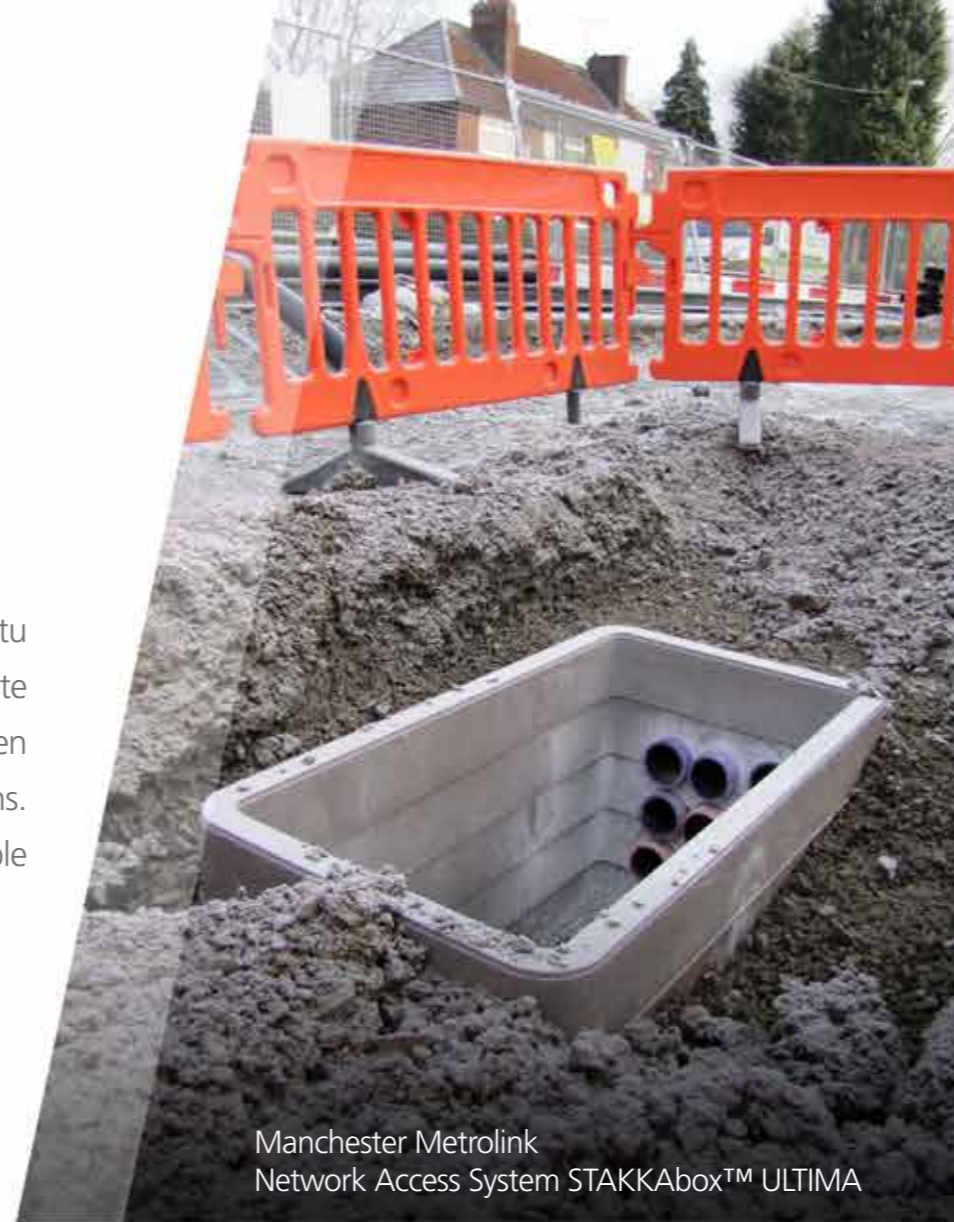
Cubis' STAKKAbOX™ access chamber systems are adaptable to the unique requirements of each site. This means ordinary site tools can be used to retrofit chamber systems around existing networks by drilling duct entries or cutting the chamber sections horizontally. The seamless integration across the Cubis product range enables the construction of bespoke systems that significantly reduce costs of access chamber construction through time savings. Cubis' chamber options & accessories range allows installers the ability to simply place, connect ducts, backfill and walk away.

Cable Protection:

Cubis' cable protection systems MULTIduct™, PROtrough, RAILduct™ and MM RAILduct™ offer innovative, lightweight, secure cable protection systems that have been used worldwide in a range of sectors and applications. Cubis' cable protection systems comprise of 1 metre long units that connect together allowing for rotation in the units to deal with tight turns, elevations, natural curvature and other obstacles. Due to their light weight properties Cubis' cable protection systems offer significant health and safety advantages over traditional systems.

AX-S™ Access Covers:

The Cubis AX-S™ range of access covers provide customers with a complete underground network system, designed and manufactured from a range of materials to complement our access chamber systems. The AX-S™ range can be tailored to meet specified loading requirements from pedestrian up to carriageway duty and are available in a wide range of clear opening dimensions, depths, security features, frame types and bespoke badging. The Cubis AX-S™ range consists of concrete infill, recessed, composite and steel fabricated.



Manchester Metrolink
Network Access System STAKKAbOX™ ULTIMA



Network Rail
AX-S™ Composite Access Covers



Manchester Metrolink
Cable Protection System MULTIduct

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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.

