

Complete Composite Systems (CCS)



ARCOSYSTEM® troughing attached to the side of a stone bridge near Klagenfurt, Austria

Discover why the flexibility of ARCO SYSTEM® makes it the rail industry's benchmark elevated cable containment system...

Take the hassle out of installing trackside cable troughing by choosing the innovative ARCO SYSTEM® from CCS for your next rail project.

Manufactured from pultruded glass fibre-reinforced polymers (GRP/FRP) and complemented by a bespoke range of laser-cut steel bracketry, ARCO SYSTEM® can be post-mounted into the ground or fastened to a range of trackside features, such as **railings, bridges, hillside slopes, HEA beams, noise barriers** or **rock walls**.

The specialist lightweight design of the composite engineered plastic troughing allows for enhanced versatility during installation, ensuring height and direction adjustments can be easily made, particularly in tight-to-access areas along the route. This dramatically speeds up installation times, while reducing costs and strain/injuries for on-site operatives.

The adaptable yet sturdy construction of ARCO SYSTEM® provides durability in all weathers, safely containing trackside power, signal, high-voltage and digital communication cables in temperatures ranging from -40°C to +80°C.

The system can accommodate cable loads of up to 90kg/m while there is a range of trough sizes and

bracket designs available to suit a variety of projects and locations.

Case Examples

ARCOSYSTEM® is currently proving to be a reliable and cost-effective option for the multi-billion-pound Transpennine Route Upgrade (TRU) project, which is designed to transform rail travel across the north of England, modernising connectivity and boosting economic growth.

Currently being installed along a section of the East route in Castleford, ARCOSYSTEM® has been a huge success, in no small part due to its lightweight design that allows the troughing to be fixed to posts mounted as far as six metres apart, saving significant time and costs during installation.

“ARCO is a pleasure to use,” said Mark Simpson, Contractors’ Responsible Engineer (CRE) at J Murphy & Sons on the TRU East Alliance. “Its simplistic 6-metre span makes it the most cost-effective elevated route to install in a possession. ARCO assisted greatly on the Castleford project as the terrain varied from cutting to embankment constantly. The 6-metre spans aided with the reduction in post foundations compared to more traditional methods.”

The larger Size 2 troughing was used in Castleford, while the narrower Size Zero was used for another recent job in Weeze, Germany. This sleek trough size



ARCOSYSTEM® post mounted trackside in Castleford, England

is designed to fit and protect thinner cabling such as modern fibre-optic cables within a secure cell of 53mm x 56mm (2952mm²) and is also useful for jobs where access to the railway lines is challenged by difficult terrain or limited space.

Other recent successful installations include fastening ARCOSYSTEM® to the side of an ancient rock face during a 600m-long trackside route in the historic city of Grein, along the Danube river in Austria. Installers used specialist anchor rods in conjunction with our range of steel brackets to support the lightweight troughing, while operators also had to attach the troughing to trackside railings and a concrete verge backing on to the river.



ARCO troughing clamped to lineside rock face in Grein, Austria

ARCOSYSTEM® — Key Benefits

- Can be post-mounted or fixed to a variety of trackside structures such as bridges, railings, ballast boards, noise barriers or rock faces
- Spans up to 6m between supports, making installation quicker and more cost-effective than traditional ground-based systems
- Constructed from durable materials, with the troughs and lids made from pultruded fibre-reinforced polymers (GRP/FRP) for excellent structural and load-bearing performance, supported on laser-cut galvanised steel brackets
- Twin-walled design of the troughing enables the system to resist lateral forces from embankment subsidence, high snow loads and wind effects from high-speed trains
- Carries cable loads up to 90kg/m, and withstands point loads up to 0.75kN and wind loads up to 1.45kN/m²
- Durability in all weathers — with a constant working temperature range from -40°C to +80°C
- Excels in remote locations subject to intense heat or extreme freeze-thaw cycles
- Resistant to heat, water, corrosion, UV rays and a wide range of chemicals
- Meets a number of fire standards and has proven performance in simulated trackside fires
- Electrically insulating, whilst providing an interference-free containment environment for Wi-Fi and data cabling
- Troughing available in different sizes to accommodate a range of cabling/lateral load requirements

Near the southern Austrian city of Klagenfurt, ARCOSYSTEM® was expertly fitted to the side of stone bridges and a tall slanted concrete wall amongst mountainous terrain. One bridge required cross-axis parts to be fitted, clamping on to existing HEA beams.

In the German city of Bremen, both sides of the railway track were enclosed by tall aluminium noise barriers, but the flexible ARCO could still be clamped in place, with the robust yet versatile brackets adjoined to the front of the existing structure of the barriers.

With its flexible design allowing for installation in a variety of obstacle-laden or complex settings, ARCOSYSTEM® makes any cabling job run smoother.

Contact the experienced **technical experts at Complete Composite Systems**, the exclusive UK distributor of ARCOSYSTEM®, for enquiries and advice on how to safely contain the cabling for your rail application.



503 Broadway, Letchworth, Hertfordshire, SG6 3PT
Tel: +44 1462 379000 or +44 7860 147863
Email: info@completecomposites.co.uk

The exclusive UK rail stockist of ARCOSYSTEM® is Scott Parnell:



Asheton Farm Business Centre,
Stapleford Abbots, RM4 1JU
Tel: +44 208 8055797
Email: rail@scottparnell.com

ARCOSYSTEM® is manufactured by CCS's Swiss partners, **Castioni Kabelführungssysteme GmbH**

