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# Complete Composite Systems (CCS)



*Images show ARCOSYSTEM® Size Zero being installed at Mühldorf in Germany, as part of Deutsche Bahn's digital expansion programme*

## Discover how ARCOSYSTEM® is boosting digital rail communications

With surging demand for a comprehensive upgrade of wifi coverage on rail networks across Europe, CCS's innovative cable troughing product ARCOSYSTEM® is leading the way in making this mission a reality.

Many national rail companies throughout the continent are setting out ambitious plans to

upscale the quality of their digital communications. In Germany work is already well under way, with Deutsche Bahn aiming to equip its entire 33,400km national network with fibre-optic technology by 2027. Denmark has announced similar plans for its railway lines, while in the UK the West Coast Main Line is to undergo a £45m upgrade which will see enhancements to wifi and

4G coverage, improving digital performance, safety and passenger telecoms.

ARCOSYSTEM®, CCS's cable management system constructed of lightweight yet robust troughs made from pultruded fibre-reinforced polymers (FRP), is renowned for safely housing power, signal and high-voltage cables.

The newly developed ARCOSYSTEM® Size Zero, again made from FRP composite, is designed to fit and protect fibre-optic cables within a secure cell of 53mm x 56mm (2952mm<sup>2</sup>).

Due to difficult terrain or limited space along railway lines, it is not always technically possible to install conventional routing systems for protecting fibre-optic cables. The flexible ARCOSYSTEM® Size Zero, however, can be fastened to the ground, wall-mounted or attached to bridges, and is also designed to be installed safely on a slope or in areas affected by snow drifts.

CCS's Swiss partner, **Castioni Kabelführungssysteme GmbH**, manufacturer of ARCOSYSTEM®, is an approved supplier for Deutsche Bahn. Installing the Size Zero product trackside to house and protect fibre-optic cables will help minimise disturbances to operational traffic and reduce the risk of theft and vandalism, while securing highly optimised uptime. Having a routing system dedicated for this purpose also helps to separate digital and signalling communications, bringing reliability, availability and maintainability to modern rail cabling systems.

The requirements for digital connectivity have never been higher. In Germany the strategy is to spread broadband coverage across the entire travel chain, from the trainline to each and every station, with speeds increasing from 20 GB/s in 2017 to 250 GB/s by the end of 2022. The plan also aims to achieve comprehensive digital performance deep into rural areas, improving mobile phone reception and wifi coverage for all, wherever they are travelling. It is believed that digitally controlled trains and interlockings can bring more



traffic to the rail network, with customers benefiting from more reliable and punctual connections, while the new cables can also be used to digitalise the adjacent areas.

More detailed technical information about ARCOSYSTEM® Size Zero, such as mechanical, electrical and fire properties as well as system data and drawings, is available on request by contacting **the technical team at Complete Composite Systems**. The product's exclusive UK stockist is **Scott Parnell**.



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