



## Rail infrastructure tunnel cable management - new product development

### ALWAYS ON THE RIGHT TRACK: THE RAIL INDUSTRY'S SUPPLIER OF CHOICE

HellermannTyton products are widely used and visible throughout the Rail sector with approvals granted on products by Network Rail and London Underground, you can find HellermannTyton products on rail vehicles, infrastructure installations, signalling and throughout the rail supply chain. With HellermannTyton products you can optimise maintenance and operational planning, reduce lifecycle costs and maintenance intervals through longer service.

Our design and development capabilities have enhanced our knowledge and understanding of the rail sector which has led to bespoke and innovative products brought to the market.

HellermannTyton products ensure safe and efficient cable management on the UK rail rolling stock and infrastructure network.

### THE BRIEF

In June 2022, Installation Technology secured the delivery contract to implement cellular connectivity throughout the underground sections of The London Underground. The install required a new design to allow the fixing of cable to the curved tunnel wall. Having worked with HellermannTyton before on previous new product development projects Installation Technology approached us to help with design and development.

We were asked to look at a design for a new installation that met the below criteria:

- The bracket needed to be retro fitted to the existing curved tunnel wall.
- The new design had to hold and carry the weight of the cable that ran the full length of the tunnel.
- The bracket needed to be removable for maintenance.
- The bracket needed to be robust enough to operate in the tunnel environment but be lightweight to carry and easy to install.

The final design needed to meet the standards set out for use on the railway.



## PROJECT TEAM

HellermannTytons New Product Development team in the UK hold a wealth of engineering and project management experience, collaborating on large and small scale projects across a variety of sectors. This project had multiple stake holders with different levels of engineering and commercial requirements. After reviewing the requirements of the project and understanding the requirements from the engineering and commercial teams, we assigned a dedicated project manager and design engineer; this approach allowed us to engage with each of the stakeholders and collaborated with them to meet the requirements as outlined in the brief.

Engaging with and understanding the requirements at an early stage helped our teams initiate, plan, monitor and control the requirements of activities needed to meet the deliverable targets. Having dedicated resource attached to the project kept the development on track and allowed us to move at pace, this helped us communicate effectively on status updates and ensured we met the requirements.

## DESIGN AND PRODUCT APPROVAL

Our team generated initial concepts and collaborated closely with Installation Technology to refine a design through regular consultations incorporating new design features using the HellermannTyton in house 3D printing capabilities to produce models for proof of concept and for fit and functionality testing. Once all parties were happy with the design, prototypes were produced, this allowed on site installation trials and using our lab testing facilities in Manchester we were able to run tests on the prototype design to ensure the product met the original brief.

The design consisted of two components: A bracket to fix to the tunnel and a Ratchet P Clamp which would fit onto the bracket to hold the cable in place.

A new bracket product was designed and manufactured in the UK consisting of mating components that were strong and versatile enough to fix to a bolted curved tunnel wall. Installation was made easier as the components of the bracket were made from plastic with an easy fit mechanism, this means the installation time was significantly reduced, installers can carry more brackets into the tunnel and consequently more cable can be installed in a shift.

Ratchet P Clamps are available for a variety of different cable sizes and fixings. The clamps are designed to be reusable and are easily opened whilst installed allowing maintenance or easy replacement of cables. Our relationships with external parties meant we could provide further validation through finite element analysis and flame testing to ensure the part conformed to railway standards.

The final design met the initial need of securing cable to the tunnel wall along with enhancing the product by the introduction of an easy fit and release Ratchet P Clamp. Our design offered functionality of being robust to the harsh environment, resistant to vibration and easy to install and carry through the tunnel. We had met the design brief and reached approval for use on the railway.





## INSTALLATION PROGRAM

Working with the project teams we had a good understanding of the product requirements and the installation and logistics required to move the new product to point of install, HellermannTyton were able to manufacture all product in the UK. Using our Cannock distribution facility we were able to hold stock and distribute to point of need thus allowing the project to move at pace.

Ian Parris, CEO of Installation Technology said, "our partners are an extension of our business. It's fantastic that something as modest as a bracket can have such a profound effect on delivery times and the associated financial savings. This engineering innovation is a great example of partner collaboration to solve problems and reduce our customers' costs wherever we can".

## WORKING WITH HELLERMANN TYTON

HellermannTyton is a leading manufacturer and supplier of quality products for fastening, fixing, installing, connecting, insulating, protecting, and identifying electrical cables and network connectivity solutions. Our NPD capabilities allow us to develop cable management parts for your customised needs

**If your project or product has the need to manage cable effectively and safely, please get in contact with our Business Development Manager Kevin Pryce who will be happy to help - 07551 843 637 [Kevin.pryce@hellermanntyton.com](mailto:Kevin.pryce@hellermanntyton.com)**



**HellermannTyton**

United Kingdom Main Distribution Centre

Cley Road, Kingswood Lakeside, Cannock, Staffs. WS11 8AA.

Tel: 0800 164 2204 Fax: 01543 728 284

E-mail: [distribution@hellermanntyton.co.uk](mailto:distribution@hellermanntyton.co.uk)