

POWERING TOMORROW'S TRANSPORTATION

RUGGEDIZED & RELIABLE SWITCHGEAR CONNECTORS TO CONNECT THE WORLD'S FIRST ELECTRICAL ROAD.

TE Connectivity (TE) participates in the creation of the world's first electrical road, by delivering ruggedized and reliable switchgear connect solutions to power heavy goods vehicles in harsh environments and reduce carbon emissions in the region.

Country:

Sweden

Industry:

Energy

Products:

- TE's Raychem Screened Separable Connectors RSTI

Key figures:

- 2-km electrical road section for a 2 years pilot test
- 80% to 90% reduction of fossil fuel emissions thanks to this transportation technology

The Challenge

To drastically reduce the environmental impact of transportation, the Swedish Transport Administration is carrying out a very ambitious mission: build the world's first electrical road to run non-fossil fuel heavy goods vehicles powered by electricity.

To develop this innovative transportation system, the Swedish government is working together with more than 35 partners. As a first step, a 2-km road was inaugurated in June 2016 to perform tests with hybrid trucks driving at speeds up to 90km/h under different weather conditions. The trucks have a rooftop pantograph that provides connection to the electric road's overhead cables, as well as a diesel system enabling them to also drive on traditional roadways. Tests are expected to conclude by 2018.

The purpose of the tests is to gain deeper knowledge and experience with this technology to extend it to other regions and countries. Germany is following this project very closely to implement this system in the coming years. Today, experts estimate that electrical road transport can reduce fossil fuel emissions by 80% to 90%.

To power the electrical road, the engineers in charge of the energy supply structure requested screened separable connectors that would enable the reliable connection of their cables in very compact switchgears. In addition, they were looking for connectors that could perform under extreme weather conditions due to the regional climate characterized by high humidity, low temperatures and heavy snowfall.

SWITCHGEAR CONNECTORS BUILT FOR HARSH ENVIRONMENTS

The Solution

Based on decades of experience in the field of medium voltage termination systems for distribution networks, TE's experts offered a switchgear connect solution meeting the technical requirements and environmental challenges of the project.

- TE's Raychem Screened Separable Connectors RSTI

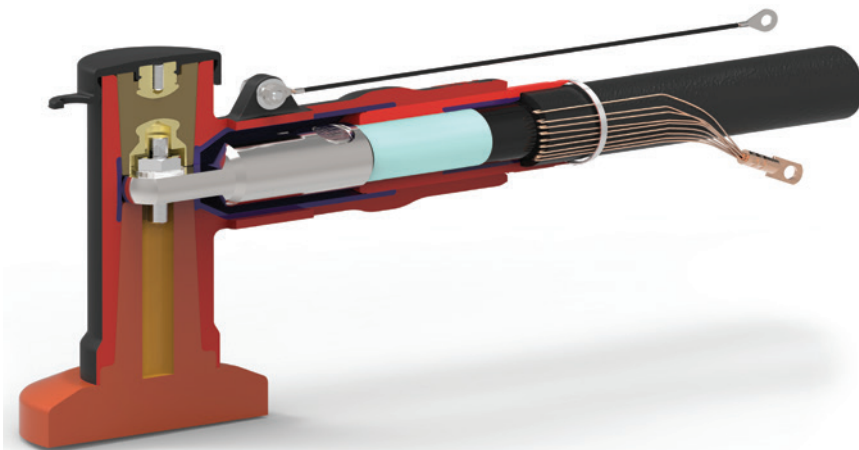
The unique design of TE's Raychem Screened Separable Connectors RSTI enabled the easy adaptation to the customer's cable type and size. Made out of a specialized liquid silicone, RSTI connectors are built to perform in the toughest conditions and under extreme temperatures, ensuring the reliable power connection of the electrical road in a particular climate. RSTI separable connectors compactness and material flexibility allowed them to fit in the small switchgear connection spaces.

- On-site Training by TE's Local Engineers

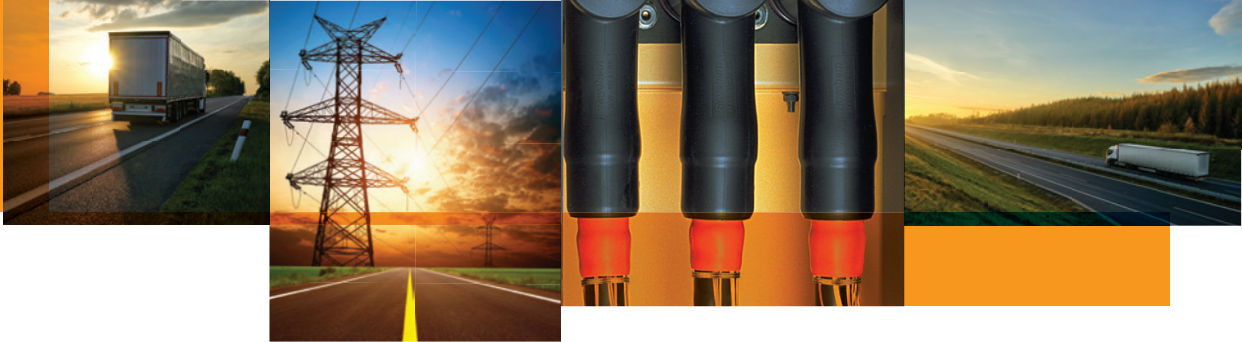
To ensure a smooth and fast installation of the connectors, TE's engineers organised an on-site training in local language.

- Easy Installation

RSTI require no special tools, reducing installation time and errors, and the on-site testing of the cable can be performed without disconnecting the connectors.



CONNECTING THE FUTURE



The Outcome

TE Connectivity was able to offer a reliable and ruggedized solution to ensure the high performance of the world's first electrical road. TE's 60 years of experience in cable accessories and material science combined with local support, made this project a success.

The silicone components and smart design of the RSTI separable connectors has enabled the reliable electrical connection of the road, even in extreme conditions, and simplified the installation in the compact switchgears.

"TE NOT ONLY DELIVERED SEPARABLE CONNECTORS ANSWERING TO OUR CHALLENGES, BUT PROVIDED AN END-TO-END SOLUTION INCLUDING TECHNICAL SUPPORT AND ON SITE TRAINING. HAVING A TECHNICAL PARTNER WE CAN COUNT ON, REALLY MAKES A DIFFERENCE."

By solving this challenge, TE Connectivity showcased its capability to design and provide switchgear connect solutions for applications in harsh environments. Today, TE is seen as a strong partner for the extension of the electrical road in the region following the pilot test. With this project, TE has contributed to empowering and forging the transportation of the future.

TE Connectivity (NYSE: TEL) is a \$12 billion global technology leader. Our commitment to innovation enables advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. TE's unmatched breadth of connectivity and sensor solutions, proven in the harshest of environments, helps build a safer, greener, smarter and more connected world. With 75,000 people – including more than 7,000 engineers – working alongside customers in nearly 150 countries, we help ensure that EVERY CONNECTION COUNTS – www.TE.com.

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FOR MORE INFORMATION:

EMAIL: rsti@te.com

TE Technical Support Centers

AMERICAS

USA/Canada: +1 (800) 327-6996
 Mexico: +52 0-55-1106-0800
 Brazil: +55 11-2103-6023
 South America: +57 1-319-8962

ASIA-PACIFIC

Australia: +61 29-554-2695
 New Zealand: +64 9-634-4580
 China: +86 (0) 400-820-6015

EUROPE-MIDDLE EAST-AFRICA

France: +33 (0) 38-058-3200
 Germany/Switzerland: +49 (0) 89-608-9903
 UK: +44 08708-707-500
 Spain/Portugal: +34 912-681-885
 Italy: +39 335-834-3453
 Benelux: +32 16-508-695
 Poland/Baltics: +48 224-576-753
 Czech Republic: +42 (0) 272-011-105
 Sweden/Norway: +46 850 725 000
 Middle East: +971 4-211-7020

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