



Sealing solutions for rapid transit rail systems

REPORT FROM THE NAMMA METRO PROJECT IN BANGALORE, INDIA

Roxtec supplies Bangalore Metro Rail Corporation Ltd. with an innovative and flexible trackside cable sealing solution. It helps BMRC secure reliable third rail

power supply as well as efficient energy use. Roxtec seals are used in the station buildings of the new city life line to prevent water, dust and rodents from entering the power supply rooms.

Most major Indian cities plan for rapid transit rail systems to reduce journey times, accidents, fuel use, and pollution. The first stretch of the Namma Metro, with 6 of the 41 planned stations, opened in 2011.



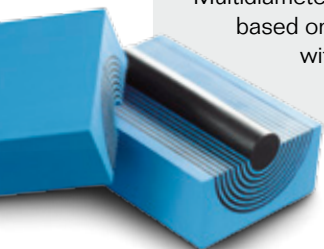
Trains enter the stations every five minutes on the beautiful elevated stretch of the purple line. They bring thousands of passengers, but they also cause severe vibration to the track and the power cable entries.

Risk of power rupture

Rain water leaked through and followed the cables down to the control cabinets in the power supply room on the ground floor. Rodents, with a preference for cable chewing, were able to enter the building

ROXTEC SEALING SYSTEM

Roxtec cable and pipe seals ensure safety, efficiency and operational reliability. They are adaptable to cables and pipes of different sizes thanks to Multidiameter™, a solution based on modules with removable layers.



as well. A cut in the power to the bottom contact third rail would stop the mass transportation services.

Customized solution

A better solution had to be found to secure safety, efficiency and operational reliability. Roxtec proposed the round Roxtec RS 100 and Roxtec RS 75, and developed a customized sleeve to obtain the correct entry angle for the stiff cables in the narrow space between the track and wall of the platform. Roxtec performed installations – and placed an R 100 seal in the middle with room for additional cables. This gives BMRCL the option to easily add cables whenever they need to upgrade.

Avoiding problems

BMRCL tested the solution live on the platform – and then decided to use Roxtec in all six stations of phase one. It will also be easy to copy and paste the solution for the next phase of the Namma Metro. “We use Roxtec in critical

applications to avoid leakage. Water in the power supply room would cause huge problems,” says one of the assistant engineers and technical managers of BMRCL Operations.

“Roxtec provides innovative solutions”

Mr. S Sundareshan of ABB Ltd

Multiple benefits

BMRCL does not only avoid risks for downtime in metro services and costly repair works in the power supply system. With the excellent sealing solution from Roxtec, the operator also ensures protection against cooling loss in air-conditioned rooms. This simplifies power savings and overall energy efficiency.



Several stretches of the Namma Metro are elevated. The trains get their power from the yellow third rail.



WHY ROXTEC?

"Roxtec provided a water-tight solution according to our customers' requirements. It is beneficial for the long-term economy of the project as you can reuse the seals and add cables without making new holes."

Would you recommend Roxtec to others?

"Yes, definitely. At ABB, we are the first ones to recommend good and innovative solutions. There are plenty of opportunities for this sealing technology. It could actually be used in all these metro projects."

Mr. S Sundareshan, Chief Project Manager, Power Transmission & Distribution of ABB Ltd.



The power supply room below the track is dry and safe thanks to the cable entry solution from Roxtec. Area efficient seals with customized sleeves withstand vibrations, water, and rats.





Facts

Project type	Construction of metro and power supply to the trains
Involved company	Bangalore Metro Rail Corporation Ltd. – owner International consortium of RITES Ltd., PCI, PBI and SYSTRA – design and engineering ABB Ltd. – contractor
Applications	Sealing of 33 KV and 750 V DC cables on track and side wall below platform, routed into power control and supply rooms in metro station buildings
Sealing requirements	IP 66/67, watertight, fire-proof, and dust-tight Air-tight for efficient use of air-conditioning Protection from rats, snakes, and lizards
Roxtec products	Roxtec R and RS seals with customized sleeves

Roxtec rolling stock and construction references

ABB, Alstom, Berlin Hauptbahnhof, Bombardier, Boston Central Artery Tunnel, Dow Chemical, Hamburger Hochbahn, Laboratory for Molecular Biology in Cambridge, Pfizer, Royal Alex Hospital, Siemens, St John's Waste Water Treatment Plant, ST Microelectronics, Winnipeg Int. Airport



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