



SIKA AT WORK

WOODHEAD TUNNEL, GREATER MANCHESTER

REFURBISHMENT: Sikadur® and SikaTop®

BUILDING TRUST



WOODHEAD TUNNEL, GREATER MANCHESTER



SIKA ARE ELECTRIC. Originally built in 1953, the Woodhead Tunnel has been built to replace two existing tunnels that carry electricity cables from east of the Pennines to Greater Manchester. After showing signs of water ingress and structural deterioration, a reliable and durable concrete repair and waterproofing system was required. For this, a comprehensive two product system from Sika, market-leading manufacturer of specialist construction materials, proved the ideal solution.

As the youngest of three decommissioned Trans-Pennine railway tunnels, the 5km long Woodhead Tunnel required refurbishment before it would be suitable to carry the high-voltage cables supplying power across the Pennines to the Manchester area. With the existing electricity cables in the two parallel tunnels approaching the end of their operational life, owners National Grid began the installation of new cables in the third and youngest – Woodhead Tunnel.



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Before cables could be installed, the tunnel required substantial maintenance work including extensive waterproofing and structural repairs. A specialist Structural refurbishment specialist Stonbury with extensive experience within the water and power industries, was appointed to complete the application of a concrete repair and waterproofing system over a 16 week period.

Working alongside this specialist contractor to ensure the correct system was selected, Sika conducted a series of on-site trials to determine product suitability. As a result of these trials and following a consultation process with Stonbury, a system comprising of Sikadur Combiflex and SikaTop® Seal-107 was chosen.

Initial installation began by applying the DWI approved Sikadur®-Combiflex® to the damaged concrete joints. Comprising of Sikadur®-31, an epoxy resin based adhesive that is applied to the substrate before it is sealed with Combiflex® Tape, a durable and chemical resistant sheet membrane. It can be applied on a wide range of substrates including concrete, mortar and steel as well as many more building materials. With a proven track record spanning 30 years, it provides a durability system that withstands extreme movements whilst maintaining a

watertight seal.

Upon completion of the concrete repairs, approximately 100,000m² of SikaTop® Seal-107, a two component, polymer modified, flexible cement based waterproofing material, was used to coat the tunnel walls. Selected after proving to be the most successful coating in the site trials, and used consistently by Stonbury in previous applications, SikaTop® Seal-107 significantly reduces the risk of water penetration into concrete to decrease the potential risk of freeze or thaw damage and surface erosion caused by chemicals.

Now the repairs and waterproofing are complete, Woodhead Tunnel will be able to safely carry the vital electrical cables that will continue to provide power to thousands of homes in the Greater Manchester area. By using market leading Sika products, each with an excellent track record for success, the tunnel will remain waterproof for many years to come.

For further information call 0800 112 3863