SIKA AT WORK
Imperial College, London

Waterproofing: SikaProof® A+ 08, Sika® Watertight Concrete, Sikalastic®-8800, Sikalastic®-851

BUILDING TRUST

IMPERIAL COLLEGE, LONDON

"EARLY TECHNICAL LIAISON WITH SIKA AND CAREYS IDENTIFIED AND RESOLVED DIFFICULT INTERFACES IN A HOLISTIC MANNER THAT LED TO PRACTICAL, INTEGRATED SOLUTIONS FOR THE PROTECTION OF THE BURIED STRUCTURES AGAINST GAS AND WATER INGRESS, IN DIFFICULT GROUND CONDITIONS. THE COLLABORATIVE APPROACH TO DESIGN AVOIDED PROLONGED DISCUSSIONS AND UNNECESSARY, COMPLEX OR COMPROMISED DETAILS THAT WOULD BE DIFFICULT TO INSTALL, HELPING ALL PARTIES TO CONTRIBUTE TO THE REDUCTION OF THE ASSOCIATED RISKS. THANK YOU TO EVERYONE INVOLVED."
MARCELLO MARINONI, REGIONAL DIRECTOR - WATERMAN STRUCTURES

PROJECT REQUIREMENT

The Imperial construction site was very tight in terms of manoeuvrability. Within a live campus, surrounded by main roads, and a railway line, its layout needed to be taken into consideration with thorough planning.

Early-stage detailing with Waterman Structures was especially important, the key challenge being the need to ensure the continuity of gas-proofing to the basement, in addition to waterproofing below the water table to achieve Grade 2 to BS8102 2022.

PROJECT SOLUTIONS

Careys, utilised a combination of Sika waterproofing products to fulfil this project with concrete provided by Capital Concrete.

Firstly, 2,500 m2 of SikaProof® A+ 08, an FPO sheet membrane for fully bonded below ground waterproofing was selected, as the product could effectively act as both a gas proof and watertight membrane for the concrete basement box. SikaProof® A+ 08 is designed for reinforced concrete structures and can be pre- or post-applied. Offering fast and easy installation, a special hybrid bonding layer on the membrane forms a full and permanent dual bond with the concrete structure. Joints are sealed with cold-applied tapes and the product offers high flexibility and crack-bridging capabilities along with high resistance to significant water pressure.

1,000 m3 of Sika® Watertight Concrete was selected for the liner walls, capping beam and basement slab due to the speed and the ease of construction it could offer the location.

1,000 m2 of Sikalastic®-8800 and 1,000 m2 of Sikalastic®-851 was chosen again due to the speed of application and quality level of both products.

Sikalastic®-8800 was used for the podium slab above the basement which was all completely buried. Sikalastic®-8800 is a 2- part, pure polyurea, hot spray applied, waterproofing and protection membrane which is fast-curing. The fast-curing element of this product allows an almost immediate return-to-service time, and the spray application offers fast coverage of the substrate.

Sikalastic®-851 is a liquid applied polyurethane/polyurea hybrid membrane and was used on elements in conjunction with London Underground and Highways, such as the new bridge crossing, because it has received approval from the Highways Authority Product Approval Scheme (HAPAS).

In addition to the collaboration between Sika and Careys in ensuring quality product supply and installation, Sika provided free on-site support and guidance. This included toolbox talks and waterproofing installation assessments, to ensure project success.

PROJECT PARTICIPANTS

Owner: Imperial College

Designer: Waterman Structures

Main Contractor: Careys

Sika Products: SikaProof® A+ 08, Sika® Watertight Concrete, Sikalastic®-8800, Sikalastic®-851

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