

PREPRUFE® Waterproofing Protects Wembley Stadium

Wembley National Stadium gets waterproofing protection from the foundation to the roof.



Project	Wembley National Stadium
Client	Wembley National Stadium
Main Contractor	Multiplex Constructions (UK) Limited
Concrete Contractor	PC Harrington Group
Architects	World Stadium Team – HOK Sport/ Foster & Partners
Structural Consulting Engineer	Mott McDonald Ltd
GCP Solution	BITUTHENE® waterproofing, PREPRUFE® pre-applied waterproofing, PROCOR® spray-applied waterproofing, SERVIDEK® /SERVIPAK® cold-applied waterproofing

Project Profile

Embarking on new stadium construction

The new Wembley Stadium was the first for a new generation of sports stadiums, offering unmatched services that attract people from around the world. The state-of-the-art, 90,000-person venue is the most versatile stage for major sporting and musical events. The presence of high voltage electrical transformers and heating necessitated a high grade waterproofing system.

Meeting complex waterproofing needs

Due to the presence of high voltage electrical transformers and heating needed to power the stadium, the Wembley construction design required a complete waterproofing system that would provide high-grade waterproofing for the basement area and retaining walls. Waterproofing continuity was essential for the basement and exposed deck areas. The stadium construction design also required numerous movement joints in the basement structure, which are always the highest risk of any waterproofing system. The fast track nature of the project required a system able to withstand different seasonal temperatures and conditions associated with lengthy timescales. Both PREPRUFE® and BITUTHENE® were well suited for this environment.

Comprehensive waterproofing

GCP offered a comprehensive waterproofing system, which comprised of technical design service, on-site technical support, as well as a waterproofing membrane and waterstop combination.

A complex network of waterstops with movement joints was detailed for the Wembley construction project. The waterstops provided the security required to deal with water pressure due to the systems' continuously active sealing element. The hydrophilic elements swell when in contact with water, which then actively seal plug voids created by concrete shrinkage.

The stadium construction project required a waterproofing system with a quick application process and the ability to support variable temperatures. BITUTHENE® and PREPRUFE® were selected for their ability to withstand different seasonal temperatures and conditions over the course of a lengthy timeline. BITUTHENE® 4000 & 8000 is a self-adhesive water and vapor membrane for the protection of the basements, was used in conjunction with PREPRUFE® 300R, a pre-applied bonded waterproofing membrane.

PROCOR® and PROCOR® Deck System were quickly spray-applied to the elevated deck areas, resulting in a reduction of the overall project time.

SERVIDEK®/ SERVIPAK® cold-applied waterproofing system, appropriate for heavily trafficked decks, suited the ramp areas leading to the decks. This system allowed the surface to be trafficked immediately after the SERVIPAK® protection boards were laid, permitting work to commence without delay.

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