



Case study Crystal Palace

Waterproofing

Architect: Arup

Main Contractor: SPIE Matthew Hall

Specialist Contractor: Cemplas Waterproofing & Concrete Repairs Ltd

Products Specified: Sika®-1 pre-bagged waterproofing system, Sikadur® Combiflex®, Sika® Cavity Drainage System, Sika® MonoTop® and Sika® FerroGard®

“Cemplas has over 30 years experience of applying Sika waterproofing systems. As an experienced specialist structural waterproofing contractor, having worked on many of London’s prestigious buildings, we are confident of the performance of the Sika product range. Our dedicated, well equipped workforce are all Sika trained and we were therefore ideally suited to undertake the works to the project.”

Paul Stacey, Business Development Manager of Cemplas Waterproofing & Concrete Repairs Ltd

In preparation for the 2012 London Olympic Games, the swimming pool in Crystal Palace National Sports Centre has been extended to 50 metres to meet Olympic standards. When it came to the internal waterproofing of the pool, plant rooms and ventilation tunnels, plus repairs to the diving boards, a repeat of the specification that has kept the pool watertight for over 50 years was the natural choice.

Having kept the original pool watertight for over 50 years, Sika®-1 from global building products manufacturer Sika, assured it would safeguard the centre’s extension. A pre-bagged waterproofing system, it provides complete protection from water and vapour ingress.

The Sika®-1 pre-bagged waterproofing system was applied to the pool walls and floor and one end of the pool creating a permanently impregnable barrier. This is made possible thanks to the Sika®-1 admixture - a colloidal silicate liquid. Mixed in with pre-bagged renders and screeds, Sika®-1 reacts upon contact with water by swelling and blocking all gaps and capillaries. The use of Sika pre-bagged mortars ensures the correct grading of aggregate and cement is used in every batch. Not only does this

help maintain the highest level of quality control on site, but it also reduces the risk of quality issues arising.

To complete the watertight solution, Sikadur® Combiflex® was applied to all construction joints and junctions where the swimming pool wall met the floor. Comprising a highly elastic sealing sheet – Combiflex® Hypalon Sheet – and Sikadur® epoxy resin, it is an easily installed system that sealed and protected all joints subject to movement.

As an experienced applicator of Sika systems, Cemplas Waterproofing & Concrete Repairs Ltd, who are currently celebrating their 40th year anniversary, was ideally suited to the project. Once the swimming pool had been completed, the company followed on to halt water ingress in the plant rooms and vast ventilation tunnels – an issue that posed the threat of the potentially fatal Legionnaires' disease.

Here, Sika® Cavity Drainage System was applied. Utilising a polypropylene internal drain membrane to cover the walls and floor, the system essentially forms a secondary wall within the structure. Ideal for structures that are too weak to utilise a waterproofing render product, the system allows water to still penetrate the structure, but not track past the membrane and into the building.

Due to this flexibility, the building is still capable of movement. Once water reaches the membrane, it is directed into a cavity drainage channel and into a sump and, from here, water is discharged from the building.

Using Sika® MonoTop® concrete repair system and Sika® FerroGard® corrosion Inhibitor, Cemplas Waterproofing & Concrete Repairs also carried out repairs to the listed diving board.



Sika®-1 Waterproofing Systems

Waterproofing Above and Below Ground for both New Build and Refurbishment

Sika®-1 pre-bagged waterproofing system provides uncompromised protection from water and vapour ingress for the structure's lifetime. Whether it's keeping water in or out, the system is backed by 100 years of experience in advanced waterproof technology along with British Board of Agrément (BBA) certification.

Available as a screed and render system, it can easily be applied to all walls and floors. The key ingredient is the Sika®-1 admixture. This colloidal silicate liquid reacts to moisture by expanding into a jelly-like substance – blocking all gaps and capillaries in the structure for a watertight seal.

The system can be used to meet the requirements of all 3 grades of waterproofing, as outlined by BS8102: 2010, Protection of Structures against Water from the Ground. Which of these grades is required depends on the end use of the structure.

It is suitable for a wide range of applications including basements, underground car parks and subways. The system can also be used on structures designed to retain water such as swimming pools, tanks and bund walls.



Grade

1

Typical Structure & Requirements

Basic utility,
Basement Car Parks,
Plant rooms (excluding electrical equipment).

BS 8102:

Grade 1: Slight seepage and damp patches are tolerable.



Grade

2

Typical Structure & Requirements

Residential and Commercial
Basements
Workshops, plant rooms and retail storage where a drier environment is required.

BS 8102:

Grade 2: No water penetration but moisture vapour tolerable.



Grade

3

Typical Structure & Requirements

Ventilated residential and working areas including offices, restaurants and leisure facilities.

BS 8102:

Grade 3: A dry environment is required and water penetration is intolerable.

NBS Specification

Sika®-1 pre-bagged waterproofing system - In accordance with NBS specification clause J10 Cementitious Mortar Tanking/Damp Proofing Clause 110 Proprietary Mortars

Sika®-1 pre-bagged waterproofing system, certified by the BBA Certificate number 00/3761, should be applied to a sound and clean open texture surface, free surface contaminants. Joints and cracks subject to movement should be treated with Sikadur® Combiflex® Jointing system. The Sika®-1 pre-bagged mortars should be mixed with diluted Sika®-1 Liquid Waterproofing Admixture to provide the multi-coat components for the waterproofing systems and the substrate pre-soaked immediately prior to application



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