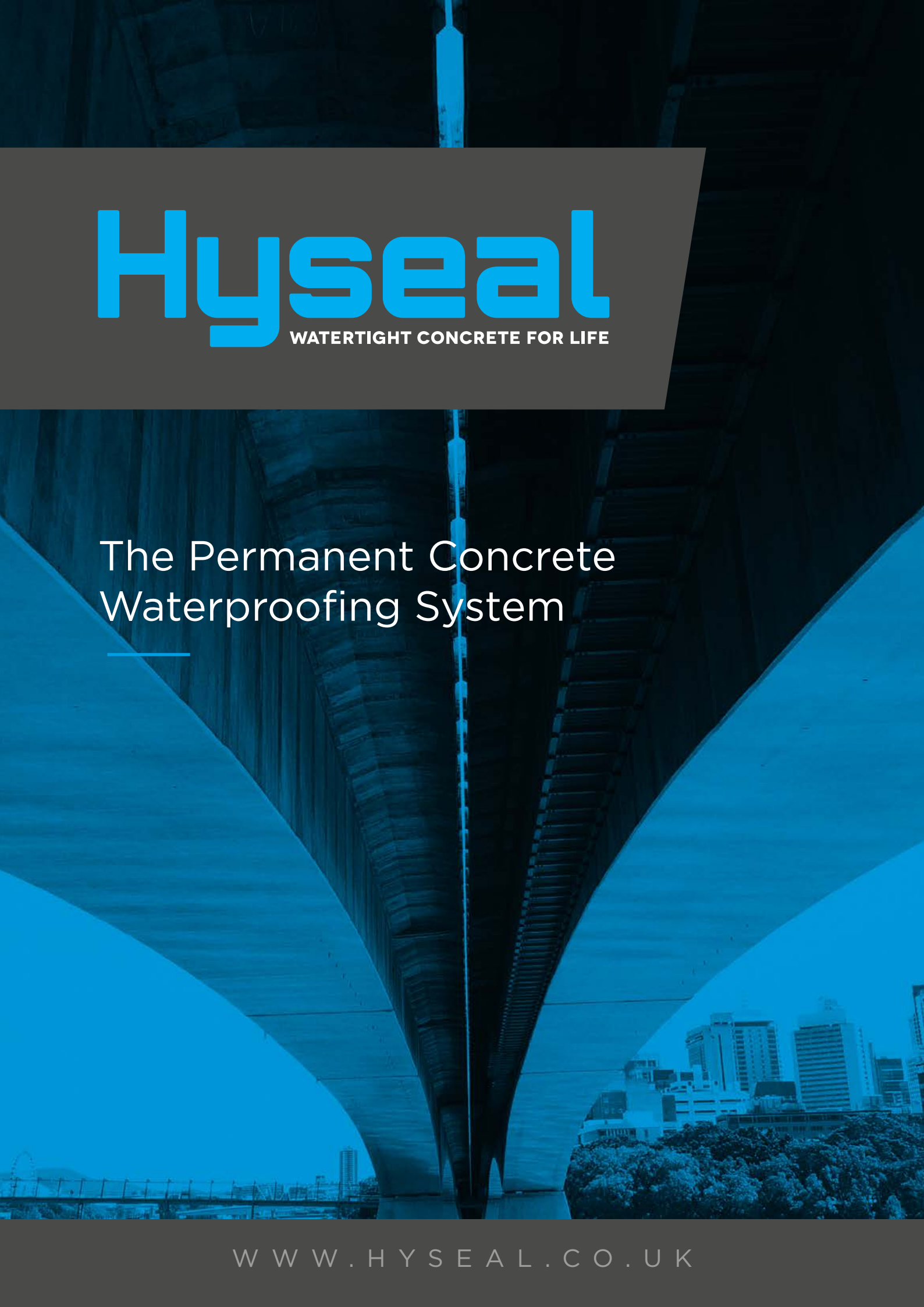

Hyseal

WATERTIGHT CONCRETE FOR LIFE

The Permanent Concrete Waterproofing System

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01.

What is Hyseal?

Hyseal is a crystalline reactive waterproofing compound, added either as an admixture in fresh concrete or applied as a slurry or mortar to existing concrete surfaces and structures.

How Does **Hyseal** Work?

Moisture and free lime within the concrete combine with the active chemicals in **Hyseal**, to create a continuous barrier of insoluble crystals which penetrate deep into the capillary structure of the concrete.

These capillaries and interstices block the passage of water, whilst permitting the transmission of air and water vapor, enabling the structure to “breathe.”

The active chemicals within **Hyseal** remain dormant in the concrete to offer long-term protection, for the life of the concrete.

Any subsequent contact with water will re-activate the crystalline process.

Application

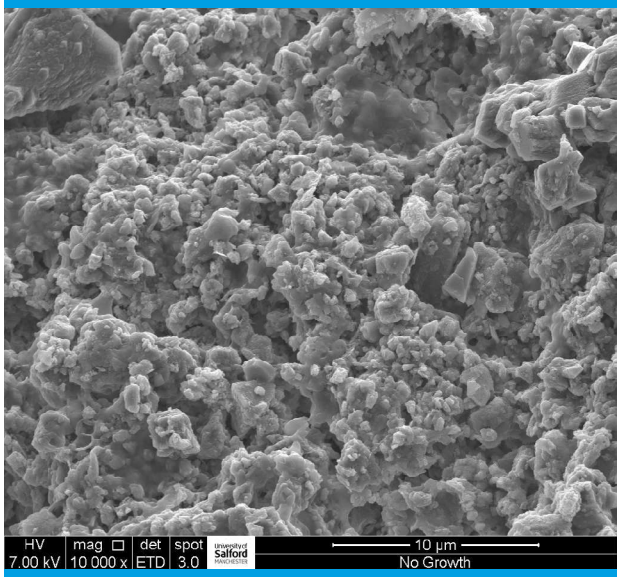
The application of **Hyseal** during the construction or remedial works stage will prevent movement of water in conditions of both negative and positive water pressure.

Additionally, **Hyseal** will provide protection against frost damage and attack from certain chemicals.

Hyseal alters the structure of the concrete and ensures permanent waterproofing with maximum resistance to erosion and chemical attack, thus extending the service life of the structure and reducing maintenance costs.

When **Hyseal** is used, insoluble crystals are formed and develop with in the water bearing capillaries of the concrete, effectively blocking the passage of water and ensuring permanent water-tightness throughout the whole of the concrete structure.

SEM-MICROSCOPY @10um



Normal Control concrete, without Hyseal
(No Crystal Growth)

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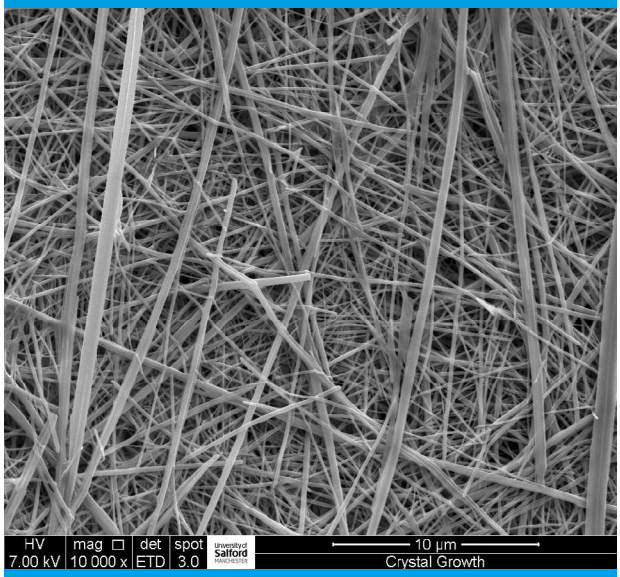
TREATED CONCRETE



Concrete with Hyseal Crystal Growth
(needle-like structures)

*photography by Microscopy Unit, Salford University Civil Engineering dept.

When to Use Hyseal

Hyseal should be applied at the initial construction stage whenever possible.

Waterproofing a structure after discovering that the concrete is porous or the structure leaks, is time consuming, expensive and disruptive.

The same is also true when surface treatments or finishes have already been applied to the concrete.

Costly shutdowns and damage from water ingress, leakage or flooding can be avoided by specifying **Hyseal** at the design stage and applying it during the original construction, ideally as an admixture to fresh concrete, or as a slurry on freshly struck concrete surfaces.

Surface Applied to existing concrete, as a slurry or mortar

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NO. 1

Added to fresh concrete as an Admixture

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CONCENTRATE

Hyseal
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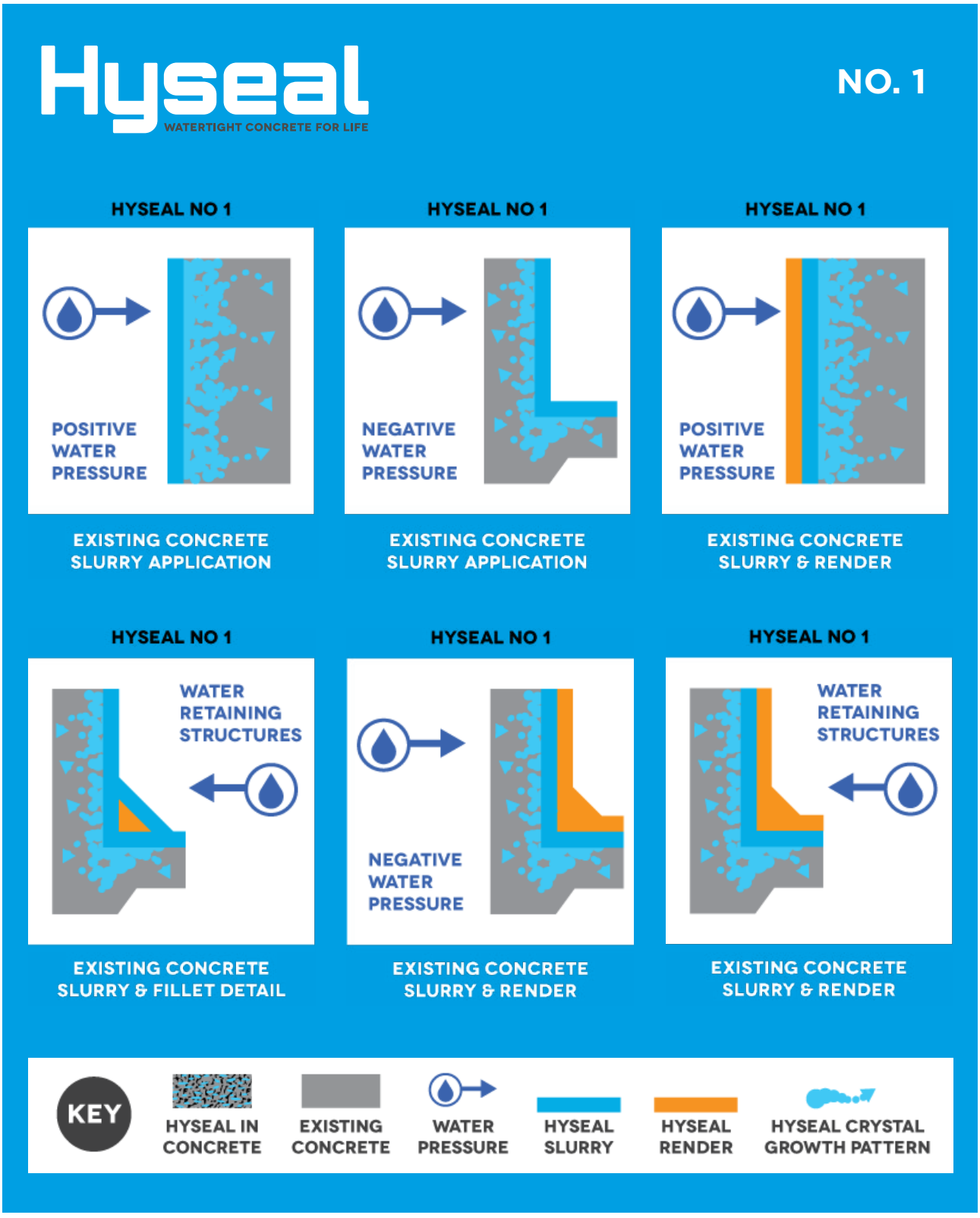
NO. 1



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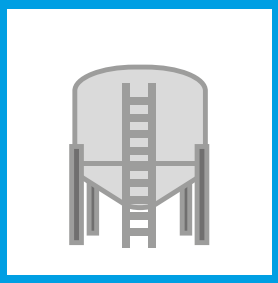
CONCENTRATE

CORRECT QUANTITIES
PER BATCH

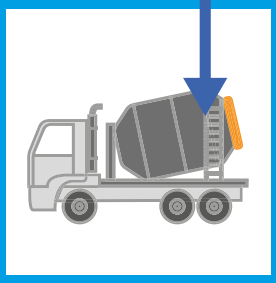
PLACE ADMIX INTO CONCRETE

Hyseal

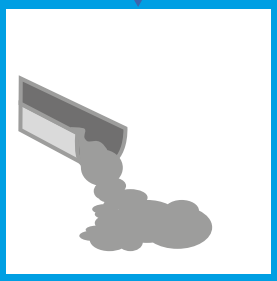


ADDED AS DRY MIX
AT BATCH PLANT

OR



ADDED TO THE
CONCRETE TRUCK AT
SITE



CONCRETE BEING
POURED IS NOW
WATERPROOF FOR LIFE

Hyseal
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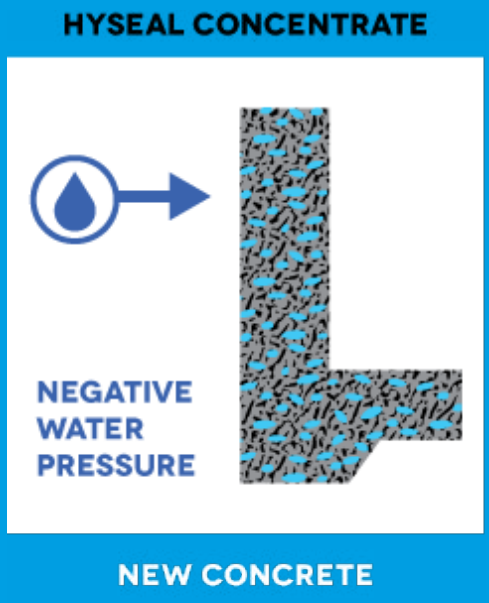
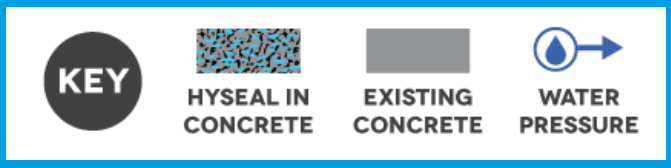
CONCENTRATE





Where to Use Hyseal

Dubai International Airport

For over 30 years, Hyseal has been trusted as the concrete waterproofing solution for the prestigious world communications hub that is Dubai International Airport

In 1984, Balfour Beatty and consulting engineers Bechtel International were awarded the construction of Dubai International Airport Terminal 1

Initially, bitumen based sheet membrane was specified for foundation waterproofing, but due to its problematic history in the region and the site location having a high water table, with brackish ground water, both the consulting engineer and contractor wanted a more permanent and robust waterproofing system to protect this prestigious project, at the time, the largest airport terminal construction world-wide.

After in-depth tests and research, Hyseal was selected to be added as a concentrate on construction joints and kickers and applied as a slurry coating, in 2 coats, to the whole of the below ground concrete foundations.

Hyseal No 1 slurry was applied in accordance with the manufacturer's instructions and kept damp for 10 days, using hessian sacking, kept damp by water spraying. No other protection was applied other than degradable protection board to protect the slurry surface from backfill damage.

Terminal 1 has now been operating 31 years, without any reported foundation leaks or concrete corrosion. In 2015, a major re-furbishment of Terminal 1 will be completed, with the original foundation structure still in place and Hyseal continuing to give dormant waterproofing protection and re-bar steel passivity.

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