

# Controll® Innerseal

Deep waterproofing for concrete



**Innerseal protects against damp related damage by stopping the penetration of water and other liquids. The protection is open to diffusion and permanent.**

Water is the cause of most damage to concrete and plaster. Water carries with it contaminants and chlorides that cause corrosion in concrete reinforcement, frost shattering, efflorescence and weathering. Innerseal prevents the ingress of liquids and reinforces weathering material in one single treatment.

Innerseal penetrates deep into the capillaries, micro-cracks and pores. A reaction then takes place between salts and minerals to form a very hard calcium silicate hydrate. This results in a crystalline structure that stops the transport of water but lets vapours pass through (diffusion). Because the protection is deeply seated, it is insensitive to external influences such as abrasion and impacts.

The surface does not become water repellent (hydrophobic) and can be coated, for example, with plaster or concrete. If a water repellent surface is wanted, we recommend a combined treatment using Controll®Topseal.

For concrete surfaces that are subjected to heavy wear and tear or aggressive liquids, we recommend a combination treatment using Controll®Innerseal Plus(+).

#### Areas of use:

- Concrete and plaster
- Roads, bridges, tunnels
- Basins, water & sewerage systems
- Industrial and warehouse floors
- Foundations and slabs
- Marine environments
- Façades, cellars, walls
- Balconies, stairs

#### Benefits:

- Environmentally friendly
- Open for diffusion
- Acid resistant
- One-off treatment
- Increase the lifespan
- Reduces the need for maintenance
- Binds dust
- Easier to keep clean

#### Very exposed areas:

In combination with surface hardener Controll®Innerseal Plus(+)

- Car parks and garages
- Vehicle washing stations
- Sewage Treatment Plants
- Freezer rooms
- Agriculture
- Biogas silos
- Sawmills, paper mills
- Recycling and waste facilities



#### Performance tested and approved in accordance with:

**EN 1504-2+ (SP/CBI)** Products and systems for the protection and repair of concrete structures – Surface protection systems for concrete

#### Life-365 / Nordtest NT-Build 492

Chloride protection - Reinforced concrete is given 3 times longer useful life

#### DIN 11622-2 (TÜV)

Chemical resistance for waste and biogas plants

#### EN ISO 12873-2: 2005 (AQUALOGY LABAQUA)

Approved for use in direct contact with potable water up to 70°C

#### Nuclear power stations (VATTENFALL)

Class: Green 2, including usage in WetWell (reactor containment)

1504-2 System 2+



Life-365 Service Life Prediction Model™  
for reinforced concrete exposed to chlorides



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## APPLICATION:

Innerseal is delivered ready to use and must not be mixed with other liquids or diluted. Shake the container before use. The surface to be treated must be free of dust, paint, grease or any other coating that may obstruct the substrate's absorption.

Damage and visible cracks (> 1.0mm) must be repaired prior to treatment. Protect glass, aluminium and other polished or painted surfaces to prevent etching. In the case of splashes, flush immediately with water and, where necessary, clean with acid; e.g. Controll® ConClean.

The temperature during application and for the following 24 hours must be  $\geq +5^{\circ}\text{C}$ . Avoid application in direct sunlight.

Apply with a low pressure spray or impregnation roller and carry out wet-in-wet at least twice with approx. 5-15 min between application, until full saturation is attained. Treat the spray mist with caution as it can travel long distances and cause damage to glass.

On horizontal concrete surfaces, Innerseal can be poured out and kept in motion with a rubber squeegee, brush or polish mop. Prevent dry patches from forming during treatment. Full saturation is attained after approx. 30-40 min. Stop when the Innerseal starts to "gel", which usually occurs sooner on new concrete. Remove excess, otherwise shiny or white patches may form and impair the adhesion for another coating. For brick façades, specific regulations apply, and application may only be performed by certified personnel.

## DRYING TIME:

Ready for foot traffic after approx. 2 hr. Can be exposed to water after 6 hr and heavier traffic after 24 hr. Full resistance to aggressive liquids is attained after 36 days.

## COVERAGE:

0.2-0.4 l/m<sup>2</sup> depending on the absorptive capacity of the substrate and the penetration depth required. Perform a test to estimate the coverage.

## CLEANING:

Tools: water of acidic solution. Skin: soap and water.

## MAINTENANCE:

Do not use cleaners with pH < 7.  
For floors, soap for concrete containing silicates is recommended.

## HEALTH & SAFETY:

Use only in well-ventilated areas. Protect airways against the spray mist, which can cause irritation. There are no known harmful effects but we recommend wearing gloves and goggles during application. Read carefully the safety data sheet prior to starting work.

## ENVIRONMENT CERTIFICATE / ASSESSMENTS:

Recommended by Scandinavian Byggvarubedömningen (Green Building Material Assessment) and SundaHus.

**ECO Institute:** Free from VOC, carcinogens, mutagens and substances hazardous to reproduction.

**EN ISO 12873-2: 2005** For use in direct contact with potable water up to 70° C. (Influence of materials on water intended for human consumption, Influence of migration. Part 2)



## CE MARKING EN 1504-2:2004, SYSTEM 2+:

Products and systems for the protection and repair of concrete structures - part 2: Surface protection products for concrete, table: ZA.1b / ZA.1c



*Extract from declaration of performance:*

Depth of penetration . . . . .	17 mm
Abrasion resistance . . . . .	> 30%
Permeability . . . . .	W < 0.1 kg/m <sup>2</sup> h <sup>0.5</sup>
Impact resistance . . . . .	Class II: >10 Nm
Adhesion strength (pull off) . . . . .	3.0 N/mm <sup>2</sup>
Reaction to fire . . . . .	Euro class 1 (fireproof)
Dangerous substances comply with . . . . .	5.4 / No requirements

## PRODUCT DATA:

Appearance . . . . .	Slightly cloudy liquid
pH . . . . .	11.4
VOC content . . . . .	0 g/l
Density . . . . .	1.135 g/cm <sup>3</sup>
Flash point . . . . .	Missing
Freezing point . . . . .	0° C
Fire . . . . .	Non-flammable
Packaging . . . . .	20 l / 1000 l
Storage/shelf-life . . . . .	Cool, dark / > 36 months.

## MANUFACTURER:

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