PREMCRETE

# HYDROCRETE

## Combined Crystalline & Pore-Blocking Waterproof Concrete Admixture

### DESCRIPTION

HYDROCRETE is established on Dual-AC Technology providing a unique crystalline waterproof concrete admixture, which also incorporates a hydrophobic pore-blocking component to provide the ultimate waterproofing admixture. Initially the pore-blocking component reduces the water absorption in the matrix. The next phase of action commences upon contact with water and produces nano-scale crystals which are formed in the micro-capillaries. These crystals remain active for the lifetime of the structure. It is supplied in powder form, in pre-weighed water-soluble bags, suitable for addition to the concrete at the batching plant.

### USES

HYDROCRETE is used as an integral waterproof admixture which will produce watertight concrete when used as part of the HYDROCRETE watertight concrete system. Applications include waterproofing of basements, swimming pools, lift pits, tunnels, culverts and other structures which require resistance to water ingress.

### ADVANTAGES

- Reduces permeability of concrete
- Innovative Dual-AC Technology provides two-fold protection
- Crack-healing up to 0.3mm
- Increases corrosion resistance of concrete
- Chloride free, offering extra protection to the reinforcement bars
- Pre-weighed powder component supplied in water soluble bags for ease of dispensing
- Consistent performance through accurate addition at concrete batching plant

### COMPLIANCE

- HYDROCRETE is certified by The BDA Agrément®.
- Complies with EN 934-2 table 9 as a water-resisting admixture.
- Type B waterproof additive as defined in BS 8102/2022 Table 1.

DUAL AC TECHNOLOGY

BDA Agrément
BAF-23-275-P-A-UK

### PROCEDURE

**Dispensing:** The HYDROCRETE dosage is 1.75kg / $m^3$ of concrete. The HYDROCRETE admixture should be added to the concrete at the same time or after the addition of the cement. Care should be taken to ensure forced action and truck mixes are free from all contaminants prior to the batching of concrete. The concrete mix should be mixed at full revolutions for a minimum of 3 minutes to ensure optimum dispersion of the admixture. It is the responsibility of the concrete batching plant to control the consistency of the mix and the water/cement ratio.

**Curing:** Concrete containing the HYDROCRETE admixture should be cured in line with good concrete practice using PREMCRETE curing agents in line with BS 7542.

### COMPATIBILITY

HYDROCRETE is compatible with all Portland cement mixes including GGBS, PFA and limestone blends. HYDROCRETE is compatible with most superplasticisers but should be added to the mix separately.



www.premcrete.com | 02380 276166 | sales@premcrete.com
44 Macadam Way, West Portway, Andover, Hampshire, SP10 3XW

PREMCRETE

| Test | Standard | Result | | |
|---|---|---|---|---|
| | | Age of sample at test | Control concrete | Concrete with product |
| Water vapour transmission rate (mean) | VTC TP/N950/09/16074 | - | 42.09 g/m$^2$/day | 26.43 g/m$^2$/day |
| Water vapour diffusion resistance coefficient, µ-value (mean) | | | 12 | 15 |
| Equivalent air layer thickness $S_d$ value (mean) | | | 1.40m | 2.16m |
| Water permeability (mean) | VTC TP/N950/09/16010 | >28 days | 2.14 x 10$^{-13}$m/s | 1.94 x 10$^{-13}$m/s |
| Capillary absorption (mean) | BS 1881-122 | >28 days | 2.56% | 1.12% |
| Wetting shrinkage | ASTM C341M-18 | 56 days | 0.014% | 0.017% |
| Drying shrinkage | | | 0.021% | 0.038% |
| Slump value | BS EN 12350-2 | N/A | 70mm | 80mm |
| Bleeding | BS EN 480-4 | N/A | 4.54 x 10$^{-3}$% | 8.40 x 10$^{-4}$% |

| Test | Standard | Result | | |
|---|---|---|---|---|
| | | Age of sample at test (days) | Control concrete | Concrete with product |
| Modulus of elasticity | BS EN 12390-13 | 44 | 44,400 N/mm$^2$ | 48,400 N/mm$^2$ |
| Flexural Strength | BS EN 12390-5 | 28 | 5.5 N/mm$^2$ | 5.03 N/mm$^2$ |
| Compressive Strength | BS EN 12390-3 | 1 | 32.07 N/mm$^2$ | 27.03 N/mm$^2$ |
| | | 7 | 61.43 N/mm$^2$ | 60.37 N/mm$^2$ |
| | | 28 | 70.03 N/mm$^2$ | 72.50 N/mm$^2$ |
| Freeze/Thaw | PD CEN/TS 12390-9 | >28 | 0.09 kg/m$^2$ | 0.04 kg/m$^2$ |

| Test | Standard | Result | |
|---|---|---|---|
| | | Control Concrete | Concrete with product |
| Air content | BS EN 12350-7 | 1.3% | 1.4% |
| Setting time | BS EN 196-3 | 210 min (initial | 366 min (initial) |
| | | 231 min (final) | 378 min (final) |
| Water-soluble chloride | BS EN 480-10 | - | 0.23% |
| Total alkali (as $Na_20$ equivalent) | BS EN 480-12 | | 0.05% |
| Sodium oxide ($Na_20$) | | | 0.05% |
| Potassium oxide ($K_20$) | | | <0.01% |

## CONCRETE MIX DESIGN

HYDROCRETE is guaranteed for use within reinforced concrete structures designed to 0.3mm maximum crack width and has been formulated for use in concrete with a minimum cement content of 350kg/$m^3$ and a maximum water/cement ratio of 0.43. If the addition of a high range water reducer/ superplasticiser is required, then consult PREMCRETE Technical Department for specific advice.

## PACKAGING & COVERAGE

**Pack size:** 4 x 1.75kg Water-Soluble Bags per bucket.

## STORAGE & SHELF LIFE

HYDROCRETE has a shelf life of 12 months and should be stored in dry conditions between 5°C to 40°C. The bags must be stored in sealed containers to prevent water ingress.

## HEALTH & SAFETY

See separate material safety datasheet