

# HYDROBETON

WATERPROOFING ADMIXTURE FOR LARGE-SCALE  
CONCRETE CASTS WITH CRYSTALLIZING EFFECT



**DRACO**

CONCRETE  
LINE

ADDITIVES FOR  
WATERPROOF  
AND UNDERWATER  
CONCRETE



**HYDROBETON** is a powder product formulated for waterproofing concrete. In the mixing phase **HYDROBETON** exhibits a three-fold action that reduces the water-concrete ratio, combines submicron particles with a crystallizing and sealing effect that decrease the porosity of the cement mix and entrains air bubbles that make your concrete waterproof and more resistant to frost and thaw.

## BENEFITS

**HYDROBETON** is an admixture that is added to the mix design when the concrete is being prepared in order to waterproof the cement.

The special characteristics of the product are:

- ✓ **It effectively and permanently waterproofs concrete:** **HYDROBETON** activates a chemical reaction inside the pores of the concrete, which generates pozzolanic reaction products with a crystal morphology that integrate into the conglomerate enhancing its microstructure and making it waterproof.
- ✓ **It improves resistance to freeze-thaw cycles:** The reduction in the water-cement ratio combined with the crystallizing effect and the entrainment of micro-bubbles triggered by **HYDROBETON**, enhance the concrete's microstructure thus increasing resistance to freeze-thaw cycles.
- ✓ **It reduces shrinkage and hence the possibility of cracking:** Concrete prepared with **HYDROBETON** presents a 50% lower probability of cracking than that of a traditional concrete.
- ✓ **Self-sealing capacity up to 0.4 mm:** Thanks to its crystallization action, which is continuously reactivated, **HYDROBETON** is capable of sealing micro-cracks of up to 0.4 mm.
- ✓ **It increases the chemical resistance and durability of concrete:** The reduced permeability and the reduction of porosity, that ensure a lower penetration of carbon dioxide and aggressive agents in general, enhance the strength and durability of concrete prepared with **HYDROBETON**.



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## USES

**HYDROBETON** is suitable for use when preparing concrete for structures in constant or occasional contact with water such as:

- ✓ Basins, tanks and reservoirs that may also contain drinking water
- ✓ Water purifiers and treatment plants
- ✓ Foundation work, slabs and retaining walls
- ✓ Docks and harbour works
- ✓ Over ground and underground car parks
- ✓ Swimming pools

## MIXING METHOD AT THE CONCRETE MIXING PLANT

### Dry mix on the aggregate belt loader

**HYDROBETON** will be manually added onto the aggregate belt loader or to the hopper. Slowly sprinkle **HYDROBETON** over the aggregates to obtain a uniform mix.

### Warning

On no account should **HYDROBETON** be added directly on-site as this would fail to ensure a proper blend of the admixture with the concrete.

For fluid and super-fluid concrete, use **HYDROBETON** in combination with our fluidifying agents (**FLUIBETON** and/or **DRACRIL**).

## COMPATIBILITY 'WITH THE TYPE OF CEMENT USED IN THE CONCRETE

**HYDROBETON** reacts with CaOH (free lime) present in the concrete matrix; it is therefore necessary to check the cement type used in the mix design, which must be CEM I or CEM II PORTLAND cement. Pozzolanic cements may have important adverse effects on the crystallizing chemical reaction (consult the **DRACO** technical office).

## PACKAGING AND STORAGE

**HYDROBETON** is packaged in:

- 12 kg bags
- 20 kg pail

If kept in its original packaging and properly stored under cover in a dry place the product maintains its characteristics for a year.



## PRODUCT FEATURES

APPEARANCE AND COLOUR	Grey powder
MAIN ACTION	Large-scale waterproofing of concrete
SECONDARY ACTION	Reduction of the W/C ratio, micro aerating
SLUMP TEST - EN 12350-2	190
MAINTENANCE OF CONSISTENCY AFTER 30' - EN 480-8	170
CHLORIDE ION CONTENT ( $\leq 0.05\%$ ) EN 480-10	0.031%
PACKAGING	12 kg bag
	20 kg pail
CUSTOMS CLASS	3824/40/00
SHELF LIFE	12 months

## APPLICATION DATA UNI EN 934-2 (T3.1/3.2/9)

MIX COLOUR	Grey
DOSAGE	1.5 - 2 kg per 100 kg cement
PH OF MIX	> 12
MINIMUM RECOMMENDED CEMENT CONTENT	300 kg/m <sup>3</sup>
MINIMUM RECOMMENDED CEMENT CONTENT FOR STRUCTURES IN CONTACT WITH WATER	350 kg/m <sup>3</sup>
RECOMMENDED W/C RATIO	0.45 ÷ 0.50
MINIMUM TEMPERATURE OF THE CONCRETE ADMIXED WITH HYDROBETON	+5 to +35°C
CAPILLARY ABSORPTION - EN 480-5	after 7 days 47.73%
	after 90 days 55.25%
AVERAGE MECHANICAL STRENGTH - EN 12390-3 PROSPECT 3.1	51.1 N/mm <sup>2</sup>