



Part of the DBGroup

PUDLO

Durability improver and waterproofing powdered admixture

DESCRIPTION

A hydrophobic, pore-blocking admixture. A dual-purpose, multi-component powdered admixture comprising of a powerful single dosage pack providing outstanding durability and waterproofing properties to all concrete mixes. It also includes plasticising and corrosion-inhibiting benefits.

PUDLO outperforms any other admixture of its kind in both durability and impermeability. Where long term durability is critical and / or exposure to aggressive environments is present, **PUDLO** provides significant key solutions when added to the concrete mix.

BBA

BBA certificate 01/3843 relates to **PUDLO** performance characteristics and provides accurate independent data on durability and impermeability.

KEY BBA CERTIFICATE FACTORS ASSESSED

Durability — concrete containing the product is more durable than the equivalent plain concrete due to its reduced permeability (see section 17 of BBA certificate).

Resistance to water penetration — concrete and render containing the product has reduced permeability when compared to the equivalent plain concrete and render (see sections 5 and 6 of BBA certificate).

Reinforcement protection — concrete containing the product has enhanced resistance to reinforcement corrosion when compared to the equivalent plain concrete (see section 7 of BBA certificate).

Mechanical properties — the mechanical properties of the concrete and render are not adversely affected by the incorporation of the product (see section 8 of BBA certificate).

POTABLE WATER APPLICATIONS

The product is suitable for use in concrete mixes designed to be in contact with potable water and has been approved by the Water Regulations Advisory Scheme for this purpose.

QUALITY CONTROL

PUDLO powder is a quality controlled, dry powdered product produced in a BS EN ISO 9001 quality manufacturing environment. **PUDLO** Powder is BBA accredited holding Certificate No 01 / 3843.

APPLICATIONS AND BENEFITS

- Integral advantages in both high durability and waterproofing environments of all concrete mixes and cementitious based systems
- **PUDLO** is suitable for use with all CEM1 mixes (100% OPC) and cement replacement mix designs using GGBS, PFA and micro silica

PRODUCT DATA SHEET





PRODUCT DATA SHEET

Part of the DBGroup

- To increase durability and minimise permeability, absorption and efflorescence
- To provide long-term (building lifetime) durability
- Applicable in all types structural ready-mix concrete and precast concretes
- To reduce shrinkage
- Provides permanent significant reduction in permeability
- Reduction in carbonation of concrete
- Improves resistance to sulphate, chloride and chemical attack including leachates
- Enhances protection against frost attack
- Provides sound concrete for protection of reinforcement steel
- Increases ultimate compressive and tensile strengths without increase in cement content
- Reduces bleed and segregation
- Reduces efflorescence and staining
- Ready to use, readily dispersed, single dose powder, supplied in convenient pre-weighed dissolvable paper bags
- Proven world-wide track record with over 140-year history
- Concrete mixes containing the product can be placed, compacted and cured by operatives with experience of using conventional concreting methods and equipment
- Eliminates the need for any post-applied coating applications or sheet any membrane materials for protection and durability

Effects of PUDLO CWP on the hardened properties of concrete

Property	Control (plain) concrete	PUDLO CWP / Admix 500 concrete	Test reference
Water absorption (%) 28 days	2.42	1.25	BS 1881-122
Water vapour permeability [g.m(N.s) ⁻¹]	790 x 10 ⁻¹²	490 x 10 ⁻¹²	BS 1377
Water permeability (ms ⁻¹)	3.2 x 10 ⁻¹⁵	0.64 x 10 ⁻¹⁵	Taywood/Valenta
Drying shrinkage (%)	0.035	0.032	BS 6073-1
Wetting expansion	0.017	0.009	BS 1181-5
Compressive strength (N.mm ⁻²) 28 days	63	82	BS 1881-116
Capillary absorption (g.mm ⁻² x 10 ⁻³)			BS EN 480-5 ⁽¹⁾
7-day cure			
1-day absorption	2.6	0.62	
7-day absorption	4.0	0.62	
90-day cure			
1-day absorption	3.9	1.1	
7-day absorption	7.0	1.7	
28-day absorption	8.4	2.6	



Part of the DBGroup

PRODUCT DATA SHEET

DOSAGE AND MIXING INSTRUCTIONS

The optimum dosage of **PUDLO** Cement Waterproofing Powder to meet specific requirements should always be determined by trials using materials and conditions that will be experienced in use.

As a guide, normal dosages of **PUDLO** Cement Waterproofing Powder should be in the range 2 – 3% by weight of cement. For example, 1kg **PUDLO** CWP/50kg of cement.

To obtain maximum benefit it is recommended that the water cement ratio should not exceed 0.40.

With the correct dosage of **PUDLO** Cement Waterproofing Powder determined, the required amount should be added to the mix, preferably with or immediately after cement addition.

The concrete or mortar produced must be thoroughly mixed until homogeneous.



Note: In the event the location of the ready mix concrete supplier (RMC) is within a very close distance to the construction site, the concrete mix containing **PUDLO** CWP must be given a minimum mixing time of 15-20mins to allow the bag to break up and dissolve.

APPLICATION AND USE

It is essential that good concreting practice is performed and maintained at every stage of the application process.

Concrete modified with **PUDLO** powder should be placed without segregation, fully compacted and correctly cured in accordance with up to date industry guidelines. Failure to adhere to guidelines and methods of good concrete practice can cause segregation and under compaction and may result in moisture or water ingress.

PACKAGING AND SHELF LIFE

PUDLO Cement Waterproofing Powder is packaged in 8kg bags or 20kg tubs. Bulk options are available, please contact us for details. The powder has an indefinite shelf life subject to storage in good dry conditions.

APPEARANCE

PUDLO CWP is an off white/pale grey powder.

HEALTH AND SAFETY

Use of substance/ preparation: **PUDLO** (Cement Waterproofing Powder) is a cementitious powder admixture that when incorporated in to concrete or render enhances the water resistance and durability of the hardened product.

Company name: David Ball Group Ltd, Wellington Way, Bourn Airfield, Cambridge CB23 2TQ.

Tel: 01954 780 687 Fax: 01954 782 912



Part of the DBGroup

PRODUCT DATA SHEET

HAZARDS IDENTIFICATION

Hazard designation: Xi Irritant

Information pertaining to particular dangers for man and environment: R 36/37/38 Irritating to respiratory system, eyes and skin.

Composition/ information on ingredients: A blend of cementitious powders, aggregates and waterproofing agents.

PUDLO Cement Waterproofing Powder is non-toxic and safe to use. However, protective clothing and a dust mask should be worn while mixing the material.

Handling: Avoid creating airborne dust wherever possible. Where dust is generated then engineering control measures should be considered (ventilation/ extraction) to maintain the airborne dust concentration as low as is reasonably practical.

Storage: Store between +5° C and +35° C protected from frost, sunlight and moisture. Treat as standard Portland cement.

Occupational Limits: Total inhalable dust, 10mgm/m³ 8 hour time weighted average.

Exposure Standards: Respirable dust, 5mg/m³ 8 hour time weighted average.

General protective and hygienic measures: Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Avoid contact with eyes and skin.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Breathing equipment: P3 dust mask or similar respirator rated for fine dust. In case of intensive or longer exposure, use breathing apparatus that are independent of circulating air.

Protection of hands: Protective gloves. Suitable gloves for the handling of cementitious materials.

Eye protection: Eye protection recommended.

Body protection: Protective work clothing recommended.

The above health and safety information is abbreviated from the **PUDLO CWP MSDS/ COSHH** data sheet available on request.