

Conplast WP*

High Performance Hydrophobic Waterproofing System

Uses

Conplast WP is a specially blended organic liquid, which is chloride free, when added to fresh concrete, reacts with products of the cement hydration process to produce a hydrophobic material which repels external water, reducing absorption into the concrete.

Conplast WP drastically reduce water absorption in structural and pre-cast concrete and improve waterproofing property of concrete.

Hydrophobic polymer in Conplast WP induced crystallization effect in concrete. This crystalline growth reduce porosity by blocking capillaries and filling hairline non-structural crack up (up to 0.1mm) caused by shrinkage of concrete. It is recommended to be used in multi-storey basement, RC flat roof, tunnel, water retaining/excluding structure, bridge deck, civil and building structure.

Conplast WP is a cost effective means of reducing concrete permeability and thereby reducing water penetration.

Advantages

- Reduces surfaces absorption
- Improved workability and plasticity.
- Minimizes cracking and plastic shrinkage.
- Minimizes bleeding and segregation.
- Provides integral protection, ensuring reduced permeability throughout the concrete.
- Integral protection is maintained even if surface damage occurs.
- Lower water: cement ratio improves compressive strength at same workability.
- Fully compatible with certain Fosroc surface coating finishes.

Description

Conplast WP is a high performance hydrophobic waterproofing system specially designed for the complete and permanent waterproofing of mass and reinforced concrete structures, ready-mixed and precast concrete, etc.

Conplast WP is a concentrated formulation of selected reactive materials that impart impermeable properties to all concrete. Its strong wetting and cement dispersion action improves the workability and plasticity of mixes.

Technical Support

Fosroc provides a technical advisory service for on-site assistance and advice on admixture selection, evaluation trials and dispensing equipment. Technical data and guidance can be provided for admixtures and other products for use with fresh and hardened concrete.

Typical Dosage

Conplast WP may be dispersed to the gauging water at the rate of 1 litre per 100 kg of Portland Cement. For severe conditions, a minimum of 1.5 dose (1.5 Litre) is recommended.

The use of Conplast WP allows the reduction of water cement ratio by about 10% without affecting workability (the specified slump is preserved). In doing so, a higher compressive strength can be achieved.

Effects of overdosing

An overdose of double the intended dose of Conplast WP may result in increased retardation and workability,

Long term strength is unlikely to be affected. Should segregation of concrete occur, due to excessive increase in workability, the concrete shall not be used.

Properties

Appearance	:	Brown liquid
Specific Gravity	:	Typically 1.10 at 20°C
Chloride content:		Nil to BS5075

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Instruction for Use

Compatibility

Conplast WP is compatible with Conplast range of retarder and plasticizer or equivalent when used in the same concrete mix, but should be added to the mix separately and must not be mixed together prior to the addition. The resultant properties of mixes containing more than one admixture should be assessed by the trial mix procedure recommended on this data sheet.

Conplast WP is recommended for concrete containing retarding admixture conform to ASTM C494 Type D or 5075 Part 1. It is also compatible with Conplast range of superplasticizer or its equivalent, conforming to ASTM C494 Type F of BS 5075 Part 3. Conplast WP is suitable for use with all types of Portland cements and cement replacement materials such as PFA, GGBFS and microsilica.

Trial Mix

Trial Mix shall be conducted for concrete intended to utilize Conplast WP to drastically reduce water absorption in a particular concrete structure. The targeted compressive strength of a particular grade of concrete shall be complied with BS 5328:1981 or its latest revision.

The results of the trial mix should satisfy all requirements of normal concrete properties. The use of Conplast WP at typical dosage will illustrate an excellent result on water absorption, as shown in Typical Performance Example.

Water proofing to joints in concrete

Supercast Waterstop must be provided between lifts of concrete and joints in floor bays.

Curing

As with all structural concrete, good curing practise should be maintained, particularly in situations where an overdose has occurred.

Water spray, wet hessian or a Concure spray applied curing membrane should be used.

Limitations

The use of Conplast WP will not make poor quality concrete waterproof.

Good concrete practice must be followed at all times. Well graded aggregates must be used and minimum cement content of 350kg/m³ is recommended for Grade 30 and below. Concrete with higher Grade would require higher cement content.

Dispensing

The correct quantity of Conplast WP should be measured by means of recommended dispenser. The admixture should then be added to the concrete with the mixing water to obtain the best results. Contact Fosroc Technical Service Department for advice.

Typical Performance Examples

Conplast WP meets the water absorption requirements of European standard EN 934-2. Many variables in concreting materials and conditions can affect the selection and use an admixture.

Trials should be carried out using relevant materials and conditions in order to determine the optimum mix design and admixture dosage to meet specific requirements.

A typical performance example from evaluation studies of Conplast WP is included on this data sheet. The values quoted are representative of results obtained and are provided as illustrations of the performance.

Because of the variability of concreting material, the results should only be taken as typical of the performance to be expected. Results quoted are not necessarily directly comparable with result obtained elsewhere for Conplast WP.

When a particular concrete mix design (with retarding plasticizer and/or superplasticizer), using Conplast WP has complied with all requirements, actual batching of concrete shall only commence.

The use of Conplast WP shall be under adequate supervision. Contact Fosroc Technical Department for advice.



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Example

Water absorption test in accordance to BS 1881 Part 122, on comparison between concrete for water retaining control and concrete with Conplast WP (Treated).

Concrete grade	:	45/20	
Cement	:	420Kg	
Free w/c	:	0.38	
Mix	:	Dosage %	Absorption (BS 1881)%
Control	:	nil	5.9
Treated	:	1.0	< 1.8
Mix Proportion	:	Control	Treated
Cement (OPC)	:	1.00	1.00
Sand	:	3.00	3.00
W/C ratio	:	0.50	0.45
Conplast WP	:	Nil	1% of OPC

Results

COMPRESSIVE STRENGTH (N/mm²)

Age of concrete		Control	Treated
3 days	:	15.5	18.5
7 days	:	26.0	31.5
28 days	:	38.0	42.0

PERMEABILITY (ml/m²/sec)

Age of concrete		Control	Treated
24 hrs	:	0.025	0.020
48 hrs	:	0.015	0.010
72 hrs	:	0.0096	0.0055

Estimating - packaging

Conplast WP is available in 210 litre drum, 1000 litre tote tank or bulk supply.

Storage

Conplast WP has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C.

Precautions

Health and safety

Conplast WP does not fall into the hazard classifications of current regulations (see notes 1 and 2 below). However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting.

Fire

Conplast WP is water based and non-flammable.

Cleaning and Disposal

Spillages of Conplast WP should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remnants should be hosed down with large quantities of water.

Additional information

Fosroc provides a wide range of waterproofing system which can be incorporated with Conplast WP to provide a complete solution to basement tanking and water retaining / excluding structure.

* Denotes the trademark of Fosroc International Limited

† See separate datasheet

Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it.



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