

Conplast UWL

Anti-washout admixture

Uses

Conplast UWL is an admixture system specially designed to allow concrete to be placed underwater. Conplast UWL increases the cohesion of concrete mixes and minimises washout enabling concrete to be easily placed underwater, and produces well compacted, high quality concrete.

Advantages

- Reduces washout of cement paste during placing.
- Eliminate segregation in mixes.
- Can remove need for specialist placing equipment.
- Allows higher strength and reinforced concrete to be satisfactorily placed underwater.

Description

Conplast UWL is a chloride free ready to use liquid admixture. Conplast UWL produces a gel in the water which surrounds the cement particles and protects them from washout.

Properties

Chloride content:	Nil to BS 5075
S.G:	1.010

Compatibility with cements

Conplast UWL can be used with all types of Portland cements and cement replacement materials such as microsilica, GGBS and fly ash. For advice on special cements, consult Fosroc's Technical Department.

Compatibility with other admixtures

Conplast UWL is recommended to use in conjunction with Fosroc's Structuro series of PCE admixtures.

If it is found necessary to use a plasticiser or other type of admixture, Fosroc's Technical Department should be contacted for advice.

Stiffening and Setting times

Stiffening time of concrete using Conplast UWL is achieved soon after placing; set time of concrete is not effected by the usage of Conplast UWL.

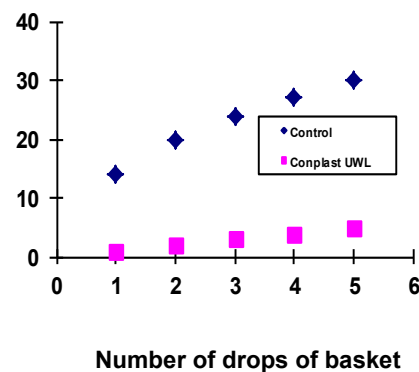
Cement washout

Typically, ordinary concrete can exhibit a washout of upto 30% of the fines content. Using Conplast UWL in the same mix, this can be reduced to less than 6%.

See Figure 1.

Washout resistance is assessed by filling a perforated basket with the concrete mix, allowing it to drop through water five times and measuring the loss in weight of the concrete after each drop.

Figure 1: Typical results of washout tests



References

Plunge test 'Laboratory Method of Testing Concrete for Placement Underwater' B.A. Davies, International Conference on Concrete in the Marine Environment, London, 1986.

Instruction for use

Dosage

The normal dosage of Conplast UWL is between 0.5 to 1.5 Litres per 100kg of cementitious materials. Dosages outside recommended levels are possible depending upon job requirements and concreting materials. Site trials should be carried out to establish optimum dosages for the mix to be used.

Overdosing

An overdose of double the recommended measure of Conplast UWL will result in an increase in the anti-washout properties, and possible loss of flowability/workability.

Mix design

Mix proportions should be determined as for a cohesive pump mix. A sand content of 40-55% of the total aggregate weight is recommended. A normal minimum cement content for underwater placing is 400 kg/m³.

Site/plant trials must be carried out to determine the optimum mix design and workability requirements.

Conplast UWL

Mixing

When concrete is made using a forced action mixer, Conplast UWL should be added towards the end of the mixing cycle. It should be added slowly and with care. Mixing should continue for a further 1 - 2 minutes.

When concrete is truck mixed Conplast UWL should be added to the concrete after mixing either at the plant if near the site, or at site. Conplast UWL should be added slowly into the truck, and mixed for 5 - 10 minutes at high speed. It is essential that truck mixers used are in good condition. Agitator trucks are not suitable. When the concrete is truck mixed it may be necessary to adjust the workability of the concrete after Conplast UWL has been added. This may be done with a small amount of additional water or the addition of a suitable plasticiser. See "Compatibility with other admixtures". The concrete should be constantly agitated until the moment of placing..

Placing

The concrete may be pumped, skipped or tremied into place, alternatively it may be flowed down an incline. Free fall of highly workable concrete tends to results in turbulent flow which segregates the mix and increases water cement ratio. At high workability it is, therefore, not recommended that the concrete is allowed to free fall, even from the end of a tremie.

Precautions

Health and Safety

Conplast UWL has no specific health hazards; it is not fall into the hazard classifications of current regulations. However, it should not be swallowed or allowed to come into contact with skin and eyes.

Cleaning

Spillages of Conplast UWL to be soaked up with inert absorbent or remove by best available means, dispose-off as waste.

Fire

Conplast UWL is not flammable.

Storage

Conplast UWL should be stored in normal warehouse conditions, protect from frost. A minimum shelf life of 6 months could then be expected.

Packaging / supply

Conplast UWL is supplied in 210 litre drums and 1000 litre totes. Please contact Fosroc for further details. Contact your local Fosroc office or representative.

Technical service

The company provides a technical advisory service for on site assistance and advice on concrete mix design and evaluation trials.

Additional information

Technical data and guidance can be provided on a wide range of admixtures, and concreting aids including accelerators, retarders, waterproofer, mould release agents, surface retarders, workability aids and repair materials. *see separate data sheet.



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