

Underwater concrete admixture system

Uses

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

Advantages

- No risk of significant washout of cement paste during placing.
- Removes need for specialist placing equipment
- Allows higher strength and reinforced concrete to be satisfactorily placed underwater.

Description

Conplast UW is a chloride free water soluble polymer supplied as a fine off-white powder. Conplast UW produces a gel in the water paste which surrounds cement particles and protects them from washout.

Properties

Chloride content : Nil to BS 5075

Compacted bulk density of the powder : 0.55 - 0.65

Compatibility with cements : Conplast UW can be used with all types of Portland cements and pozzolans. For advice on special cements, consult Fosroc.

Compatibility with other admixtures: Conplast UW is not generally compatible with other types of admixture. It has been formulated to give good workability and the additional use of a plasticising admixture is not normally recommended. In case it is found necessary to use a plasticiser or other type of admixture, Fosroc should be contacted for advice.

Setting times : Stiffening time of concrete using Conplast UW is retarded by approximately 3 to 5 hours at normal dosages, depending on cement and mix characteristics.

Cement washout : Typically, ordinary concrete can exhibit a washout of up to 30% of the fines content. Using Conplast UW in the same mix, this can be reduced to less than 5%.

Instructions for use

Dosage : The normal dosage of Conplast UW is 0.6 to 1.0% by weight of cement, but will depend on the cement and sand content. Site trials should be carried out to establish the optimum dosage for the mix to be used.

Overdosing : An overdose of double the recommended measure of Conplast UW will result in an increase in the anti-washout properties, significantly increased retardation and strength loss of the concrete.

Mix design : Mix proportions should be designed as for a cohesive pump mix. A slump of at least 180mm is typical. A sand content of 40-50% of the total aggregate weight is recommended. A normal minimum cement content for underwater placing is 400kg/m³. Site /plant trials should be carried out to determine the optimum mix design and workability requirements.

Mixing : When concrete is made using a forced action (Power paddle) mixer Conplast UW 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 UW should be added to the concrete after mixing either at the plant if near the site, or at site. Conplast UW 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 UW has been added. This may be done with a small amount of additional water or the addition of a suitable plasticiser. The concrete should be constantly agitated until the moment of placing.

Cleaning : Spillages of Conplast UW will gel when in contact with moisture and should therefore be removed in the dry state.

Estimating

Packaging

Conplast UW is supplied in 6kg bags.

Storage

Conplast UW should be stored in its sealed bags, protected from moisture and off the floor. A minimum shelf life of 12 months could then be expected.

Precautions

Health and Safety

Conplast UW has no specific health hazards; it is non toxic but should not be ingested. Any eye contamination should be flushed with clean water and medical advice should be sought.

Additional information

Technical data and guidance can be provided on a wide range of admixtures and concreting aids including plasticisers, retarders, waterproofs, mould release agents, surface retarders and repair materials.