

PRODUCT DATA SHEET

Sika® UCS Pak

Underwater/anti-washout admixture

DESCRIPTION

Sika® UCS Pak is a powdered underwater/anti-washout admixture formulated to increase the cohesion of concrete to enable significant reductions in washout. Sika® UCS Pak is packaged in water soluble bags to enable ease of addition and handling.

USES

Sika® UCS Pak allows for the production and the improvement of concrete to be placed underwater.

Sika® UCS Pak is mainly used for the following applications:

- A wide range of applications where concrete is to be placed underwater
- Marine construction

FEATURES

Sika® UCS Pak has the following characteristics and should be used in combination with a Sika® HRWR/Superplasticiser:

- Strong increase in cohesion
- Extended workability
- Superior anti-washout properties
- Provides improved integrity of concrete placed underwater
- Less segregation and bleed
- Packaged in water soluble bags for easy dispensing

CERTIFICATES AND TEST REPORTS

Conforms to the requirements of BS 8443

PRODUCT INFORMATION

Composition	Powder blend of plasticisers and viscosity modifiers
Packaging	0.400Kg water soluble bag (24 bags = sealed tub)
Appearance and colour	Pale Buff Powder
Shelf life	12 months from date of production if stored properly in undamaged unopened, original sealed packaging.
Storage conditions	Store in dry conditions at temperatures between +5°C and +25°C. Protect from direct sunlight and frost.
Density	~ 0.50Kg/Litre
Total chloride ion content	< 0.1% w/w
Specific advice	Equivalent Sodium Oxide as % Na ₂ O w/w: < 0.50%

APPLICATION INFORMATION

Recommended dosage	4 – 5 Bags/m ³ (0.400Kg)
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Compatibility

Sika® UCS Pak may be combined with many other Sika products. Important: Always conduct trials before combining products in specific mixes and contact our Technical Service Department for information and advice about any specific combinations.

Dispensing

- Sika® UCS Pak should not be added to the gauging water.
- Sika® UCS Pak should preferably be added at the batching plant with the aggregate or cement to support dispersion.
- A wet mixing time, which is depending on the mixing conditions and mixer performance, of at least 120 seconds is recommended.
- Underwater concrete needs to have high workability (F4 consistence) in order to flow and compact. Underwater/anti-washout admixtures combined with superplasticisers require a long, slower mixing action to achieve a high workability.
- When added directly to a truck mixer, the mixer shall rotate its drums at maximum revolutions for at least 1 minute per m³ concrete and a minimum of 5 minutes to achieve a uniform mix.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

APPLICATION METHOD / TOOLS

- The standard rules of good concreting practice, concerning production and placing, are to be followed.
- Cement contents should be at least 400 kg/m³ (total cementitious content) with a maximum water/cement ratio of 0.45. Typically the fine aggregate content should be >45%.
- Laboratory trials shall be carried out before concreting on site, especially when using a new mix design or producing new concrete components.
- Underwater concrete can be placed by skip, pump or tremie. However, care is needed not to allow the concrete to free-fall through a water filled pump line or tremie pipe as the turbulent flow produced will cause the mix to segregate. Pumping will normally produce the best results and minimise washout as only the top surface is usually exposed to the full effects of the water movement.

CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be removed mechanically.

NOTES ON APPLICATION / LIMITATIONS

- When using Sika® UCS Pak a suitable mix design has to be taken into account and local material sources

shall be trialled.

- Overdosing may cause an increase in air-entrainment that will tend to lower the compressive strength. Cohesion and anti-washout properties will be increased which may lead to reduced workability of the concrete. There may also be an increase in set time.
- The compressive strength of underwater concrete may be slightly reduced by the inclusion of Sika® UCS Pak but this is often negated by the addition of a Sika® HRWR/Superplasticiser.
- The setting time of underwater concrete will be increased when Sika® UCS Pak is used. This extra time to set is often beneficial to the concreting operation as underwater concrete pours generally take longer to complete than conventional land based pours.
- The air-content of the underwater concrete may be increased slightly due to the viscous nature of the mortar matrix preventing all entrapped air being released.
- Support from our Technical Service Department is recommended.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

LEGAL NOTES

Any information or suggestions for use concerning Sika's products, which we either in writing or orally have given buyers or end-users of the product, have been given in good faith based on our own experiences and based on approved praxis and the technological and scientific knowledge on the time of giving such suggestions and information, which are given without any type of guarantees, and which do not lead to any further responsibility from Sika Danmark A/S, besides what is stated in the sales agreement in question. The buyer or end-user should themselves investigate or otherwise make sure, that our products are suitable for the use in question and further make sure that the products are kept and used correct and in agreement with the published rules and considering

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the actual conditions in order to avoid damages or less satisfactory results. Any order is accepted and any deliverance is affected according to the general terms of sales and delivery from Sika Danmark A/S, which are considered known and accepted, and which could be handed out when asked for. Our catalogues are not up-dated automatically. The present product data sheet is only for use in Denmark. Values stated in the present product data sheet should be seen as recommended, unless stated otherwise.

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