

Retarding admixture for mortar

Uses

- In conjunction with Cebex or Conplast air entrainers to produce a pre mixed retarded mortar with a suitable life of typically up to two working days.
- To provide controlled extension of working life for pre mixed renders or screeds
- Recommended for use in mortar containing lime or sands containing more than 10% of silt as measured by the Field setting test.

Advantages

- Controlled retardation provides extended working life
- Allows premixing of mortar in large volumes for gradual use, increasing quality and consistency of the mortar
- Premixing of large volumes of mortar allows more accurate and consistent dispensing of colour pigments.
- Usable with a wide range of building sands, including those containing large quantities of the material that may otherwise give workability retention problems
- Allows easier use of locally available materials
- In combination with Conplast and Cebex air entrainers, provides a combination of air entrainment and reduced water content in the mix, decreasing water absorption and enhancing durability.

Standards compliance

Cebex 311 complies with BS 4887 Part 2 as a retarding admixture for mortar and with the requirements of BS4721, specification for ready mixed building mortars, Section 3.

Description

Cebex 311 is a chloride free plasticising and retarding admixture based on a blend of organic retarders. It is supplied as a straw coloured solution which readily disperses in water.

Cebex 311 enhances the dispersion of cement particles in a mortar mix, exposing a greater surface area of cement to the mixing water and enabling the water content of the mortar to perform more effectively.

The initial hydration of cement is also delayed. Careful selection of dosage and use in combination with Cebex or Conplast air entraining agents allows extension of the working life of a pre mixed mortar as surface for the bricks or blocks or blocks to be laid. Once between the bricks or blocks, water is drawn from the mortar. This causes acceleration of the stiffening and the mortar then sets and performs in a similar manner to conventional non retarded mortars.

Technical Support

Fosroc provides a technical advisory service to specifiers, end-users and contractors as well as on-site technical assistance in locations all over the country.

Typical dosage

The optimum dosage of Cebex 311 to meet specific requirements must always be determined by trials using the materials and conditions that will be experienced in use. This allows the optimisation of admixture dosage and mix design and provides a complete assessment of the mix.

Typical dosage levels for Cebex 311 for use in retarded mortars lie in the range of 0.30 to 1.60 litres / 100 kg of cement. The actual level will depend on the working life required and other factors such as the type of sand used. A dosage selection method is detailed later on this datasheet.

Where lime is used in the mix the admixture should be dosed based on the total amount of lime and cement in the mix. The recommended trial procedure will allow the effects of lime to be determined. An initial starting point for trials is to consider the lime to have the same admixture demand as three times its own weight of cement.

Use at other dosages

Dosages outside the typical range suggested on this data sheet may be used if necessary and suitable to meet particular mix requirements, provide that adequate supervision is available. Compliance with requirements must be assessed through trial mixes. Contact Fosroc for advice in these cases.

Properties

Appearance	: Straw coloured liquid
Specific gravity	: Typically 1.19 @ 25°C
Chloride content	: Nil to BS 4887

Cebex[®] 311

Instructions for use

Mix design

Comprehensive trial mixes with local materials must be performed to ensure suitable performance is obtained and that the optimum dosages of Cebex 311 and other Fosroc admixtures are selected. Cebex 311 has been developed to give improved workability retention characteristics in mixes containing high levels of fine material. However, the dosage required for a particular period of retardation will still depend on the silt content. Low silt contents will require lower dosages of Cebex 311 and high silt contents will require higher dosages.

Mortar mix designs based on BS 4721 section 3 are shown in Table 1, together with typical performance specifications associated with them.

Air entrainment

Most specifications for mortar require entrained air. The inclusion of adequate quantities of air is necessary to allow satisfactory workability and ease of use to be maintained. The use of Cebex or Conplast air entrainer is recommended.

Air entrainment also reduces segregation and bleeding, should these faults be apparent. If these problems are severe then Fosroc shall be contacted.

Mix workability

The initial workability of a retarded mortar is an important factor in ensuring a consistent product with the desired workability retention characteristics. The initial workability should be within the range of 100% to 110% as measured using the BS 4551 flow table.

Storage of mixed mortar

Once manufactured, mortar must be protected from moisture loss. It is recommended that mortar is stored in a non-porous container with a close fitting lid. If evaporation occurs, the mortar will prematurely form a crust.

Compatibility

Cebex 311 is compatible with other Fosroc admixtures used in the same mortar mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The resultant properties of mortar containing more than one admixture should be assessed by the trial mix procedure recommended on this datasheet.

Cebex 311 is suitable for use with all types of ordinary portland cement. Fosroc shall be contacted for advice on use with special cements and blends containing cement replacement materials.

Effects of overdosing

An overdose of double the intended amount of Cebex 311 will result in a significant increase in retardation compared to that normally obtained at the intended dosage. This may cause problems of instability of mortared units. Extended retardation of renders and screeds will allow desiccation of the screed or mortar to occur before the material hardens, leading to dusting and deterioration of the surface and possible debonding from the substrate.

An overdose will also tend to increase the plasticising effect of the admixture. The degree of these effects will depend on the particular mix design and overdose level.

Curing

As with all cementitious systems, good curing practice should be maintained. Curing is particularly important where retarded screeds or renders are used.

Limitations

The recommendations on this datasheet concerning the maximum working life that should be used with low absorption masonry units and retarded screeds and renders should be carefully followed.

Cebex[®] 311

Estimating

Packaging

Cebex 311 is available in 200 litre drums and tanker loads. For larger users, storage tanks can be supplied.

Storage

Cebex 311 has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C. Should the temperature of the product fall outside this range then Fosroc should be consulted.

Precautions

Health & Safety instructions

Cebex 311 is mildly alkaline and 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.

For further information Fosroc shall be consulted.

Fire

Cebex 311 is water based and non flammable.

Cleaning and disposal

Spillages of Cebex 311 should be absorbed onto sand, earth or vermiculite and transferred to suitable containers.

The disposal of excess or waste material should be carried out in accordance with local legislation under the guidance of the local waste regulatory authority.

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telephone	fax	e-mail
++91 80-22240018/120	++91 80-22233474	india@fosroc.com

Regional Offices



Fosroc Chemicals (India) Pvt. Ltd.

Head Office

111/3, Hafeeza Chamber II Floor,
K H Road, PBNo. 2744, Bangalore 560027

www.fosroc.com



Bangalore

Shankar House, IV Floor
1 & 18, RMV Extension
Bangalore 560 080
Ph:080-2361 3161/2361 2004
Fax : 080-2361 7454
email: Bangalore@fosroc.com

Mumbai

208/209, Persepolis
Sector 17, Vashi
Navi Mumbai 400 703
Ph:022-2789 6412/14
Fax: 022 - 2789 6413
email:Mumbai@fosroc.com

Delhi

First floor, 1/2 East Patel Nagar
Opp: Vivek Cinema, Main Patel Rd
New Delhi 110 008
Ph:011-25884903/4
Fax: 011- 25884422
email:Delhi@fosroc.com

Kolkata

P-569, Lake Terrace Extn.
First Floor
Kolkata 700 029
Ph: 033 24650917 / 55343188
Fax: 033-24650891
email:Kolkata@fosroc.com

- Ahmedabad : (079) 26762799 ● Ankleshwar : (02646) 220704/224687 ● Bhubaneshwar : (0674) 2546415 ● Chennai (044) 24899949/24853383
- Chandigarh : (0172) 2639360 ● Cochin : (0484) 2356668 ● Coimbatore : (0422) 2472966 ● Goa : (0832) 2542465 ● Guwahati (0361) 2548793
- Hyderabad : (040) 27662324/27662425 ● Hubli (0836) 09343402597 ● Indore : (0731) 504339/5061477 ● Jaipur : (0141) 2235349
- Jamshedpur: (0657) 2223848 ● Lucknow : (0522) 2239044 ● Nagercoil 09842134873 ● Visakhapatnam : (0891) 2564850 / 2707607