Sustainable waterproofing mortar for cellars, underground structures and water tanks

Application

Cemsec is designed for use as a waterproof coating for cellars, underground structures, foundation walls, swimming pools and water tanks. **Cemsec** can be applied to either the inner or the outer surfaces, in case of active or passive hydraulic pressure. **Cemsec** can also be used to create watertight joints.

Properties

Cemsec is a pre-mixed product based on polymer cement, fire-dried sand, quartz powder and reinforced with a synthetic fibre. The addition of water produces a ready-to-use sustainable waterproofing mortar. After drying and finishing, this mixture offers sufficient tensile strength, bonding strength and compressive strength and is resistant to seepage.

Directions

General instructions for waterproofing underground structures

The structure must be able to resist the hydrostatic pressure of the water table. Check that the soil and water table do not contain aggressive substances detrimental to the maintenance of such underground structures and the waterproofing coating. Special precautions should be taken if appropriate. The soil should be drained, if necessary, before applying waterproofing. Ensure that there is no risk of landslip. The waterproof coating is applied up to at least 50 cm above the presumed highest level of the water table. The substrate to which the waterproofing mortar is applied must be stable, clean, sound, sufficiently porous and suitable for the coating. The waterproofing mortar can be applied to both the walls and floors.

General preparation

In the case of masonry, any bad joints should first be removed. The areas where joints have been removed and any areas where the masonry or other substrate has cavities, gravel pockets or stabilised cracks should first be filled and smoothed as described below. Then prepare a mix of 25 kg **Cemsec** to 4 ltr water in a concrete mixer. Once the mix is homogenous, allow it to set for two minutes, and then mix again for about 30 seconds. The mix is now ready for use and should be applied to a sufficiently moistened substrate.

Work method * Structures with active leaks

The person applying the waterproofing can choose any of the methods described below, according to personal preferences and experience with such systems.

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1. Small drain method

Install a small drain in areas subject to an active leak, to drain away water entering. Moisten the substrate thoroughly, preferably by hosing down the wall. Apply the first bond coat/damp-proof coat (**Cemsec**) and allow drying for at least 24 hours. Remove the small drains and fill the holes with Redivit in accordance with the instructions for use supplied with the product. Check the bond coat/damp-proof coat, clean any waterlogged areas and plug the leaks with Redivit in accordance with the instructions for use supplied with the product. Thoroughly moisten the waterlogged areas where the leaks have been plugged with Redivit. Make good with a bond coat/damp-proof coat (**Cemsec**). Wait for at least 1 hour before moving on to the next step. Thoroughly moisten the bond coat/damp-proof coat, preferably by hosing down the wall. Apply the waterproof top coat (**Cemsec**) and leave to dry for between 1 to 3 hours, according to circumstances. Then polish the waterproof top coat to a smooth surface using a suitable lightly wet sponge float. Check that the mortar does not dry out too quickly in the first few days and if necessary, keep the surface wet by regularly spraying it down with water or by covering it with a plastic sheet.

2. Bond coat/damp-proof coat rinsing method

Moisten the substrate thoroughly, preferably by hosing down the wall. Apply the first bond coat/damp-proof coat (**Cemsec**) and allow drying for at least 24 hours. Check the bond coat/damp-proof coat, clean any waterlogged areas and plug the leaks with Redivit in accordance with the instructions for use supplied with the product. Thoroughly moisten the waterlogged areas where the leaks have been plugged and make good with a bond coat/damp-proof coat. Wait for at least 1 hour before moving on to the next step. Thoroughly moisten the bond coat/damp-proof coat, preferably by hosing down the wall. Apply the waterproof top coat (**Cemsec**) and leave to dry for between 1 to 3 hours, according to circumstances. Then polish the waterproof top coat to a smooth surface using a suitable lightly wet sponge float. Check that the mortar does not dry out too quickly in the first few days and, if necessary, keep the surface wet by regularly spraying it down with water or by covering it with a plastic sheet.

3. Direct leak plugging method

Plug all leaks with Redivit in accordance with the instructions for use supplied with the product. Moisten the substrate thoroughly, preferably by hosing down the wall. Apply the first bond coat/damp-proof coat (**Cemsec**) and allow drying for at least 2 hours. Thoroughly moisten the bond coat/damp-proof coat, preferably by hosing down the wall. Apply the waterproof top coat (**Cemsec**) and leave to dry for between 1 to 3 hours, according to circumstances. Then polish the waterproof top coat to a smooth surface using a suitable damp sponge float. Check that the mortar does not dry out too quickly in the first few days and, if necessary, keep the surface wet by regularly spraying it down with water or by covering it with a plastic sheet. Note: if blistering occurs after applying the top coat or if the top coat becomes waterlogged due to unplugged leaks, the affected area should be stripped back to the bare substrate. Plug the leak and finish off by applying a bond coat/damp-proof coat and a waterproof top coat as described in method 2 above.

Work method * Structures subject to extreme salt stresses

In the case of structures subject to extreme salt stresses, any of the methods described above can be used but also following the additional instructions below with respect to preparation and the bond coat/damp-proof coat. Dry brush to remove the salt bloom. Moisten the substrate thoroughly, preferably by hosing down the wall. Apply the first bond coat/damp-proof coat and allow drying for at least 2 hours. The bond coat/damp-proof coat should be made up as follows. Prepare a mix of 25 kg **Cemsec** to 3,5 à 4 ltr water and 0,5 ltr Cemgrip S in a concrete mixer.

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Once the mix is homogenous, allow it to ripen for two minutes, and then mix again for about 30 seconds. The mix is now ready for use and should be applied to a sufficiently moistened substrate.

General application information

Temperatures

The inside and outside temperature should be over 0°C when applying the product and for the next few days afterwards. If the surfaces are exposed to driving rain, strong sunshine or a drying wind, cover the fresh mortar with a waterproof sheet to protect it from the rain or from drying out.

Preparing and applying the bond coat/damp-proof coat

When high levels of salt contamination are present, prepare a mix of 25 kg **Cemsec** with 3,5 to 4 ltr water and 0,5 ltr of Cemgrip S. Manually mix the two products together, however if a mechanical mixer is used it is recommended that the revolutions do not exceed 800 rpm. Once the mix is homogenous, allow it to ripen for two minutes, and then mix again for about 30 seconds. The mix is now ready for use. According to the circumstances the bond coat/damp-proof coat can either be applied with a spray gun, sprayed on (pay attention to a maximum grain size of 2 mm), poured on or spread with a stiff brush. In all cases the bond coat/damp-proof coat must fully cover the substrate and provide a rough surface.

Preparing the waterproof top coat

Prepare a mix of 25 kg **Cemsec** to 4 ltr water in a concrete mixer. Once the mix is homogenous, allow it to ripen for two minutes, and then mix again for about 30 seconds. The mix is now ready for use. According to the circumstances the waterproof top coat can be applied with a spray gun (pay attention to a maximum grain size of 2 mm) or floated to a thickness of 1 cm. Where there is a strong water pressure we recommend applying a 1,5 cm waterproofing coat.

General finishing details and information

Corners

Once the waterproof top coat has been polished to a smooth surface, the horizontal and vertical corners should be rounded off in a concave shape. Spray such corners with a mortar with the same composition as the waterproof top coat. Use a rounded trowel to spread the mortar in the corners, to create a 5 to 6 cm concave quarter circle. Then smooth the edges of the quarter circles with a soft, wet brush, blending them into the waterproof top coat and the floor.

Expansion joints, ducts, flues, pipes and fastenings

When carrying out waterproofing of structures it is important to be aware of the general building regulations concerning any requirement to provide expansion joints. Such joints should be finished in a workmanlike manner using elastic watertight pointing systems designed for the purpose. An elastic watertight pointing system should also be provided around all utility pipes and ducts and inlet and drain pipes. Should it be necessary to mount items of furniture etc. on the wall, a chemical surface fastening should preferably be used. Piercing the waterproof top coat should be avoided. However, if a chemical fastening method cannot be used, the holes drilled for the purposes of mechanical fastening should be additionally waterproofed using a waterproof pointing system.

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Boilers
Indoor boilers should be installed on top of a ventilated plinth to provide insulation for the waterproof coat. Sufficient ventilation should also be provided between the plinth/boiler flue and the waterproof walls so as to protect the waterproof coat, once hardened, from extreme heat.

Resuming work
It is always advisable when waterproofing underground structures to organise operations so as to work from corner to corner. If this is not possible due to the circumstances, for instance when treating very large areas, the bond coat/damp-proof coat and the waterproof top coat should be completed in stages, staggered by 25 cm, and the edges should be carefully smoothed. Work can then resume next day from that point.

After drying
Condensation can be noticeable at the surface after the drying process of **Cemsec**. In case of condensation, the surface should additionally be ventilated.

Technical characteristics

Appearance	Powder
Raw material type	Polymer cement Fire-dried quartz sand Quartz powder
Colour	Grey
Specific gravity	1,7

Quantity to use
+/- 5 kg/m² for the bond coat/damp-proof coat
+/- 17 kg/m²/per 1 cm thick for the waterproof coat

Packaging
25 kg

Safety information – Transport – Handling and storage - Waste
Consult the most recent and product-related safety information sheet from Rewah in compliance with the (EU) 453/2010 annex II/A guidelines. The information on the abovementioned safety information sheet has been drawn up with the greatest care and is based on the knowledge available at the date of issue. We accept no liability for damage or hindrance of any kind which could be caused by the use of the product concerned.

Transport and storage
Transport and store away from frost. Protect the product and its packaging against direct sunlight. Avoid storage at temperatures >30°C.

Storage life
18 months after manufacturing in the original closed packaging.

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Considerations

The data included in this sheet, the application advices and other recommendations are based on extensive research and experience. They are however not binding also in relation to third party liability. They do not protect the customer against checking the products and directions for their suitability for the purpose. The characteristics and properties described are average values and analyses registered at 20°C, variances are tolerated. Our customer service will gladly answer your questions. The rewrite of this sheet replaces all previous sheets.

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