

# CEMPRO LITECRETE

LIGHTWEIGHT CONCRETE



**PRODUCT DESCRIPTION**

Litecrete is a ready to use one pack, versatile lightweight construction concrete. Litecrete materials have been designed for application internally or externally. The product range is based on a blend of special cements, microsilica, polystyrene beads, clay granules, alkali resistant glass fibres and LCK-Mix. Due to careful selection of the composite materials, the product is very stable once mixed allowing pumping even under water. Once set the material is suitable for use in even the harshest environments such as offshore construction.

**APPLICATION**

Litecrete has been designed as a durable lightweight construction concrete. It is particularly suitable for floating and offshore construction. Where weight savings are required for columns, walls, roofs and foundations. Litecrete can be used as a cost-effective solution. Reduced density also means reduced loading on shutters when pouring therefore, false-work and form-work costs can be reduced.

LITECRETE Properties	LC-10	LC-25	LC-35
General	Single pack, add water on site		
Finish	Tamped or floated (as normal concrete)		
Colour	Light Grey ( <i>can colour to suit</i> )		
Compressive Strength	8-10 N/mm <sup>2</sup>	22-25 N/mm <sup>2</sup>	35-40 N/mm <sup>2</sup>
Tensile Split Strength	1.1 N/mm <sup>2</sup>	2.4 N/mm <sup>2</sup>	3.4 N/mm <sup>2</sup>
Specific Gravity (Kg/m <sup>3</sup> ) ( <i>wet</i> )	900-1000	1300-1400	1600-1700
Specific Gravity (Kg/m <sup>3</sup> ) ( <i>dry in place</i> )	700-800	1100-1200	1350-1450
E-Modulus	4.0-6.0 GPa	10.0-12.0 GPa	15.0-17.0 GPa
Average Bond Strength	1.0 N/mm <sup>2</sup>	1.3 N/mm <sup>2</sup>	2.0 N/mm <sup>2</sup>
Water Penetration to DIN 1048	4 mm	3 mm	5 mm
Thermal Conductivity (W/m <sup>2</sup> C)	0.28	0.41	-
Maximum Particle Diameter	4mm		
Carbonation Depth	3mm	3mm	4mm
pH Value	12 to 12.5 ( <i>when wet</i> )		
Flash Point	None		
Standard Bag Size ( <i>can vary to suit</i> )	25Kg ( <i>Up to 1000kg bulk bags on request</i> )		
Water Addition ( <i>per standard bag</i> )	9.0 litres	7.5 litres	6.0 litres
Yield ( <i>for bag size above</i> ) <i>Approx. After Mixing</i>	33 litres	23 litres	17 litres
Minimum Practical Thickness	10mm – Unreinforced. 15mm – Reinforced		
Subsequent Coats	50% Strength - 1 day after initial set 75% Strength - 3 days after initial set 98% Strength - 28 days after initial set		
Other Properties	Litecrete has been designed to meet particular Client requirements. When used in conjunction with Litecrete, can offer the benefits of a cost-effective composite solution capable of providing the necessary characteristics that could not be met by any one material.		
Shelf Life	Minimum of twelve months if stored as instructed		
Storage	Store bags unopened in a dry environment, off the ground.		

**IMPORTANT: It is important to note that the whole bag must be mixed in one process.**

**PRODUCER:**

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## Substrate Preparation

As with all repairs & applications it is essential to apply to a clean, sound surface free from grease, oil, dust & loose material.

Litecrete can be applied to unprimed & the majority of primed steelwork & rebar. Due to Litecrete's cement base, alkali sensitive primers or paints should be removed prior to application. If the paint cannot be removed a sealing coat should be applied (see CemPro for advice). All loose rust or paint should be removed prior to Litecrete application. Ideally surfaces should be grit blasted and then degreased

Concrete substrates must be adequately prepared, all surfaces containing grease or oil should be cleaned with detergent & care taken to ensure the oil/grease is removed and not spread around. The substrate to be covered should be drenched with clean water prior to the application of Litecrete to ensure the best bond possible.

In some instances there may be the requirement to install mesh prior to application of Litecrete to allow even distribution of stresses created by thermal loading or shrinkage. CemPro AS can advise.

All shuttering material faces that will be in contact with Litecrete should be coated with a mould release agent prior to pouring the Litecrete.

One of the significant advantages of Litecrete in shuttering work is the much lower wet density of the material in comparison with standard concrete. This in turn imparts lower forces on the shuttering therefore requiring reduced support requirements or increased pour rates.

## Application

Pumped application must be carried out by contractors (with suitably trained operatives) recognised by CemPro AS. Litecrete products should be applied in accordance with the latest "Instructions for Application" available from CemPro AS

**Practical Coverage:** This is influenced by mixing, pumping technique & distance, which will affect the applied density. The wastage factor will depend on such details as the degree of site control, size & shape of the pour as well as pumping distances. This can best be determined by experience.



**Method of Application:** Litecrete must be mixed with potable water by mechanical means, such as forced action mixers (Cretangle) or slow speed drill

paddle mixers. Mixers attached to pumps are also suitable. Add the majority of the water to the mixer prior to adding the Litecrete; add the remaining water during mixing to reach desired consistency. Litecrete must be mixed for a minimum of 5 minutes to ensure correct performance.

When filling repair areas, avoid feathering edges by cutting back at least 10m around the area to be filled if required. Substrate movement joints should be continued through the Litecrete layer and suitably sealed.

Pumps such as Putzmeister P11 may be used for placement. Standard concrete placement procedures apply when using CemPro products & all personnel should be trained to the required standard. If the use of piston pumps is intended, CemPro should be consulted as to the suitability of intended pump.

**Finishing:** Levelling and initial finishing should be carried out using a wooden or plastic float immediately after placement has finished. Surface overworking should be avoided may result in cracking.

**Curing:** Good curing is essential. Particular care is required in hot and/or windy conditions. Curing can either be with a coat of spray-applied curing membrane (Febcure), or by covering the area with plastic sheet or wet hessian, if the area is to subsequently receive an overcoat.

**Cleaning:** All equipment and tools should be cleaned once work is completed or during extended breaks

## Product Selection

The Litecrete range of products has been created with a selection of strengths available to suit the requirements of the application. With these strength variations come differing densities and thermal properties, which may be the characteristic, required. The information on the front of this sheet displays the varying characteristics of the products. For further assistance in selection of the correct product, please contact CemPro AS who will happily answer any further questions.

## Health And Safety Precautions / COSHH Regulations

Litecrete products are asbestos & mineral fibre free, do not emit toxic or hazardous fumes before, during & after application, or under exposure to fire.

As with all cementitious products, if Litecrete comes into contact with skin it may cause irritation. In case of contact with eyes, immediately flush with water for at least 15 minutes. Call a physician. In case of contact with skin, wash thoroughly.

Some of the Litecrete products contain polystyrene beads as well as glass fibres, which should be prevented from entering the atmosphere during mixing by fixing a cover over the mixer. The mixer operator should wear a mask during the mixing operation. The nature of Litecrete during application is such that it does not produce dust & less protection is required here. In common with all powder products, care should be taken to minimise raising dust.

For further information refer to the CemPro Products Health & Safety Information Sheet which contains more detailed information relating to Health & Safety & COSHH matters.

## Technical Support

For further information and technical questions or problems please contact our Technical Department.

The information given within this Product Data Sheet is based NOT ONLY on laboratory work but also on practical experiences gained during projects. However, because of numerous factors affecting results, this information is offered without guarantee and no patent liability is assumed. If further information is required, please contact CemPro AS

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