



### Product Information Sheet

March 2014

## SILCRETE R

### Description

Silcrete R is an inorganic silicate-based render/mortar designed for vertical and overhead application. It is provided in two-component format, a potassium silicate solution and a catalysed mineral filler powder.

### Typical Uses

Silcrete R is recommended as a render/mortar in most applications where strong acid materials are present, in particular for trenches, pits and storage areas. Silcrete R should not be used to thicknesses greater than 15mm. Silcrete R has a relatively high surface porosity which is useful in thermal cycling conditions. However, care should be taken in exposure to variable temperature environments where moisture is present. Freeze-thaw variances can lead to premature disintegration of the mortar.

### Advantages

Silcrete R displays excellent chemical resistance to literally all acids (except hydrofluoric) and is recommended for all applications with sulphuric and other strong oxidising acids. Silcrete R also displays excellent resistance to organic materials such as solvents and oils. Easily applied with trowels in a similar manner to traditional civil mortars, Silcrete R can perform up to refractory temperatures of 900°C. Where higher temperatures are required, please contact ACCS Ltd for alternatives.

### Chemical Resistance

Full details are available on ACCS website: [www.protectivelinings.co.uk](http://www.protectivelinings.co.uk). Silcrete R will not withstand hydrofluoric acids, concentrated bases or crystallising salts. For instances where environmental restrictions inhibit the use of halogenated products, please contact ACCS for further information.

### Surface Preparation

For all pre-existing surfaces of concrete, abrasive blast or scarify to remove all laitance and surface contaminants. Due to acid catalyst components of the Silcrete R mortar, a primer base should be applied before application. Without a primer, the catalyst is likely to react with the substrate (eg alkaline concrete). The surface should be dust-free and dry and the ambient temperature should be above the dew point of air.

### Application

Silcrete R comprises a silicate solution and a catalysed powder. Typically, a paint version of Silcrete R is applied in a 1mm layer first. This paint layer will prepare the concrete substrate and form a clear barrier between the alkaline concrete and the Silcrete R mortar.

Values are an intended guide.

### Silcrete R – Paint (1mm coating)

Mixing Ratio	1 parts powder to 1 part solution
By weight	~25kg powder to 25kg solution
By volume	~0.5L powder to 1L solution

Using a paddle mixer, place the powder in mixing vessel and add the solution. Mix thoroughly for at least 3 minutes; the powder will 'wet' out.

Application should be made with a paint brush or paint roller to all surfaces to ensure a complete chemical barrier. No pooling of material should be allowed. All tools and equipment should be cleaned off with excess water and damp cloths to ensure their continued use.

Once the paint layer has cured (~5-7 days), the next layer of Silcrete R mortar can be applied. It is usually suggested that 2 x 5mm layers should be applied with a typical curing time of 5-7 days between each application.

Values are an intended guide.

### Silcrete R – Render (2x5mm coating)

Mixing Ratio	2.8 parts powder to 1 part solution
By weight	~25kg powder to 9kg solution
By volume	~2L powder to 1L solution

Using an inclined mixer or paddle mixer, place the powder in mixing vessel and add the solution. Mix thoroughly for at least 3 minutes; the powder will 'wet' out to a mortar.

Application should be made with either float or trowel to all surfaces to ensure a complete chemical barrier. All tools and equipment should be cleaned off with excess water and damp cloths to ensure their continued use.



# ACCS Ltd

## Industrial Protective Linings

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### Pot-Life

at 15°C – 60mins  
at 20°C – 50mins  
at 30°C – 20mins

An initial set occurs approximately 12hours after mixing, with light foot traffic permissible after 24hours and with a full chemical cure occurring after 5-7days. Silcrete R should never be exposed to water, steam or chemical environments before the primer is completely cured.

**Note: Do not mix more material than required by pot-life. It cannot be reconstituted. Never add unapproved materials to the mix, in particular Portland Cement or excess water.**

### Acidification

In cases where exposure to neutral conditions (eg rain water before completion and beginning of service life, it is recommended that all joints should be liberally treated with an acid wash to ensure complete reaction of the silicate components. This should occur after setting has taken place (7 days). Washing with a 25% solution of HCl in a solvent; or 35% solution of H<sub>2</sub>SO<sub>4</sub> in a solvent, is recommended.

### Coverage

Typical coverage on a relatively smooth concrete surface for a mixed Silcrete R system at 5mm thickness is 8kg/m<sup>2</sup>. Values are approximate requirements.

### Standard Packing

Powder – 25kg lined polyweave bags (40 per pallet)  
Solution – 34kg in 25L UN drums (24 per pallet)

### Storage

Store in a cool, dry, frost-free place. Normal storage conditions in up to 25°C should provide shelf life of:  
Powder – 24 months  
Solution – 12 months

Do not store a combined stack of solution and powder components. Accidental leakage could lead to flash setting of material.

### Safety

Safety data information available on request. Adequate ventilation must be provided whilst work is in progress and is compulsory for closed or indoor applications. The instructions on storage, fire and explosion are to be observed. No releases to the sewers or drains are to be permitted under any circumstances. Always refer to MSDS data sheets for hazard and transport information.

### Warranty

We warrant that our products will conform to the description contained in the order and that we have good title in all goods sold. WE PROVIDE NO WARRANTY, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHERWISE, EXPRESS OR IMPLIED, OTHER THAN AS EXPRESSED SET FORTH HEREIN. We are glad to offer suggestions or to refer you to customers using ACCS Ltd cements and compounds for similar applications. Users shall determine the suitability of the product for intended application before using, and users assume all risk and liability whatsoever in connection therewith regardless of any suggestions as to application or construction. In no event shall we be liable hereunder or otherwise for incidental or consequential damages. Our liability and your exclusive remedy hereunder or otherwise, in law or in equity, shall be expressly limited to our replacement of non-conforming goods at our factory or, at our sole option, to repayment of the purchase price of non-conforming goods.

### Technical Data

Parameter	Test Method	Unit	Value
Density		kg/m <sup>3</sup>	1870
Specific Volume		m <sup>3</sup> /tonne	0.48
Compressive Strength	BS1902	kg/cm <sup>2</sup>	308
Bond strength (wire cut bricks)		kg/cm <sup>3</sup>	35
Coefficient of expansion		10 <sup>-6</sup> °C	15
Water absorption		%	10
Maximum Operating Temperature		°C	900

### Disclaimer

The technical data contained in this document represents the current state of our product knowledge and is for information purposes only. It does not constitute a guarantee or specification.