



Product Information Sheet

March 2014

POTSIL

Description

Potsil is an inorganic silicate-based bedding and jointing mortar for fixing acid-proof bricks and tiles. It is provided in two-component format, a potassium silicate solution and a catalysed mineral filler powder.

Typical Uses

Potsil is recommended as a jointing and bedding mortar in most applications where strong acid materials are present, in particular for general tiling / masonry work and for trenches, pits and storage areas. Potsil should not be used to thicknesses greater than 15mm. Potsil 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

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

Chemical Resistance

Full details are available on ACCS website: www.protectivelinings.co.uk. Potsil will not withstand hydrofluoric acids, concentrated bases or crystallising salts. For instances where environmental restrictions inhibit the use of halogenated products, please refer to Potsil HF.

Surface Preparation

For all pre-existing surfaces of metal or concrete, abrasive blast or scarify to remove all laitance and surface contaminants. Due to the acid catalyst components of the Potsil 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. Typically, the substrate should be prepared with a coating of silicate solution prior to application.

By painting the substrate surface with silicate solution and allowing to go tacky (approximately 1hour, dependant on temperature), sufficient adhesion between substrate and mortar will occur. For areas where significant degradation of the substrate has occurred, alternative primers such as PE120 membrane (metal) or AC90 primer (concrete) should be used before application of the silicate primer. For new-build concrete constructions, a damp tolerant primer AC95 is recommended and can be applied within 48 hours of concrete set, potentially expediting any construction schedule. Potsil mortar can then be applied once silicate priming has been completed. When higher service temperatures (>100°C) are required, it is recommended that the silicate solution only be used as a primer.

Application

The mortar comprises a silicate solution and a catalysed powder. Nominal mortar joints of up to 4mm are recommended. Values are an intended guide.

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 jointing 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.

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. Potsil should never be exposed to water, steam or chemical environments before the primer is completely cured.



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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 H₂SO₄ in a solvent, is recommended.

Coverage

For fully bedded and jointed (4mm) bricks of dimensions:

Brick/Tile	Powder	Solution	Unit
230x114x75mm (Wall – 114mm)	18.5	6.5	Kg/m ²
230x114x65mm (Wall – 114mm)	20	7	Kg/m ²
230x114x50mm (Floor – 50mm)	12	4	Kg/m ²
230x114x38mm (Floor – 38mm)	10.5	3.5	Kg/m ²
230x114x20mm (Floor – 20mm)	9.5	3	Kg/m ²

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 FOR 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 ³	1870
Specific Volume		m ³ /tonne	0.48
Compressive Strength	BS1902	kg/cm ²	308
Bond strength (wire cut bricks)		kg/cm ³	35
Coefficient of expansion		10 ⁻⁶ °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.