

Description

SIConit "F" is a **brushable** silicon carbide coating compound for coating metallic surfaces exposed to abrasion, corrosion and acids **pH value 0 – 12. Please do not use for pH-values exceeding 12.**

SIConit "F" is applied in layers of thickness **500 µm – 2 mm.**

SIConit "F" has a very high silicon carbide content for use in extremely abrasive operational conditions where complex and costly repairs are the norm. The compound can be used as a preventative coating, often outperforming the original metal in terms of abrasive stability.

SIConit "F" can be used in place of metal applications, tiling, rubber backing, etc.

Constitution

Epoxy resin / silicon carbide / aluminium oxide composite material

Matrix: – an aromatic epoxy resin system AF reacts with an aminic cold hardener.

Strengthening: a special mixture of silicon carbide and aluminium oxide particles. This mixture has excellent abrasive stability and is simple to apply.

Recommended applications

(only hydraulic not pneumatic)

Paper pulp systems	Cyclones
Drainage systems	Funnels
Pipe elbows	Conveyor systems
Turbo separators	Abrasive pumps
Pump housing	Pump anti-wear walls
Flow stabilisers	Worm gearbox
Reducers	

Properties

The excellent abrasive stability ensures long operational life and usually outlasts welded plating. The tough epoxide structure withstands thermal shock and impact. Outstanding adhesive strength ensures reliability and prevents debonding. Tolerates chemically varying operating conditions where metals fail. May easily be formed on any metallic surface .

Resistance

Gypsum suspension	Process water
Washing water	Muddy water
Cu electrolyte	Lime water
Fatty acids	Salt bed
Diatomite earth	Monocalcium phosphate
Sinter water	TiO2 – sludge
Limestone + FeCl2	Sea water
Ni Ci S suspension	Ti – SO4 suspension
Mg CO3 + SiO2	Zinc sludge
MgS4	Ca CL12 + CaSO5
Wash lye	Iron sulphate sludge
Quencher suspension	Water Sand
Sewage water	MG lye
	Mother lye

Also tested in laboratory trials at 21 ° C
Sample cured for 5 days at 20 ° C

Acids:

10% hydrochloric acid	1
20% hydrochloric acid	1
Isopropyl alcohol	1
5% acetic acid	1
10% sulphuric acid	1
30% sulphuric acid	1
50% sulphuric acid	1
Xylene	1

Other compounds:

Bunker C	1
Diesel	1
Naphtha	1
Kerosene	1
Sewage water	1
Salt water	1
Toluene	1

Legend:

1 = resistant

Surface preparation

Proper surface preparation is very important to achieve good results with this product. The **exact** requirements vary according to the application, expected service life and the original condition of the surface.

Surface preparation for steel

Clean, dry and free of oil and fat. Satisfactory results are achieved with blast derusting in accordance with DIN EN ISO 12944-4, standard grade of cleanliness Sa 2 ,5. The surface roughness should be at least 75µm. This is achieved by first cleaning, then abrasive blasting to the cleanliness of white alloy (SA 3 / SSPC –SP 5) or near to white alloy (SA 2.5/SSPC– SP 10), followed by rinsing with an **organic cleaning agent**, which vapourises and leaves no residue behind. **After mixing, quickly apply with a short hair brush.** The compound must not be used once it becomes difficult to apply properly. Please seek our advice for preparation of other surfaces.

Technical details

Durability
Thickness
Maximum temperature

Shore = 88
STM D 792 = 2.0 g/cm³
operating in wet conditions = 90° C

Material preparation

The material is delivered in casks. Add the hardener constituent to the base constituent and stir in carefully, preferably with a mechanical agitator, not forgetting cask base and sides. Only add as much material as can be processed within the potlife.

Instructions for use

Base surface and air temperature at least +10°C. Relative humidity max. 80%. The temperature of the surface to be coated must be 3°C above its dew point. Low temperatures delay hardening and impair processability. The base surface temperature must be above the minimum hardening temperature for complete hardening. High humidity and falling below the dew point can lead to condensation forming on the base surface or coating surface. This can cause problematic adhesion and intermediate adhesion flaws. The object conditions must be met during the processing and hardening time. We recommend the use of heating or drying units when changing these thresholds.

Mixing

A (compound) : B (hardener) **1000 : 39**
(1000g **SIConit "F"** :40 ml hardener)

Mixture ratio weight / capacity

approx. 250 ml in measuring cup = approx. 500 g

= 500g **SIConit F** + 20 ml hardener

= 250g **SIConit F** + 10 ml hardener

etc.

Important !

Measure the hardener to the precise quantity with the dispenser supplied and always use a clean vessel for mixing otherwise quality discrepancies may result.

The following formula should be used to calculate the amount required to cover a specified surface

$$2 \times \text{surface area (m}^2\text{)} \times \text{average thickness (mm)} \\ = \text{amount (kg)}$$

Packaging

The material is delivered in a packaging size of 500g. Delivered black-grey in colour and hardener constituent yellowish.

Layer build-up and material requirement

SIConit F may be applied with a minimum layer thickness of 500µm. The minimum temperature when applying is 10°C. Work the compound firmly into the surface with a plastic, metal or wooden tool, wetting the whole surface area. After application of the compound, it may be smoothed in several ways. If necessary, **SIConit F** may be finished with a fast-wearing grinding disc after hardening. Other machine finishing is only possible with diamond or Carborundum tools.

Potlife in minutes

	16°C	25 °C	32 °C	43 °C
1.0 kg	75	50	35	25
5.0 kg	67	38	25	17

This table defines the practical hardening times starting from the beginning of mixing.

Hardening time

	15 °C	25 °C	30 °C
Non-adhesive:	8 hrs.	5 hrs.	3 hrs.
Full load, chemically resistant	36 hrs.	24 hrs.	20 hrs.

Workover intervals / further layering

SIConit F may be overlaid with the same compound or other compound systems after hardening and at a temperature of between +10 and +30°C. Provided that the surfaces are clean, dry and free of oil and fat. It is imperative to abrade the coating. The surface resin layer must be removed.

Cleaning

Use commercial cleaning agents (acetone, xylene, alcohol, methylethylketon) to clean tools immediately after use. After the compound has hardened it can only be removed by grinding.

Store at a temperature of between 10 and 32°C, variations during transportation are acceptable. Some mixing of resin and filler may result during storage. Stir well before application. Storage life for unopened containers is two years.

Safety precautions

Prior to using any product, read the relevant material safety data sheet or the safety regulations pertaining to your area. Comply with all relevant safety regulations when using in enclosed areas.

Technical information was collated through laboratory trials and provides general guidelines only. SICcast GmbH & Co. KG gives no direct or indirect guarantees at all, including the saleability and suitability for particular applications and use. Any guarantees are limited to the replacing of the product. Preliminary testing is recommended.

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