

## Technical Data Sheet

The material consists of an organic epoxy binder with a filler of black mineral sands (mainly Titanium Carbide).

When applying the material, the especially smooth surface of the mineral sand particles in the shape of a ball or a club leads to the formation of a glassy surface. Within the material, the particles come into close contact, forming a dense hexagonal spherical package. By choosing a proper particle size distribution the usual cavitation can be avoided such that only a minimum of binder is required.

As a result of the dense packaging the material becomes highly resistant to pressure and because of the high loading factor it also becomes highly wear-resistant.

The material is extremely resistant to corrosion and to other aggressive agents, especially to acids, alkalis and escrementes, even when they are aqueous.

The surface friction can be set by choosing a proper mixture.

The material absorbs energy very fast and releases it slowly and homogeneously.

The material is not flammable. Environmental and health hazards do not occur during application or use.

a) Density	2.6Lt	
b) Wear	Up to 2.0ccm/50m <sup>2</sup>	DIN 52108
c) Heat Conductivity	At ± 30,1°C – 0.638 W/M.K At ± 49,8°C – 0.642 W/M.K At ± 69,8°C – 0.653 W/M.K	DIN 52612
d) Bending Strength	34 N/mm <sup>2</sup>	DIN 1164
e) Compressor Strength	98.9 N/mm <sup>2</sup>	DIN 1164
f) Water Permeability	Zero 1mm Layer Titan on concrete depth of penetration after 48 hours and 10 Bar – Nil	DIN 1048
h) Steam Diffusion Resistance	40.900	DIN 53122
i) Acid Resistance	Resistant to large range of acids	DIN 4051
j) Alkalis, Aggressive Substances & Escrementes	Resistant	DIN 51092

## **FURTHER DATA**

1. Specific Weight ca. 2.6Lt
2. Antistatic and Antimagnetic
3. UV-Resistant
4. X-Ray Resistant
5. Non Thermoplastic
6. Legitimacy to food
7. Tropic- proof, secure to termites
8. Non- flammable, Non-explosive
9. Decontaminable
10. Fast heat absorption, slow homogeneous heat emission, therefore well suitable for under floor heating and cooling rooms.
11. Discourage bacterial growth.

## **RANGE OF APPLICATION**

According to its extraordinary properties the material has a wide range of application.

The following listing informs you about the possibilities of using the material industrially.

### **THE MATERIAL IS USED AS**

- Coating
- Aggregate
- Undercoat, joint sealing compound, special adhesive
- Protection against corrosion
- Cold Casting

### **THE MATERIAL IS USED AS COATING**

- Nuclear Reactor Engineering
- Pipeline Engineering
- Air Strips
- Sewage Works
- Canal Engineering
- Industrial Floors
- Road Construction
- Building Construction and Civil Engineering
- Covering areas on trucks, busses against rust, wear and tear and is non-slip
- Coating steel and concrete against erosion and corrosion

### **AGGREGATE FOR**

- Cement Plants
- Ready Mix Plants
- Screeds Plants

## ***UNDERCOAT, JOINT SEALING COMPOUND, SPECIAL ADHESIVE FOR***

- Binding Asbestos, Aluminium, PVC, Iron, Cast-iron, Cement, Plastic, Glass, Porcelain, Paper, Leather, Clay, Stainless Steel, Lead, Stone, Marble, Wood and Copper
- Prefabricated Houses Manufacturing
- Precast Concrete Manufacturing
- Timber Manufacturing
- Machine Building
- Repairing of radiators, Roofs, Petrol and Diesel Tanks, Irrigation Equipment
- Engine Blocks and Batteries

## ***PROTECTION AGAINST CORROSION AND EROSION FOR***

- Ship Building
- Steel Construction
- Concrete Construction

## ***COLD CASTING FOR***

- Machine Building
- Mould Building
- Enclosure Building
- Tools Building
- Can be machined

The material can be sprayed e.g. With special spraying equipment or trowled.

## ***IT IS HIGHLY APPLICABLE FOR***

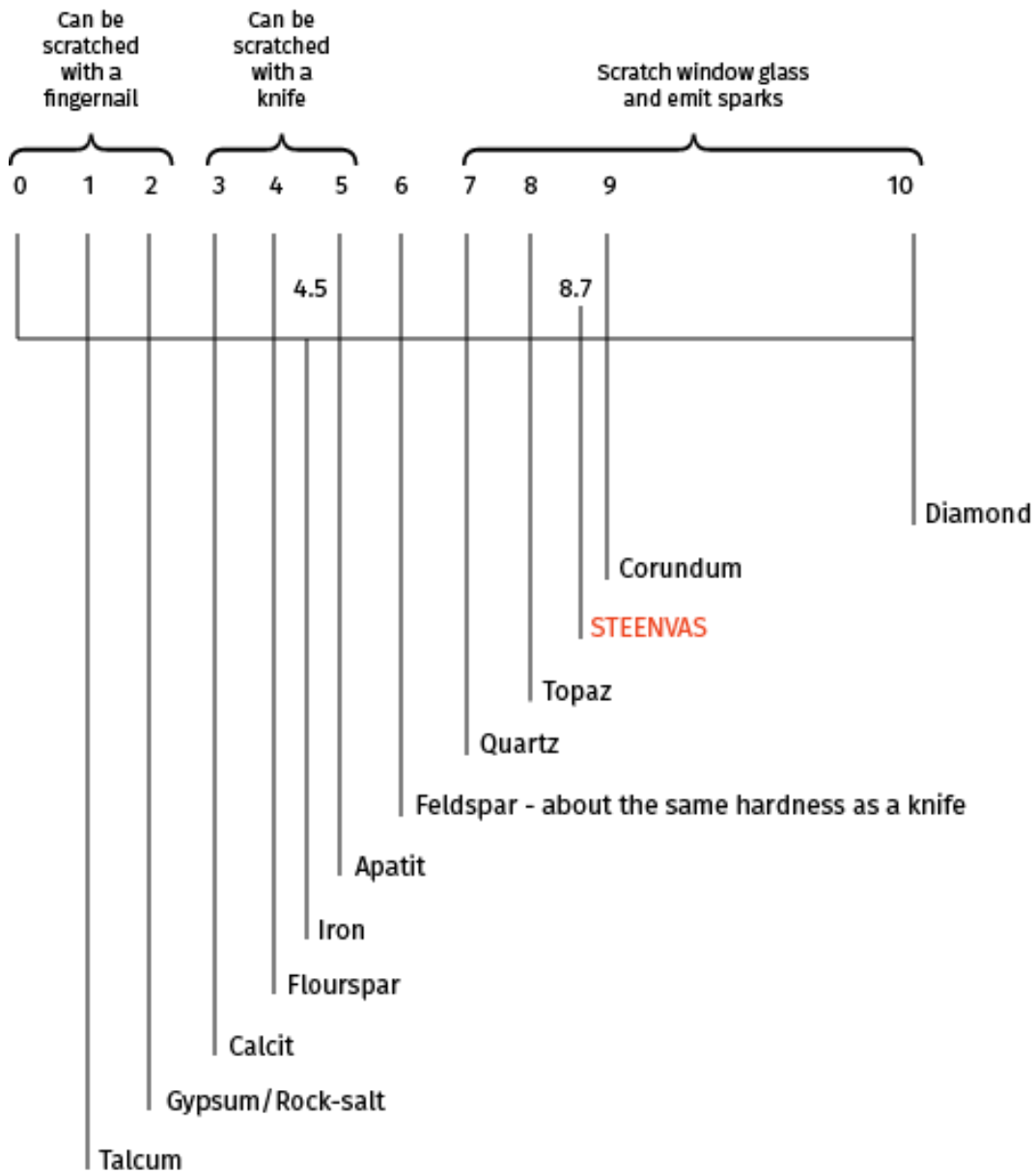
- Floors of chemical laboratories
- Dairies
- Butcheries and Abattoirs
- Industrial buildings
- Bowling Alleys
- Open air dance halls
- Acid Reservoirs
- Road Surfaces
- Balconies
- Platforms
- Terraces and Steps (Non-Slippery)
- Shower and Bathroom Floors
- Cooling Rooms and Cold Storage Floors

The material can very well be used by consumers of Warehouses and Supermarkets, as well as using it for repairing asbestos, Aluminium, PVC, Irrigation pipes, High pressure valves, Tabs, radiators, Reservoirs, Water furrows, Cellars, Asbestos Tanks and Pipes, Roofs, Batteries, Cement Pipes and Petrol and Diesel Tanks.

The product is tested and accepted by Everite, SA Navy and is been used in South Africa and Germany with great success.



## SCALE OF HARDNESS BY MOHS



## TESTS DONE ON THE PRODUCT STEENVAS

(At The State Mineral Test Institute, Darmstadt West Germany)

77% Mineral Contents  
23% Agglutinant

### **WATER PERMABILITY ACCORDING TO DIN 1048**

The test was done on samples of concrete 20 x 20cm<sup>2</sup> surface x 12cm thick.  
The samples were covered with 1.2mm of our product.

They have placed the samples in three different degrees of pressure according to Din 1048, and water pressure was placed on surface of coating.

In the first pressure grade was 1 bar overhead pressure (1kp/cm<sup>2</sup>) for 48 hours, and the second and third pressure degree were for 24 hours, one after another, a pressure of 3 bar (3kp/cm) and 7 bar pressure of 7kp/cm<sup>2</sup>

After the test the samples were cut in half to see what the water permeability was.

### **RESULT**

There was no water penetrating through the covered samples, and the average covering thickness was 1.2mm.

Singular value 1.0, 1.0, 1.5

### **DENSITY AGAINST FUEL OIL**

Again they used three concrete slabs of 20 x 20cm surface and 12cm thick, covered 1.2mm with STEENVAS.

In all three pressure grades, according to DIN 1048, they placed on the surface of coating, the fuel oil under pressure.

(Fuel Oil test mixed by Co. J Halterman , Hamburg)

In the first degree of pressure, was a 48 hour oil pressure of 1 bar (kp/cm<sup>2</sup>) and the second and third pressure degrees was a oil pressure of 3 bar (3kp/cm<sup>2</sup>) and seven (7) bar 7kp/cm<sup>2</sup> for 24 hours.

The samples were cut in half, and found no oil permeability.

### **RESULT**

No oil has penetrated through covered samples into concrete, so permeability of oil is zero.

## ***DURABILITY AGAINST AGGRESSIVE SUBSTANCES***

It is mainly about the effect of acids, lye and aggressive substances (like ammonia and Urine solutions).

6 Plates of clean STEENVAS products 20 x 10 x 1.8cm were used for the test.

### **RESULT**

The effect of the acids (diluted sulfuric acid, nitric acid and hydrochloric acid) and lye was that the material was by no means affected, except a slight colour change.

With the ammonia and diluted urine solutions, there was no effect and not the slightest change at all.

## ***WATER VAPOUR RESISTANCE FACTOR***

For the examination they used four samples 95mm x 2.4mm

The test was done according to DIN 16730 (Abs 5.8 edition May 1976. Request in transit according to DIN 53122 part 1 edition November 1974) Climate in evaporations room 23°C and humidity 85%. (Climate D according to DIN 53122)

### **RESULT**

- |    |                  |                               |
|----|------------------|-------------------------------|
| a) | Thickness in mm: | Average 2.42mm                |
|    | Singular value:  | 2.11mm, 2.54mm, 2.60mm        |
| b) | Vapour:          | Resistance U calculate        |
|    |                  | $U = \frac{39182}{M \cdot S}$ |

This means  $M$  = Vapour resistance amount according to DIN 53122 in g/m<sup>2</sup> d

$S$  = Thickness of Samples in mm

The so calculated average of the vapour resistance factor  $U$  is "40/00". The single value is 38600-42200.



## **TEST FOR STIPULATION OF FLEXIBILITY, PRESSURE FIRMNESS, AS WELL AS WEAR**

Investigation was done with samples of 60cm x 20cm x 5cm

TEST NR.	FLEXIBILITY	PRESSURE FRMNESS	WEAR AFTER 16 x 22 disc rotation	
			g / 50cm <sup>2</sup>	cm <sup>2</sup> / 50cm <sup>2</sup>
20/1			4,5	1,9
20/2			6,8	2,9
20/3			5,4	2,3
20/4	33,3	99,6/100,0	6	
20/5	34,3	99,6/100,0		
20/6	35,7	97,2/ 98,4		
20/7	35,1	100,8/ 99,2		
20/8	36,2	97,2/ 96,4		
20/9	32,9	100,0 / 98,0		
<b>AVERAGE</b>	<b>34,4</b>	<b>98,8</b>	<b>5,6</b>	<b>2,4</b>

## **TEST FOR STIPULATION OF HEAT CONDUCTION ABILITY**

Average sample thickness in singular value (mm): 7.91, 10.57

<b>AVG TEMPERATURE</b>	<b>TEMPERATURE DIFFERENCE IN SAMPLES</b>	<b>HEAT CONDUCTIVITY ABILITY W/M-K</b>
30.1	1.912 – 2.072	0,638
49.6	1.887 – 2.026	0,642
69.8	1.854 – 1.988	0,653

### **REMARK**

The report value for the heat conduction ability in W/M-K

For more information, please visit our website and requests a quote on [www.steenvas.co.za](http://www.steenvas.co.za).