Technical Data Sheet

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® KERABUTYL V3

Soft rubber lining to protect steel and concrete components
On-site rubber lining

Description
KERABUTYL V3 is a vulcanized, two-ply soft rubber lining based on butyl rubber (IIR). The thickness of the rubber sheet is 3 mm or 4 mm, depending on the requirements.

Typical uses
KERABUTYL V3 is employed for the protection of steel and concrete components that are exposed to chemical attack. A particular feature of this product is its resistance to high thermal stress.
The primary fields of application encompass linings of deionized water reservoirs and components in nuclear power plants.

Properties
In addition to its outstanding chemical and thermal resistance features, KERABUTYL V3 also exhibits excellent mechanical properties.
Of particular note are its impermeability to water vapour and excellent decontamination properties.
KERABUTYL V3 also provides all the advantages of a vulcanised rubber sheet, particularly problem-free storage and non-refrigerated transport as well as being fully capable of withstanding stress immediately after application without the necessity of costly vulcanization procedures.

Chemical resistance
Information on the chemical resistance properties will be furnished on request.

Substrate
Steel and concrete components may serve as substrate.
The steel structures and concrete components to be rubber lined shall comply with the requirements of DINEN 14879-1.

Surface pretreatment
Steel: The steel surface must be blasted to a metallic white finish. A preparation degree of Sa 2 ½ as specified in DIN EN ISO 12944-4 and a roughness degree of "medium (G)" as specified in DIN EN ISO 8503-1 must be achieved; minimum roughness R_z = 50 µm (Segment 2).
After blasting, the steel surface must be primed.
Concrete: If required the concrete substrate must be treated by means of blasting in such a way that it is free from cement slurries, cement skin, loose and brittle particles, defects and separating substances. The residual moisture of the concrete surface shall be < 4%.
Concrete substrates are provided with a conductive smoothing coat (thickness approx. 1 mm) of KERAPOX EP 221 to level unevenness' and to serve as counter pole for electrical tightness testing.

Application
The KERABUTYL V3 rubber lining is composed of the single-component Keratex primer, the three-component adhesive BS and the KERABUTYL V3 sheet.

Mixing ratios	**Parts by weight (kg)**	**Parts by volume (l)**
Adhesive BS		
Solution BS	100	2.00
Accelerator BS	9	0.12
Keratex hardener E	3.4	0.06

Spread the primer on the steel or concrete substrate (KERAPOX EP 221), then apply two layers of adhesive. Treat the rubber sheet with KCH cleaner 1 and brush it twice with adhesive.
The rubber sheets are firmly bonded to the substrate by rolling as specified in DIN 28055-1

Pot life

Temperature	Adhesive BS
15°C	~ 160 min
20°C	~ 120min
30°C	~ 55 min

Consumption

Keratex primer:	approx. 0.15 kg/m²
Adhesive BS:	approx. 0.2 kg/m² per coat
KCH cleaner 1:	approx. 0.2 kg/m²

Packing
The following standard quantities are available:

Keratex primer	5.16 kg
Solution BS	5.15 kg
Accelerator BS	5 25 kg
Keratex hardener E	0.75 kg
KCH cleaner 1	8.50 kg

Storage
The products shall be stored in a cool and dry place. With a storage temperature of 23°C the minimum shelf life is as follows:

KERABUTYL V3 sheet	36 months
Keratex primer	12 months
Solution BS	12 months
Accelerator BS	12 months
Keratex hardener E	12 months
KCH cleaner 1	24 months

Higher temperatures will shorten the shelf life of this products. The packaging drums are to be kept tightly shut and are to be resealed each time material has been removed. All liquid products must be stored frost-free.

Safety
Adequate ventilation shall be provided during the execution of all work. Ventilation is compulsory for all work carried out in pits and closed rooms. All vapours that are produced during processing must be continuously suctioned off at floor or bottom level.
Only such amount of material effectively required to continue work is to be stored at the working place. The instructions for the prevention of fire and explosion are to be observed if required.
Please note and ensure that even smallest quantities of the individual components and/or prepared mixtures are not allowed to reach the sewerage.
All regulations for the prevention of accidents stipulated by the employer's liability assurance association, the regulations for the prevention of accidents prescribed at the site of application and the TRGS 507 „Surface treatment in rooms and tanks", as well as the safety precautions listed on the packing (label) required by the provisions of the Hazardous Materials Ordinance shall be adhered to. The operating instructions pursuant to § 14 GefStoffV as well as the EC safety data sheets are to be complied with.

Technical data	Test specification	Unit	Parameter
Density upper layer	DIN EN ISO 1183-1	g/cm³	1.16 ± 0.02
Density lower layer	DIN EN ISO 1183-1	g/cm³	1.35 ± 0.02
Hardness	DIN 53505	Shore A	55 ± 5
Tensile strength *)	DIN 53504	MPa	≥ 6
Elongation at tear *)	DIN 53504	%	≥ 400
Peeling strength	DIN 28055-2	N/mm	≥ 3
Max. surface pressure		MPa	2
Max. operating temperature		°C	110

*): The values were determined at 4 mm thick rubber samples.

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