

Technical Data Sheet

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® VULCOFERRAN 2201

Soft rubber lining for the protection of steel components
General construction regulation approval no. Z-59.22-186
On site and Workshop rubber lining

Description

VULCOFERRAN 2201 is a self-vulcanising soft rubber lining system based on chlorobutyl rubber (CIIR). Depending on the requirements the layer thickness of the rubber sheet may range between 3 and 6 mm.

Typical uses

VULCOFERRAN 2201 is recommended as a protective lining for structural components made of steel that are subjected to chemical exposure. A noteworthy feature is the special suitability of VULCOFERRAN 2201 in case of abrasive stress.

Its primary spectrum of application includes the lining of hydrofluoric acid storage tanks as well as reaction vessels and agitators with stress of aggressive media at high temperatures. Moreover impellers (moulded parts) are manufactured out of this material.

VULCOFERRAN 2201 is DIBt-certified in accordance with the relevant construction codes and test standards and approved as a lining system for steel tanks utilised for the storage of water-polluting substances.

Properties

VULCOFERRAN 2201 is distinguished by an outstanding chemical and thermal resistance as well as by high mechanical properties.

A particular feature of this product is the high resistance against hydrofluoric acid.

VULCOFERRAN 2201 is high accelerated. The vulcanisation can be alone in an autoclave or can be reached by hot air, hot water or by the operating media.

VULCOFERRAN 2201 cannot be spark tested.

Chemical resistance

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

Substrate

The substrate is composed of steel. The steel structures must satisfy the requirements of DIN EN 14879-1.

Surface pre-treatment

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 $R_z = 50 \mu\text{m}$ (Segment 2). After blasting, the steel surface must be primed.

Stainless steel must be blasted with non-ferritic grit. Grey cast iron must be tempered in the autoclave before blasting, in order to expel any inclusions of moisture.

Application

The VULCOFERRAN 2201 rubber lining system is composed of the single-component Primer 1, the single-component Primer 2, the two-component VULCOFERRAN Bonding Solution 2206/L1 and the VULCOFERRAN 2201 rubber sheet.

Note:

For workshop linings in which the sheets are vulcanised in the autoclave, the Bonding Solution 2206/L1 is used without the accelerator, for all other applications, the Bonding Solution 2206/L1 is used with the accelerator.

Mixing ratios	Parts by weight (kg)
Bonding Solution 2206/L1	25
Bonding Solution 2206/L1	
Accelerator 2206	

Apply the Primer 1, then the Primer 2 to the steel substrate, followed by two coats of the VULCOFERRAN Bonding Solution 2206/L1. Coat the rubber sheet with the VULCOFERRAN Bonding Solution 2206/L1. The rubber sheets are then firmly pressed and bonded to the substrate using a heated tool in compliance with DIN 28055-1.

In case of Hydrofluoric acid load VULCOFERRAN 2201 always must be applied in two layers.

Handling (Properties)

VULCOFERRAN Bonding Solution 2206/L1, accelerated max. 3 weeks

Consumption

Primer 1	approx. 0.15 kg/m ²
Primer 2	approx. 0.20 kg/m ²
VULCOFERRAN Bonding Solution 2206/L1:	
	approx. 0.60 kg/m ²

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.

Packing

The following standard quantities are available:

Primer 1	23 kg
Primer 2	25 kg
VULCOFERRAN Bonding Solution 2206/L1	25 kg
Accelerator 2206 is portioned for 25 kg units of Bonding Solution	

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.

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:

VULC. 2201 rubber sheet	4 months
VULC. 2201 rubber sheet at < + 15°C	8 months
Primer 1	12 months
Primer 2	6 months
VULCOFERRAN Bonding Solution 2206/L1, non-accelerated	12 months
Accelerator 2206	24 months

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	DIN EN ISO 1183-1	g/cm ³	1.11 ± 0.02
Hardness	DIN 53505	Shore A	65 ± 5
Tensile strength *)	DIN 53504	MPa	≥ 11
Elongation at tear *)	DIN 53504	%	≥ 350
Peeling strength	DIN 28055-2	N/mm	≥ 4
Max. service temperature		°C	100

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

The technical data contained herein represents the current state of our product knowledge and is intended to furnish general information regarding our products and their application spectrum. In view of the diversity and multitude of application possibilities, this data should be regarded solely as general information, which does not guarantee any specific properties and/or suitability of these products for each concrete case of application. Consequently, when ordering a product, please contact us for detailed information relative to the properties required for a specific application. Our technical service will, upon request, furnish a profile of characteristics for the concrete application without delay.

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