

## Technical Data Sheet

33.06.251E – 09/06

### ® VULCOFERRAN 2190

**Hard rubber lining for the protection of steel components**  
**General construction regulation approval no. Z-59.22-63**  
**Workshop rubber lining**

#### Description

VULCOFERRAN 2190 is a graphite filled hard rubber lining based on isoprene rubber (IR) that is vulcanised in an autoclave. Depending on the requirements, the layer thickness of the rubber sheet may range between 3 and 6 mm.

#### Typical uses

VULCOFERRAN 2190 is recommended as a protective lining for structural components made of steel that are subjected to chemical exposure. Its primary spectrum of application is the lining of reaction and process tanks that are operated at high temperature ranges. VULCOFERRAN 2190 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 2190 is characterised by its excellent chemical resistance to alkaline and acidic media. A particularly notable feature of this lining is its high diffusion resistance and outstanding mechanical properties.

#### 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 2190 rubber lining system is composed of the single-component Vulkodurit adhesive LS3A, the VULCOFERRAN Seam Solution 2104/N1 and the VULCOFERRAN 2190 rubber sheet.

On the substrate apply two layers of adhesive Vulkodurit adhesive LS3A. For stainless steel and grey cast iron, spread the Primer 1 on the substrate, followed by the Primer 2 and then apply two coats of the Vulkodurit adhesive LS3A. The rubber sheets are coated with the VULCOFERRAN Seam Solution 2104/N1 and bonded to the substrate in accordance with the specifications contained in DIN 28055-1. A durable and solid bonding will be achieved by firmly pressing down the rubber sheet and the subsequent vulcanization process.

#### Consumption

Vulkodurit adhesive LS3A approx. 0.25 kg/m<sup>2</sup> per coat  
VULCOFERRAN Seam Solution 2104/N1 approx. 0.10 kg/m<sup>2</sup>  
For stainless steel/grey cast iron also:  
Primer 1 approx. 0.15 kg/m<sup>2</sup>  
Primer 2 approx. 0.20 kg/m<sup>2</sup>

#### Packing

The following standard quantities are available:

Vulkodurit adhesive LS3A	16, 170 kg
VULCOFERRAN Seam Solution 2104/N1	15 kg
Primer 1	23 kg
Primer 2	25 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:

VULCOFERRAN 2190 sheet < 15°C	12 months
Vulkodurit adhesive LS3A	6 months
VULCOFERRAN Seam Solution 2104/N1	12 months
Primer 1	12 months
Primer 2	6 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	DIN EN ISO 1183-1	g/cm <sup>3</sup>	1.28 ± 0.02
Hardness	DIN 53505	Shore D	80 ± 5
Tensile strength *)	DIN 53504	MPa	≥ 40
Elongation at tear *)	DIN 53504	%	> 1
Adhesive strength	DIN EN 24624	MPa	≥ 6
max. surface pressure		MPa	10
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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