

HEGGEL® EL 3320

Diffusion-Resistant Hard Rubber Lining

You Build, We Protect!

Description:

HEGGEL EL 3320 is a brown hard rubber lining based on natural rubber and styrene-butadiene rubber (NR/SBR), designed for the protection of steel components exposed to chemical attack. It provides excellent resistance to mineral acids, bases, and aqueous phases, making it ideal for industrial applications. Additionally, it offers good resistance to a wide range of chemicals, exceptional diffusion resistance, and strong mechanical properties, ensuring durability in demanding environments. The primary application of this lining is in water treatment plants, processing and supply tanks used in the chemical industry, as well as a wide range of steel components across various industrial sectors.

Characteristics:

- Superior chemical resistance to mineral acids, bases, and aqueous solutions
- Excellent diffusion resistance for long-term durability
- Thickness range between 3 and 6 mm (Depending on the requirements)
- Good mechanical properties

Chemical Resistance:

Information on the chemical resistance is available on request.

Technical Data:

| Title | Standard | Value |
|----------------------------|-------------|-------------------------------------------------------------------|
| Density | ASTM D297 | 1.45 g/cm ³ |
| Adhesion to Metal | ASTM D429/A | ≥ 10 MPa |
| Elongation | ASTM D2707 | ≥ 4% |
| Hardness | ASTM D2240 | 78 ± 5 Shore A |
| Tensile Strength | ASTM D2707 | ≥ 20 MPa |
| Martens Grade | UNI 4281 | ≤ 43°C |
| Max. Operating Temperature | - | 80°C |
| Max. Operating Temperature | - | 100°C (Different adhesion cycle shall be used. Contact HEGGEL) |

Note: These guidelines offer technical instructions, but real-case applications require common sense, professional judgment, and flexibility to achieve the best outcomes

Note: The values are derived from specimens produced under reproducible laboratory conditions. However, they may vary slightly in equipment linings due to the vulcanization conditions at the factory.

Packaging:

The adhesives are supplied in the following standard package sizes:

| Product | Size | Package |
|-------------------------|-------|---------|
| HEGGEL Bond 2211 Primer | 20 kg | Can |
| HEGGEL Bond 2231 | 20 kg | Can |
| Cleaning Solution | 20 kg | Can |

Storage:

The products must be stored in a dark and dry place at a temperature of max. 25°C in accordance with DIN 7716. The materials should not be exposed to freezing conditions, heat, flame, or spark. Check expiration dates and dispose of outdated and contaminated products. At the specified storage temperatures, a shelf life of the products is given of at least for the following periods:

| Product | Temperature | Shelf Life |
|-------------------------|-------------|------------|
| HEGGEL Bond 2211 Primer | 20°C | 12 Months |
| HEGGEL Bond 2231 | 20°C | 12 Months |
| Cleaning Solution | 20°C | 24 Months |
| HEGGEL EL 3320 Sheet | 25°C | 6 Months |

Depending on storage conditions it may be possible to use rubber linings beyond the recommended shelf life however additional testing must be completed. Please contact HEGGEL for recommended test procedures. A sample of the rubber lining can also be sent back to HEGGEL for verification.

1. Surface Preparation

The substrate which is to be protected must meet the requirements contained in DIN 28051-97, DIN 28053-97, NACE RP0178-95. Bonding to both steel and concrete is possible. Bonding to other metallic substrates (such as titanium, copper, etc.) can be achieved provided that it is consulted with our technical department.

The metallic substrate must be blasted to achieve a minimum blast cleaning grade of SA 2½ with "medium" profile according to ISO 8501/1-95, ISO 8503/1/2-85 and SSPC SSPC-SP-5.

It is advisable to apply the primer to the blasted surface as soon as possible, and definitely before any traces of rust can reform.

2. Environmental Conditions

The substrate must be dry and warmed if necessary, during application. Uncured material should be protected from moisture (condensation, fog, precipitation or other water source). Temperature of the substrate must be 3° C above the dew point temperature and should not be allowed to drop below that point throughout the lining process. (5°C dew point distance is highly

recommended for ambient temperature lower than 10°C.)

3. Consumption

| Component | Consumption per Coat | Number of Coats |
|--------------------------------|----------------------|-----------------|
| HEGGEL Bond 2211 Primer | 150 g/m ² | 1 coat |
| HEGGEL Bond 2231 | 200 g/m ² | 2 coats |
| Cleaning Solution | 150 g/m ² | 1 coat |

Note: The above value may change in the different work conditions.

4. Application

HEGGEL EL 3320 is supplied as single component **HEGGEL Bond 2211 Primer**, **HEGGEL Bond 2231**, a cleaning solution and **HEGGEL EL 3320** Sheet.

For stainless steel and grey cast iron, first apply **HEGGEL Bond 2211** to the substrate, followed by two coats of **HEGGEL Bond 2231** adhesive. Clean the rubber sheets with the cleaning solution and bond them to the substrate as per DIN 28055-1 specifications. Perform spark

testing according to DIN 28055/2-02 and NACE RP 0188-90 at 3 kV/mm.

5. Safety Measures

During the implementation of all work, ventilation must be ensured. Ventilation is mandatory for all work performed in pits and confined spaces. All the vapors generated during processing must be continuously exhausted at ground level or below. Only as much material as is necessary for the continuation of the work is to be stored at the work site. It must be observed and ensured that even the lowest quantities of each single component or the mixtures prepared shall not enter the sewage system. All local laws, regulations and international standards for accident prevention of the employer's liability insurance association need to be strictly adhered to.

The material safety data sheets of the individual components, the safety instructions on the packing (label) as well as the legal requirements for handling hazardous materials must be observed.

HEGGEL EL 3320; Revision No: 0.00 / Last Revision Date: 08.10.2024

All information contained herein is based on the current state of our knowledge and practical experience at the time of release. Therefore, please make sure that this is the latest edition of the Technical Data Sheet. All data are only intended as a guideline for informational purposes and do not constitute a legally-binding warranty of the suitability for a certain purpose of use, due to its dependence on site conditions and possible processing, use and applications. All information contained in this technical datasheet is subject to change without notice.

HEGGEL GmbH

Huttropstr. 60
45138 Essen
Germany

Tel: +49 201 17003 270

Fax: +49 201 17003 277

E-Mail: info@heggel.de

Web: www.heggel.de