HEGGEL® EL 3360

EPDM-based Soft Rubber Lining

You Build, We Protect!

Description:

HEGGEL EL 3360 is an EPDM-based soft rubber lining designed to protect steel and concrete components exposed to high temperatures, up to 150°C. It is used for workshop lining, vulcanized in an autoclave or it can also be applied on-site using steam pressure, hot air or heating blankets. This lining provides outstanding durability and chemical resistance, making it ideal for demanding industrial environments.

Characteristics:

- Excellent chemical resistance to seawater, acids, alkalis, and soaps
- Good flexibility in a wide range of temperatures
- Good mechanical properties, particularly resistance to abrasion
- Thickness range between 6 and 90 mm (Depending on the requirements)
- Temperature resistance up to 150°C
- Superior long-term UV resistance

Chemical Resistance:

Information on the chemical resistance is available on request.

Packaging:

The products are supplied in the following standard package sizes:

Product	Size	Package
HEGGEL Bond 2211	20 kg	Can
HEGGEL Bond 2236	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 Check expiration dates and dispose of outdated and contaminated products.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 / 2216 / 2210	20°C	24 Months
HEGGEL Bond 2236	20°C	12 Months
Cleaning Solution	20°C	24 Months
HEGGEL EL 3360 Sheets	25°C	1 Months
HEGGEL EL 3360 Sheets	20°C	3 Months
HEGGEL EL 3360 Sheets	15°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 EN14879-1 as well as 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. (minimum surface roughness Rz = 50 µm recommended).

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

If bonding to concrete is required, the substrate needs to be free of cement skin, cement slurry, loose and friable parts, defective spots and detaching material. The concrete needs to be blasted. The concrete surface has to have a residual moisture content of < 4%.

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 Primer 2211/2216/2210	150 g/m^2	1 coat
HEGGEL Bond 2236	200 g/m^2	4 coats
Cleaning Solution	150 g/m^2	1 coat

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

4. Application

HEGGEL EL 3360 includes **Primer** (**HEGGEL Bond 2211 and HEGGEL Bond 2216 or HEGGEL Bond 2210**, on the basis of the substrate), **HEGGEL Bond 2236** , a cleaning solution and **HEGGEL EL 3360 Sheet.**

Apply one coat of **HEGGEL Bond 2211** to the blasted substrate, and wash the **HEGGEL EL 3360** layer before application. Apply two coats of **HEGGEL Bond 2236** on both the substrate and the washed rubber sheet layer. The rubber sheet should be applied once the adhesive solvents have fully evaporated and reached a touch-dry state.

HEGGEL Bond 2236 must be completely touch dry for optimal adhesion strength. The rubber sheet is applied by pressing in accordance with DIN EN 14879-4 and DIN 28055/1-02. Finally, perform spark testing as per DIN 28055/2-02 and NACE RP 0188-90 at 3 kV/mm.

5. Vulcanization

Vulcanization should be done in autoclave or by steam pressure, hot air, and heating blankets. Details of vulcanization process will be provided by HEGGEL case by case.

6. 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.

Technical Data:

Title	Standard / Method	Value
Density	ASTM D297	1.07 g/cm^3
Elongation	ASTM D412	≥ 400%
Hardness	ASTM D2240	63 ± 5 Shore A
Tensile Strength	ASTM D412	≥ 15 MPa
Tear Strength	ASTM D624	≥ 40 N/mm
Abrasion Test	UNI / DIN 53516	≤ 200 mm^3
Adhesion to Metal	ASTM D429 met.B	> 12 N/mm (Cohesive failure)
Operating Temperature	-	< 150°C
Thermal Conductivity (@0°C)	ISO 8301	0.285 ± 0.04 W/m.K
Volume Resistivity	ASTM D991	> 10^9 Ohm/cm
Cathodic Disbondment (85°C, 30 days on 4 mm thickness sample)	ASTM G42	< 5 mm
Compression Set	ASTM D395	- h. 24, 70°C : 10% - h. 70, 100°C :22%
Ozone Resistance - 50 pphm, 40°C., h. 70, 20% elongation - 100 pphm, 25°C., h. 100, 15% elongation	ASTM D1149	No cracks at 7X
Volume Change (Sea Water Resistance)	70°C, 70 days	2% Max

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.

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