

HEGSEL EL 3310

Prevulcanized Bromobutyl Rubber Lining

Description:

HEGSEL EL 3310 is a black prevulcanized bromobutyl soft rubber lining with high temperature capability, demonstrating outstanding resistance against wide range of chemicals from alkaline to acidic media.

Characteristics:

- Excellent diffusion resistance in gas services
- Good flexibility in a wide range of temperatures
- Good resistance in oxidizing media
- Thickness range between 3 and 6 mm (Depending on the requirements)

Physical Properties:

Density	ASTM D297 1.26 g/cm ³
Hardness	ASTM D2240 53 A ± 5
Tensile Strength	ASTM D412 ≥ 9 MPa
Elongation at Break	ASTM D412 ≥ 640 %
Abrasion Resistance	DIN 53516 ≤ 160 mm ³
Adhesion to Substrate	ASTM D429 ≥ 5 N/mm
Max. Operating Temperature	100°C

*The values may differ on equipment linings due to the vulcanization conditions at factory.

Storage Condition:

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

Product	Temperature	Shelf Life
HEGSEL Bond 2210	20°C	24 Months
HEGSEL Bond 2235	20°C	12 Months
Activator	20°C	6 Months
Cleaning Solution	20°C	24 Months
HEGSEL EL 3310 sheet	20°C	36 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 HEGSEL for recommended test procedures. A sample of the rubber lining can also be sent back to HEGSEL for verification.

Packaging:

The adhesives are supplied in the following standard package sizes:

Product	Package Size
HEGSEL Bond 2210	20 kg
HEGSEL Bond 2235	20 kg
Activator	0,75 kg
Cleaning Solution	20 kg

1. Surface Preparation

The substrate which is to be protected must meet the requirements of DIN EN14879-1 together with those of 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 DIN EN ISO 12944-4, ISO 8501-1, ISO 8503-1,2 and SSPC SSPC-SP-5 (recommended minimum surface roughness Rz = 50 µm). 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. Dew point distance must be at least 3 K.

5K dew point distance is highly recommended for ambient temperature lower than 10°C.

3. Consumption

HEGGEL Bond 2210 primer	150 g/m ² per coat (1 coat)
HEGGEL Bond 2235	200 g/m ² per coat (4 coats)
Activator	3% W/W of the quantity of HEGGEL Bond 2235
Cleaning Solution	150 g/m ² per coat (1 coat)

The above value may change in the different work conditions.

4. Application

Apply a single coat of **HEGGEL Bond 2210** primer to the blasted substrate and wash the white layer of the **HEGGEL EL 3310** rubber sheet with the cleaning solution. Before using bonding agent, **HEGGEL Bond 2235** needs to be activated by activator, the mixing ratio of which is 3% W/W. The activated solution has a pot life of 60 minutes. Apply two coats to the rubber sheet white layer and two coats to the substrate. The rubber sheet is to be applied by pressing in

accordance with DIN EN 14879-4 also DIN 28055/1-02. The lining must be spark tested in accordance with DIN 28055/2-02, NACE RP 0188-90 at 3Kv/mm. There is no need for vulcanization or heat treatment. The substrate temperature needs to be 3°K higher than the temperature of the dew point and should not fall below this level during the entire procedure of lining application.

5. Safety

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.

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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 actual 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.

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