HEGGEL® EL 3350

CSM-based Pe-Vulcanized Soft Rubber Lining

You Build, We Protect!

Description:

HEGGEL EL 3350 is a black CSM-based pre-vulcanized soft rubber lining designed for steel components operating at elevated temperatures for on-site lining and workshop. It provides excellent chemical resistance and durability for demanding industrial environments. **HEGGEL EL 3350** is specifically designed for components exposed to up to 33% hydrochloric acid at 90°C and oxidizing solutions. With a glass transition temperature of -35°C, it remains flexible in extreme conditions, preventing the risk of cracking

Characteristics:

- Good resistance to a wide range of chemical, alkaline and acidic media especially at high temperatures
- Good flexibility in a wide range of temperatures
- Thickness range between 3 and 6 mm (Depending on the requirements)
- High temperature resistance

Chemical Resistance:

Information on the chemical resistance is available on request.

Technical Data:

Title	Standard	Value
Press Vulcanization	-	45 min @160°C
Density	ASTM D297	1.21 ± 0.05 g/cm^3
Adhesion to Substrate	ASTM D429/E	≥ 5 N/mm
Elongation at Break	ASTM D412	≥ 370%
Tear Strength	ASTM D624	≥ 37 N/mm
Modules at 100%	ASTM D412	1.7 MPa
Modules at 200%	ASTM D412	3.8 MPa
Hardness	ASTM D2240	62 ± 5 Shore A
Tensile Strength	ASTM D412	≥ 10 MPa
Max. Operating Temperature	-	120°C

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 products are supplied in the following standard package sizes:

Product	Size	Package
HEGGEL Bond 2212	20 kg	Can
HEGGEL Bond 2234	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 Check expiration dates and dispose of outdated and contaminated products.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 2212	20°C	24 Months
HEGGEL Bond 2234	20°C	12 Months
Cleaning Solution	20°C	24 Months
HEGGEL EL 3350 sheets	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 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.
The substrate should be primed within a few hours after blasting 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 Bond 2212	150 g/m^2	1 coat
HEGGEL Bond 2234	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 3350 includes **HEGGEL Bond 2212,** the two component **HEGGEL Bond 2234,** a **cleaning solution** and **HEGGEL EL 3350 Sheet.** It is supplied as a two-ply, pre-vulcanized material.
Apply one coat of **HEGGEL Bond 2212** to the blasted substrate, then wash the white layer of the **HEGGEL EL 3350** rubber sheet with the cleaning solution. Apply two coats on the substrate and two coats on the rubber sheet. The rubber sheet should be applied once the adhesive solvents have fully evaporated and reached a touch-dry state.
The rubber sheet must be applied in accordance with 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

No vulcanization or heat treatment is needed.

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.

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