Sylodyn® HRB HS 6000 Data Sheet

Material
closed-cell PU elastomer (polyurethane)

Colour
dark blue

Standard delivery dimension
Thickness: 12.5 mm / 25 mm
Mat: 1.2 m wide, 1.5 m long
Other dimensions as well as punched parts on request.

<table>
<thead>
<tr>
<th>Range of use</th>
<th>Compressive load</th>
<th>Deformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static range of use (static loads)</td>
<td>up to 6.0 N/mm²</td>
<td>approx. 12%</td>
</tr>
<tr>
<td>Dynamic range of use (static and dynamic loads)</td>
<td>up to 9.0 N/mm²</td>
<td>approx. 15%</td>
</tr>
<tr>
<td>Load peaks (occasional, brief loads)</td>
<td>up to 18.0 N/mm²</td>
<td>approx. 25%</td>
</tr>
</tbody>
</table>

Material properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test methods</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical loss factor</td>
<td>0.07</td>
<td>DIN 53513¹</td>
<td>temperature-, frequency-, specific load- and amplitude-dependent</td>
</tr>
<tr>
<td>Compression set²</td>
<td>&lt; 5 %</td>
<td>EN ISO 1856</td>
<td>25 % deformation, 23 °C, 72 h, 30 min after removal of load</td>
</tr>
<tr>
<td>Static shear modulus³</td>
<td>3.5 N/mm²</td>
<td>DIN ISO 1827 ¹</td>
<td>at a pretension of 6.0 N/mm²</td>
</tr>
<tr>
<td>Dynamic shear modulus³</td>
<td>4.2 N/mm²</td>
<td>DIN ISO 1827 ¹</td>
<td>at a pretension of 6.0 N/mm², 10 Hz</td>
</tr>
<tr>
<td>Coefficient of friction (steel)</td>
<td>≥ 0.6</td>
<td>Getzner Werkstoffe</td>
<td>dry, static friction</td>
</tr>
<tr>
<td>Coefficient of friction (concrete)</td>
<td>≥ 0.7</td>
<td>Getzner Werkstoffe</td>
<td>dry, static friction</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>0.17 W/(mK)</td>
<td>DIN EN 12664</td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>-30 °C to 70 °C</td>
<td>EN ISO 11925-2</td>
<td>short term higher temperatures possible</td>
</tr>
<tr>
<td>Flammability</td>
<td>class E</td>
<td>EN ISO 11925-2</td>
<td>normal combustible, EN 13501-1</td>
</tr>
</tbody>
</table>

¹ Measurement/evaluation in accordance with the relevant standard
² The measurement is performed on a density-dependent basis with differing test parameters
³ Values apply to shape factor q = 3

All information and data is based on our current knowledge. The data can be applied for calculations and as guidelines, are subject to typical manufacturing tolerances and are not guaranteed. Material properties as well as their tolerances can vary depending on type of application or use and are available from Getzner on request.

Further information can be found in VDI Guideline 2062 (Association of German Engineers) as well as in glossary. Further characteristic values on request.

www.getzner.com
**Load deflection curve**

- Quasi-static load deflection curve measured with a loading rate of 0.6 N/mm²/s.
- Testing between sandblasted, flat steel-plates; recording of the 1st load, with filtered starting range in accordance with ISO 844, testing at room temperature.
- Shape factor: \( q = 3 \)

**Modulus of elasticity**

- Quasi-static modulus of elasticity as tangential modulus from the load deflection curve. Dynamic modulus of elasticity from sinusoidal excitation with a velocity level of 100 dBv re. \( 5 \cdot 10^{-8} \) m/s corresponding to a vibration amplitude of 0.22 mm at 10 Hz and 0.08 mm at 30 Hz.
- Measurement in accordance with DIN 53513
- Shape factor: \( q = 3 \)

**Natural frequencies**

- Natural frequencies of a vibratory system with a single degree of freedom, consisting of a mass and an elastic bearing made of Sylodyn® HRB HS 6000 on a rigid surface.
- Parameter: thickness of the Sylodyn® bearing
- Shape factor: \( q = 3 \)
Static creep behaviour

Deformation under consistent loading.

Parameter: permanent static load

Shape factor: $q = 3$

Dependency on amplitude

Typical dependency of the dynamic modulus of elasticity on the amplitude of vibration.

Sylodyn® HRB HS 6000 materials exhibit a negligible dependency of amplitude.

Fig. 4: Deformation under static load depending on time

Fig. 5: Dynamic modulus of elasticity depending on the vibration amplitude
Influence of the shape factor

The graphs show the material properties at different shape factors.

Fig. 6: Static range of use in relation to the shape factor

Fig. 7: Deflection\(^1\) in relation to the shape factor

Fig. 8: Dynamic modulus of elasticity\(^2\) at 10 Hz in relation to the shape factor

Fig. 9: Natural frequency\(^1\) in relation to the shape factor

\(^1\) Reference value: specific load 6.0 N/mm\(^2\), shape factor \(q = 3\)