

Sylodamp® Material data sheet

SP
10

by getzner
sylodamp®

Material Mixed cellular PU elastomer
(Polyurethane)
Colour Lemon yellow

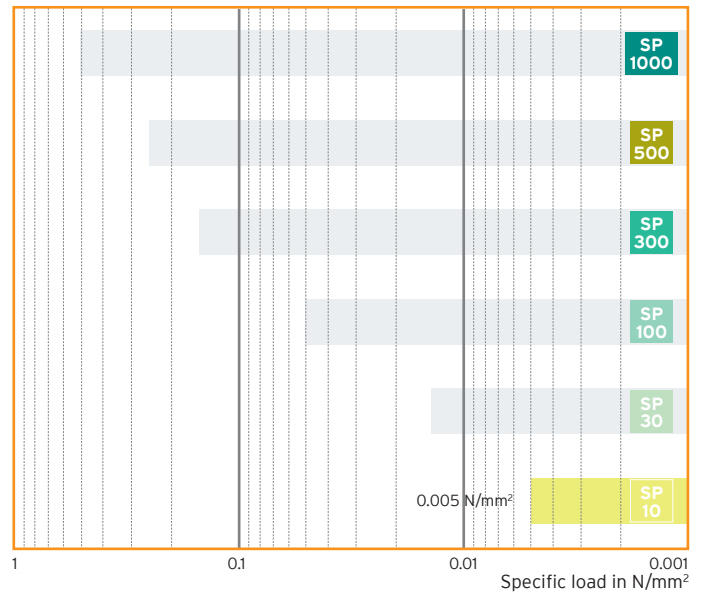
Standard delivery dimensions

Thicknesses: 12.5 mm / 25 mm
Rolls: 1.5 m wide, 5.0 m long
Strips: up to 1.5 m wide, up to 5.0 m long

Other dimensions, punched and moulded parts available on request.

Area of application	Pressure load	Deformation
	Form factor-dependent, the specified values apply for a form factor of $q=3$	
Static area of application (static loads)	up to 0.005 N/mm ²	approx. 3 %
Impact area of application (dynamic loads)		up to 60 %
Load peaks (occasional, brief loads)	up to 0.25 N/mm ²	approx. 80 %

Sylodamp® range Static area of application



Properties		Test procedure	Comment
Mechanical loss factor	0.61	DIN 53513 ¹	Temperature-, frequency-, specific load- and amplitude-dependent
Impact resilience	13 %	EN ISO 8307 ¹	
Specific energy absorption	up to 1.8 MJ/mm ²	Getzner Werkstoffe	At a thickness of 25 mm
Compression hardness ³	0.01 N/mm ²	EN ISO 844 ¹	At 10 % linear compression, 1 st load cycle
Compression set ²	< 5 %	EN ISO 1856	25 % deformation, 23 °C, 72 h, 30 min after removal of load
Static shear modulus ³	0.057 N/mm ²	DIN ISO 1827 ¹	At a pretension of 0.01 N/mm ²
Dynamic shear modulus ³	0.24 N/mm ²	DIN ISO 1827 ¹	At a pretension of 0.01 N/mm ² , 10 Hz
Min. rupture stress under tension	0.2 N/mm ²	DIN EN ISO 527-3/5/100 ¹	
Min. elongation at rupture under tension	200 %	DIN EN ISO 527-3/5/100 ¹	
Abrasion ²	≤ 4800 mm ³	DIN ISO 4649 ¹	Load 10 N
Coefficient of friction (steel)	≥ 0.5	Getzner Werkstoffe	Dry, static friction
Coefficient of friction (concrete)	≥ 0.7	Getzner Werkstoffe	Dry, static friction
Specific volume resistivity	> 10 ¹² Ω·cm	DIN IEC 60093	Dry
Thermal conductivity	0.039 W/mK	DIN EN 12667	
Temperature range ⁴	-30 °C to 70 °C		Optimum damping range from 5 °C to 40 °C
Flammability	Class E	EN ISO 11925-2	Normal combustibility, EN 13501-1

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 applicable to form factor $q=3$

⁴ Take account of heating caused by energy conversion

All information and data is based on our current knowledge. It can be used in calculations and for reference purposes, but is subject to typical manufacturing tolerances and does not represent warranted properties. Subject to change without notice.

Deflection curve

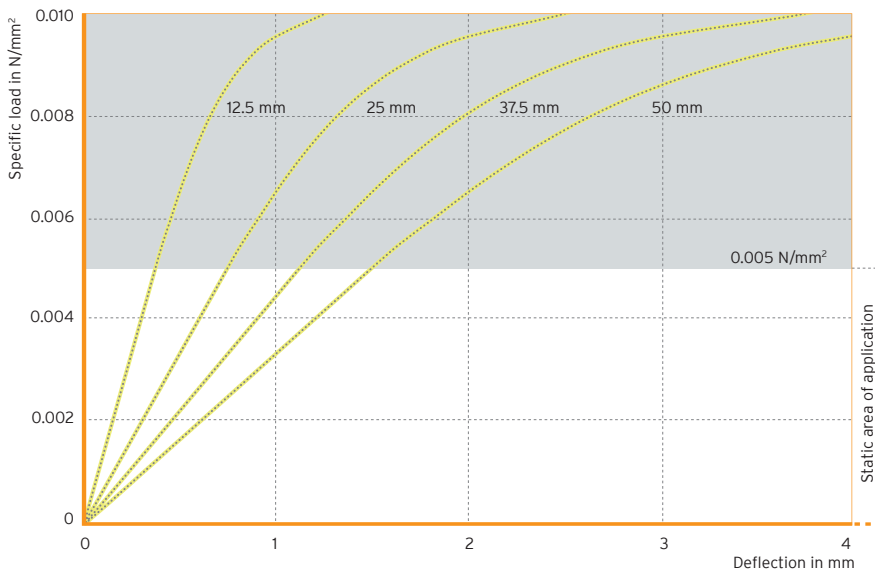


Fig. 1: Quasi-static load deflection curve for different bearing thicknesses

Quasi-static load deflection curve with a loading rate of 1% of the thickness of the unloaded sample per second.

Recording of the 1st load, with filtered starting range (in accordance with ISO 844), testing at room temperature.

Form factor $q = 3$

Modulus of elasticity

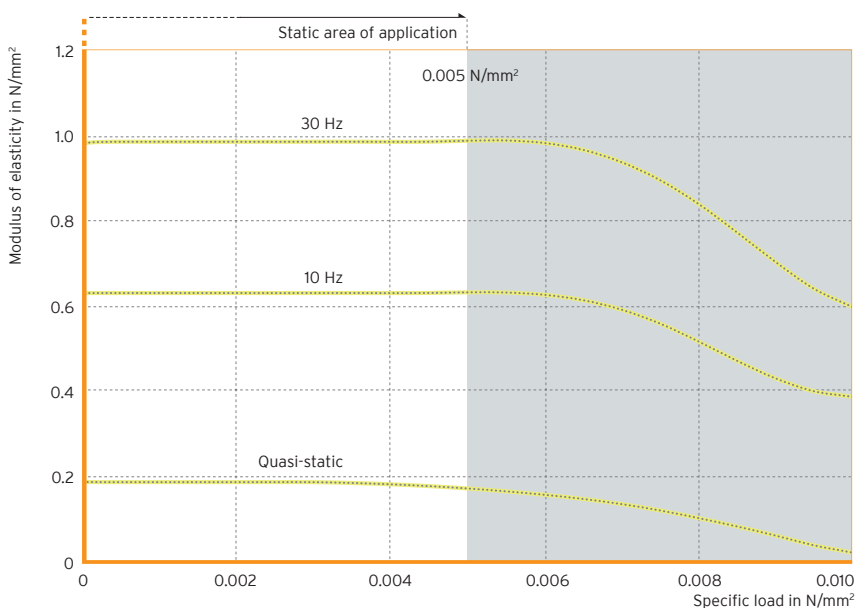


Fig. 2: Load-dependency of the static and dynamic modulus of elasticity

Quasi-static modulus of elasticity as tangential modulus from the load deflection curve. Dynamic modulus of elasticity from sinusoidal excitation at a vibration velocity 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

Form factor $q = 3$

Natural frequencies

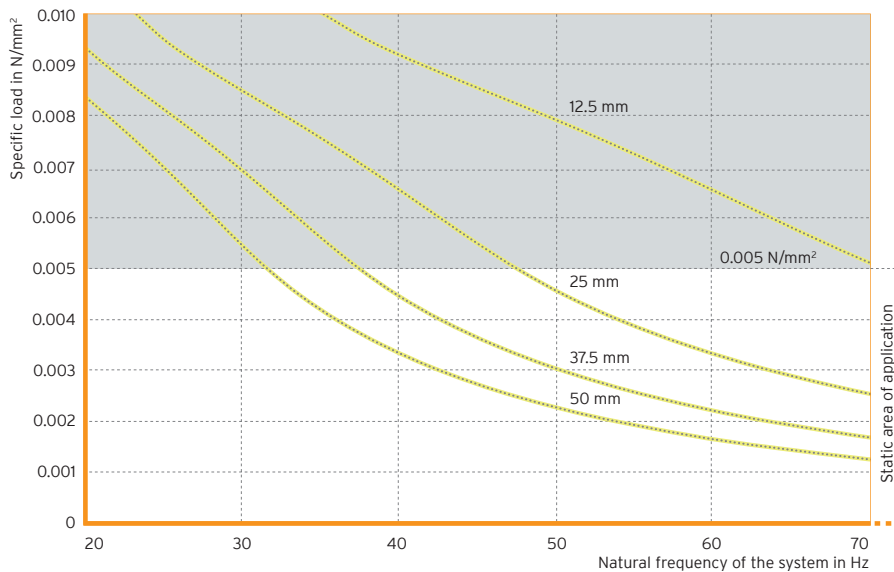


Fig. 3: Natural frequencies for different bearing thicknesses

Natural frequencies of a vibratory system with a single degree of freedom, consisting of a mass and an elastic bearing made of Sylodamp® SP 10 on a rigid surface.

Parameter: thickness of the Sylodamp® bearing

Form factor $q = 3$

Energy absorption

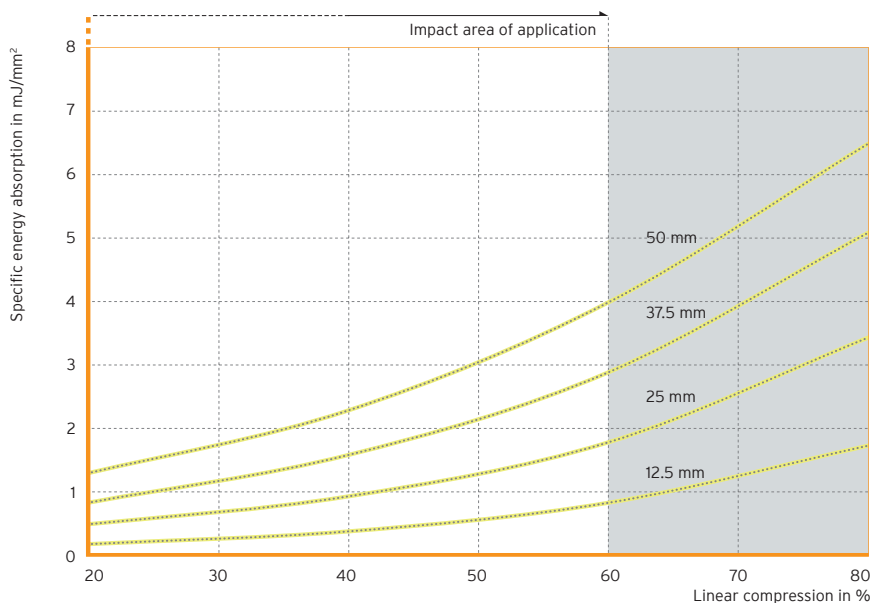


Fig. 4: Specific energy absorption for different bearing thicknesses

Specific energy absorption from an impact load at an impact speed of up to 5 m/s.

Drop impact test with a round, flat stamp, recording of the 1st load, testing at room temperature.

Parameter: thickness of the Sylodamp® bearing

Influence of the form factor

The graphs show the material properties at different form factors.

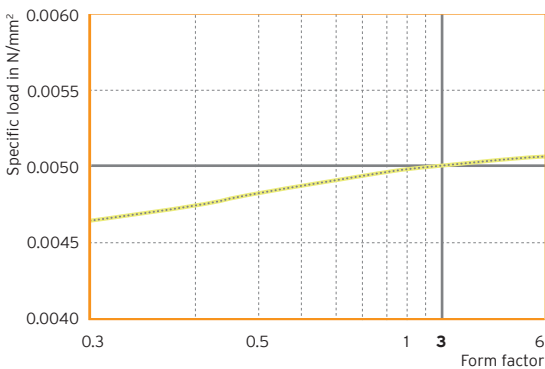


Fig. 5: Static area of application in relation to the form factor

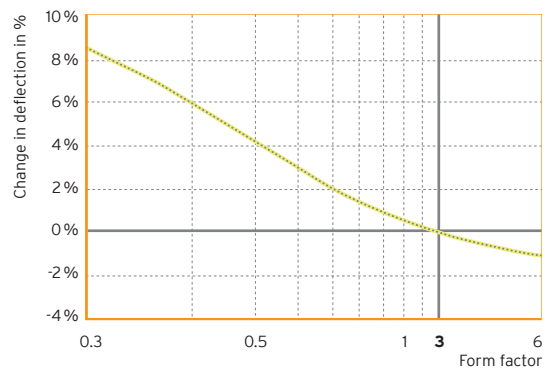


Fig. 6: Deflection⁵ in relation to the form factor

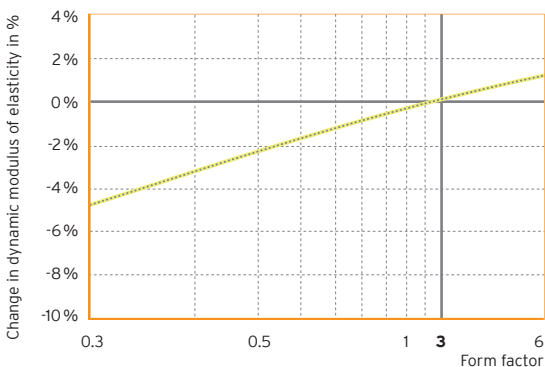


Fig. 7: Dynamic modulus of elasticity⁵ at 10 Hz in relation to the form factor

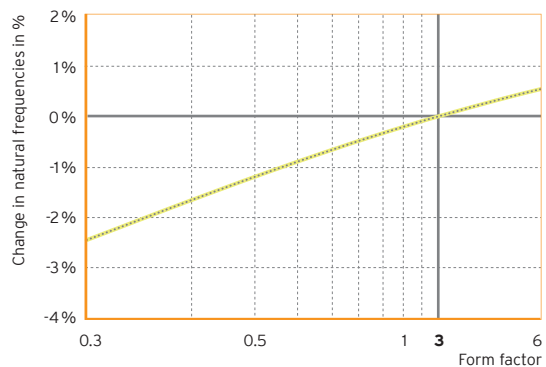


Fig. 8: Natural frequency⁵ in relation to the form factor

⁵ Reference values: specific load 0.005 N/mm², form factor q = 3

Material properties can be determined using the online calculation program FreqCalc.
The program can be accessed via www.getzner.com (registration necessary).