Sylodamp® SP 1000 SP 1000
Data Sheet

by getzner sylodamp®

Material mixed-celled PU elastomer (polyurethane)
Colour traffic green

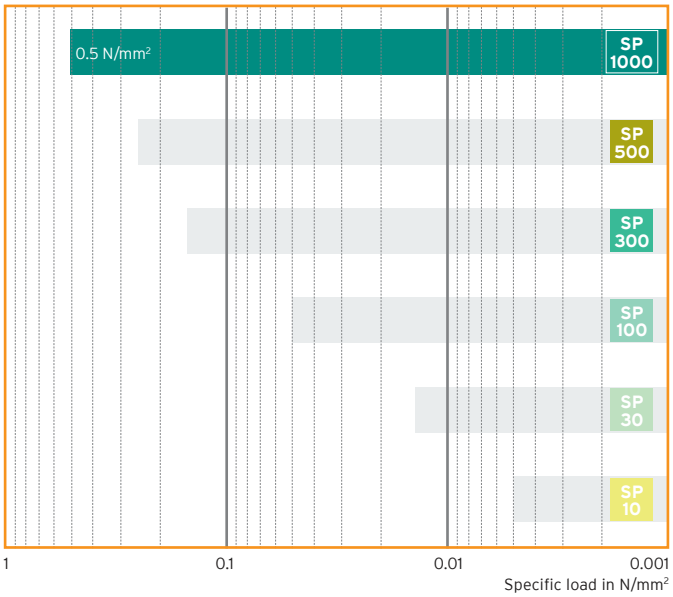
Standard delivery dimension

Thickness: 12.5 mm / 25 mm
Mat: 1.5 m wide, 1.0 m long

Other dimensions, punched and moulded parts on request.

Sylodamp® range

Static range of use



Range of use	Compressive load	Deformation
	Shape factor-dependent, the specified values apply to shape factor of q = 3	
Static range of use (static loads)	up to 0.5 N/mm²	approx. 4.8 %
Impact range of use (dynamic loads)		up to 40 %
Load peaks (occasional, brief loads)	up to 5 N/mm²	approx. 60 %

Material properties		Test methods	Comment
Mechanical loss factor	0.46	DIN 53513 [1]	temperature-, frequency-, specific load- and amplitude-dependent
Impact resilience	15 %	EN ISO 8307 [1]	
Specific energy absorption	up to 84 mJ/mm²	Getzner Werkstoffe	at a thickness of 25 mm
Compression hardness [3]	1.0 N/mm²	EN ISO 844 [1]	at 10 % linear compression, 1st 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]	1.9 N/mm²	DIN ISO 1827 [1]	at a pretension of 1.0 N/mm²
Dynamic shear modulus [3]	5 N/mm²	DIN ISO 1827 [1]	at a pretension of 1.0 N/mm², 10 Hz
Min. tensile stress at rupture	3 N/mm²	DIN EN ISO 527-3/5/100 [1]	
Min. tensile elongation at rupture	125 %	DIN EN ISO 527-3/5/100 [1]	
Abrasion [2]	≤ 1300 mm³	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	0.11 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 flammable, 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 apply to shape factor q = 3
[4] Take account of heating caused by energy conversion

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.

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Load deflection curve

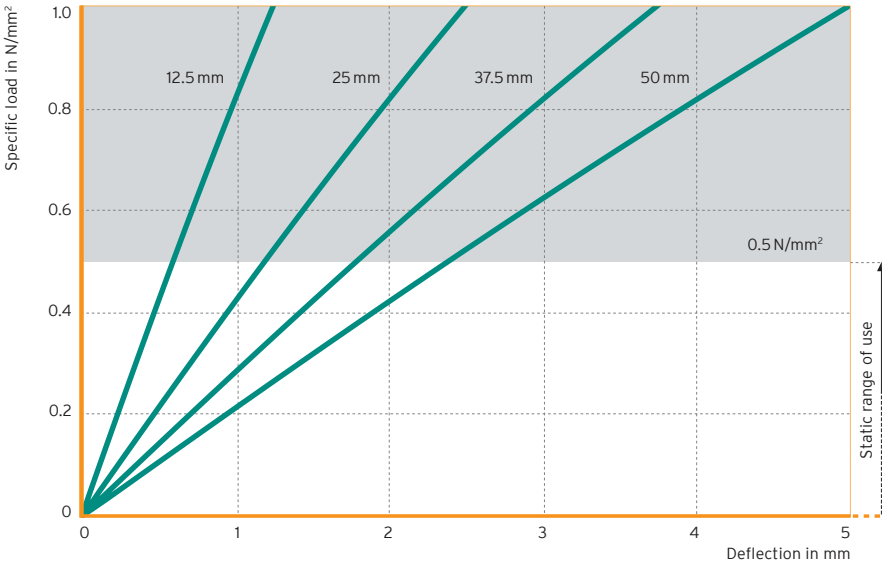

Fig. 1: Quasi-static load deflection curve for different bearing thicknesses

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.

Shape factor q = 3

Modulus of elasticity

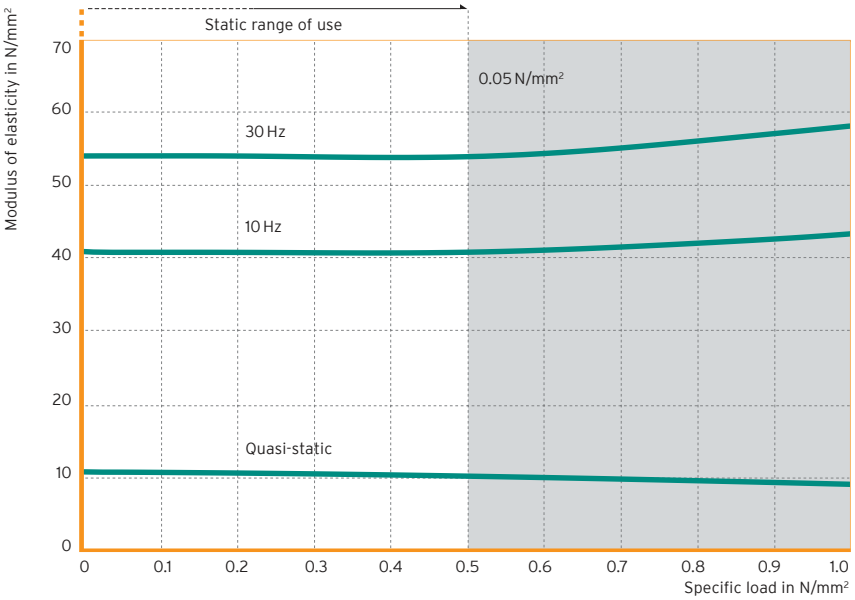

Fig. 2: Load dependency of the static and dynamic modulus of elasticity

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

Shape factor q = 3

Natural frequencies

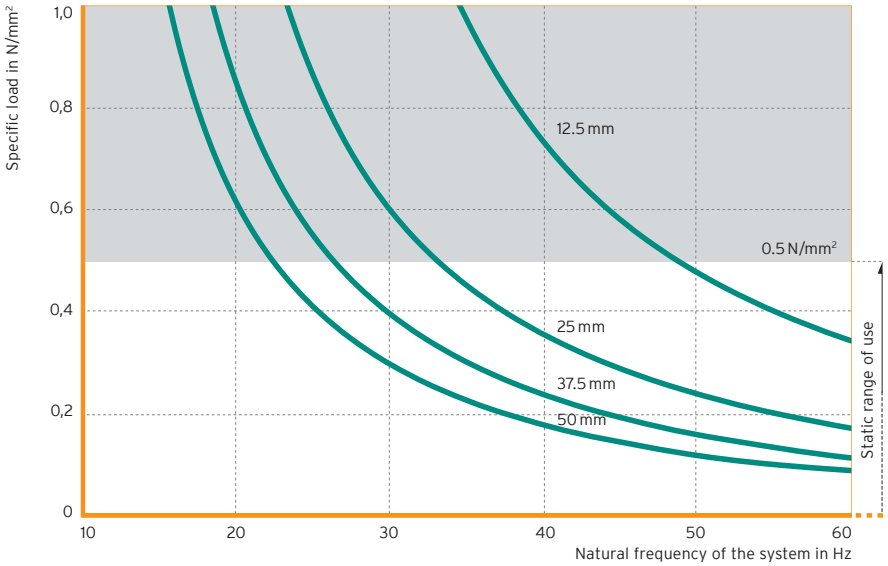

Fig. 3: Natural frequencies for different bearing thicknesses

Natural frequencies of a vibratory system with a single degree of freedom, consisting of a mass and an elastic bearing made of Sylodamp® SP 1000 on a rigid surface.

Parameter: thickness of the Sylodamp®-bearing

Shape factor q = 3

Energy absorption

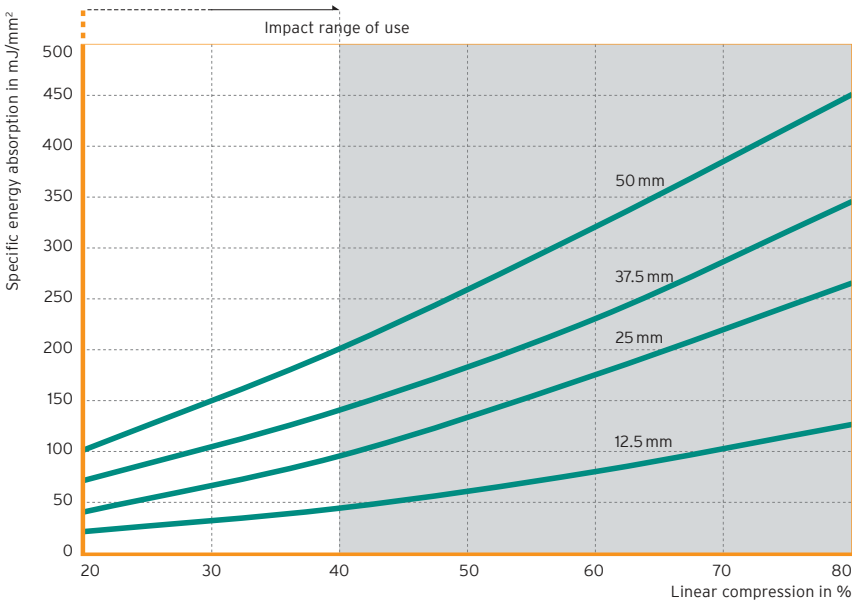

Fig. 4: Specific energy absorption for different bearing thicknesses

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 shape factor

The graphs show the material properties at different shape factors.

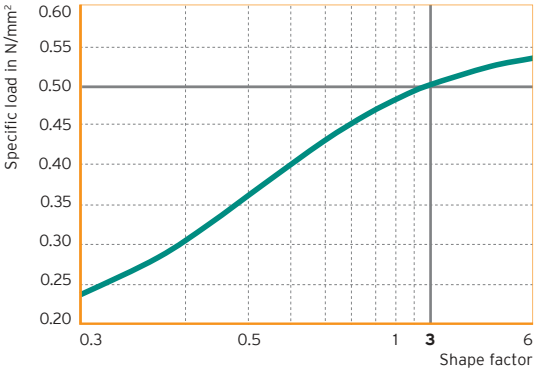

Fig. 5: Static range of use in relation to the shape factor

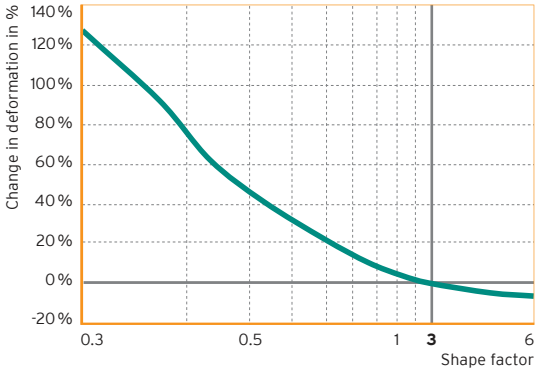

Fig. 6: Deflection[5] in relation to the shape factor

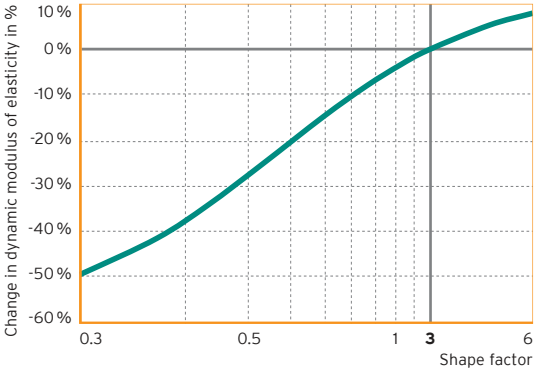

Fig. 7: Dynamic modulus of elasticity[5] at 10 Hz in relation to the shape factor

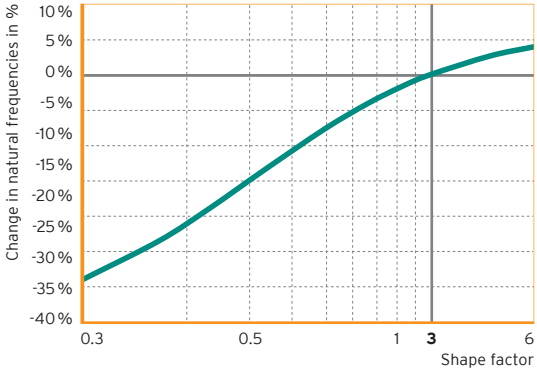

Fig. 8: Natural frequency[5] in relation to the shape factor

[5] Reference values: specific load 0.5 N/mm², shape 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).

Ota yhteyttä: Christian Berner Oy +358 9 2766 830 • infofi@christianberner.com • www.christianberner.fi