Sylomer® SR 850 Data Sheet

SR 850

by getzner sylomer®

Material mixed-cell PU elastomer (polyurethane)

Colour turquoise

Standard delivery dimension

Thickness: 12.5 mm / 25 mm

Roll: 1.5 m wide, 5.0 m long

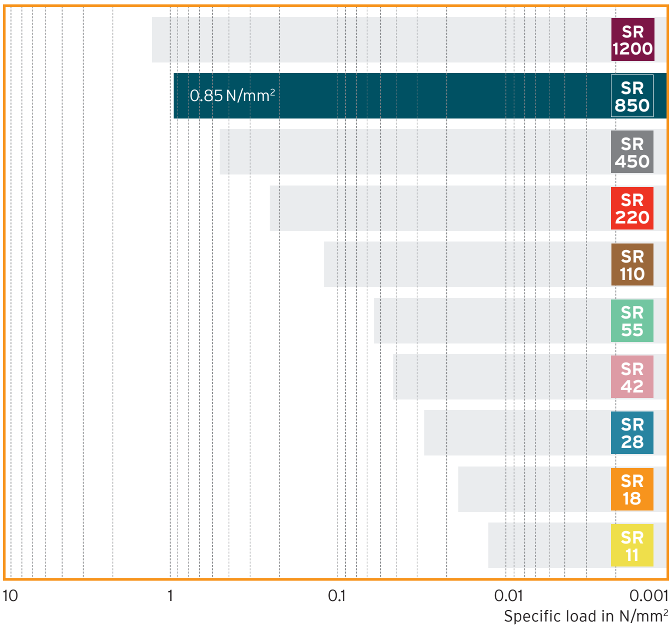
Strip: up to 1.5 m wide, up to 5.0 m long

Other dimensions, punched and molded parts on request.

Range of use	Compressive load	Deformation
	shape factor-dependent, values apply to shape factor q = 3	
Static range of use (static loads)	up to 0.85 N/mm^2	approx. 10 %
Dynamic range of use (static plus dynamic loads)	up to 1.3 N/mm^2	approx. 20 %
Load peaks (occasional, brief loads)	up to 6.0 N/mm^2	approx. 45 %

Standard Sylomer® range

Static range of use



Material properties		Test methods	Comment
Mechanical loss factor	0.11	DIN 53513 [1]	temperature-, frequency-, specific load- and amplitude-dependent
Rebound resilience	60 %	EN ISO 8307 [1]	
Compression hardness [3]	0.85 N/mm^2	EN ISO 844 [1]	at 10 % linear compression, 3rd load cycle
Compression set [2]	< 5 %	EN ISO 1856 [1]	25 % deformation, 23 °C, 72 h, 30 min after removal of load
Static modulus of elasticity [3]	7.23 N/mm^2		at specific load of 0.85 N/mm^2
Dynamic modulus of elasticity [3]	11.08 N/mm^2	DIN ISO 53513 [1]	at specific load of 0.85 N/mm^2, 10 Hz
Static shear modulus	0.84 N/mm^2	DIN ISO 1827 [1]	at a pretension of 0.85 N/mm^2
Dynamic shear modulus	1.15 N/mm^2	DIN ISO 1827 [1]	at a pretension of 0.85 N/mm^2, 10 Hz
Min. tensile stress at rupture	2.30 N/mm^2	EN ISO 527-3/5/500 [1]	
Min. tensile elongation at rupture	150 %	EN ISO 527-3/5/500 [1]	
Abrasion [2]	≤ 300 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 resistance	> 10^{10} Ω·cm	DIN EN 62631-3-1 [1]	dry
Thermal conductivity	0.13 W/(mK)	DIN EN 12667	
Temperature range	-30 °C to 70 °C		short term higher temperatures possible
Flammability	class E	EN ISO 11925-2	normal combustible, 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

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

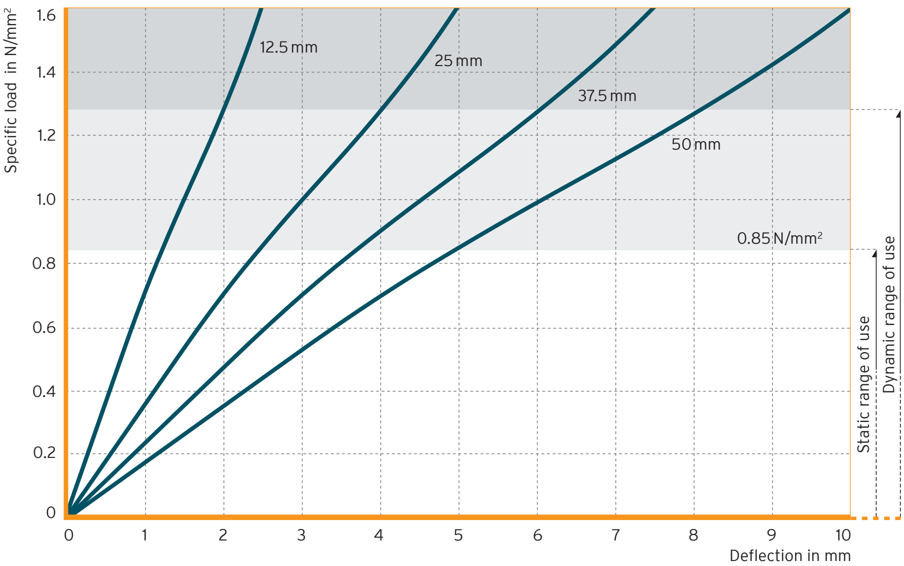

Fig. 1: Quasi-static load deflection curve for different bearing thicknesses

Quasi-static load deflection curve measured with a loading rate of 0.085 N/mm²/s.

Testing between flat and plane-parallel steel plates, recording of 3rd load, with filtered starting range in accordance with ISO 844, testing at room temperature.

Shape factor q = 3

Modulus of elasticity

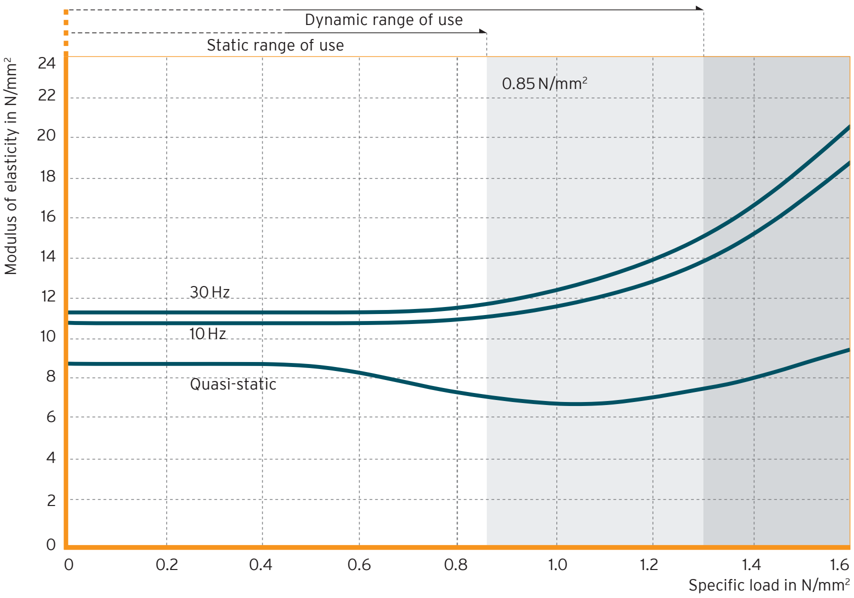

Fig. 2: Load dependency of the static and dynamic modulus of elasticity

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

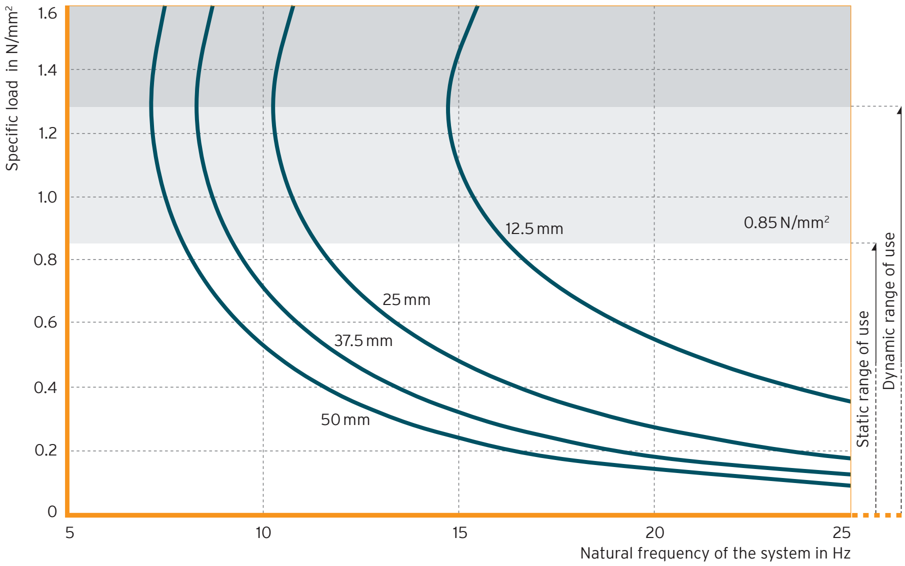

Fig. 3: Natural frequencies for different bearing thicknesses

Natural frequencies of a vibratory system with a single degree of free-dome, consisting of a mass and an elastic bearing made of Sylomer® SR 850 on a rigid surface.

Parameter: thickness of the Sylomer® bearing

Shape factor q = 3

Vibration isolation efficiency

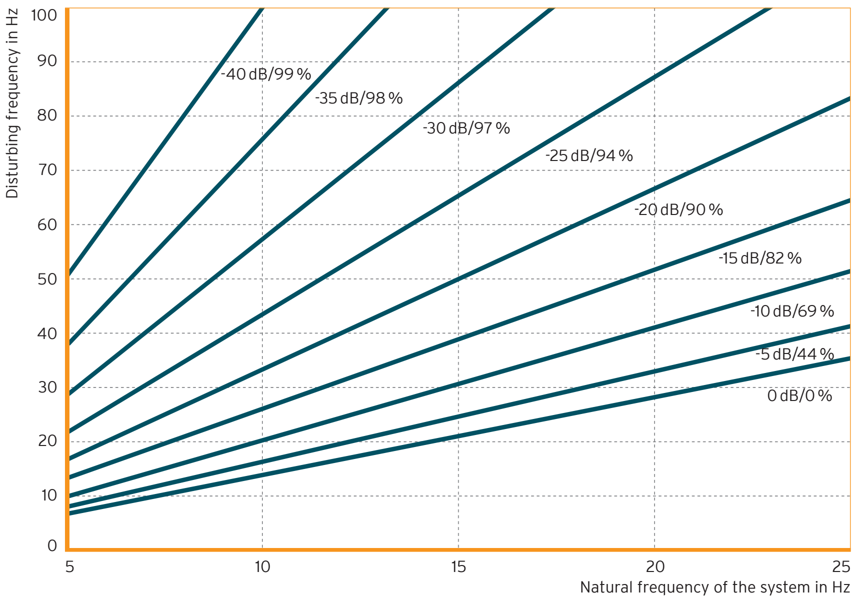

Fig. 4: Factor of transmission and isolation rate

Reduction of the transmitted me-chanical vibrations by implementa-tion of an elastic bearing consisting of Sylomer® SR 850 based on a stiff subgrade.

Parameter: factor of transmission in dB, isolation rate in %

Influence of the shape factor

The graphs show the material properties at different shape factors.

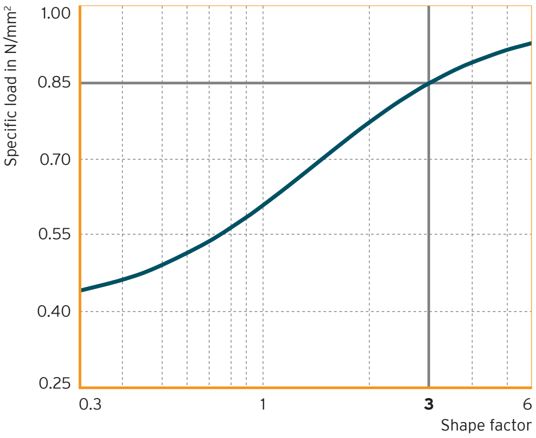

Fig. 5: Static range of use in relation to the shape factor

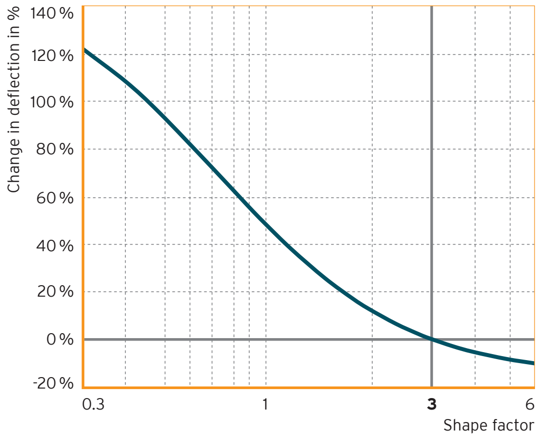

Fig. 6: Deflection [4] in the relation to the shape factor

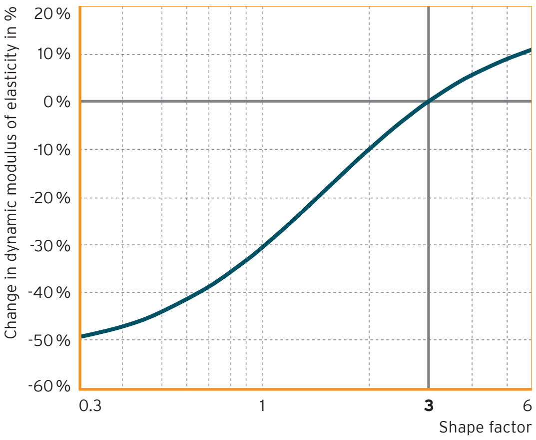

Fig. 7: Dynamic modulus of elasticity [4] at 10 Hz in relation to the shape factor

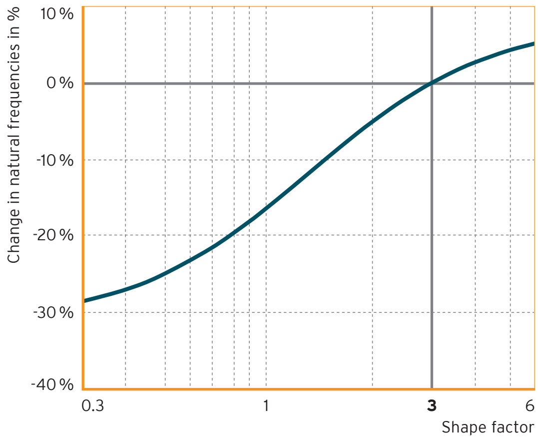

Fig. 8: Natural frequency [4] in relation to the shape factor

[4] Reference values: specific load 0.85 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).