

Sylomer® SR 450

Material Data Sheet

by getzner
sylomer®

Material mixed cellular polyurethane
Colour grey

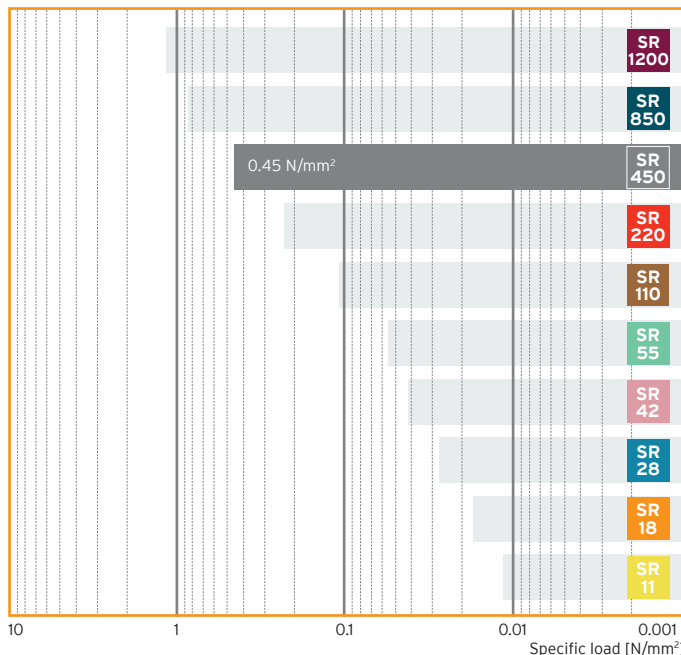
Standard dimensions on stock

Thickness: 12.5 mm with Sylomer® SR 450 - 12
25 mm with Sylomer® SR 450 - 25
Rolls: 1.5 m wide, 5.0 m long
Stripes: max. 1.5 m wide, up to 5.0 m long

Other dimensions (also thickness) as well as stamped and molded parts on request.

Standard Sylomer® range

Static range of use



Area of application	Compression load	Deflection
	depending on form factor, values apply to form factor 3	
Static range of use (static loads)	up to 0.45 N/mm ²	ca. 10 %
Operating load range (static plus dynamic loads)	up to 0.7 N/mm ²	ca. 20 %
Load peaks (short term, infrequent loads)	up to 5 N/mm ²	ca. 60 %

Material properties		Test methods	Comment
Mechanical loss factor	$\eta = 0.12$	DIN 53513*	depending on frequency, stress and amplitude
Rebound elasticity	60 %	EN ISO 8307	
Compression hardness	0.42 N/mm ²	EN ISO 3386-1*	10 % deformation, 3 rd load cycle
Compression set	< 5 %	EN ISO 1856	50 % deformation, 23 °C, 72 h, 30 min after unloading
Static shear modulus	0.58 N/mm ²	DIN ISO 1827*	at specific load of 0.45 N/mm ²
Dynamic shear modulus	1.0 N/mm ²	DIN ISO 1827*	at specific load of 0.45 N/mm ² , 10 Hz
Coefficient of friction (steel)	$\mu_s = 0.5$	Getzner Werkstoffe	dry
Coefficient of friction (concrete)	$\mu_B = 0.7$	Getzner Werkstoffe	dry
Abrasion	$\leq 400 \text{ mm}^3$	DIN ISO 4649*	load 10 N, bottom surface
Min. tensile stress at rupture	1.80 N/mm ²	EN ISO 527-3/5/100*	
Min. tensile elongation at rupture	170 %	EN ISO 527-3/5/100*	
Operating temperature	-30 to 70 °C		short term higher temperatures possible
Specific volume resistance	$> 10^{11} \Omega \cdot \text{cm}$	DIN IEC 60093	dry
Thermal conductivity	0.11 W/(mK)	DIN EN 12664	
Flammability	class E	EN ISO 11925-2	normal flammable, EN 13501-1

* Measurement / evaluation in accordance with the relevant standard

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. We reserve the right to amend the data.

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

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Load deflection curve

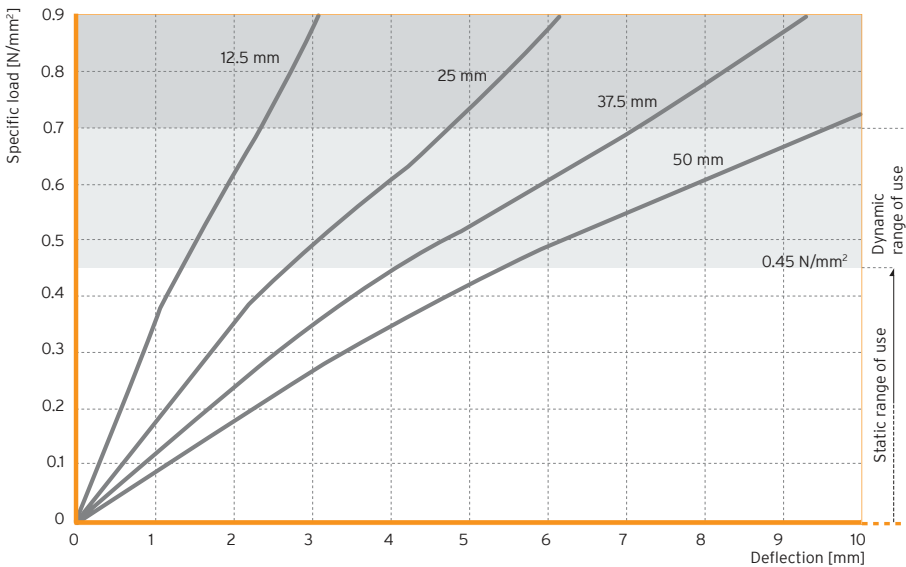


Figure 1: Quasistatic load deflection curve measured with a loading rate of 0.045 N/mm²/s

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

Form factor 3

Modulus of elasticity

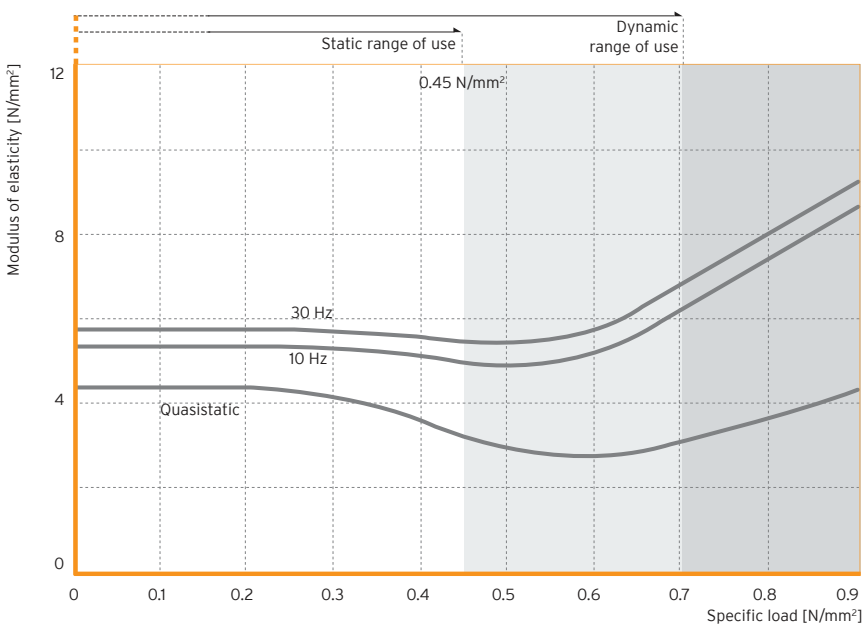


Figure 2: Load dependency of the static and dynamic modulus of elasticity

Quasistatic modulus of elasticity as a tangent modulus taken from the load deflection curve; dynamic modulus of elasticity due to sinusoidal excitation with a velocity level of 100 dBv re. $5 \cdot 10^{-8}$ m/s (equal to an oscillating range of 0.22 mm at 10 Hz and 0.08 mm at 30 Hz, see also in the glossary)

Test according to DIN 53513

Form factor 3

Natural frequency

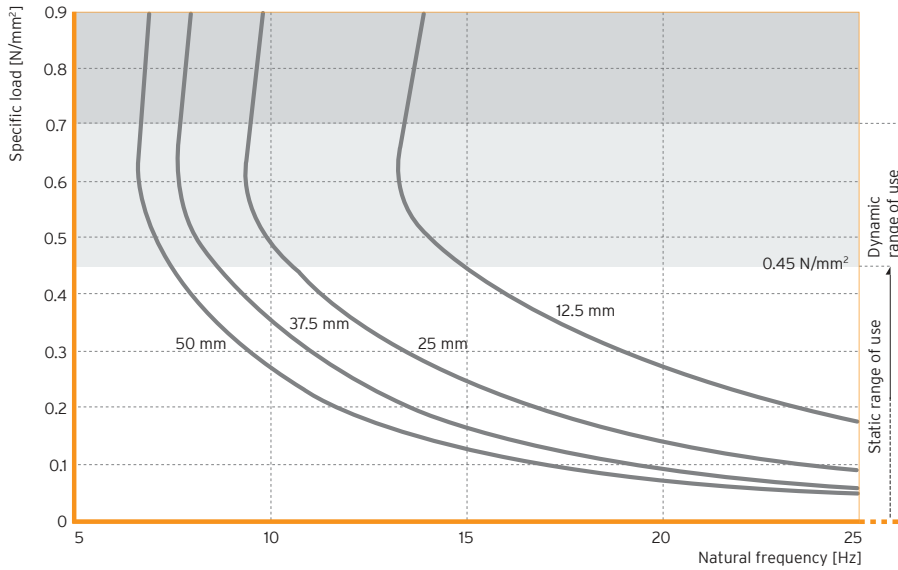


Figure 3: Natural frequency of a single-degree-of-freedom system (SDOF system) consisting of a fixed mass and an elastic bearing consisting of Sylomer® SR 450 based on a stiff subgrade

Parameter: Thickness of elastomeric bearing

Form factor 3

Vibration isolation efficiency

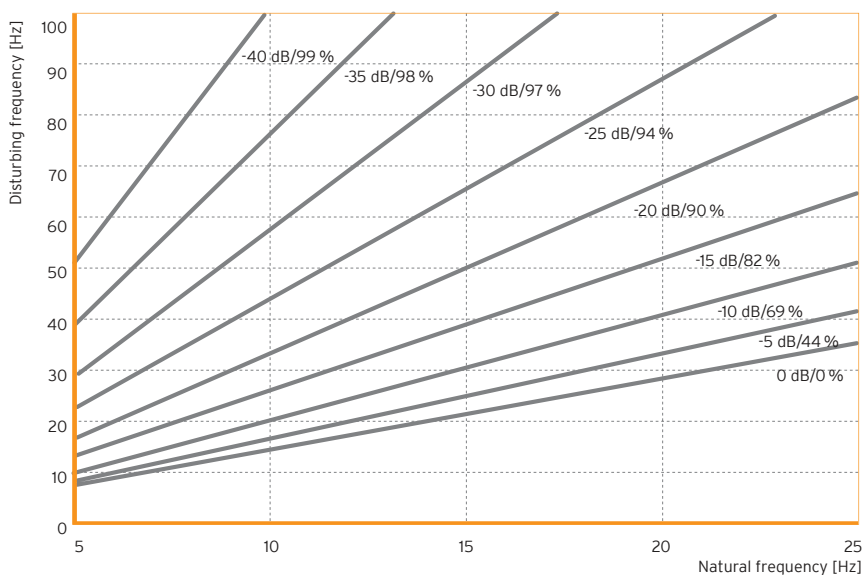


Figure 4: Reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylomer® SR 450

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

Influence of the form factor

The graphs show changes in the material properties at different form factors.

Figure 5: Static load range

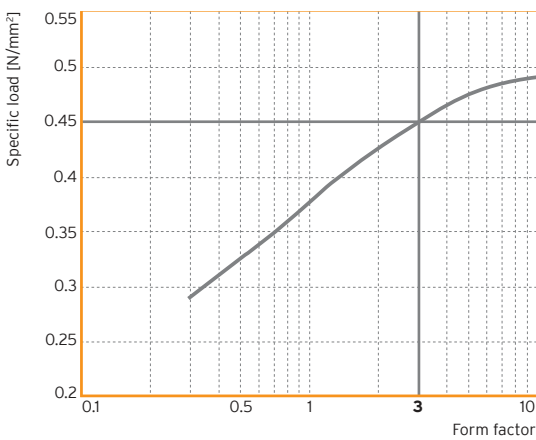


Figure 6: Deflection*

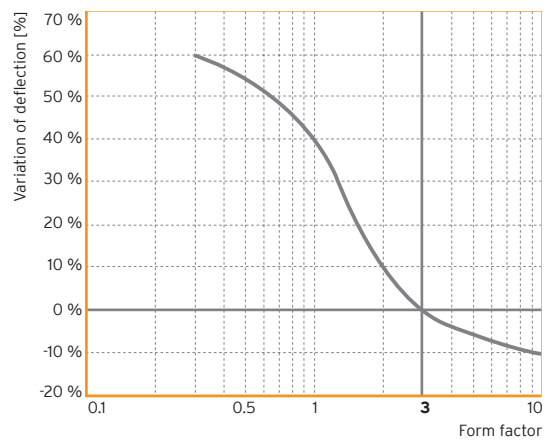


Figure 7: Dynamic modulus of elasticity at 10 Hz*

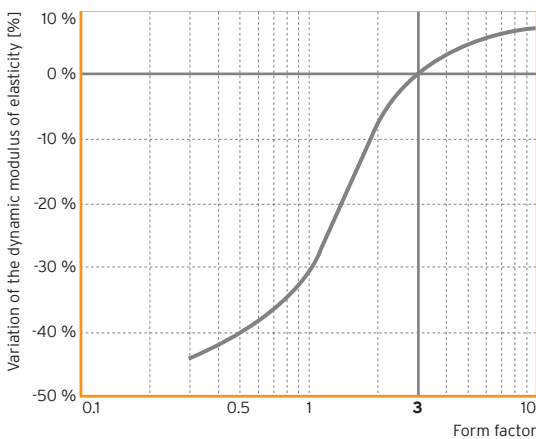
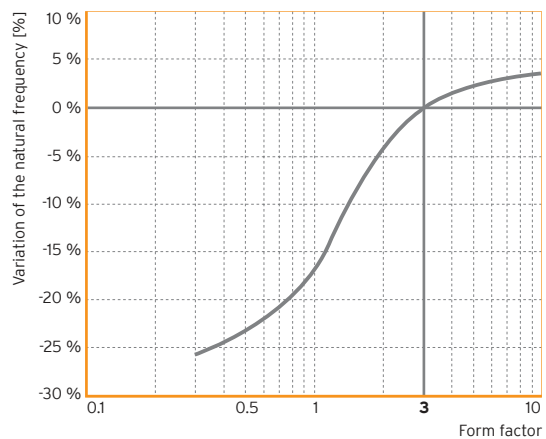


Figure 8: Natural frequency*



* Reference value: specific load 0.45 N/mm², form factor 3

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