

sylomer®

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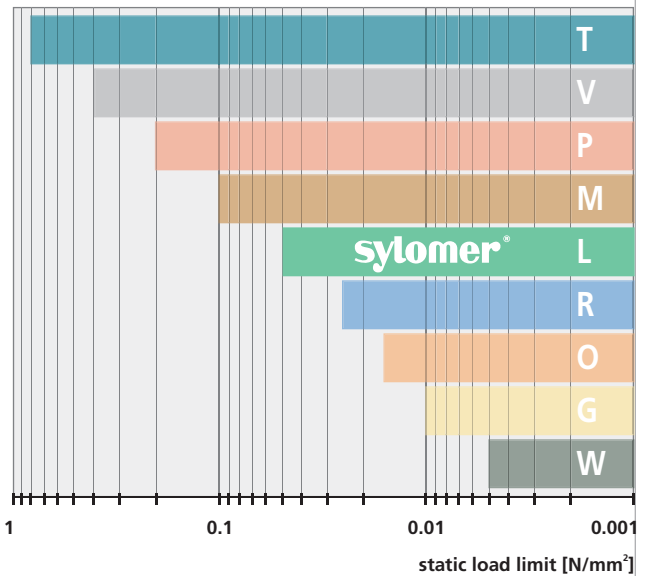
Material: mixed cellular polyurethane
Colour: green

Area of application: compression load deflection (depending on shape factor)
Static load limit: up to 0.05 N/mm² approx. 7%
Operating load range: up to 0.08 N/mm² approx. 25% (static plus dynamic loads)
Load peaks: up to 2.0 N/mm² approx. 80% (short term, infrequent loads)

Standard dimensions on stock:

thickness: 12.5 mm with Sylomer L12
 25 mm with Sylomer L25
rolls: 1.5 m wide, 5.0 m long
stripes: max. 1.5 m wide, 5.0 m long
 other dimensions (also thickness), as well as stamped and molded parts on request

Standard Sylomer range



MATERIAL PROPERTIES			test methods	comment
tensile stress at break	0.75	N/mm ²	DIN EN ISO 527-3/5/100*	minimum value
elongation at break	300	%	DIN EN ISO 527-3/5/100*	minimum value
tear strength	2.5	N/mm	DIN 53515*	minimum value
abrasion	1,160	mm ³	DIN 53516	load 7.5 N, bottom surface
coefficient of friction (steel)	0.5		Getzner Werkstoffe	dry
coefficient of friction (concrete)	0.7		Getzner Werkstoffe	dry
compression set	< 5	%	EN ISO 1856	50%, 23°C, 70 h, 30 minutes after unloading
static shear modulus	0.13	N/mm ²	DIN ISO 1827*	at static load limit
dynamic shear modulus	0.27	N/mm ²	DIN ISO 1827*	at static load limit
mechanical loss factor	0.20		DIN 53513*	depending on frequency, load and amplitude (reference value)
rebound elasticity	55	%	DIN 53573	tolerance +/- 10%
operating temperature	-30 up to 70	°C		short term higher temperatures possible
flammability	B2		DIN 4102	normal flammable
	B, C and D		EN ISO 11925-2	passed
specific volume resistance	> 10 ¹¹	·cm	DIN IEC 93	dry
thermal conductivity	0.07	W/[m·K]	DIN 52612/1	

further characteristic values on request
 * tests according to respective standards



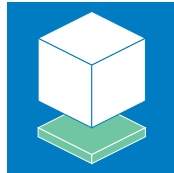
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All information according to our current state of knowledge.
 All data can be used for calculation and reference values and are subject to usual production tolerances. Subject to modifications and alterations at any time and without prior notice.

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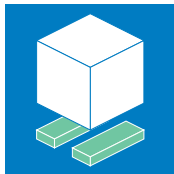
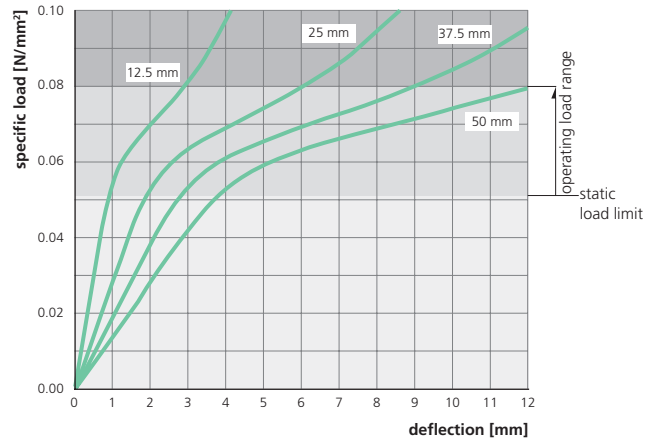
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load deflection curve



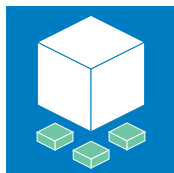
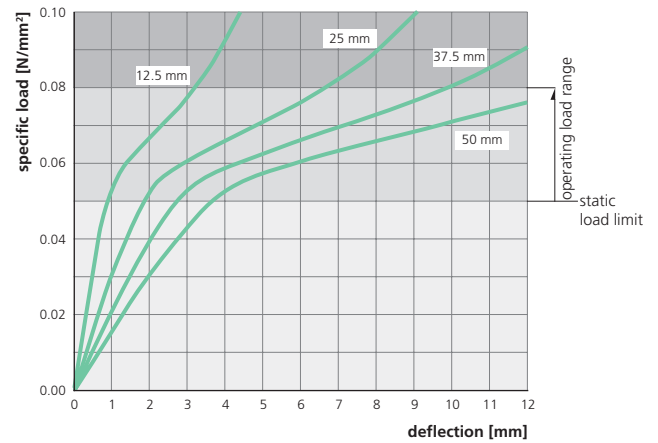
full surface bearing

shape factor: $q=6$



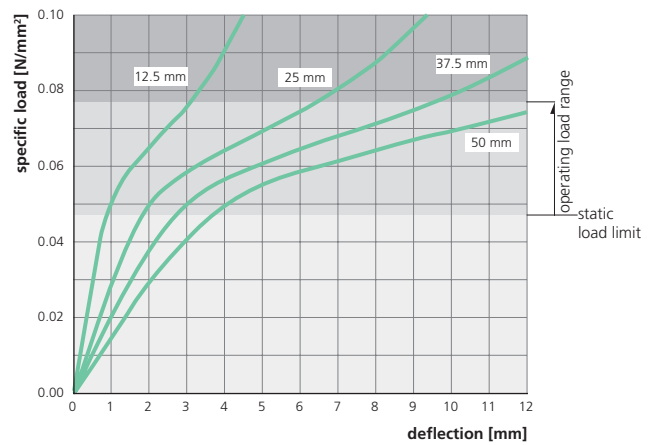
strip bearing

shape factor: $q=3$



point bearing

shape factor: $q=1.5$

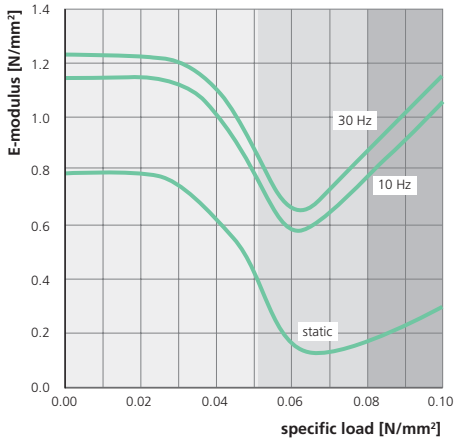


Quasi-static load deflection curve measured at a velocity of deformation of 1% of the thickness per second;
 testing between flat steel-plates;
 recording of the 3rd loading; testing at room temperature

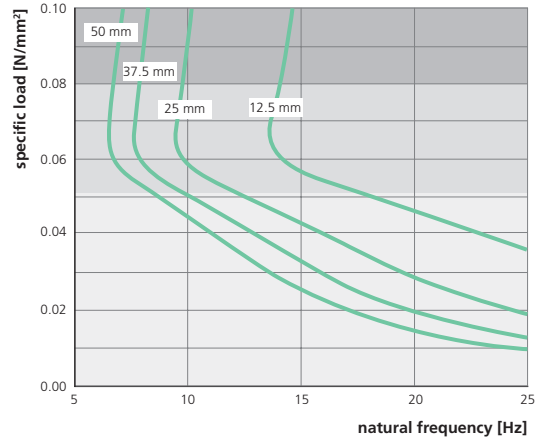
modulus of elasticity

natural frequency

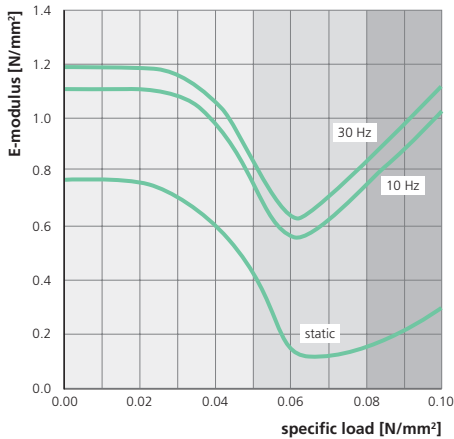
modulus of elasticity shape factor: q=6



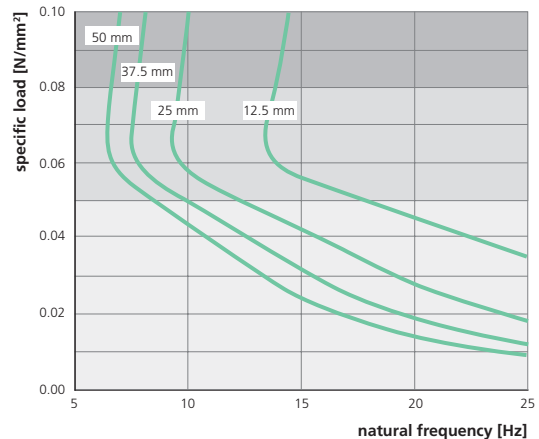
natural frequency shape factor: q=3



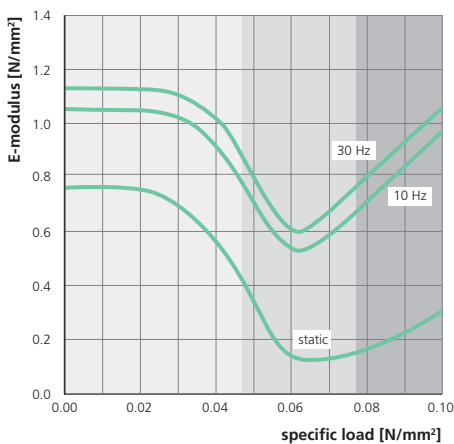
modulus of elasticity shape factor: q=3



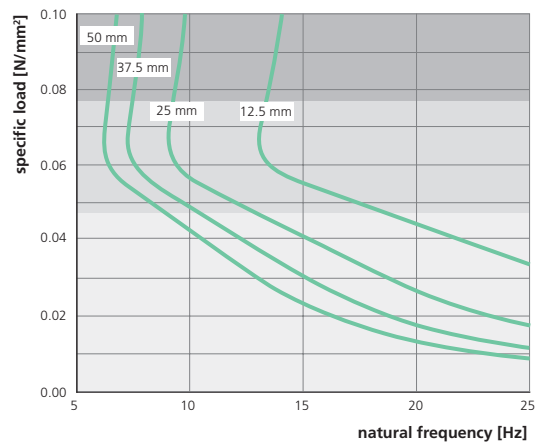
natural frequency shape factor: q=3



modulus of elasticity shape factor: q=1.5



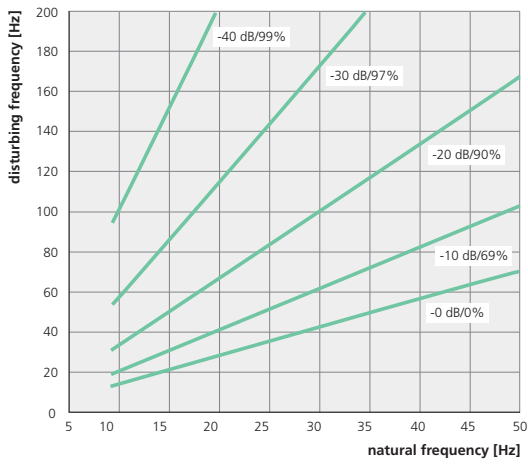
natural frequency shape factor: q=1.5



Static 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; test according to DIN 53513

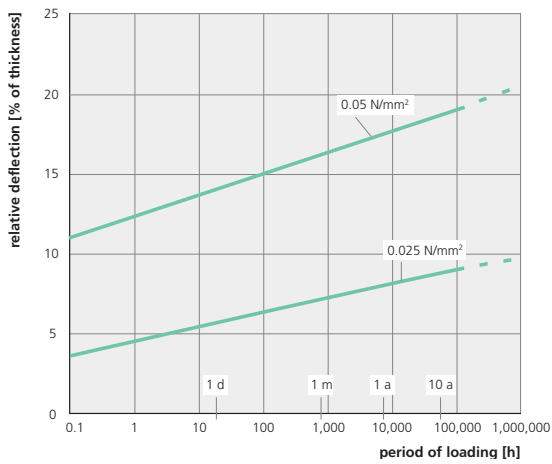
Natural frequency of a single-degree-of-freedom system (SDOF system) consisting of a fixed mass and an elastic bearing consisting of Sylomer L based on a stiff subgrade; parameter: thickness of elastomeric bearing

vibration isolation - efficiency



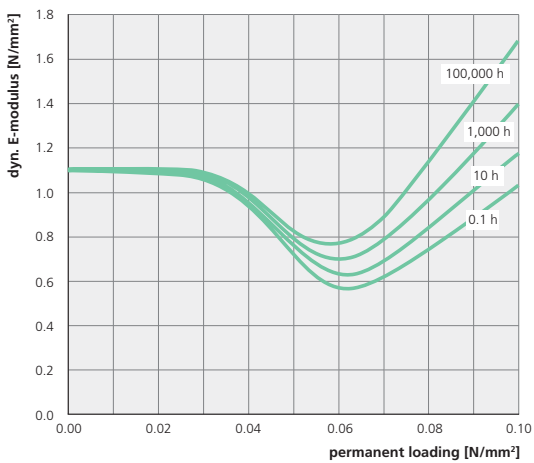
reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylomer L
parameter: factor of transmission in dB, isolation rate in %

creep behaviour



increase in deformation under consistent loading
parameter: permanent loading
 shape factor $q=3$

dynamic E-modulus at long term loading

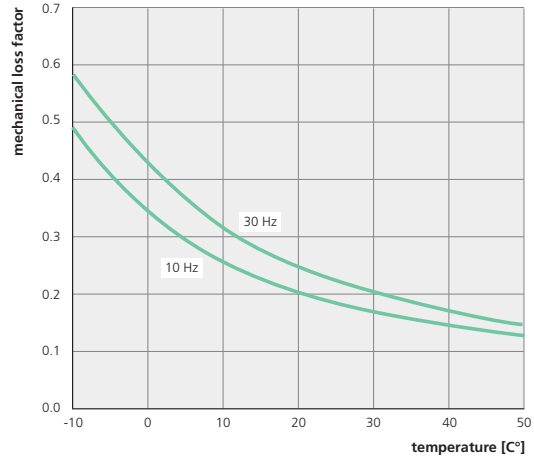
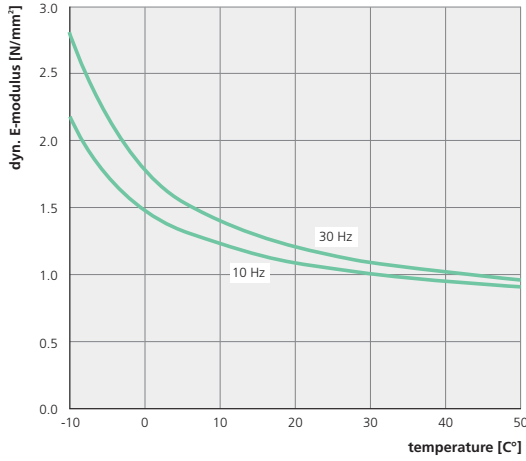


change of dynamic modulus of elasticity under consistent loading
parameter: load duration
 shape factor $q=3$

DMA-test (Dynamic Mechanical Analysis);

tests within linear area of the load deflection curve, at low specific loads

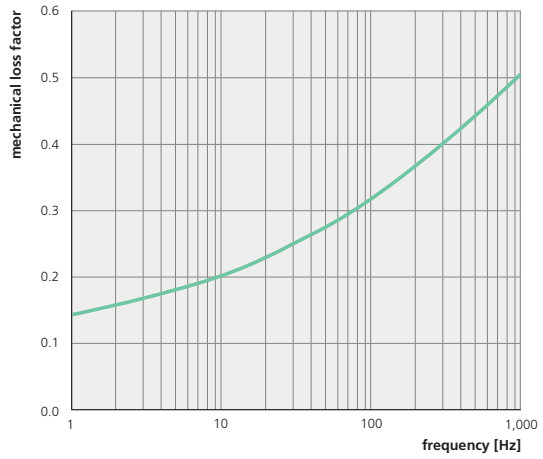
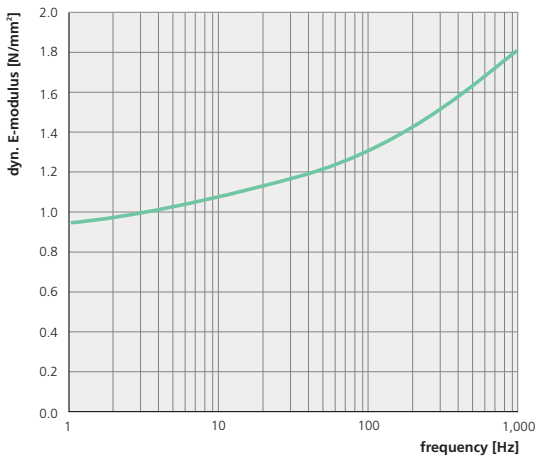
temperature dependency



DMA-tests; mastercurve with a reference-temperature of 21°C;

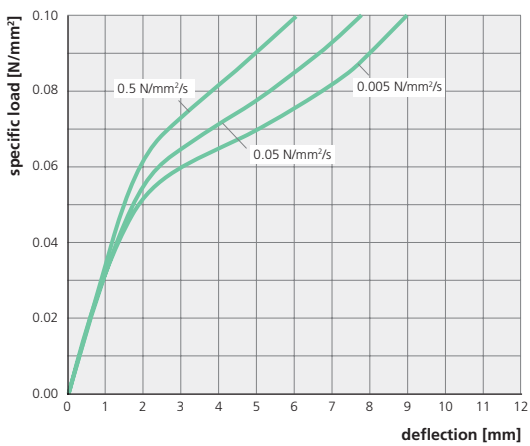
tests within the linear area of the load deflection curve, at low specific loads

frequency dependency



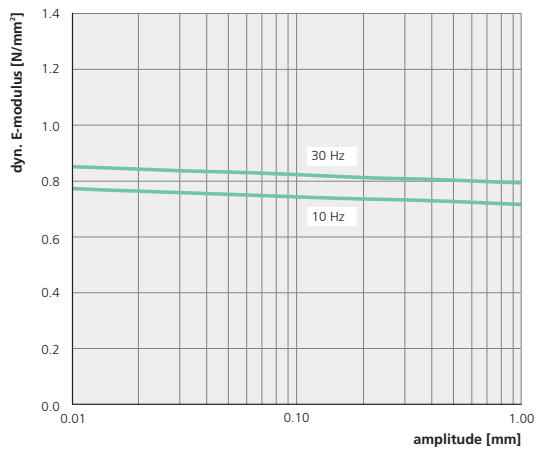
dependency on loading velocity

shape factor: $q=3$, thickness of material 25 mm



dependency on amplitude

preload at static load limit; shape factor: $q=3$, thickness of material 25 mm



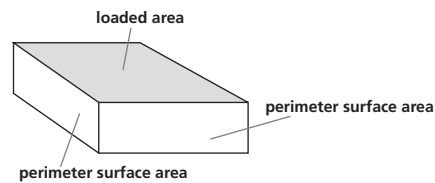
Shape factor

The shape factor is a geometric measure for the shape of an elastomeric bearing defined as the ratio of the loaded area and the area of sum of the perimeter surfaces.

definition:
$$\text{shape factor} = \frac{\text{loaded area}}{\text{perimeter surface area}}$$

for a rectangular shape:
$$q = \frac{l \cdot w}{2 \cdot t \cdot (l + w)}$$

(l...length, w...width, t...thickness)

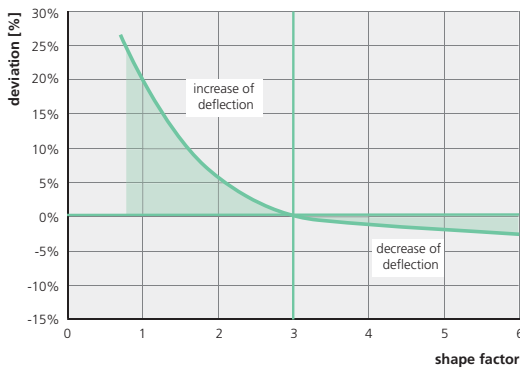


The shape factor has an influence on the deflection and the static load limit respectively.

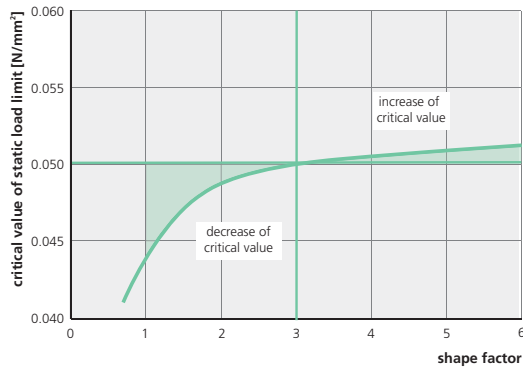
Elastic Sylomer-bearings are considered as:

- full surface bearing: shape factor > 6
- strip bearing: shape factor between 2 and 6
- point bearing: shape factor < 2

influence of the shape factor on the critical value of the static load limit for homogeneous material reference value: shape factor q=3



influence of the shape factor on the critical value of the static load limit for homogeneous material reference value: shape factor q=3



Caveats: Specifications are subject to change without notice. The data in this document are typical of average values based on tests by independent laboratories or by the manufacturer and are indicative only. Materials must be tested under intended service conditions to determine their suitability for purpose. The conclusions drawn from acoustic test results are as interpreted by qualified independent testing authorities. Nothing here releases the purchaser/user from responsibility to determine the suitability of the product for their project needs. Always seek the opinion of your acoustic or mechanical engineer on data presented by the manufacturer. Due to the wide variety of individual projects, Pyrotek NC is not responsible for differing outcomes from using their products. Pyrotek disclaims any liability for damages or consequential loss as a result of reliance solely on the information presented. No warranty is made that the use of this information or of the products, processes or equipment to which this Information Page refers will not infringe any third party's patents or rights. DISCLAIMER: This document is covered by Pyrotek standard Disclaimer, Warranty and © Copyright clauses. See www.pyroteknc.com/disclaimer.

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