

sylomer®

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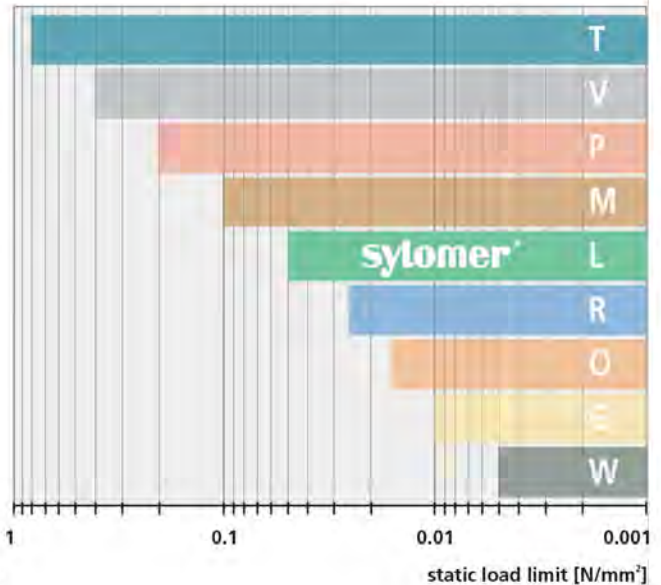
Material: mixed cellular polyurethane
Colour: green

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

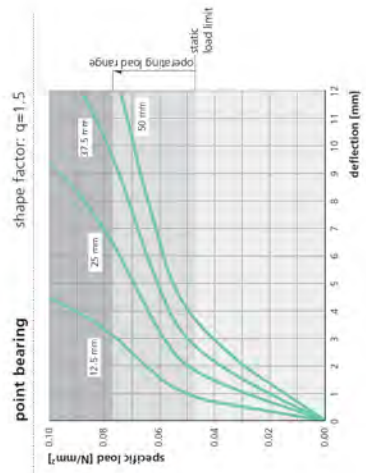
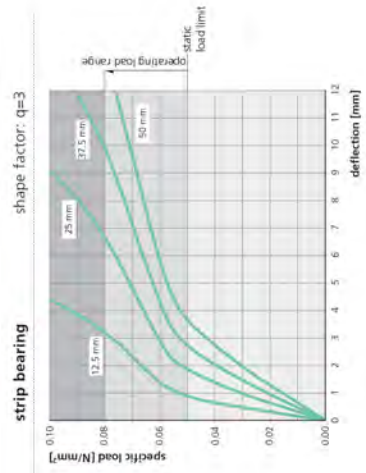
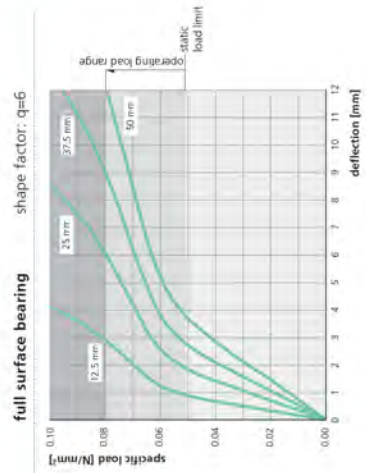
* tests according to respective standards

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.

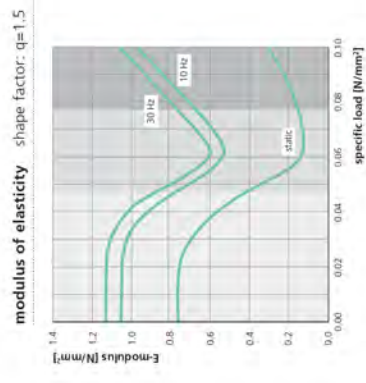
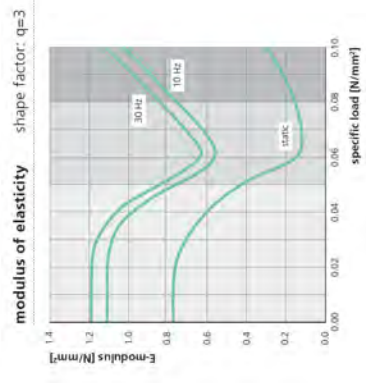
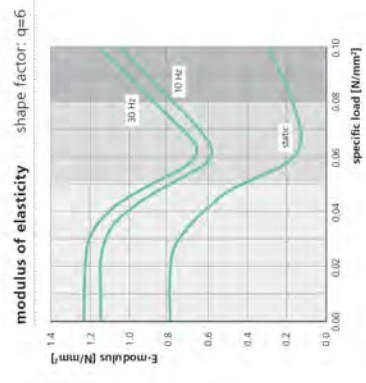
getzner
WERKSTOFFE

load deflection curve



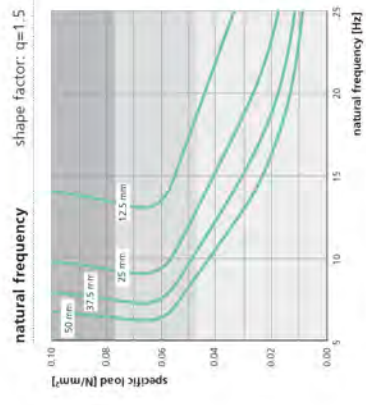
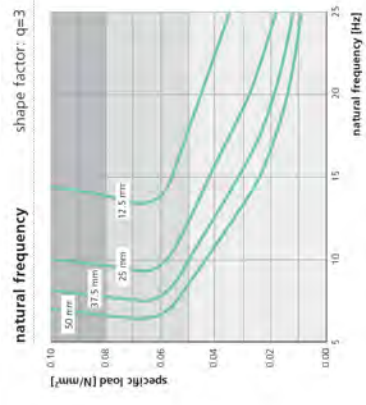
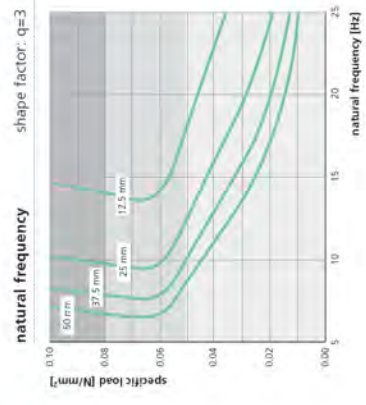
Quasi-static load deflection curve measured at a velocity of deformation of 1% of the thickness per second; testing between flat steel-plates; recording of the 3rd loading; testing at room temperature

modulus of elasticity



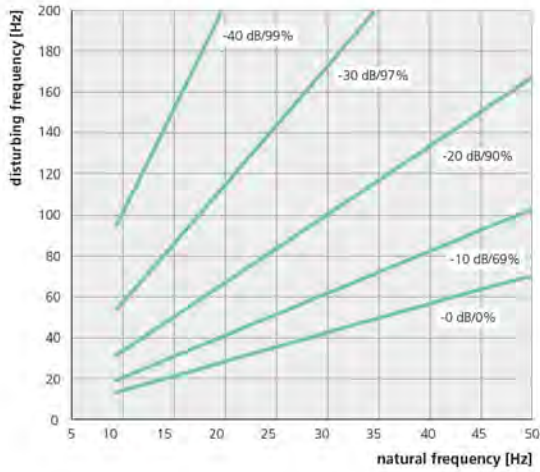
Static modulus of elasticity as a tangent modulus taken from the load deflection curve; dynamic modulus of elasticity due to sinusoidal excitation with a velocity level of 100 dBv re. 5·10⁻⁴ m/s; test according to DIN 53513

natural frequency



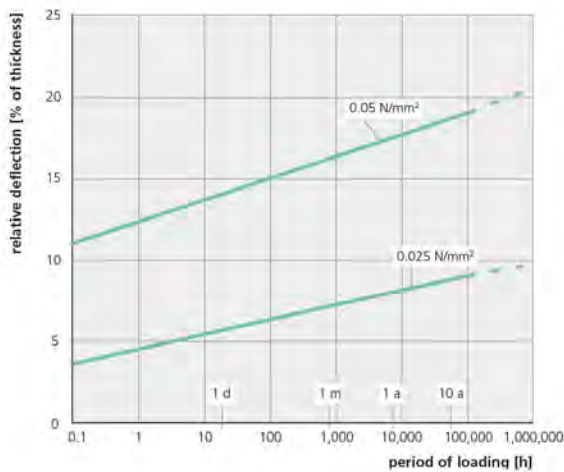
Natural frequency of a single-degree-of-freedom system (SDOF system) consisting of a fixed mass and an elastic bearing consisting of Sylomer L based on a stiff substrate; parameter: thickness of elastomeric bearing

vibration isolation - efficiency



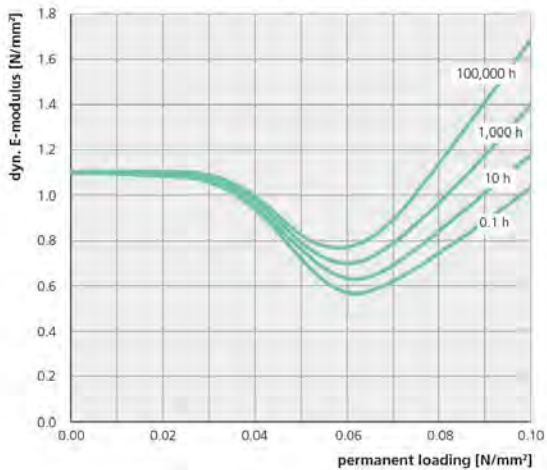
reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylomer L
parameter: factor of transmission in dB, isolation rate in %

creep behaviour



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

dynamic E-modulus at long term loading

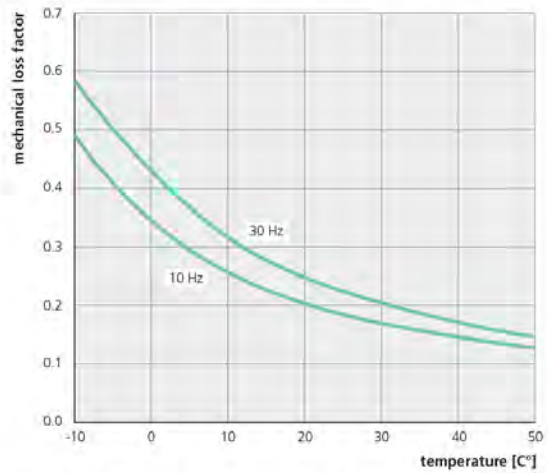
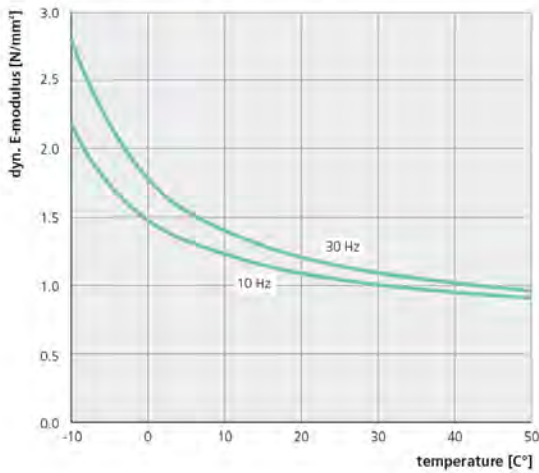


change of dynamic modulus of elasticity under consistent loading
parameter: load duration
 shape factor $q=3$

temperature dependency

DMA-test (Dynamic Mechanical Analysis);

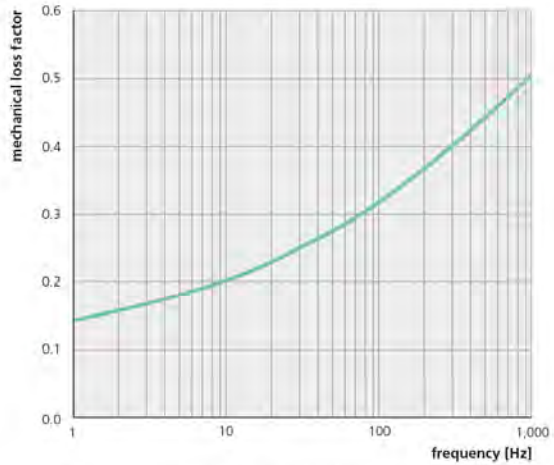
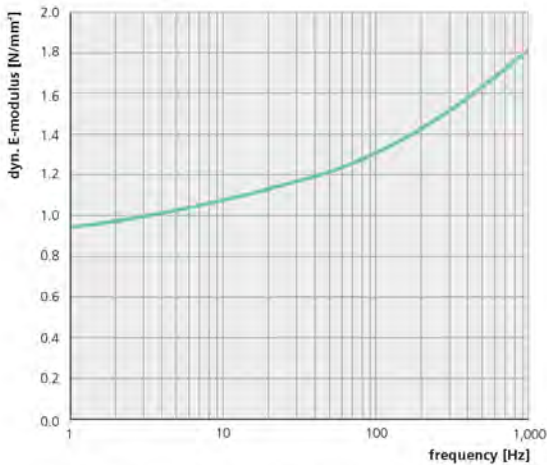
tests within linear area of the load deflection curve, at low specific loads



frequency dependency

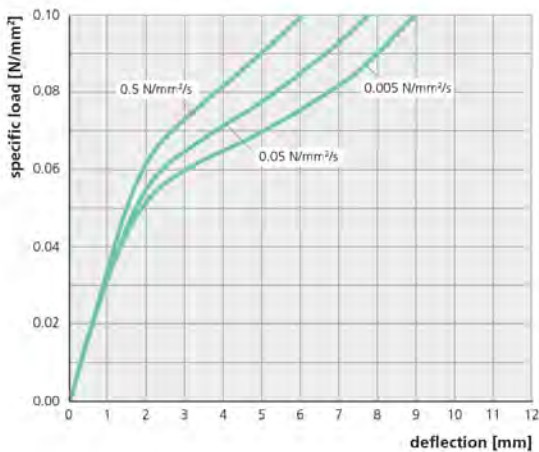
DMA-tests; mastercurve with a reference-temperature of 21°C;

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



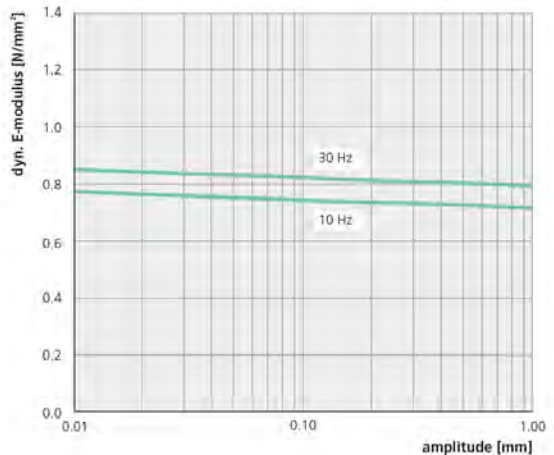
dependency on loading velocity

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



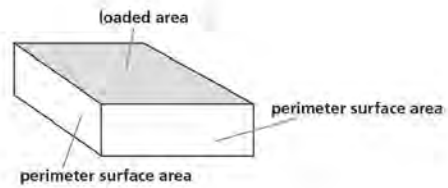
Shape factor

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)

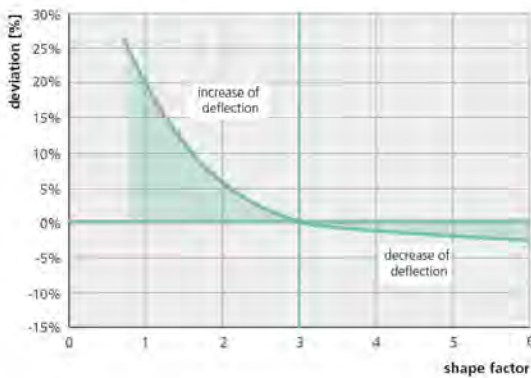


The shape factor has an influence on the deflection and the static load limit respectively.

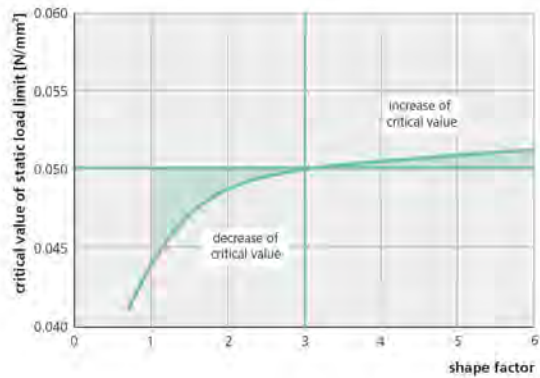
Elastic Sylomer-bearings are considered as:

- 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



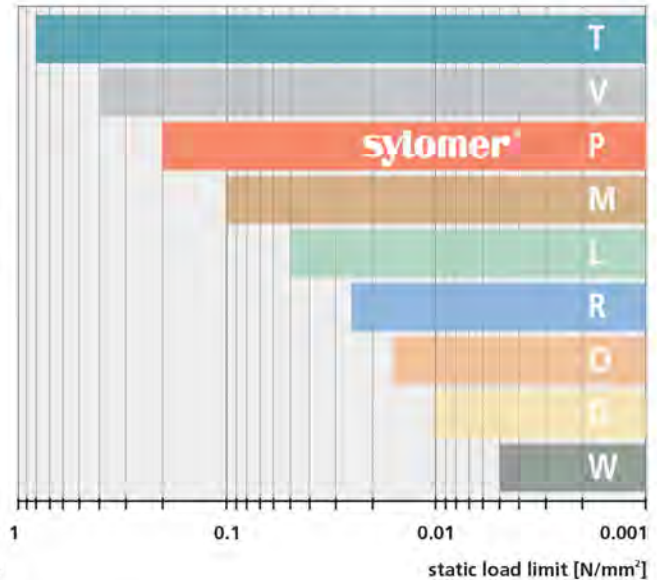
Material: mixed cellular polyurethane
Colour: red

Area of application: compression load deflection
 (depending on shape factor)
Static load limit: 0.20 N/mm² approx. 9%
Operating load range: up to 0.30 N/mm² approx. 20%
 (static plus dynamic loads)
Load peaks: up to 4.0 N/mm² approx. 70%
 (short term, infrequent loads)

Standard dimensions on stock:

thickness: 12.5 mm with Sylomer P12
 25 mm with Sylomer P25
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	1.5	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	6.0	N/mm	DIN 53515*	minimum value
abrasion	1,000	mm ³	DIN 53516	load 10 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	0.35	N/mm ²	DIN ISO 1827*	at static load limit
dynamic shear modulus	0.68	N/mm ²	DIN ISO 1827*	at static load limit
mechanical loss factor	0.15		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 B, C and D		DIN 4102 EN ISO 11925-2	normal flammable passed
specific volume resistance	> 10 ¹¹	·cm	DIN IEC 93	dry
thermal conductivity	0.08	W/[m·K]	DIN 52612/1	

further characteristic values on request

* tests according to respective standards

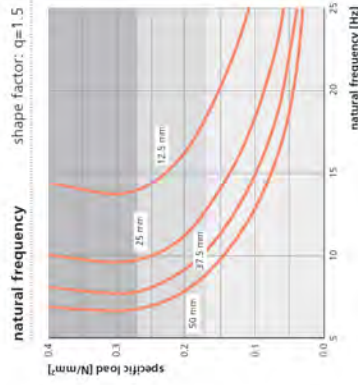
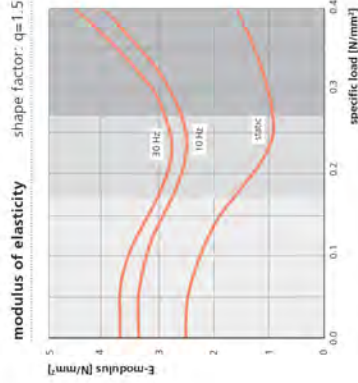
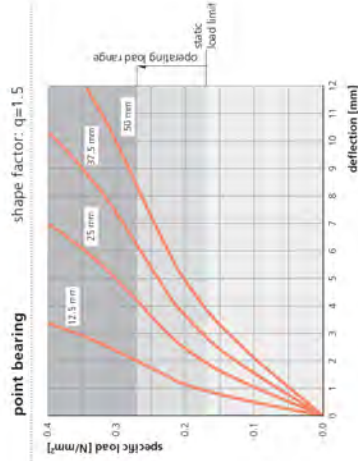
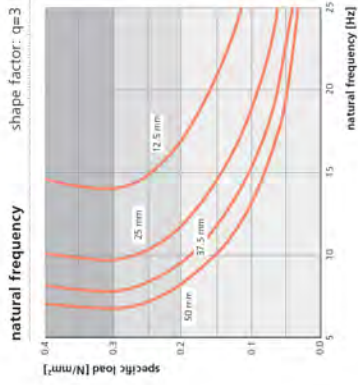
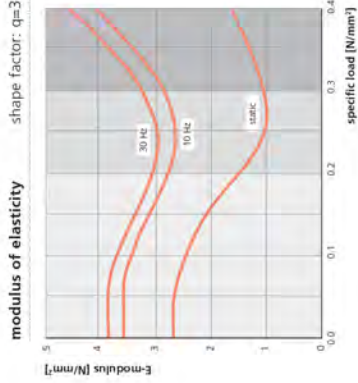
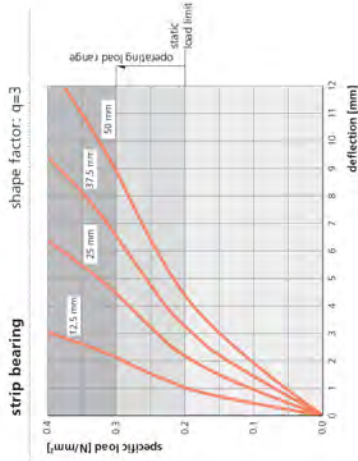
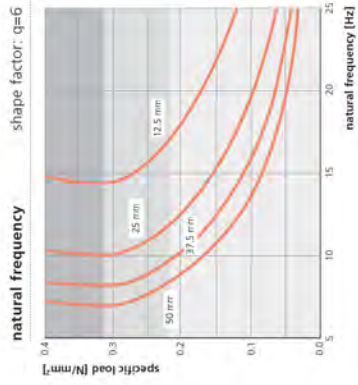
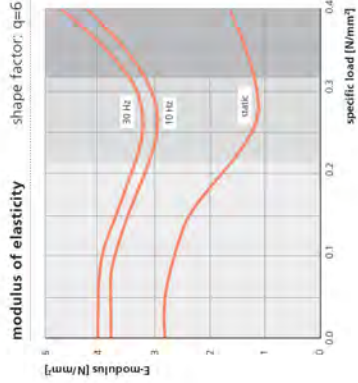
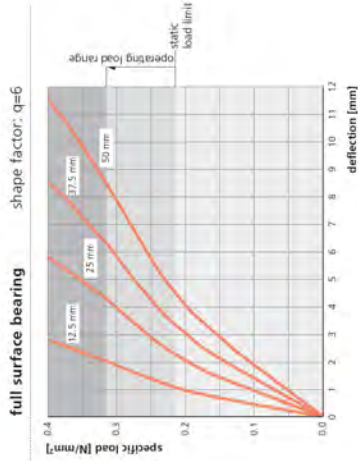
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load deflection curve

modulus of elasticity

natural frequency



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

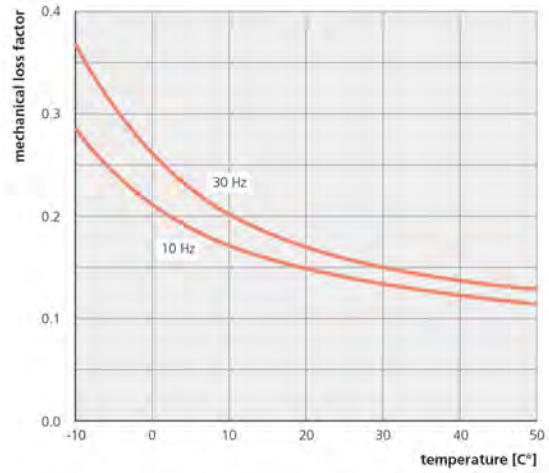
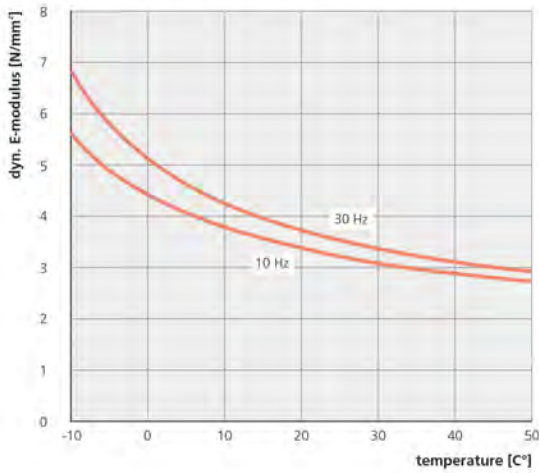
Static modulus of elasticity as a tangent modulus taken from the load deflection curve; dynamic modulus of elasticity due to sinusoidal excitation with a velocity level of 100 dBv re. $5 \cdot 10^{-4}$ m/s; test according to DIN 53513

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

temperature dependency

DMA-test (Dynamic Mechanical Analysis);

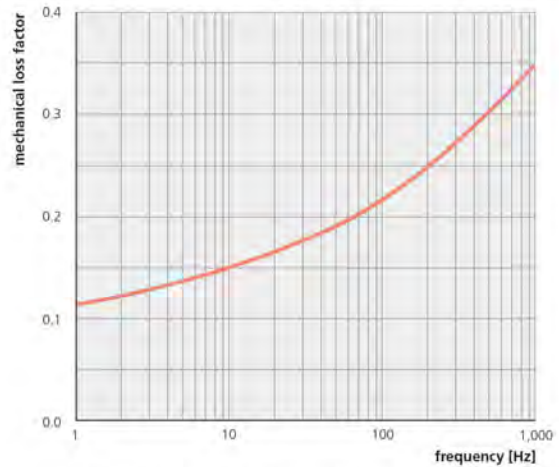
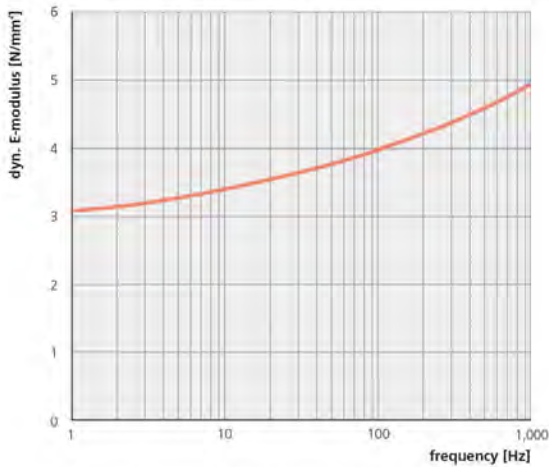
tests within linear area of the load deflection curve, at low specific loads



frequency dependency

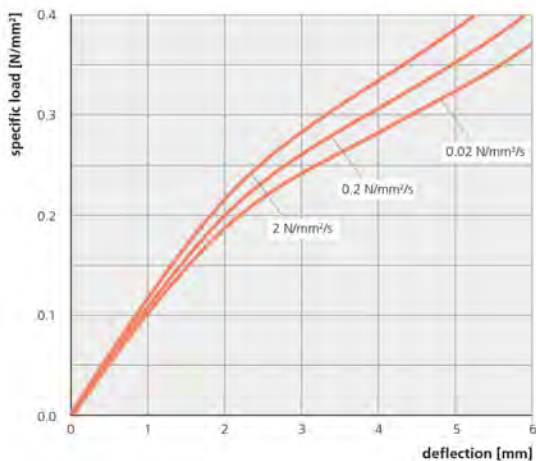
DMA-tests; mastercurve with a reference-temperature of 21°C;

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



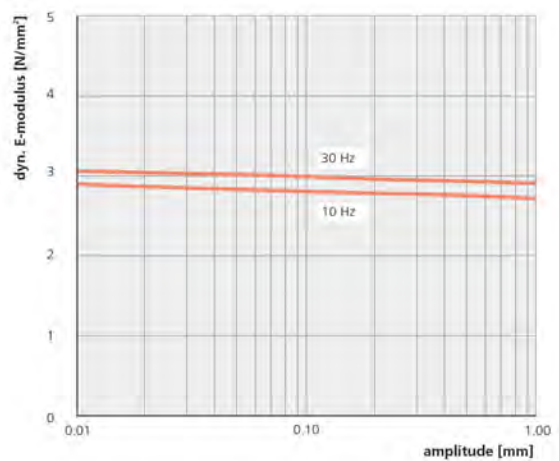
dependency on loading velocity

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



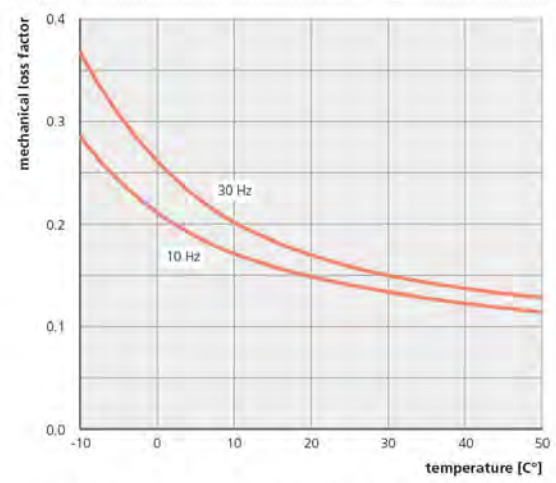
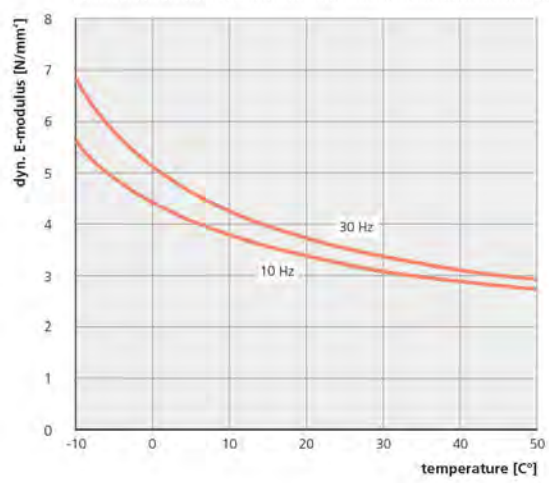
dependency on amplitude

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



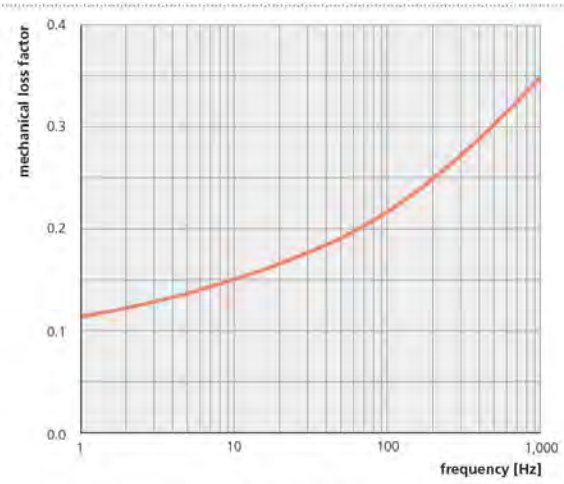
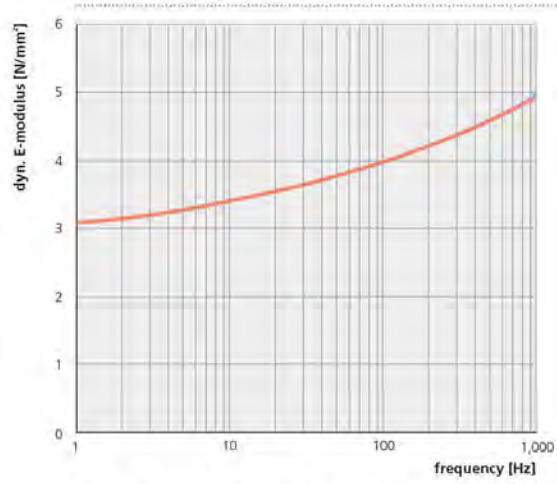
temperature dependency

DMA-test (Dynamic Mechanical Analysis); tests within linear area of the load deflection curve, at low specific loads



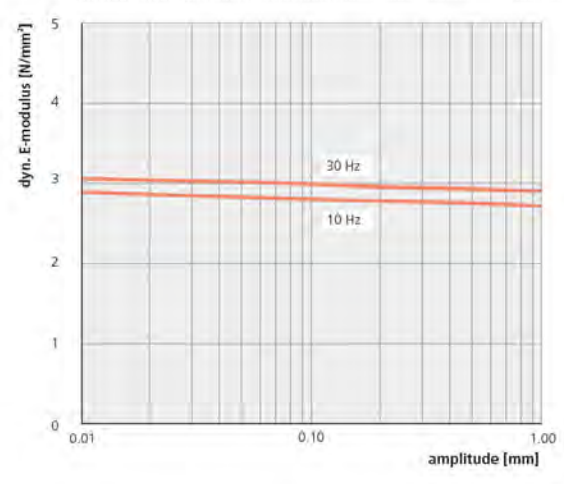
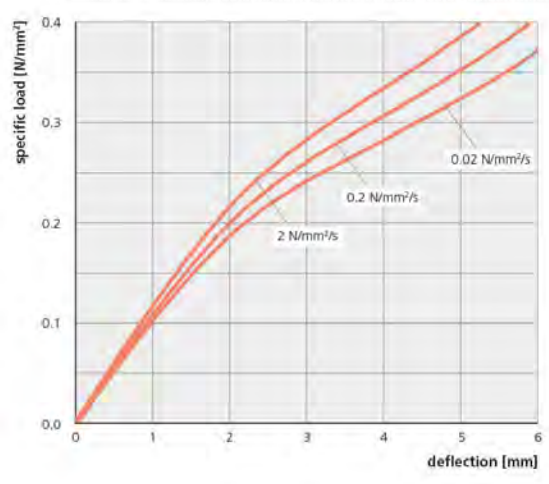
frequency dependency

DMA-tests; mastercurve with a reference-temperature of 21°C; tests within the linear area of the load deflection curve, at low specific loads



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



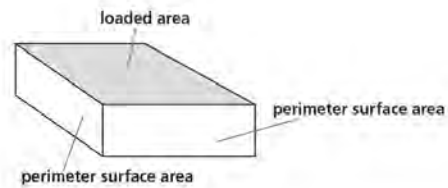
Shape factor

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)

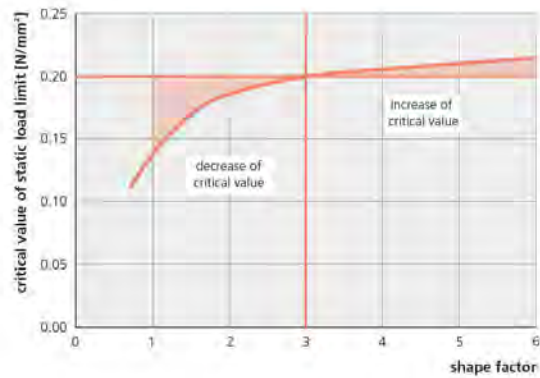
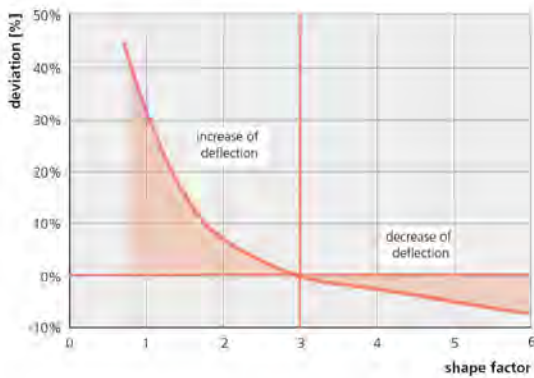


The shape factor has an influence on the deflection and the static load limit respectively.

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



sylomer® R

Material: mixed cellular polyurethane
Colour: blue

Area of application: compression load deflection
 (depending on shape factor)

Static load limit: up to 0.025 N/mm² approx. 7%

Operating load range: up to 0.035 N/mm² approx. 20%
 (static plus dynamic loads)

Load peaks: up to 1.0 N/mm² approx. 80%
 (short term, infrequent loads)

Standard dimensions on stock:

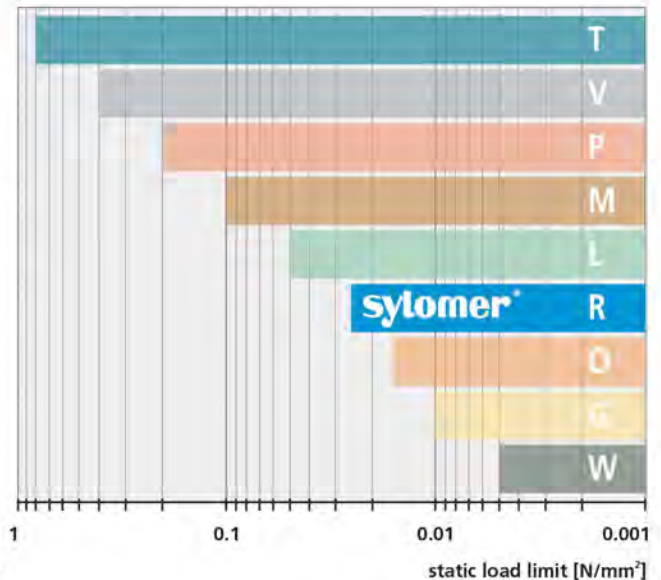
thickness: 12.5 mm with Sylomer R12
 25 mm with Sylomer R25

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	0.5	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	2.0	N/mm	DIN 53515*	minimum value
abrasion	770	mm ³	DIN 53516	load 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	0.07	N/mm ²	DIN ISO 1827*	at static load limit
dynamic shear modulus	0.17	N/mm ²	DIN ISO 1827*	at static load limit
mechanical loss factor	0.21		DIN 53513*	depending on frequency, load and amplitude (reference value)
rebound elasticity	45	%	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	0.06	W/[m·K]	DIN 52612/1	

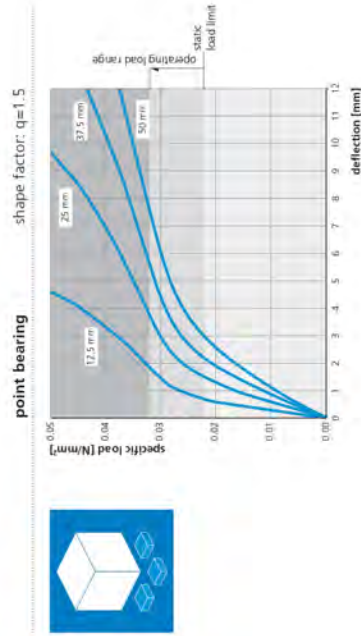
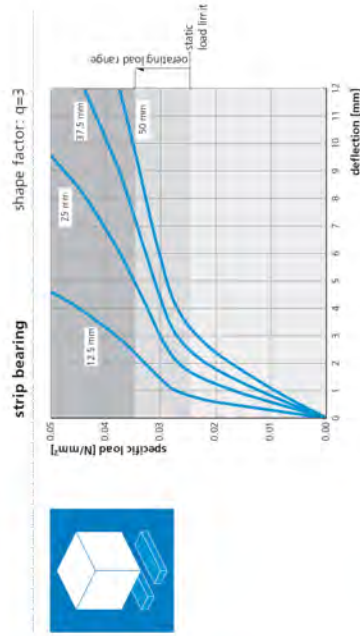
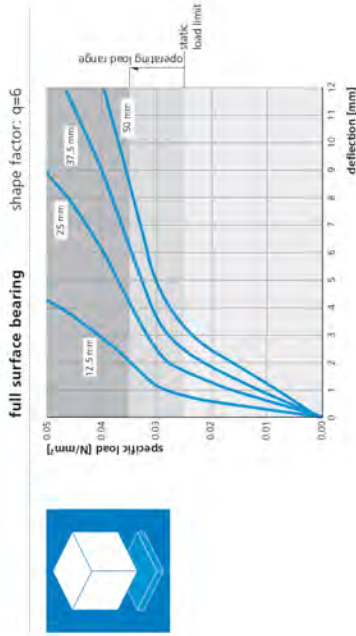
further characteristic values on request

* tests according to respective standards

All information according to our current state of knowledge.

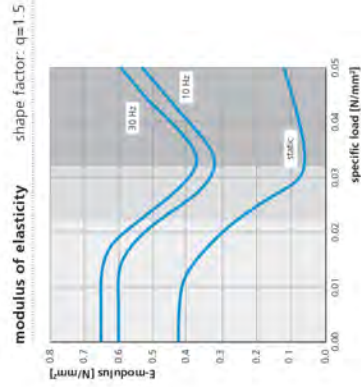
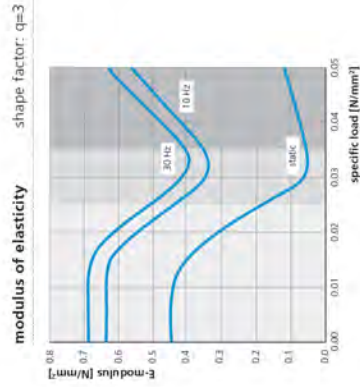
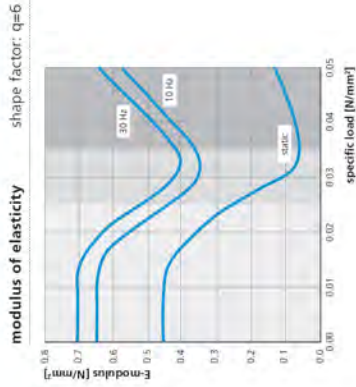
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load deflection curve



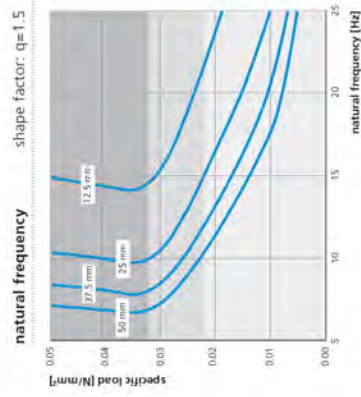
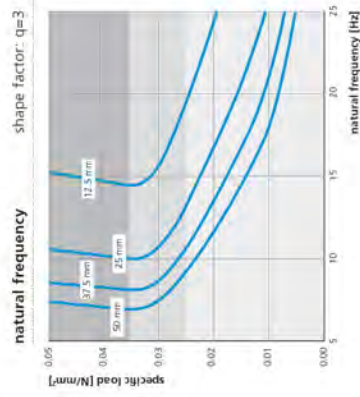
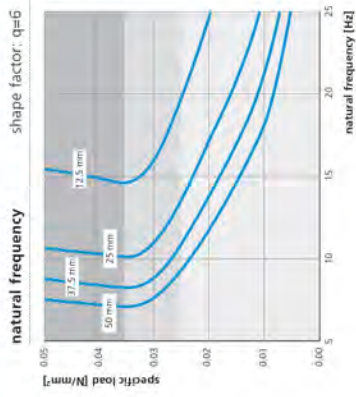
Quasi-static load deflection curve measured at a velocity of deformation of 1% of the thickness per second; testing between flat steel-plates; recording of the 3rd loading; testing at room temperature

modulus of elasticity



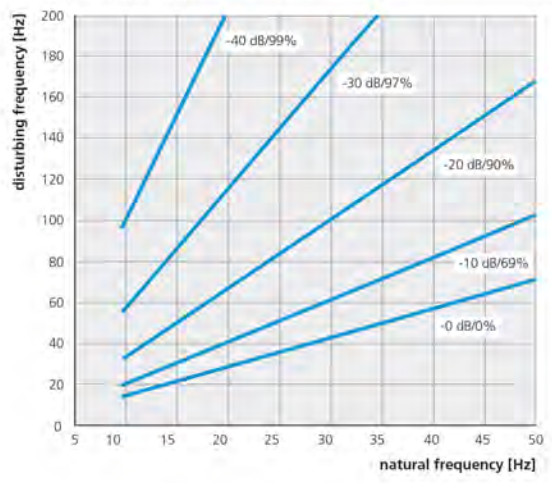
Static modulus of elasticity as a tangent modulus taken from the load deflection curve; dynamic modulus of elasticity due to sinusoidal excitation with a velocity level of 100 dBv re. $5 \cdot 10^{-6}$ m/s; test according to DIN 53513

natural frequency



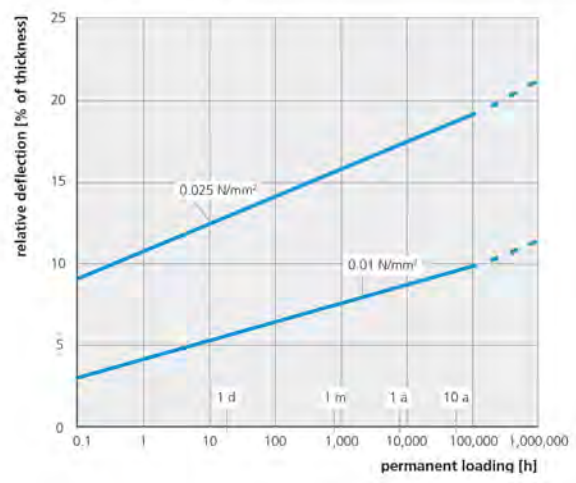
Natural frequency of a single-degree-of-freedom system (SDOF system) consisting of a fixed mass and an elastic bearing consisting of Sylomer R based on a stiff substrate; parameter: thickness of elastomeric bearing

vibration isolation - efficiency



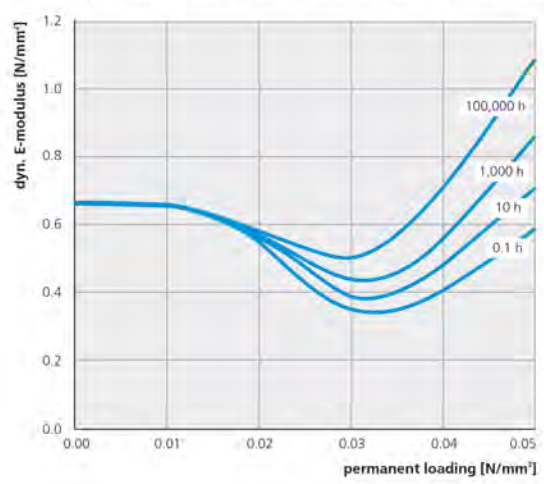
reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylomer R
parameter: factor of transmission in dB, isolation rate in %

creep behaviour



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

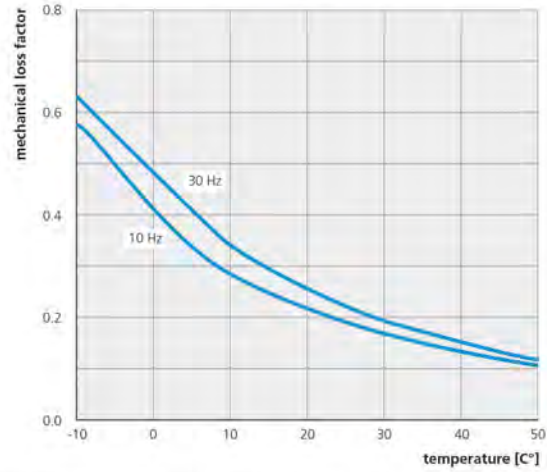
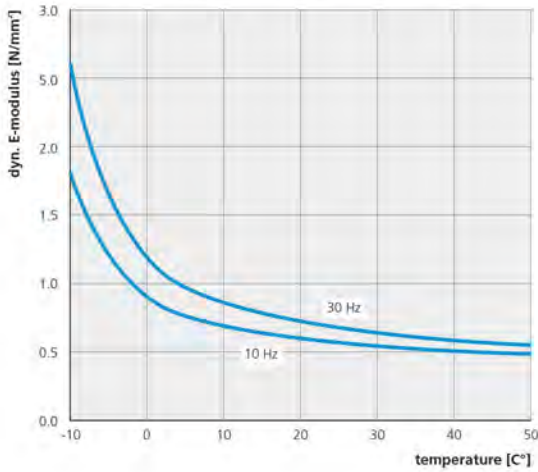
dynamic E-modulus at long term loading



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

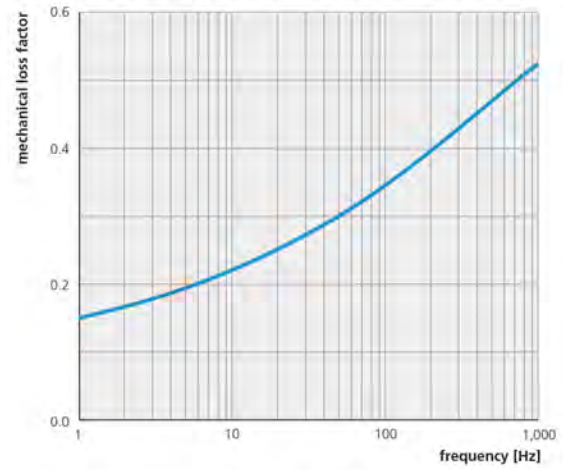
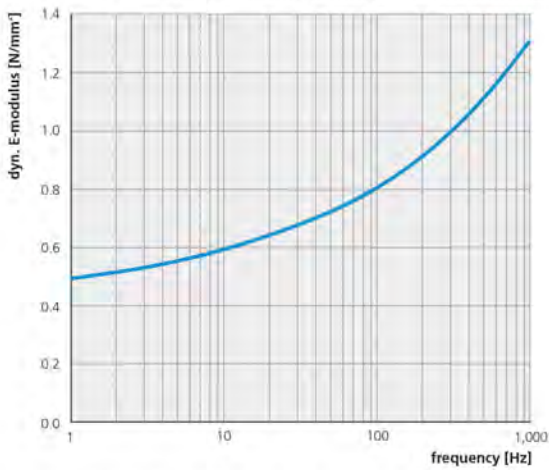
temperature dependency

DMA-test (Dynamic Mechanical Analysis); tests within linear area of the load deflection curve, at low specific loads



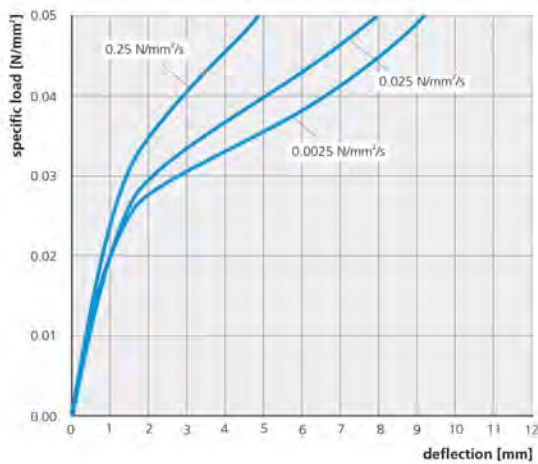
frequency dependency

DMA-tests; mastercurve with a reference-temperature of 21°C; tests within the linear area of the load deflection curve, at low specific loads



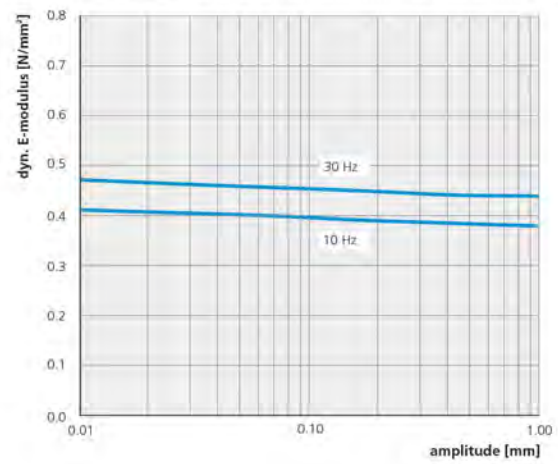
dependency on loading velocity

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



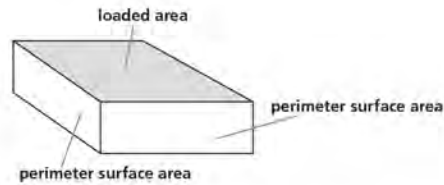
Shape factor

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)

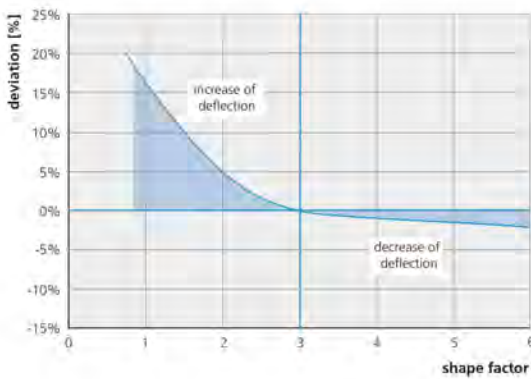


The shape factor has an influence on the deflection and the static load limit respectively.

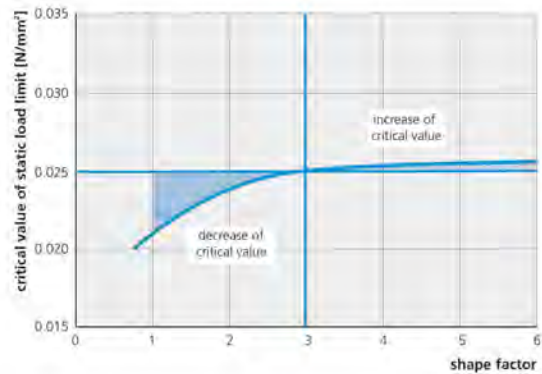
Elastic Sylomer-bearings are considered as:

- 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



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CONTACT DETAILS: for further information and contact details, please visit our website at www.pyroteknc.com

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