Sylodyn® NE
Material Data Sheet

sylodyn® by getzner

Material closed cellular polyurethane
Colour blue

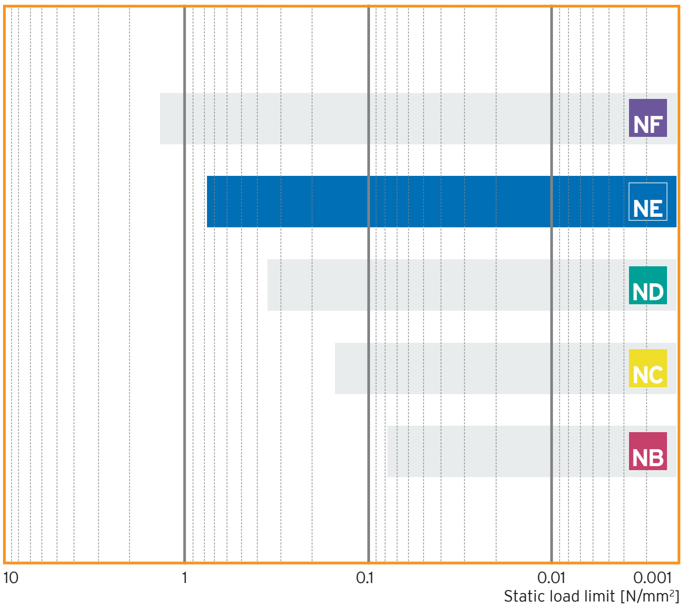
Standard dimensions on stock

Thickness: 12.5 mm with Sylodyn® NE 12
25 mm with Sylodyn® NE 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.

Area of application	Compression load (depending on form factor)	Deflection
Static load limit	up to 0.75 N/mm^2**	approx. 10 %**
Operating load range (static plus dynamic loads)	up to 1.20 N/mm^2**	approx. 20 %**
Load peaks (short term, infrequent loads)	up to 6.0 N/mm^2**	approx. 50 %**

Standard Sylodyn® range



Material properties		Test methods	Comment
Tensile stress at break	4 N/mm^2	DIN EN ISO 527-3/5/100*	minimum value
Elongation at break	500 %	DIN EN ISO 527-3/5/100*	minimum value
Tear strength	15 N/mm	DIN 53515*	minimum value
Abrasion	80 mm^3	DIN 53516	load 10 N, bottom surface
Coefficient of friction (steel)	0.7	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	0.61 N/mm^2	DIN ISO 1827*	at static load limit
Dynamic shear modulus	0.86 N/mm^2	DIN ISO 1827*	at static load limit
Mechanical loss factor	0.09	DIN 53513*	depending on frequency, load and amplitude (reference value)
Rebound elasticity	70 %	DIN 53512	tolerance +/- 10 %
Operating temperature	-30 to 70 °C		short term higher temperatures possible
Flammability	B2 class E	DIN 4102 EN ISO 11925-2	normal flammable EN 13501-1
Specific volume resistance	> 10^{11} Ω·cm	DIN IEC 93	dry
Thermal conductivity	0.1 W/[m·K]	DIN 52612/1	

Further characteristic values on request

* Tests according to respective standards
** At form 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. We reserve the right to amend the data.

Further information can be found in VDI Guidline 2062 – Page 2.

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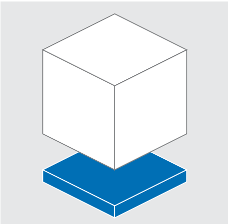
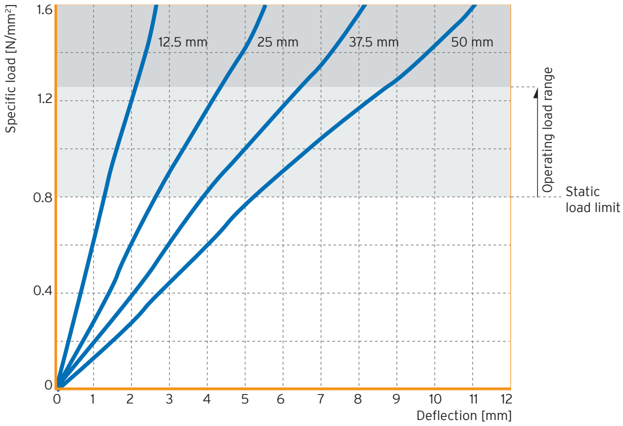
Load deflection curve

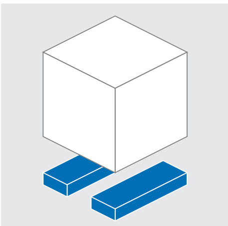
Full surface bearing



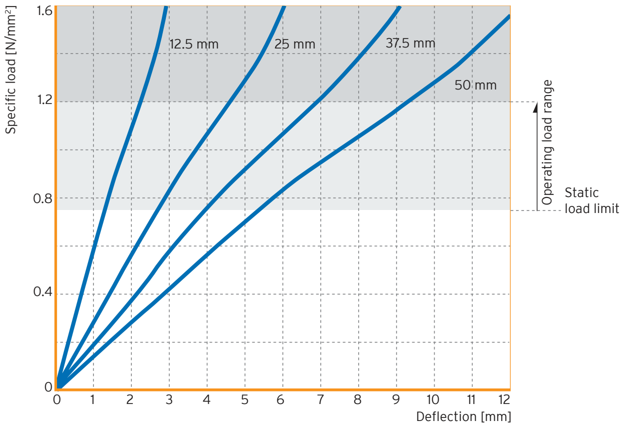
Form factor: q=6



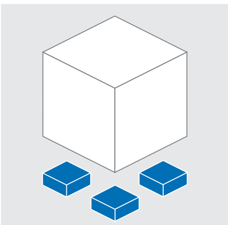
Strip bearing



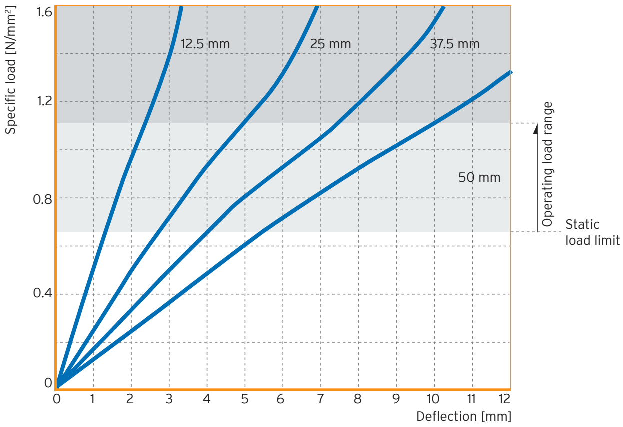
Form factor: q=3



Point bearing



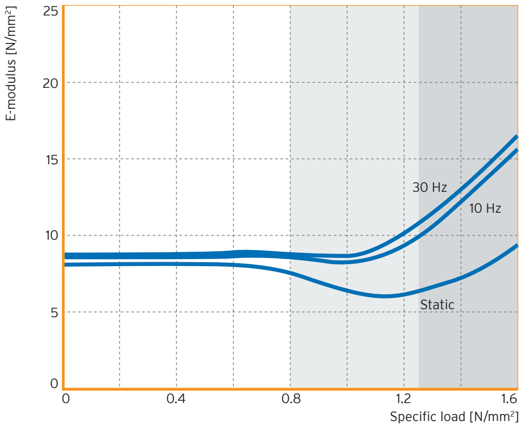
Form factor: q=1.5



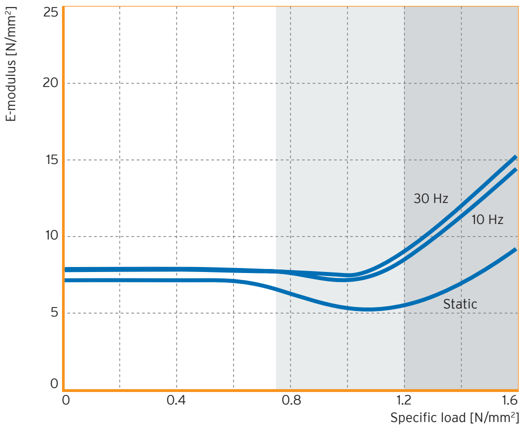
Quasi-static load deflection curve measured at a velocity of deformation of 1 % of the thickness per second; testing between flat steel-plates; recording of the 3rd loading; testing at room temperature

Modulus of elasticity

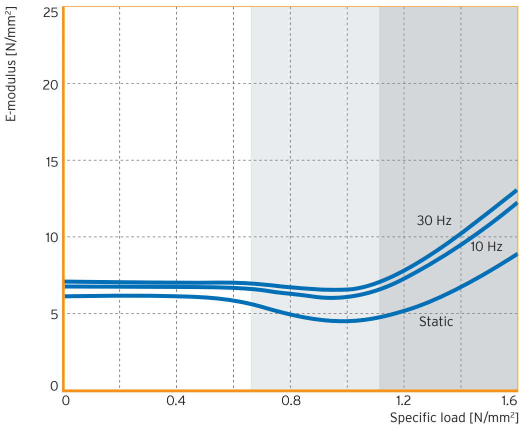
Form factor: q=6



Form factor: q=3



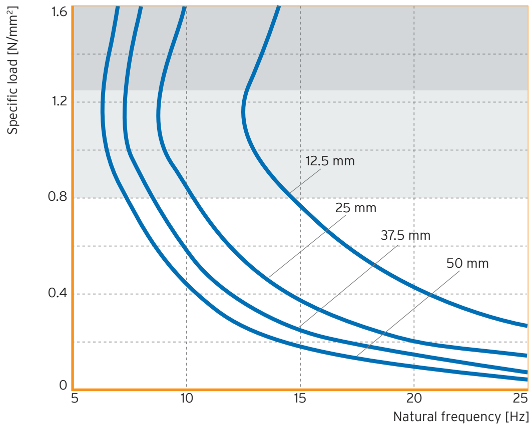
Form factor: q=1.5



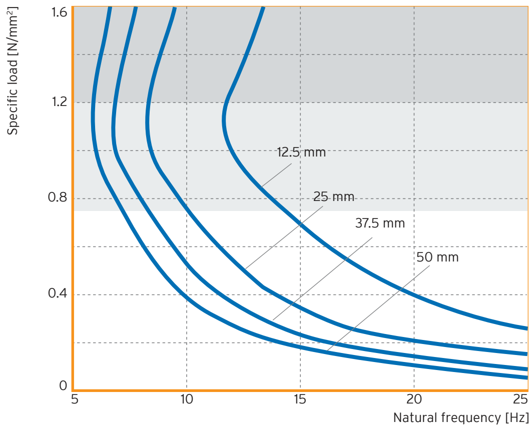
Static modulus of elasticity as a tangent modulus taken from the load deflection curve; dynamic modulus of elasticity due to sinusoidal excitation with a velocity level of 100 dBv re. $5 \cdot 10^{-8}$ m/s; test according to DIN 53513

Natural frequency

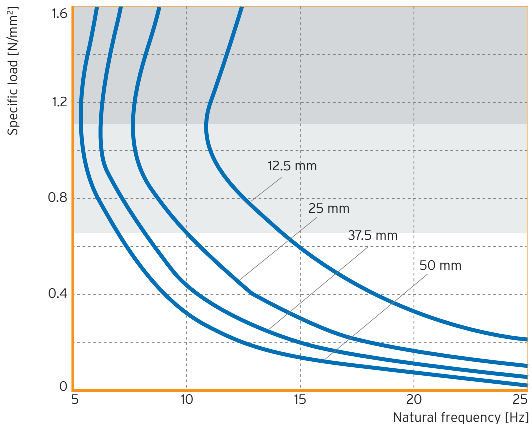
Form factor: q=6



Form factor: q=3

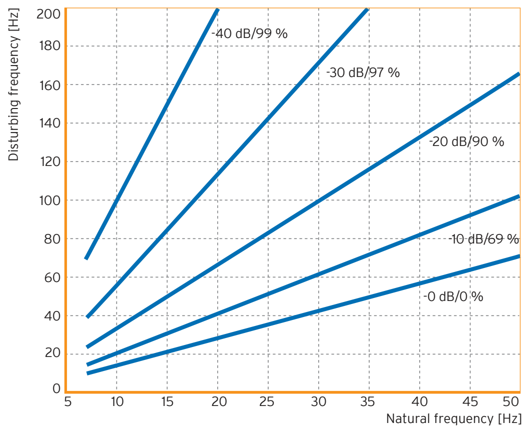


Form factor: q=1.5



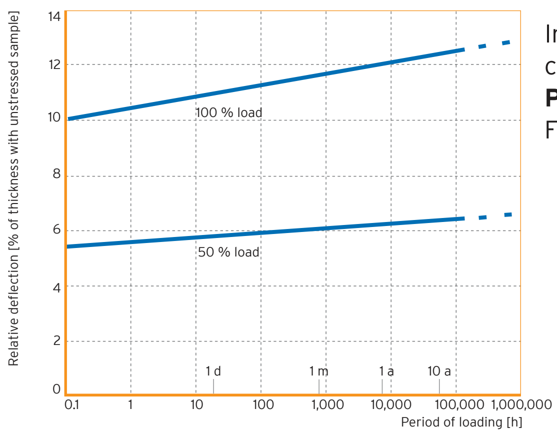
Natural frequency of a single-degree-of-freedom system (SDOF system) consisting of a fixed mass and an elastic bearing consisting of Sylodyn® NE based on a stiff subgrade; parameter: thickness of elastomeric bearing

Vibration isolation – efficiency



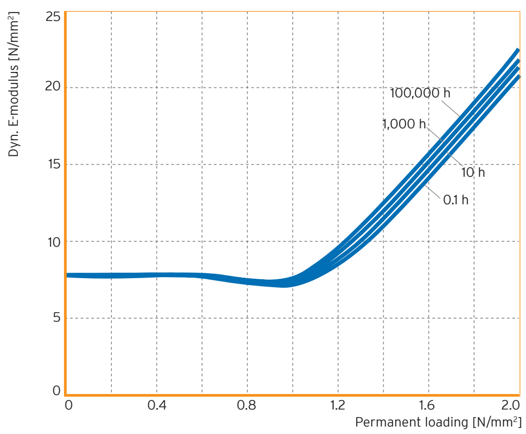
Reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylodyn® NE
Parameter: factor of transmission in dB, isolation rate in %

Creep behaviour



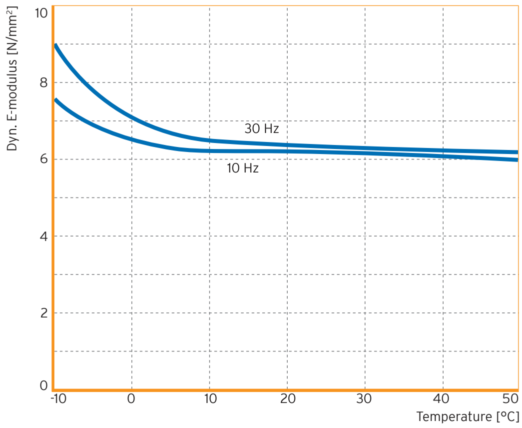
Increase in deformation under consistent loading
Parameter: permanent loading
Form factor: q=3

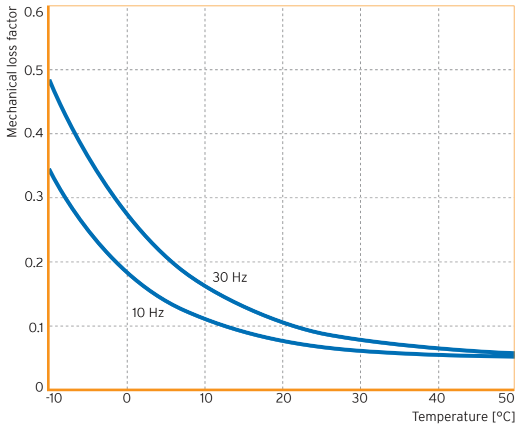
Dynamic E-modulus at long term loading



Change of dynamic modulus of elasticity under consistent loading (at 10 Hz)
Parameter: load duration
Form factor: q=3

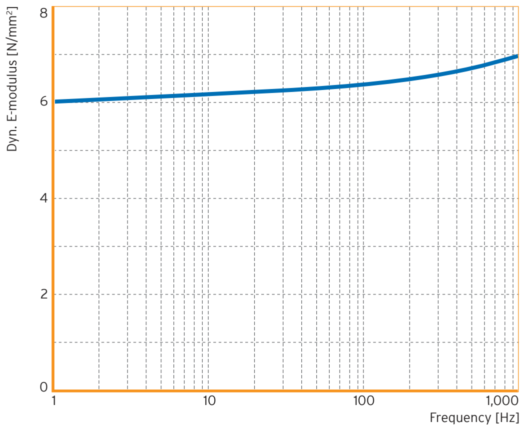
Temperature dependency

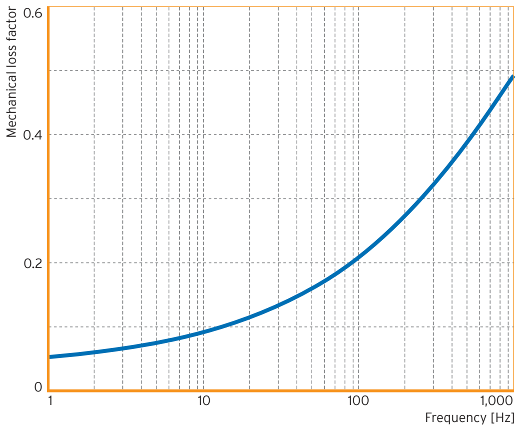




DMA-test (Dynamic Mechanical Analysis); tests within linear area of the load deflection curve, at low specific loads

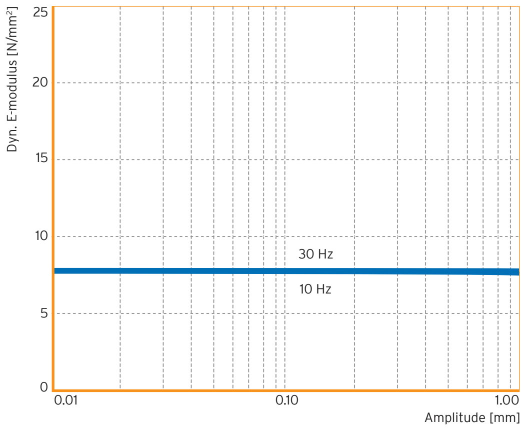
Frequency dependency



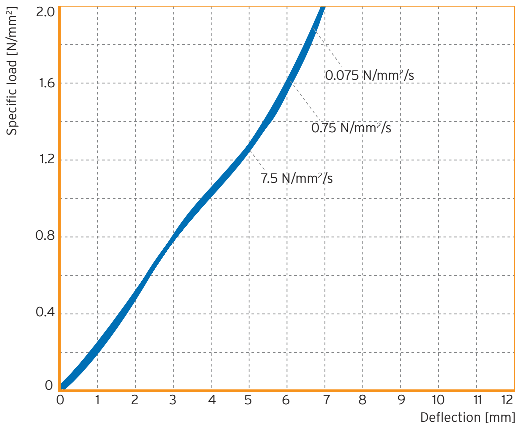


DMA-tests; mastercurve with a reference-temperature of 21 °C; tests within the linear area of the load deflection curve, at low specific loads

Dependency on amplitude



Dependency on loading velocity

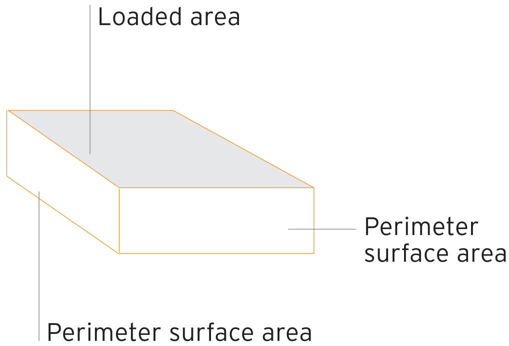


Dependency on amplitude: preload at static load limit; Form factor: q=3, thickness of material 25 mm

Dependency on loading velocity: Form factor: q=3, thickness of material 25 mm

Form factor

The form 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: $$\text{Form factor} = \frac{\text{Loaded area}}{\text{Perimeter surface area}}$$

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

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

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

Elastic Sylodyn®-bearings are considered as

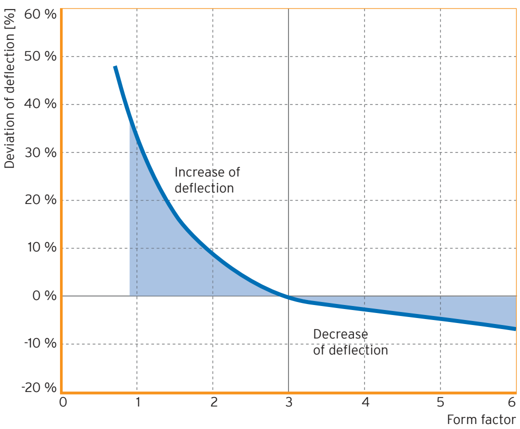
Full surface bearing: Form factor > 6

Strip bearing: Form factor between 2 and 6

Point bearing: Form factor < 2

Influence of the form factor on the deflection at the static load limit for a homogeneous material

Reference value: Form factor q=3



Influence of the form factor on the static load limit for a homogeneous material

Reference value: Form factor q=3