# Sylodamp® SP 10
# Material data sheet

by getzner sylodamp®

**Material** Mixed cellular PU elastomer (Polyurethane)
**Colour** Lemon yellow

## Standard delivery dimensions

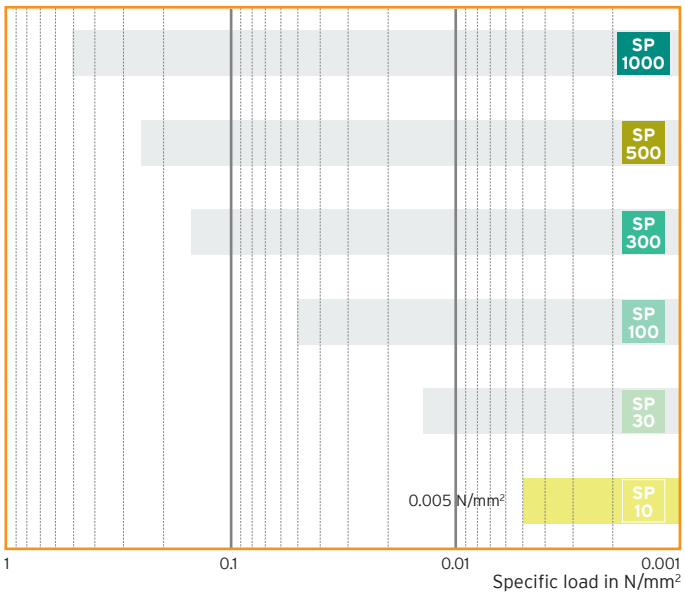
Thicknesses: 12.5 mm / 25 mm
Rolls: 1.5 m wide, 5.0 m long
Strips: up to 1.5 m wide, up to 5.0 m long

Other dimensions, punched and moulded parts available on request.

| Area of application | Pressure load | Deformation |
|---|---|---|
| | Form factor-dependent, the specified values apply for a form factor of q = 3 | |
| Static area of application (static loads) | up to 0.005 N/mm² | approx. 3 % |
| Impact area of application (dynamic loads) | | up to 60 % |
| Load peaks (occasional, brief loads) | up to 0.25 N/mm² | approx. 80 % |

## Sylodamp® range

Static area of application




| Properties | | Test procedure | Comment |
|---|---|---|---|
| Mechanical loss factor | 0.61 | DIN 53513[1] | Temperature-, frequency-, specific load- and amplitude-dependent |
| Impact resilience | 13 % | EN ISO 8307[1] | |
| Specific energy absorption | up to 1.8 mJ/mm² | Getzner Werkstoffe | At a thickness of 25 mm |
| Compression hardness[3] | 0.01 N/mm² | EN ISO 844[1] | At 10 % linear compression, 1st load cycle |
| Compression set[2] | < 5 % | EN ISO 1856 | 25 % deformation, 23 °C, 72 h, 30 min after removal of load |
| Static shear modulus[3] | 0.057 N/mm² | DIN ISO 1827[1] | At a pretension of 0.01 N/mm² |
| Dynamic shear modulus[3] | 0.24 N/mm² | DIN ISO 1827[1] | At a pretension of 0.01 N/mm², 10 Hz |
| Min. rupture stress under tension | 0.2 N/mm² | DIN EN ISO 527-3/5/100[1] | |
| Min. elongation at rupture under tension | 200 % | DIN EN ISO 527-3/5/100[1] | |
| Abrasion[2] | ≤ 4800 mm³ | 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 resistivity | > $10^{12}$ Ω·cm | DIN IEC 60093 | Dry |
| Thermal conductivity | 0.039 W/mK | DIN EN 12667 | |
| Temperature range[4] | -30 °C to 70 °C | | Optimum damping range from 5 °C to 40 °C |
| Flammability | Class E | EN ISO 11925-2 | Normal combustibility, 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 applicable to form factor q = 3
[4] Take account of heating caused by energy conversion

# Sylodamp® SP 10

## Deflection curve

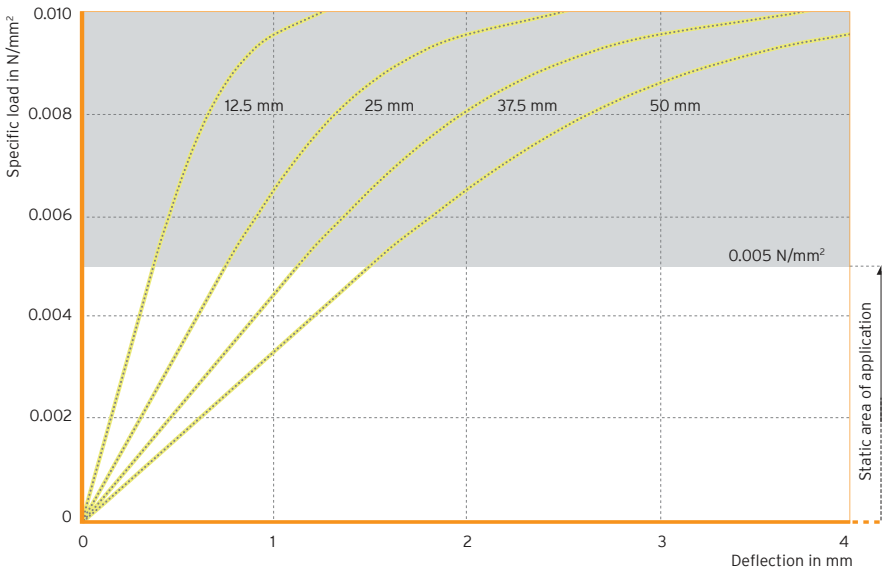



Fig. 1: Quasi-static load deflection curve for different bearing thicknesses

Quasi-static load deflection curve with a loading rate of 1% of the thickness of the unloaded sample per second.

Recording of the 1st load, with filtered starting range (in accordance with ISO 844), testing at room temperature.

Form factor q = 3

## Modulus of elasticity

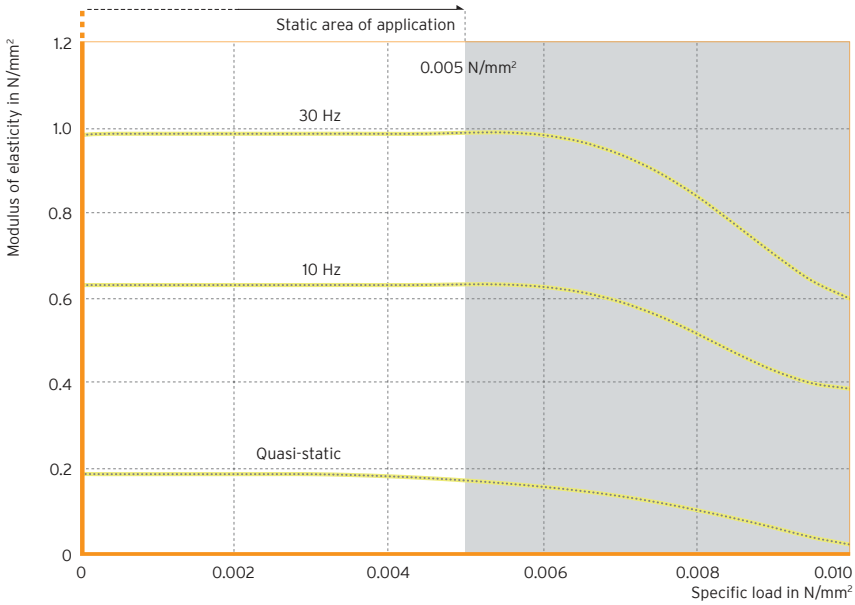



Fig. 2: Load-dependency of the static and dynamic modulus of elasticity

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

Form factor q = 3

## Natural frequencies

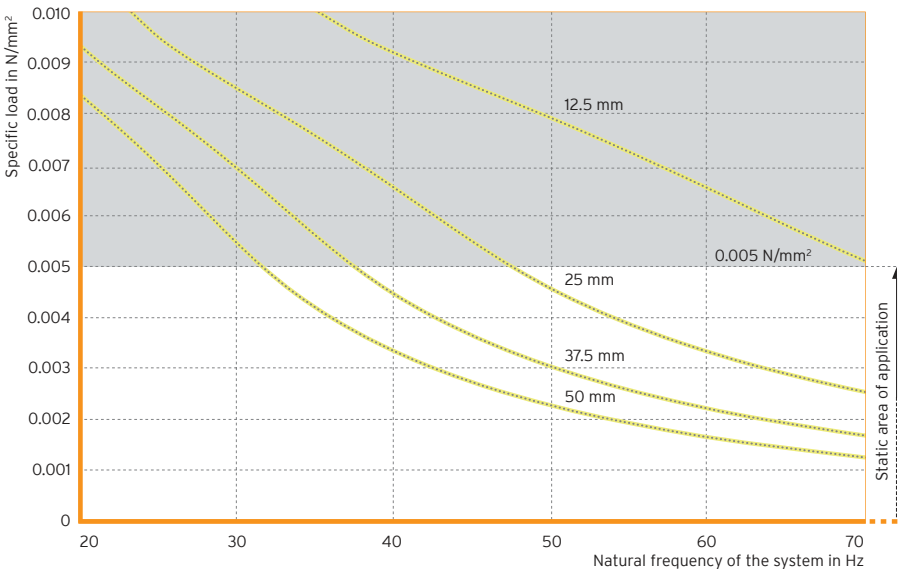



Fig. 3: Natural frequencies for different bearing thicknesses

Natural frequencies of a vibratory system with a single degree of freedom, consisting of a mass and an elastic bearing made of Sylodamp® SP 10 on a rigid surface.

Parameter: thickness of the Sylodamp®-bearing

Form factor q = 3

## Energy absorption

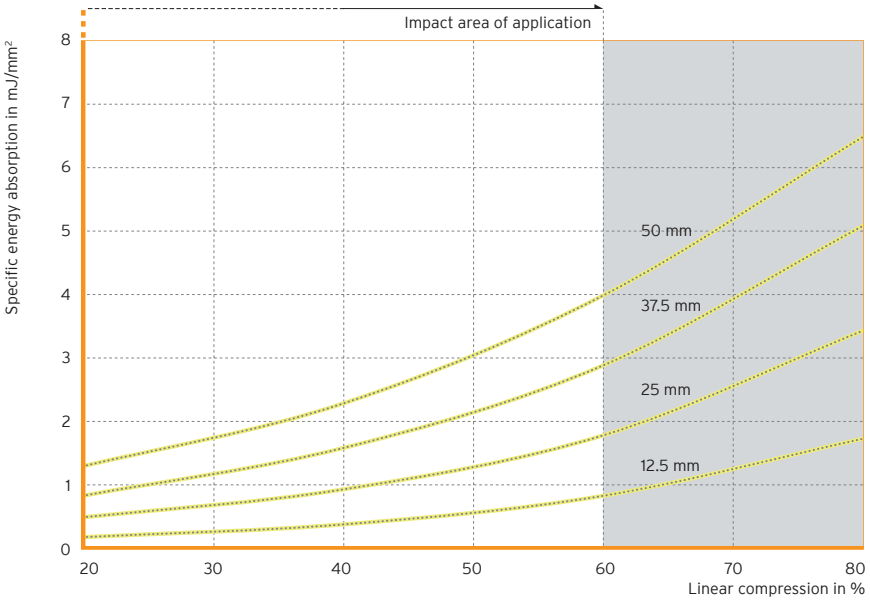



Fig. 4: Specific energy absorption for different bearing thicknesses

Specific energy absorption from an impact load at an impact speed of up to 5 m/s.

Drop impact test with a round, flat stamp, recording of the 1st load, testing at room temperature.

Parameter: thickness of the Sylodamp®-bearing

## Influence of the form factor

The graphs show the material properties at different form factors.

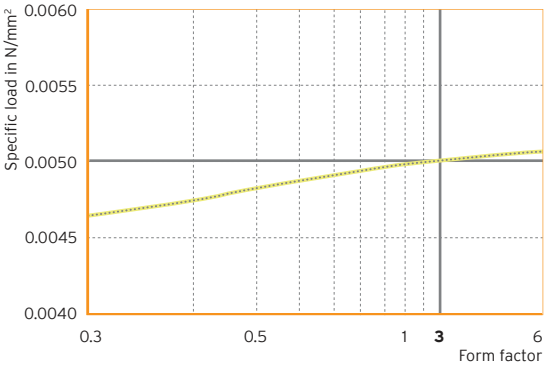



Fig. 5: Static area of application in relation to the form factor

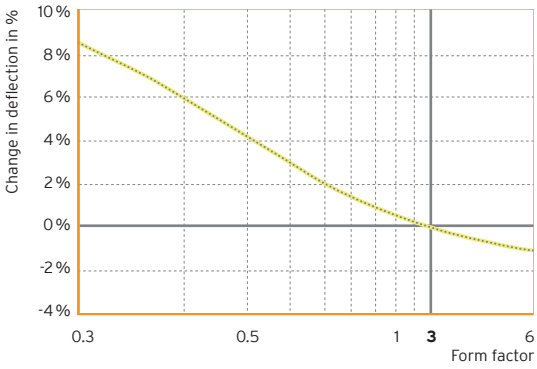



Fig. 6: Deflection[5] in relation to the form factor

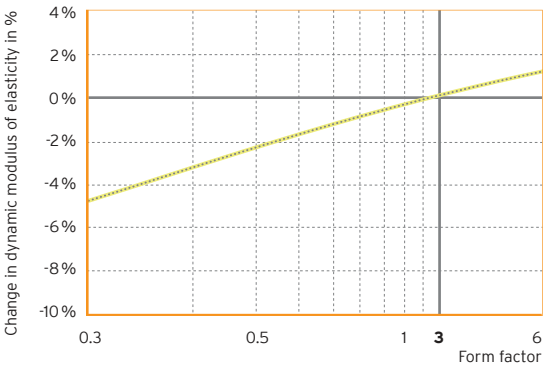



Fig. 7: Dynamic modulus of elasticity[5] at 10 Hz in relation to the form factor

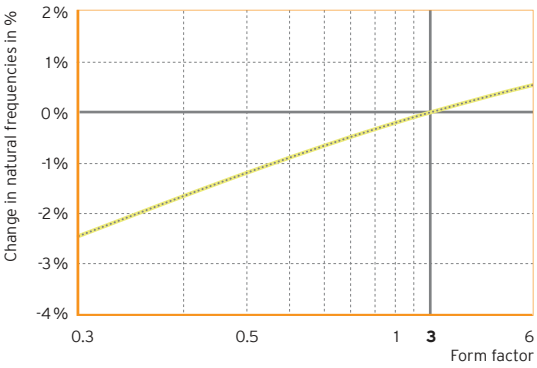



Fig. 8: Natural frequency[5] in relation to the form factor

[5] Reference values: specific load 0.005 N/mm², form 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).