

# Sylomer® SR 18

SR 18

## Data Sheet



**Material** mixed-cell PU elastomer (polyurethane)  
**Colour** orange

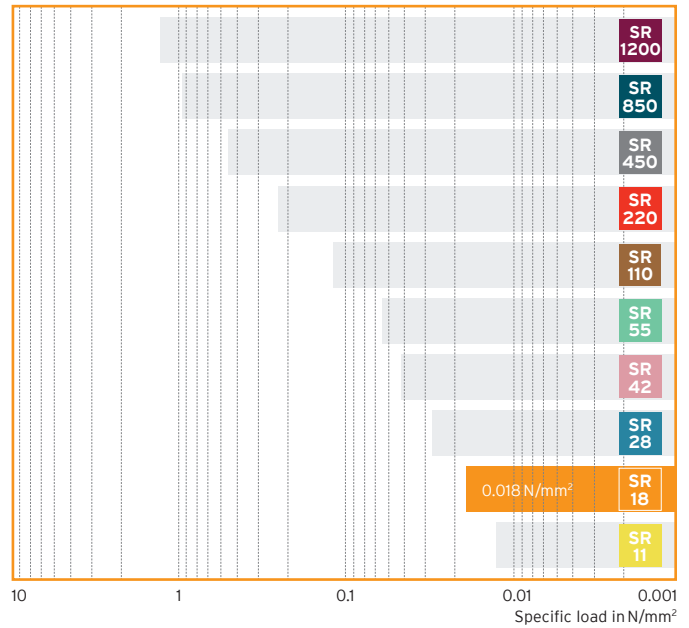
### Standard delivery dimension

Thickness: 12.5 mm / 25 mm  
 Roll: 1.5 m wide, 5.0 m long  
 Strip: up to 1.5 m wide, up to 5.0 m long

Other dimensions, punched and molded parts on request.

### Standard Sylomer® range

Static range of use



| Range of use                                     | Compressive load   | Deformation  |
|--|--|--------------|
|  | shape factor-dependent, values apply to shape factor $q = 3$ |              |
| Static range of use (static loads)               | up to 0.018 N/mm <sup>2</sup>                                | approx. 7 %  |
| Dynamic range of use (static plus dynamic loads) | up to 0.023 N/mm <sup>2</sup>                                | approx. 20 % |
| Load peaks (occasional, brief loads)             | up to 0.75 N/mm <sup>2</sup>                                 | approx. 80 % |

| Material properties                        |                         | Test methods                    | Comment  |
|--|-------------------------|---------------------------------|--|
| Mechanical loss factor                     | 0.23                    | DIN 53513 <sup>1</sup>          | temperature-, frequency-, specific load- and amplitude-dependent |
| Rebound resiliance                         | 40 %                    | EN ISO 8307 <sup>1</sup>        |  |
| Compression hardness <sup>3</sup>          | 0.02 N/mm <sup>2</sup>  | EN ISO 844 <sup>1</sup>         | at 10 % linear compression, 3 <sup>rd</sup> load cycle           |
| Compression set <sup>2</sup>               | < 5 %                   | EN ISO 1856 <sup>1</sup>        | 50 % deformation, 23 °C, 72 h, 30 min after removal of load      |
| Static modulus of elasticity <sup>3</sup>  | 0.08 N/mm <sup>2</sup>  |                                 | at specific load of 0.018 N/mm <sup>2</sup>                      |
| Dynamic modulus of elasticity <sup>3</sup> | 0.29 N/mm <sup>2</sup>  | DIN 53513 <sup>1</sup>          | at specific load of 0.018 N/mm <sup>2</sup> , 10 Hz              |
| Static shear modulus                       | 0.06 N/mm <sup>2</sup>  | DIN ISO 1827 <sup>1</sup>       | at a pretension of 0.018 N/mm <sup>2</sup>                       |
| Dynamic shear modulus                      | 0.12 N/mm <sup>2</sup>  | DIN ISO 1827 <sup>1</sup>       | at a pretension of 0.018 N/mm <sup>2</sup> , 10 Hz               |
| Min. tensile stress at rupture             | 0.35 N/mm <sup>2</sup>  | EN ISO 527-3/5/500 <sup>1</sup> |  |
| Min. tensile elongation at rupture         | 230 %                   | EN ISO 527-3/5/500 <sup>1</sup> |  |
| Abrasion <sup>2</sup>                      | ≤ 400 mm <sup>3</sup>   | DIN ISO 4649 <sup>1</sup>       | load 2.5 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 resistance                 | > 10 <sup>10</sup> Ω·cm | DIN EN 62631-3-1 <sup>1</sup>   | dry  |
| Thermal conductivity                       | 0.05 W/(mK)             | DIN EN 12667                    |  |
| Temperature range                          | -30 °C to 70 °C         |                                 | short term higher temperatures possible                          |
| Flammability                               | class E                 | EN ISO 11925-2                  | normal combustible, EN 13501-1                                   |

<sup>1</sup> Measurement / evaluation in accordance with the relevant standard

<sup>2</sup> The measurement is performed on a density-dependent basis with differing test parameters

<sup>3</sup> Values apply to shape 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. Material properties as well as their tolerances can vary depending on type of application or use and are available from Getzner on request.

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

## Load deflection curve

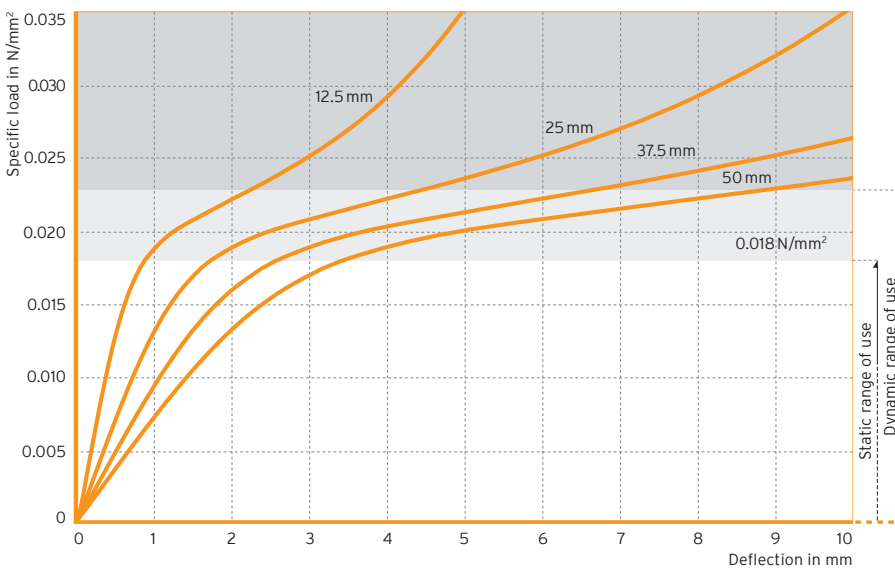


Fig. 1: Quasi-static load deflection curve for different bearing thicknesses

Quasi-static load deflection curve measured with a loading rate of 0.0018 N/mm<sup>2</sup>/s.

Testing between flat and plane-parallel steel plates, recording of 3<sup>rd</sup> load, with filtered starting range in accordance with ISO 844, testing at room temperature.

Shape factor  $q=3$

## Modulus of elasticity

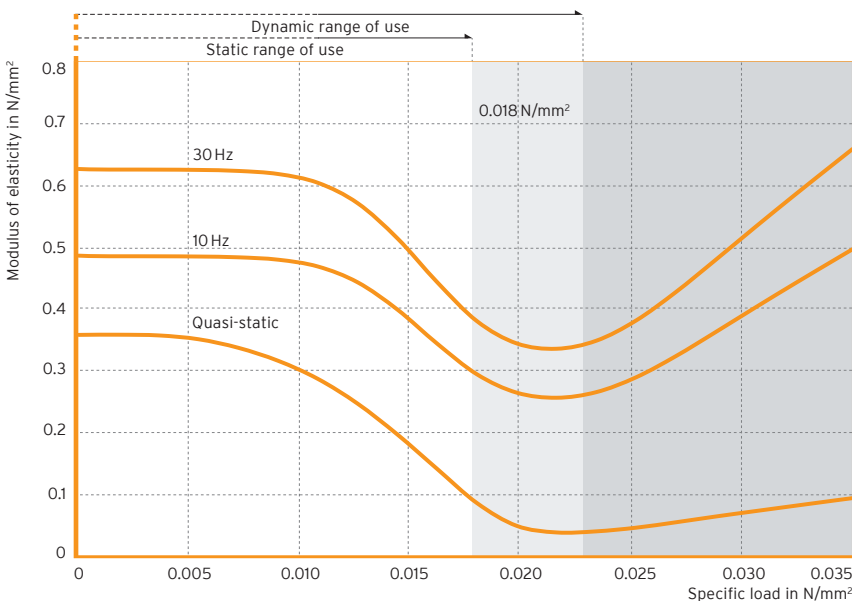


Fig. 2: Load dependency of the static and dynamic modulus of elasticity

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

Shape factor  $q=3$

### Natural frequencies

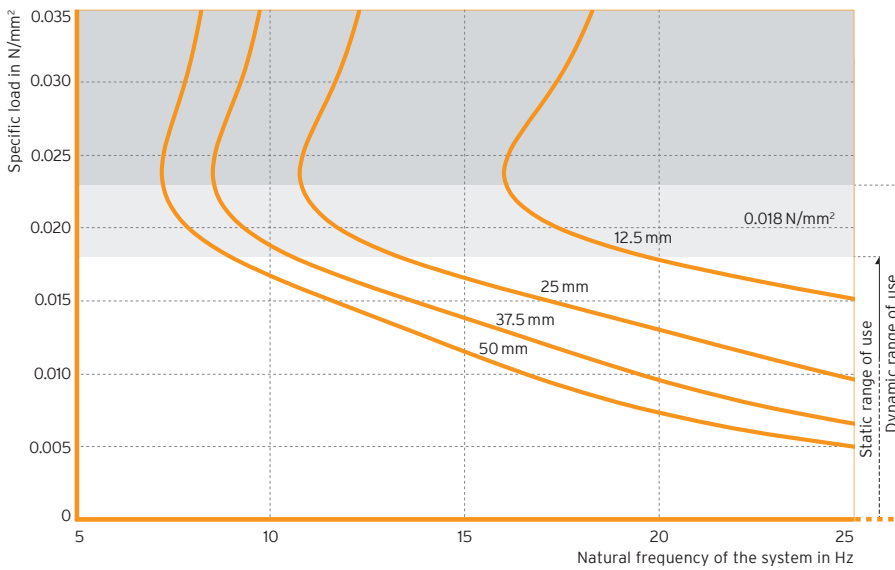


Fig. 3: Natural frequencies for different bearing thicknesses

Natural frequencies of a vibratory system with a single degree of freedom, consisting of a mass and an elastic bearing made of Sylomer® SR 18 on a rigid surface.

Parameter: thickness of the Sylomer® bearing

Shape factor  $q = 3$

### Vibration isolation efficiency

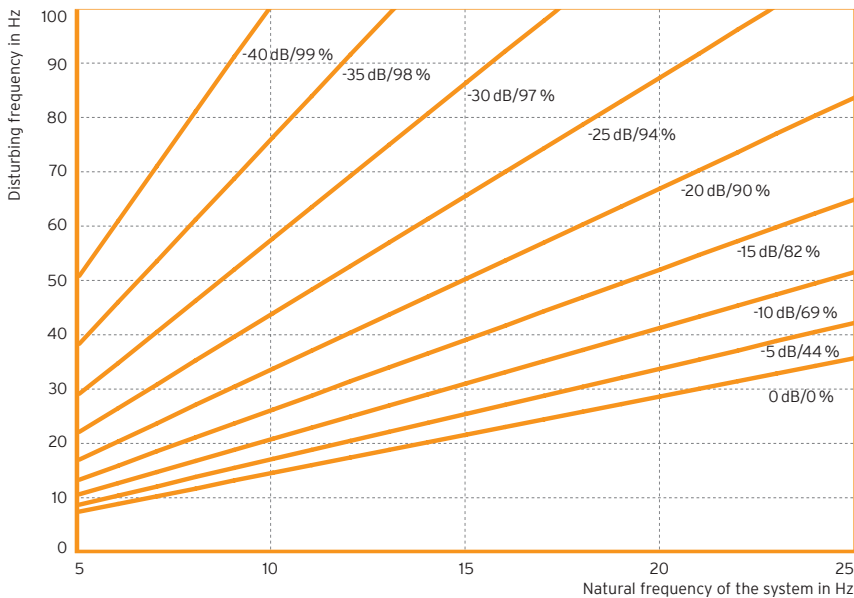


Fig. 4: Factor of transmission and isolation rate

Reduction of the transmitted mechanical vibrations by implementation of an elastic bearing consisting of Sylomer® SR 18 based on a stiff subgrade.

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

### Influence of the shape factor

The graphs show the material properties at different shape factors.

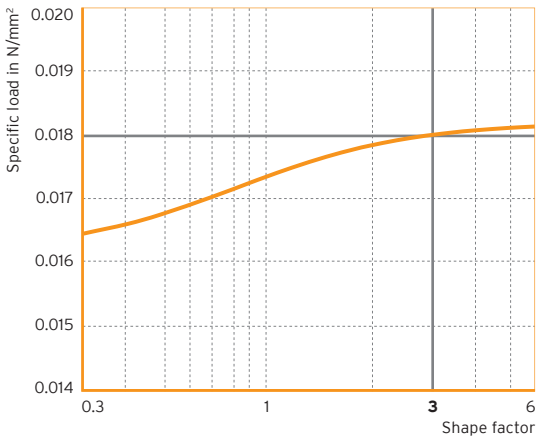


Fig. 5: Static range of use in relation to the shape factor

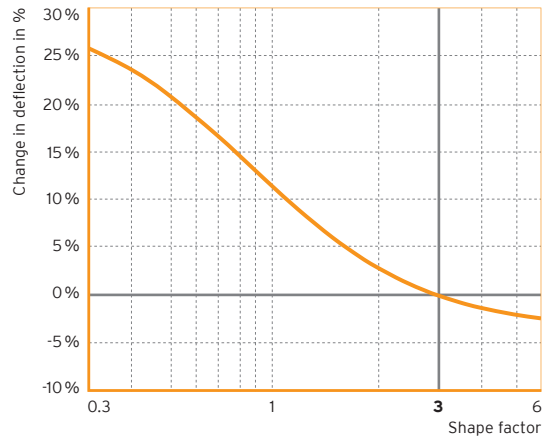


Fig. 6: Deflection<sup>4</sup> in the relation to the shape factor

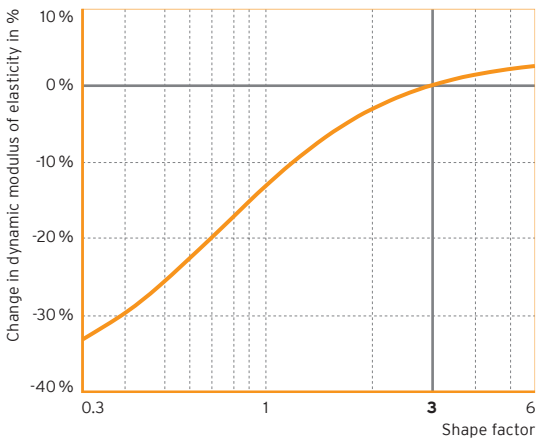


Fig. 7: Dynamic modulus of elasticity<sup>4</sup> at 10 Hz in relation to the shape factor

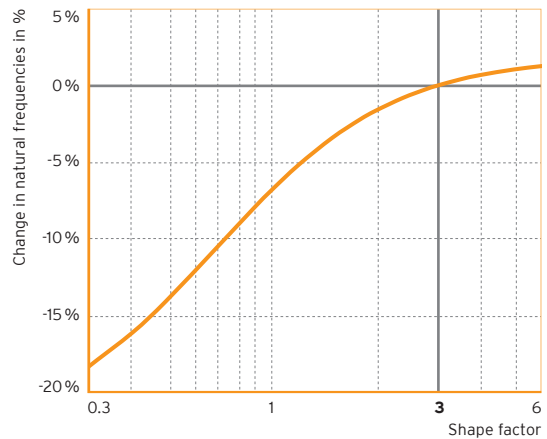


Fig. 8: Natural frequency<sup>4</sup> in relation to the shape factor

<sup>4</sup> Reference values: specific load 0.018N/mm<sup>2</sup>, shape factor q=3

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