

What is Sylomer HD® 100 EN

Sylomer HD® 100 green

Sylomer HD® 100 – mixed-cell polyether urethane elastomer (PUR) for vibration and structure-borne noise isolation, colour green, raw density 500 kg/m³

Sylomer® is a mixed-cell polyurethane elastomer from Getzner Werkstoffe GmbH for elastic mounting and vibration isolation. Sylomer HD® 100 is a green grade with a raw density of 500 kg/m³ and a static continuous load capacity of up to 0.075 N/mm². As is usual for Sylomer, the colour indicates the load range. As an elastic spring/damping material, Sylomer® is used above all for structure-borne noise and vibration isolation in railway, construction and mechanical engineering.

Classification and basic character

Sylomer® belongs to the mixed-cell polyurethane elastomers (polyether urethane). The mixed-cell structure combines a spring with a damping effect and enables a defined, soft elastic mounting. The permissible load range is set via the raw density and material type – colour-coded for Sylomer: the HD 100 grade (green) at 500 kg/m³ is designed for static continuous loads up to 0.075 N/mm². Sylomer® is characterised by high durability, low amplitude dependence and a low compression set.

Vibration isolation and load range

The outstanding feature of Sylomer® is vibration and structure-borne noise isolation across a wide, finely graded load range. The elastic mounting deliberately lowers the natural frequency of a system so that vibrations and structure-borne noise are effectively decoupled. The colour coding (here green) assigns the material to a defined load range – so the appropriate grade can be selected for the respective surface pressure. Sylomer® is elastic, permanently load-bearing and fatigue-resistant.

How Sylomer® is processed

Sylomer® is supplied as sheet or roll material and can be easily cut and fabricated – e.g. as strip, full-surface or point mounting. From the semi-finished stock we produce bearing and isolation elements by cutting, punching and water-jet cutting; adequate dust extraction should be ensured during machining. The design – surface pressure, thickness and natural frequency – is carried out application-specifically based on the required isolation effect.

Mechanical and thermal properties

Sylomer HD® 100 (green) has a raw density of 500 kg/m³ and is designed for static continuous loads from 0 to 0.075 N/mm². The minimum tensile strength is 1 N/mm², the minimum elongation at break is 200 % and the compression set is a low 2 %. The service temperature range extends from -30 °C to +70 °C, short-term to +110 °C. As a polyether urethane, Sylomer® has good hydrolysis resistance; permanent contact with oils, solvents, acids and alkalis should be avoided.

When Sylomer® is the right choice

Sylomer® is worthwhile whenever vibrations and structure-borne noise must be elastically decoupled – for example:

- Ballast mats and under-sleeper pads in track construction
- Mass-spring systems and floating floors in building construction
- Elastic machine and unit mounting (also HVAC)
- Structure-borne noise isolation of buildings and components
- Point, strip or full-surface mountings within the defined load range

When Sylomer® is NOT the right choice

Equally important are the limits of the material:

- Surface pressures outside the grade's load range (then select another Sylomer colour/grade)
- Permanent contact with oils, solvents, acids or alkalis
- Continuous service above +70 °C (short-term +110 °C) or below -30 °C
- Load-bearing structures without an elastic function
- Applications with increased fire-safety requirements (then check flame-retardant Sylomer FR grades)

What does Sylomer® cost?

Sylomer® is a specialty engineering PUR material for vibration technology; the price depends on grade, thickness, cutting/fabrication and quantity and cannot be meaningfully stated as a pure per-kg price. Bearing and isolation elements are usually costed as application-specific cut parts. We are happy to quote binding prices on request based on your drawing, the surface pressure and the required isolation effect.

Processing at Liedtke

From Sylomer® semi-finished stock we produce bearing and isolation elements by cutting, punching and water-jet cutting; during machining we ensure adequate dust extraction. We support you in selecting the appropriate grade/colour and thickness for your surface pressure and the desired natural frequency. This is how we reliably produce effective vibration isolation – from single pieces to series production.

Advantages and disadvantages at a glance

An honest assessment – and how the disadvantages can be mitigated in practice:

Advantages

- Effective vibration and structure-borne noise isolation
- Finely graded load range via grade/colour
- High durability and fatigue strength
- Low amplitude dependence, low compression set
- Easily cut and fabricated to size

Disadvantages

- Usable only within the grade's defined load range (green: up to 0.075 N/mm²)
- Not resistant to oils, solvents, acids and alkalis
- Service temperature limited to -30 ... +70 °C (short-term +110 °C)
- Not a load-bearing structural component – elastic function, design required

Practical tip: Sylomer® plays to its strengths wherever vibrations and structure-borne noise are elastically decoupled – from track construction and mass-spring systems in building construction to machine mounting. The key is the correct grade/colour for the given surface pressure; we handle the appropriate selection and the natural-frequency design together with you.

Typical Properties

- Vibration and structure-borne noise isolation
- Mixed-cell elastomer structure
- Load range graded via colour/grade (green)
- High durability and fatigue strength
- Low amplitude dependence
- Low compression set
- Good hydrolysis resistance (polyether urethane)

Product Examples

- Ballast mats and under-sleeper pads
- Mass-spring systems and floating floors
- Elastic machine and unit mountings
- Structure-borne noise isolation bearings in buildings
- Point, strip and full-surface mountings
- Vibration-isolating cut parts

Typical Industries

- Railway technology / track construction
- Building technology
- Mechanical and plant engineering
- Building services / HVAC
- Rail vehicle construction
- Vibration and structure-borne noise technology

- Easily cut to size

	Test Method	Unit	Value
General Properties			
Material type			Mixed-cell polyether urethane
Colour			green
Raw density	DIN 53 420	kg / m ³	500
Static continuous load		N / mm ²	0 to 0.075
Mechanical Properties			
Min. tensile strength	DIN 53 455-6-4	N / mm ²	1
Min. elongation at break	DIN 53 455-6-4	%	200
Compression set	DIN 53 572	%	2
Thermal Properties			
Service temperature		°C	-30 ... +70
Service temperature, short-term		°C	+110

Sylomer® is a registered trademark of Getzner Werkstoffe GmbH. The values stated correspond to the raw material data sheet for Sylomer HD® 100 (green), revision 1 December 2008, and may be used as calculation or guide values; they are subject to the usual manufacturing tolerances. The spring and damping behaviour (static/dynamic stiffness, natural frequency) depends on surface pressure and component geometry and must be designed application-specifically. The material is not suitable for permanent contact with oils, solvents, acids and alkalis. The values serve as an aid to material selection and are not a legally binding warranty of specific properties.