

Machines generate vibrations which are transmitted to the surroundings. They can influence the manufacturing process of other machines and thereby the quality of the products.

Vibrations disrupt the location and the environment and cause damage to buildings. SLAB Polyurethane elastomer is a material that effectively reduces vibration and structure-borne noise.

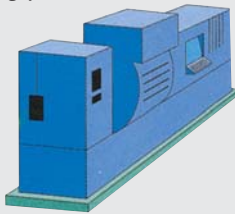
Depending on the requirements, SLABs are available in different densities, thicknesses and dimensions.

SLAB damping plates are used to insulate vibrations for:

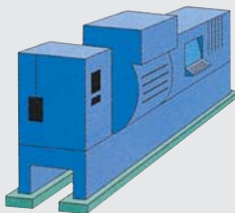
- Machine tools
- Textile machinery
- Air conditioning and ventilating machines
- Crane rails
- Hydraulic crushers
- Presses / stamping machines etc.

Potential for direct bearing support on SLAB damping plates:

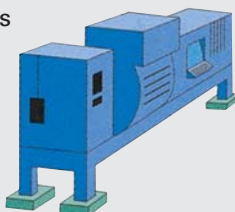
Full surface mount



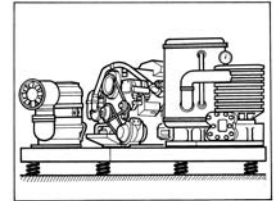
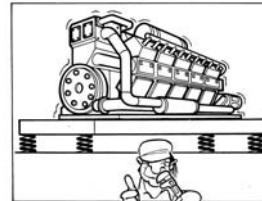
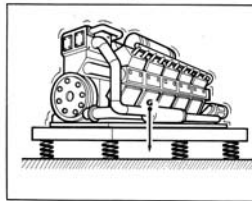
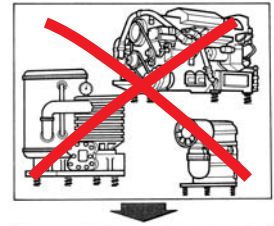
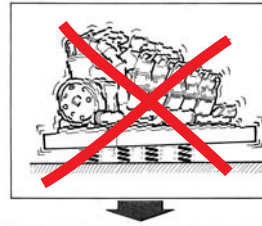
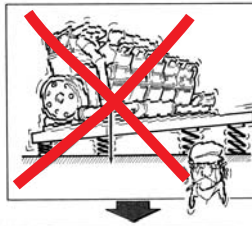
Strip bearings



Discrete bearings



Even load distribution of vibration damping elements are illustrated using the example of a combustion engine

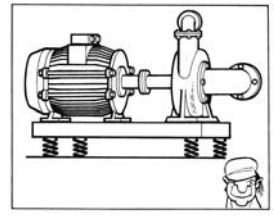
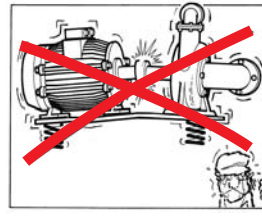
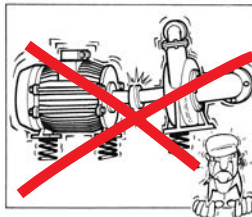


Pay attention to center of gravity!

Maximize the bearing's torsional stiffness!

Merging of assembly groups (combined elastic bearing)

Mounting of individual equipment components illustrated using the example of a pump

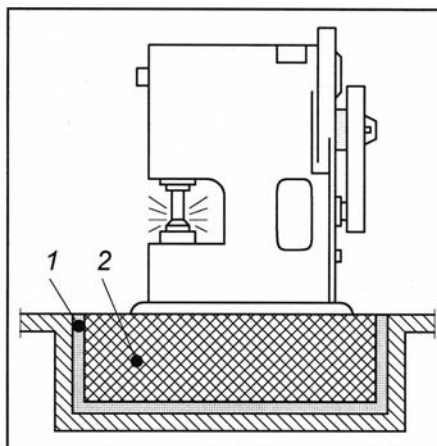


Pay attention to separate flexible mounts of connected equipment components!

Pay attention to flexible base plates or machine frames!

Use large flex resistant base plates or machine frames!

Full surface mounted eccentric press



- sufficient base size
- modeling
- assure vibration insulation
- static view: center of gravity, deflection
- maximize torsional stiffness
- dynamic view: forces, torques, amplitude

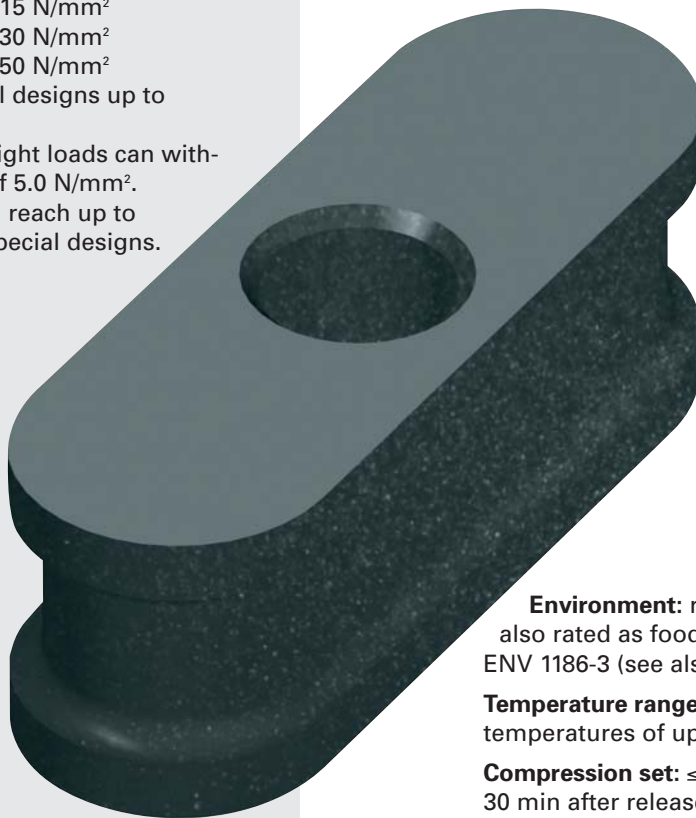
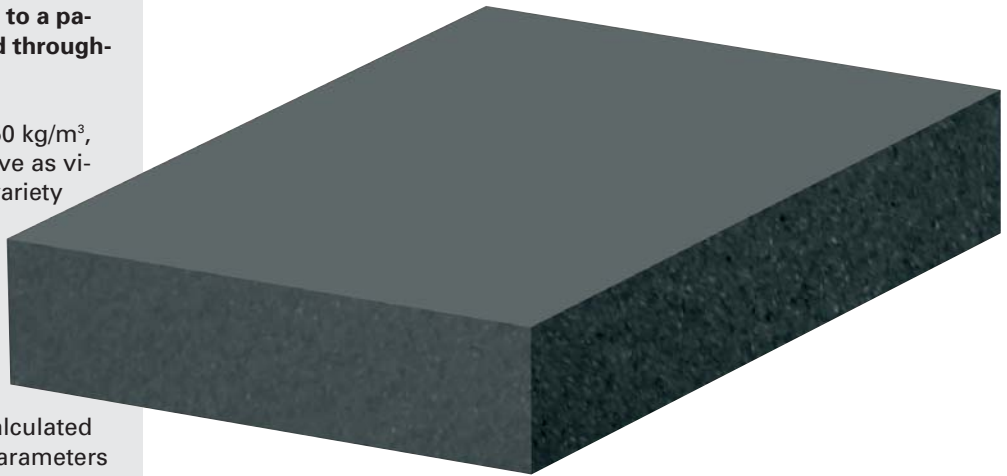
1 Vibration damping
2 Concrete base

Source: SUVA,
Elastic Bearing of Machines

SLAB damping plates of the SL-450, SL-600 and SL-720 are universally applicable elastic PUR materials that are manufactured according to a patented formula that are used throughout industry.

The standard densities of 450 kg/m³, 600 kg/m³ and 720 kg/m³ serve as vibration insulation in a wide variety of applications. For specific applications, special designs with specific densities can be manufactured. The static and dynamic product characteristics are precisely defined. The effectiveness of elastic suspension can be calculated in advance. The necessary parameters are shown on the checklist on page 19.

The static load capacity of standard materials are in the range of:
 SL-450 0 to 0.15 N/mm²
 SL-600 0 to 0.30 N/mm²
 SL-720 0 to 0.50 N/mm²
 and for special designs up to 0.8 N/mm².
 Unusual and light loads can withstand forces of 5.0 N/mm².
 This value can reach up to 6 N/mm² for special designs.



Environment: resistant to ozone and UV radiation, also rated as food-graded harmless, according to ENV 1186-3 (see also chemical resistance page 18)

Temperature range: -30°C to +70°C, short-term higher temperatures of up to 110°C possible.

Compression set: ≤5%, at 50% of compression, 23°C, 70 h, 30 min after release, according to EN ISO 1856

Fire rating: B2, normally flammable, according to DIN 4102

Standard density: 450 kg/m³, 600 kg/m³ and 720 kg/m³, according to DIN 53420, special designs on request

Permanent static load: 0 to 0.15 N/mm², 0 to 0.30 N/mm² and 0 to 0.50 N/mm²

On request: available with compact polyurethane wear protection, Shore hardness: 82 Shore Sh A

Possibilities for cutting: water jet cutting, stamping, splitting, sawing, drilling, etc.

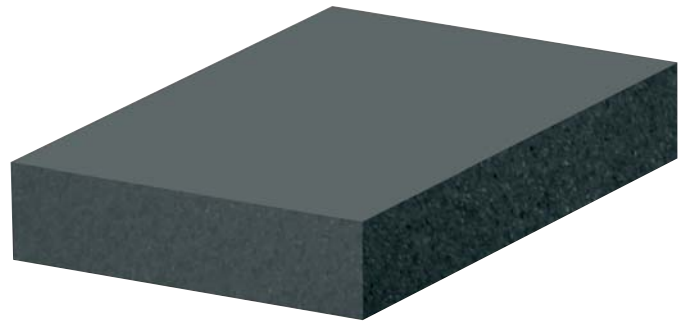
Mounting possibilities: bonding (see adhesive recommendation page 17), clamping, screwing, etc..

These data are based on the current standard of knowledge. They can be taken as calculation or reference values and are subject to the usual manufacturing tolerances; subject to change.

Ordering Example

ACE-SLAB _____
 Material Type _____
 Material Thickness _____
 Dimension/Shape _____
 (is assigned by ACE)

SL-450-12-Fxxxx



Technical Data

Material: mixed cellular polyether urethane
Standard Colour: black
Characteristics: elastic PUR material with spring/damping characteristics
Delivery Form: thickness 12 mm and 25 mm
 rolls: 1.5 m wide, 5.0 m long, strips: up to the maximum width and length

Other dimensions (also thickness), colours, shapes and cut-out parts on request.

Recommendation for Elastic Bearing:

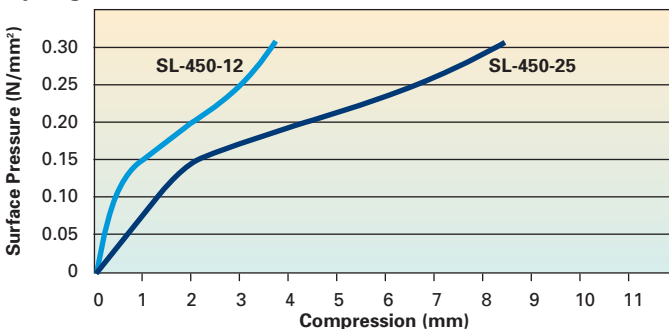
Permanent Static Load	0 to 0.15 N/mm ²
Application	0 to 0.25 N/mm ²
Peak Loads	up to 2.0 N/mm ²

Physical Characteristics

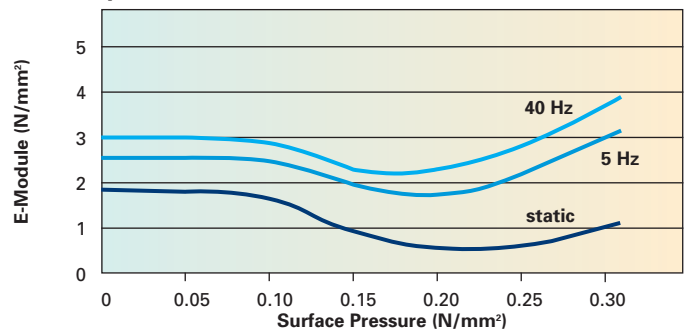
	Value	Unit	Test Method	Notice
Density	450	kg/m ³	EN ISO 845	
Tensile strength	1.5	N/mm ²	following EN ISO 527-3/5/100	minimum value
Elongation at break	300	%	following EN ISO 527-3/5/100	minimum value
Compression set	3.8	%	EN ISO 1856	50%, 23 °C, 70 h, 30 min after release
Mechanical loss factor	0.17		following DIN 53513	load and frequency dependent
Static modulus of rigidity	0.48	N/mm ²	following DIN 53513	load dependent
Dynamic modulus of rigidity	0.76	N/mm ²	following DIN 53513	load and frequency dependent

Characteristics

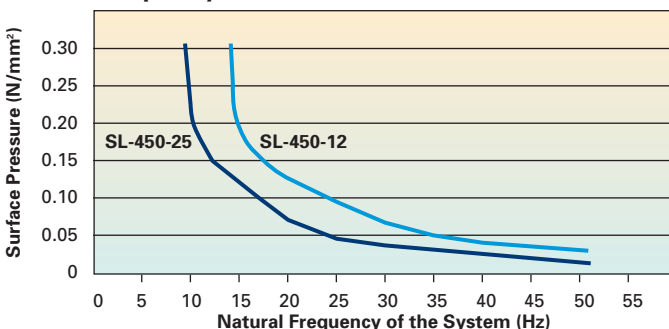
Spring Characteristics SL-450 ¹⁾



Elasticity Module SL-450 ²⁾



Natural Frequency SL-450 ³⁾

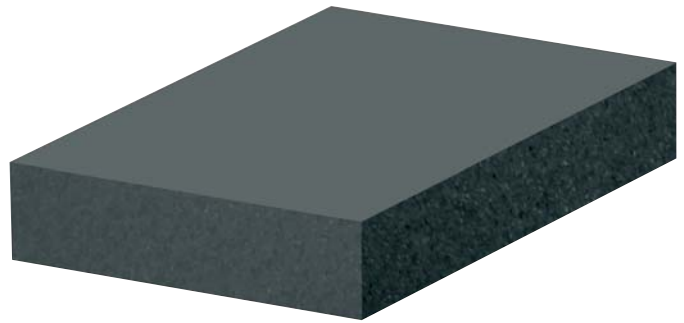


- 1) Samples: 300 x 300 mm, initially compressed between level plates, released and then tested.
Deformation: 1% of thickness/s, room temperature
- 2) Static E-Module: tangent module from spring characteristics
Dynamic E-Module: Samples 300 x 300 x 25 mm
Sinusoidal excitation with amplitude 0.25 mm
- 3) Lowest frequency of a single mass pendulum with an elastic bearing of SL-450

Ordering Example

ACE-SLAB _____
 Material Type _____
 Material Thickness _____
 Dimension/Shape _____
 (is assigned by ACE)

SL-600-12-Fxxxx



Technical Data

Material: mixed cellular polyether urethane
Standard Colour: black
Characteristics: elastic PUR material with spring/damping characteristics
Delivery Form: thickness 12 mm and 25 mm
 rolls: 1.5 m wide, 5.0 m long, strips: up to the maximum width and length

Other dimensions (also thickness), colours, shapes and cut-out parts on request.

Recommendation for Elastic Bearing:

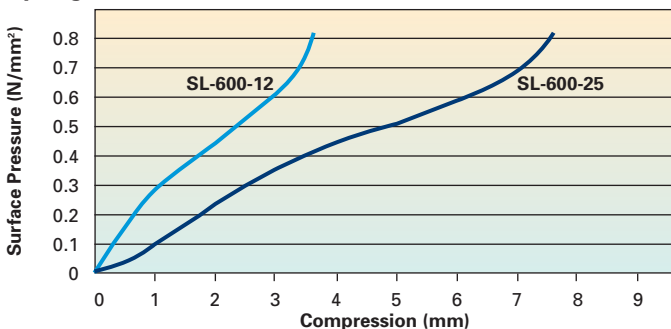
Permanent Static Load	0 to 0.30 N/mm ²
Application	0 to 0.45 N/mm ²
Peak Loads	up to 3.0 N/mm ²

Physical Characteristics

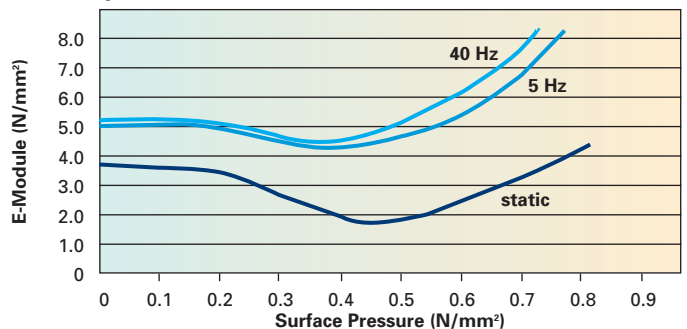
	Value	Unit	Test Method	Notice
Density	600	kg/m ³	EN ISO 845	
Tensile strength	2.0	N/mm ²	following EN ISO 527-3/5/100	minimum value
Elongation at break	300	%	following EN ISO 527-3/5/100	minimum value
Compression set	5.0	%	EN ISO 1856	50 %, 23 °C, 70 h, 30 min after release
Mechanical loss factor	0.12		following DIN 53513	load and frequency dependent
Static modulus of rigidity	0.8	N/mm ²	following DIN 53513	load dependent
Dynamic modulus of rigidity	1.2	N/mm ²	following DIN 53513	load and frequency dependent

Characteristics

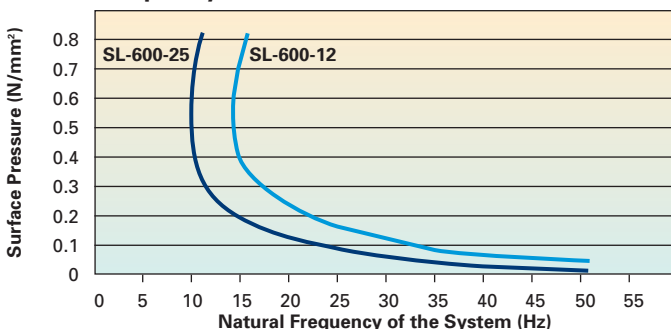
Spring Characteristics SL-600 ¹⁾



Elasticity Module SL-600 ²⁾



Natural Frequency SL-600 ³⁾

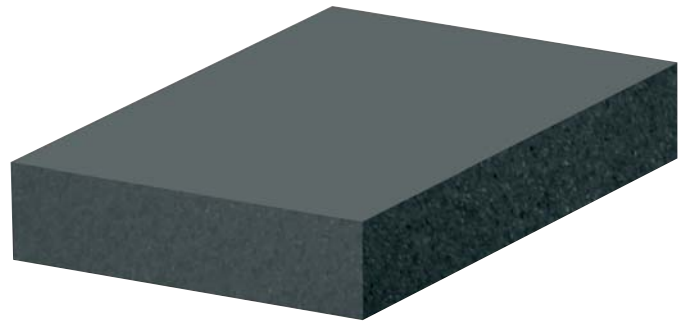


- 1) Samples: 300 x 300 mm, initially compressed between level plates, released and then tested.
Deformation: 1% of thickness/s, room temperature
- 2) Static E-Module: tangent module from spring characteristics
Dynamic E-Module: Samples 300 x 300 x 25 mm
Sinusoidal excitation with amplitude 0.25 mm
- 3) Lowest frequency of a single mass pendulum with an elastic bearing of SL-600

Ordering Example

ACE-SLAB _____
 Material Type _____
 Material Thickness _____
 Dimension/Shape _____
 (is assigned by ACE)

SL-720-12-Fxxxx



Technical Data

Material: mixed cellular polyether urethane
Standard Colour: black
Characteristics: elastic PUR material with spring/damping characteristics
Delivery Form: thickness 12 mm and 25 mm
 rolls: 1.5 m wide, 5.0 m long, strips: up to the maximum width and length

Other dimensions (also thickness), colours, shapes and cut-out parts on request.

Recommendation for Elastic Bearing:

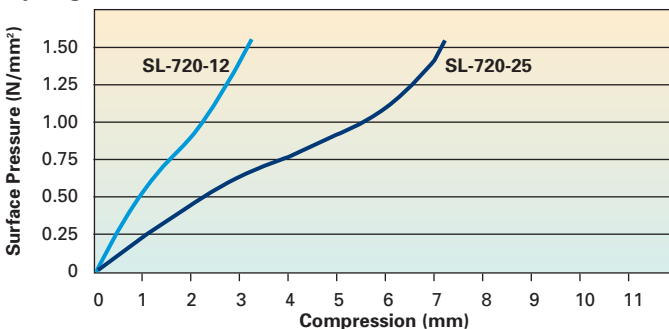
Permanent Static Load	0 to 0.50 N/mm ²
Application	0 to 0.75 N/mm ²
Peak Loads	up to 5.0 N/mm ²

Physical Characteristics

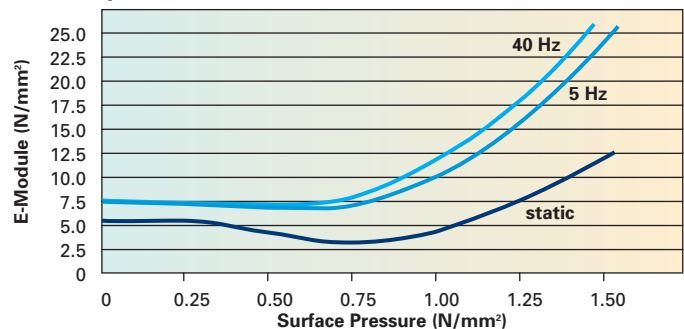
	Value	Unit	Test Method	Notice
Density	720	kg/m ³	EN ISO 845	
Tensile strength	3.0	N/mm ²	following EN ISO 527-3/5/100	minimum value
Elongation at break	300	%	following EN ISO 527-3/5/100	minimum value
Compression set	5.0	%	EN ISO 1856	50%, 23 °C, 70 h, 30 min after release
Mechanical loss factor	0.12		following DIN 53513	load and frequency dependent
Static modulus of rigidity	1.0	N/mm ²	following DIN 53513	load dependent
Dynamic modulus of rigidity	1.5	N/mm ²	following DIN 53513	load and frequency dependent

Characteristics

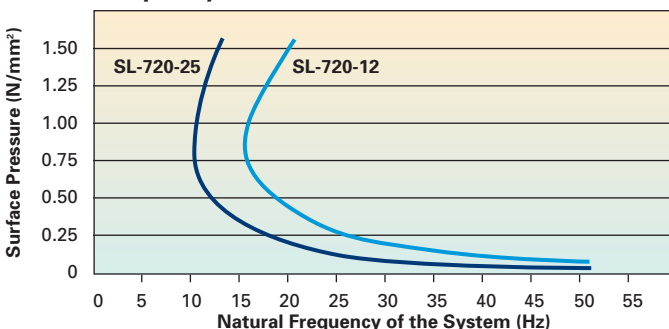
Spring Characteristics SL-720 ¹⁾



Elasticity Module SL-720 ²⁾



Natural Frequency SL-720 ³⁾



- 1) Samples: 300 x 300 mm, initially compressed between level plates, released and then tested.
Deformation: 1% of thickness/s, room temperature
- 2) Static E-Module: tangent module from spring characteristics
Dynamic E-Module: Samples 300 x 300 x 25 mm
Sinusoidal excitation with amplitude 0.25 mm
- 3) Lowest frequency of a single mass pendulum with an elastic bearing of SL-720