

SLAB damping plates of the **SL-150** to **SL-720** are universally applicable elastic PUR materials that are manufactured according to a patented formula and which are used throughout industry. The standard densities of 150 kg/m³ to 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 a respective checklist.

The static load capacity of standard materials are in the range of:

SL-150: 0 to 0.01 N/mm²

SL-220: 0 to 0.025 N/mm²

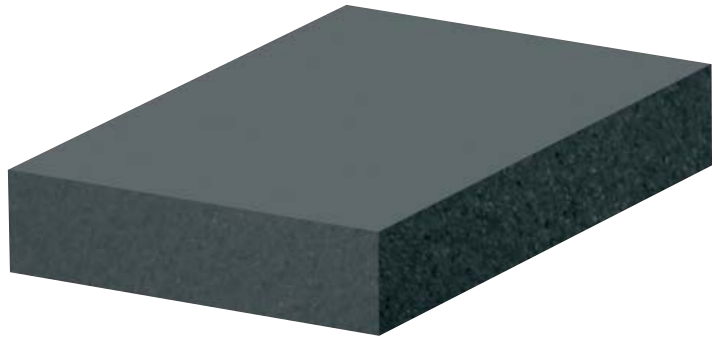
SL-290: 0 to 0.05 N/mm²

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.



"Efficiency of the elastic damping can be calculated in advance!"



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

Environment: Resistant against ozone and UV radiation; food-graded according to ENV 1186-3 (also see chemical resistancy page 98)

Material: Mixed cellular polyether urethane

Standard density: 150 kg/m³, 220 kg/m³, 290 kg/m³, 450 kg/m³, 600 kg/m³ and 720 kg/m³, according to DIN 53420, special designs on request

Fire rating: B2, normally flammable according to DIN 4102

Operating temperature range: -30 °C to +70 °C, short-term higher temperature potential up to 110 °C

Delivery form: Thickness: 12.5 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.

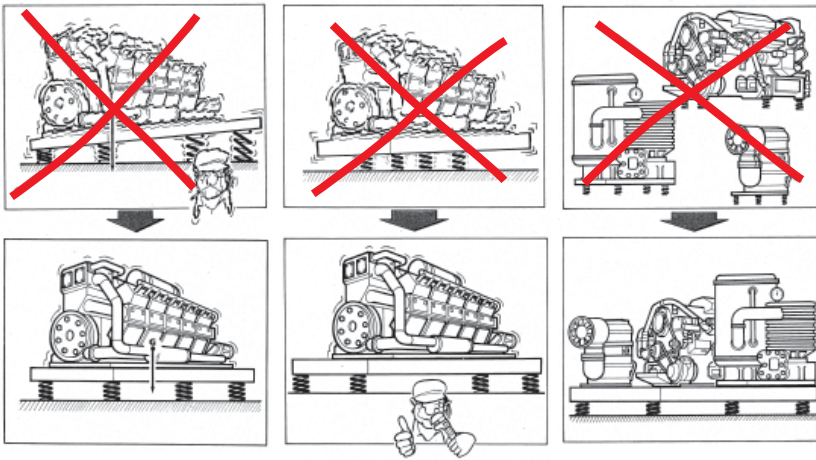
Possibilities for cutting: Water jet cutting, stamping, splitting, sawing, drilling, etc.

Mounting style: Bonding (see adhesive recommendation page 97), clamps, screws, etc.

On request: Available with compact polyurethane wearing surface, shore hardness: 82 shore Sh A.



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

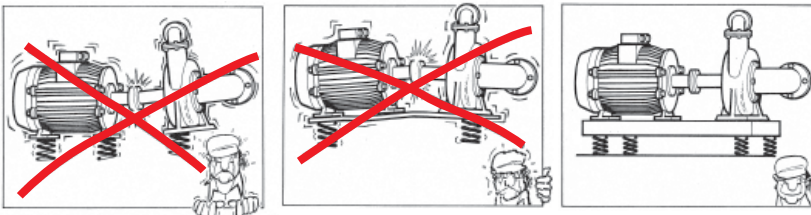


Pay attention to center of gravity!

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

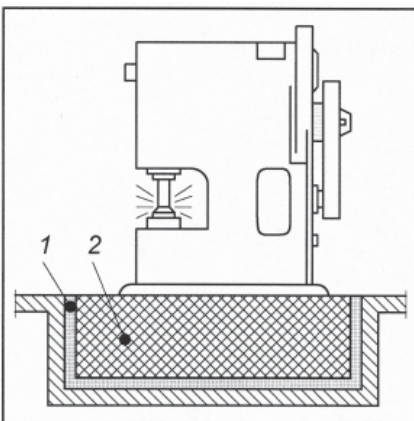


Pay attention to separate flexible mounts of connected equipment components!

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

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.

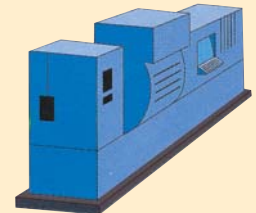
Vibrations disrupt the location and the environment and cause damage to buildings. SLAB polyurethane elastomer is a material that effectively reduces vibration and structure-borne noise. Depending on the requirements, SLABs are available in different densities, thicknesses and dimensions.

SLAB damping plates are used to insulate vibrations for:

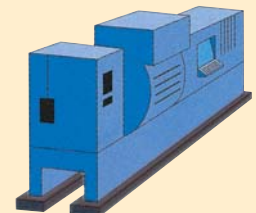
- Machine tools
- Textile machinery
- Air conditioning and ventilating machines
- Crane rails
- Hydraulic crushers
- Presses / stamping machines etc.

Potential for direct bearing support on SLAB damping plates:

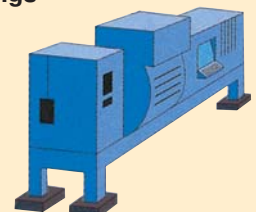
Full surface mount



Strip bearings



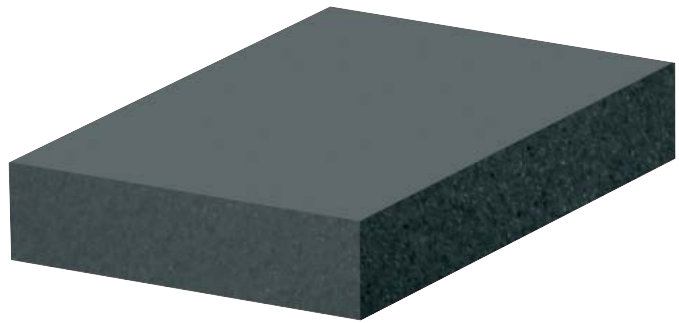
Discrete bearings



Ordering Example

ACE-SLAB _____
Material Type _____
Material Thickness _____
Dimension/Shape _____

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.

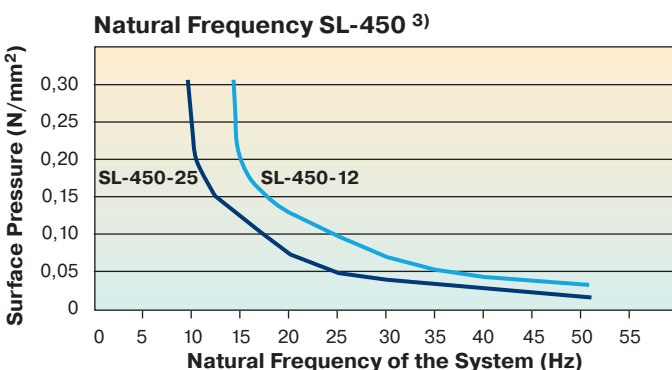
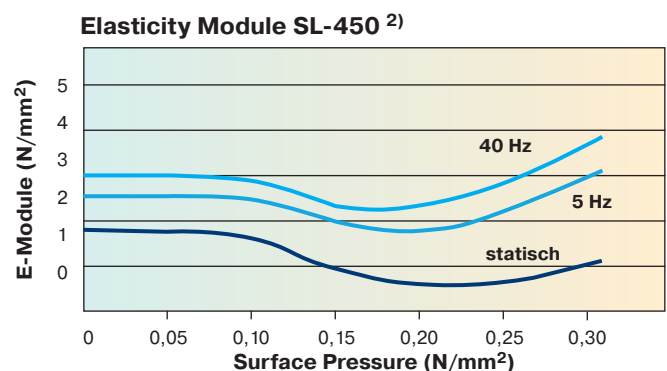
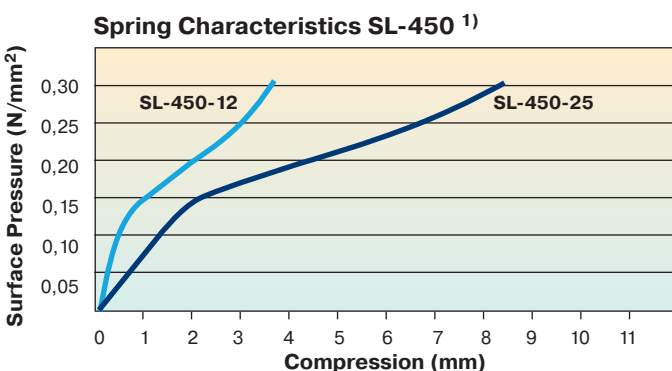
Recommendation for Elastic Bearing:

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

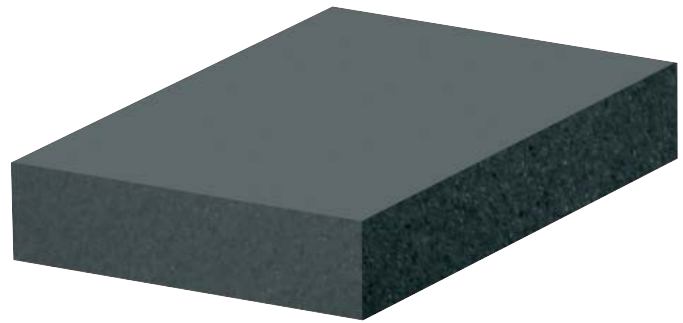


- 1) Samples: 300 x 300 mm, initially compressed between level plates, released and then tested.
Deformation: 1% of thickness/s, room temperature
- 2) Static E-Module: tangent module from spring characteristics
Dynamic E-Module: Samples 300 x 300 x 25 mm
Sinusoidal excitation with amplitude 0.25 mm
-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

Ordering Example

SL-600-12-Fxxxx

ACE-SLAB _____
Material Type _____
Material Thickness _____
Dimension/Shape _____



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:

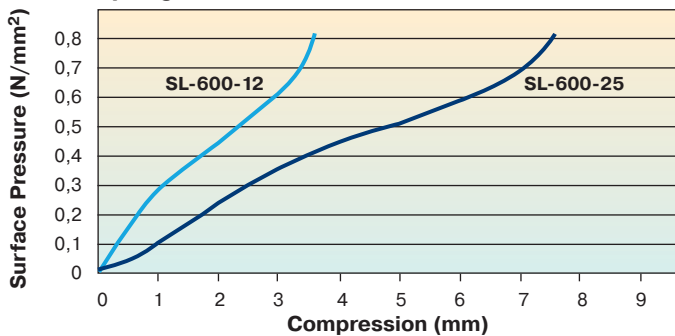
Permanent Static Load	0 to 0.30 N/mm ²
Application	0 to 0.45 N/mm ²
Peak Loads	up to 3.0 N/mm ²

Physical Characteristics

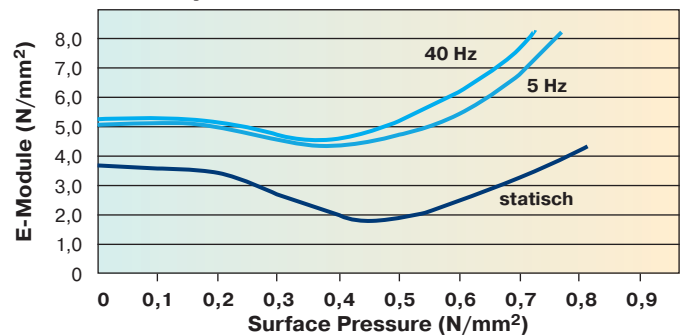
	Value	Unit	Test Method	Notice
Density	600	kg/m ³	EN ISO 845	
Tensile strength	2.5	N/mm ²	following EN ISO 527-3/5/100	minimum value
Elongation at break	300	%	following EN ISO 527-3/5/100	minimum value
Compression set	5.0	%	EN ISO 1856	50 %, 23 °C, 70 h, 30 min after release
Mechanical loss factor	0.12		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

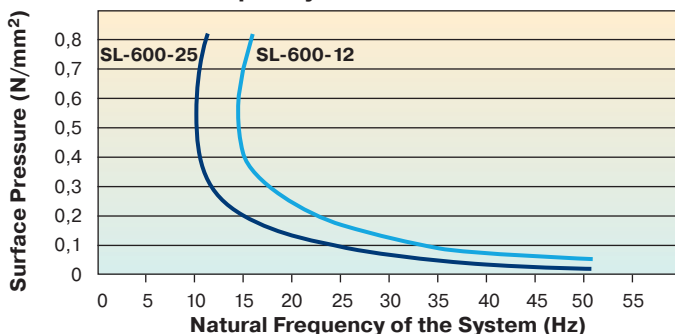
Spring Characteristics SL-600 ¹⁾



Elasticity Module SL-600 ²⁾



Natural Frequency SL-600 ³⁾

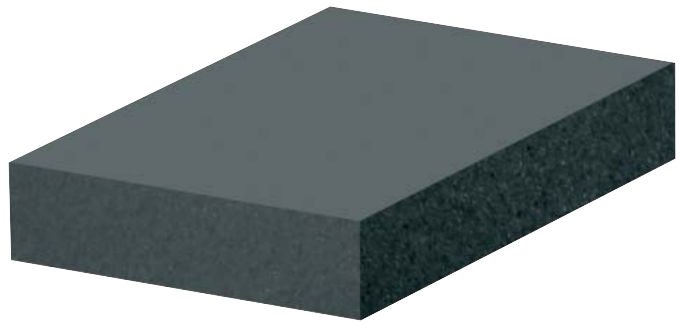


- 1) Samples: 300 x 300 mm, initially compressed between level plates, released and then tested.
Deformation: 1% of thickness/s, room temperature
- 2) Static E-Module: tangent module from spring characteristics
Dynamic E-Module: Samples 300 x 300 x 25 mm
Sinusoidal excitation with amplitude 0.25 mm
- 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 _____

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.

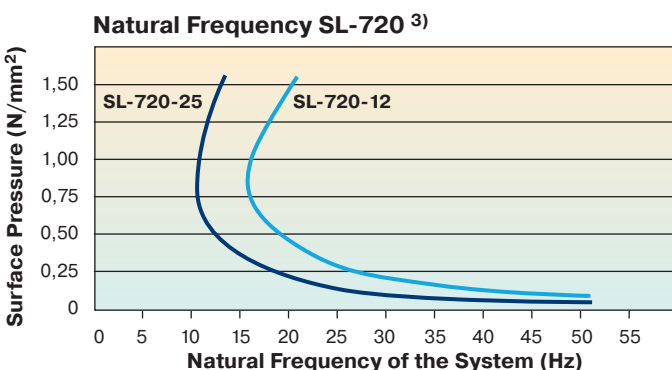
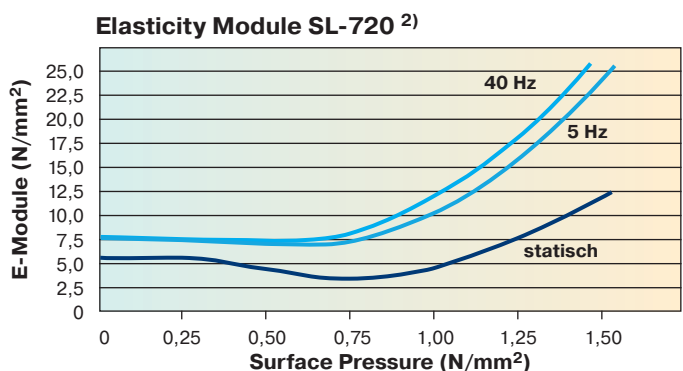
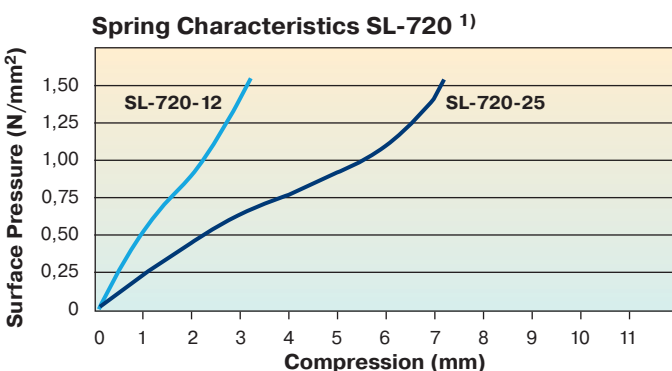
Recommendation for Elastic Bearing:

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



- 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

Bonding of Polyurethane (PUR) Elastomers

Cellular and compact parts of polyurethane (PUR) elastomers SLAB damping plates can be bonded according to the following recommendations. If treatment instructions are followed, the strengths of the bonded joint can be equivalent to the elastomer material itself.

1. General Information

To achieve the required bonding strength it is necessary to ensure the correct adhesive is chosen for each individual application.

Contact Bonding Material: thin adhesive film, with little filling of the gaps. Correcting or moving of the areas covered with bonding material is no longer possible after the first contact is made (contact effect).

Once a bonding is separated, the bonding process must be renewed. Please note that creases, ripples or blisters cannot be straightened once the contact is made.

Hardening Bonding Material: (As thin as possible) the film of glue fills the joint. The gluing can be done after the edges are brought together.

2. Preparation

The preparation of bonding surfaces is of significant importance for the bonding strength. The surfaces must be adapted to each other and available in plain, clean form.

Careful removal of: adhesive remnants, oil, fat, separating agents, dirt, dust, scales, molding layers, protective coating, finish, paint, sweat etc.

Mechanical Support: stripping, brushing, scraping, grinding, sandblasting.

Chemical Support: degreasing (washing off with grease remover), etching, priming; pay attention to chemical resistance on page 7!

In general, SLAB damping plates in sheet form can be bonded without pretreatment. Molded parts, with or without special skin, have to be cleaned from left-over separating agents, if necessary by grinding. When bonding with other materials like plastic, wood, metal or concrete, mechanical and/or chemical additives have to be used.

The adhesive has to be prepared according to the formula, observing the manufacturer's recommendations. The adhesive film is also to be carefully applied pursuant to these details. (Tools: brush, spatula, adhesive spreader, airless spray gun).

Contact Bonding Material: Apply the non-gap-filling adhesive film to both bonding surfaces – the thinner, the better. To close the pores of low density materials, two layers may be necessary.

Hardening Bonding Material: Apply evenly. Possible irregularities can be compensated by the film thickness.

3. Bonding

When using contact bonding material, the flash off time has to be kept in mind. Especially, with systems containing water instead of usual solvents, the adhesive film must be as dry as possible in order to pass the 'finger test' – no marks appear

when touching the adhesive surface. When using hardening bonding material, the parts have to be joined immediately after applying the bonding material.

4. Pressing

Contact Bonding Material: contact pressure up to 0.5 N/mm²

Hardening Bonding Material: fix firmly

It is important to carefully follow the manufacturer's instructions with regard to processing temperature, hardening time and earliest possible loading.

5. Selection of Approved Bonding Materials

Because of the variety of materials that can be bonded together as well as numerous suitable bonding materials, we refer you to a worldwide leading producer of bonding and sealing materials.

Sika Deutschland GmbH
Kornwestheimer Str. 103-107
D-70439 Stuttgart

Tel.: +49-711-8009-0

Fax: +49-711-8009-321

E-Mail: info@de.sika.com

Internet: <http://www.sika.de>

Test (following DIN 53428)

Exposure time of the medium: 6 weeks at room temperature, but for concentrated acids and bases as well as solvents: 7 days at room temperature

Evaluation Criteria

Changing of tensile strength and elongation of break (dry samples), change in volume

Evaluation Standard

- 1 Excellent resistance, change in characteristics < 10%
- 2 Good resistance, change in characteristics between 10% and 20%
- 3 Conditional resistance, change in characteristics partly above 20%
- 4 Not resistant, change in characteristics all above 20%

All Information is based on our current knowledge and experiences. We reserve the rights for changes towards product refinement.

* The resistance towards acids and bases depends on the concentration.

Water/watery solutions

SL-450
SL-600
SL-720

Water	1
Iron(III) chloride 10%	1
Sodium carbonate 10%	1
Sodium chlorate 10%	1
Sodium chloride 10%	1
Sodium hydrogencarbonate 10%	1
Sodium nitrate 10%	1
Herbicides (div.)	1
Tensides (div.)	1
Hydrogen peroxide 3%	1
Laitance	1

Oils and Greases

SL-450
SL-600
SL-720

ASTM Oil No. 1	1
ASTM Oil No. 3	1
Laitance	2
Hydraulic oils	depends on consistency/additives
Motor oil	1
Turpentine oil	3
Formwork oil	1
Silicone oil	1
Cooking oil	1
High performance grease	1-2
Railroad switch lubricant	1-2

Acids and Bases*

SL-450
SL-600
SL-720

Formic acid	4
Acetic acid	3
Phosphoric acid	2
Nitric acid	4
Hydrochloric acid	3
Sulphuric acid	3
Ammonia solution	3
Caustic potash solution	2
Caustic soda solution	2

Solvents

SL-450
SL-600
SL-720

Acetone	4
Ethyl acetate	4
Diesel/Fuel oil	2
Carburetor fuel/benzine	3
Glycerin	1
Glycols	1-2
Cleaning solvents/hexane	1
Methanol	3
Thinner	4
Aromatic hydrocarbons	4

Other Factors

SL-450
SL-600
SL-720

Hydrolysis	1
Ozone	1
UV radiation and weathering	1-2
Biological resistance	1

In order to process your inquiry quickly, we need the following information:

1. Description of Application

- a) Description of your application in key words – the kind of machine/device that needs insulation
.....
- b) Machine design (possibly data sheet with information about loads, installation (drawing))
.....
- c) Static and dynamic machine loads (do these operate off-center?)
.....
- d) Mounting with foundation:
What dimensions are available? Is sideways support necessary? length _____ mm, width _____ mm, height _____ mm
yes no
- e) Mounting without foundation:
Which machine mount is present (machine stands, U-profile mount, etc.) contact area _____ mm
number of contact areas _____
- f) Environmental requirements air humidity _____ %, temperature _____ °C
liquids/foreign matter _____
- g) Required product life _____
- h) Safety element: yes no

2. Physical Dimensions

- a) Measurements and weight of the machine mass _____ kg
- b) Center of gravity concentric excentric (sketch)
- c) Operation of the machine, e.g., frequencies or revolutions per minute (exciter frequency) _____ Hz _____ 1/s
- d) Available area for set up length _____ mm, width _____ mm
diameter _____ mm, number of load points _____
- e) Maximum mounting height of bearing height _____ mm, tolerance _____ +/- mm
- f) Permissible deflection _____ mm permissible amplitudes _____ mm
- g) Is operational reliability/product life of the machine by the elastic bearing? yes no

Special requirements: _____ Quantity/year: _____
 _____ Machine type: _____

Sender:

Company _____ Department _____
 Address _____ Name/Pos. _____
 _____ Telephone _____ Fax _____
 Internet _____ E-Mail _____

Please copy, fill out and fax with sketch to: Fax +49-(0)2173-9226-89

Standard Plates ex Stock

Part Number	Dimensions
SL-450-12-F-MP4	220 x 150 x 12.5 mm
SL-450-25-F-MP4	220 x 150 x 25 mm
SL-600-12-F-MP4	220 x 150 x 12.5 mm
SL-600-25-F-MP4	220 x 150 x 25 mm
SL-720-12-F-MP4	220 x 150 x 12.5 mm
SL-720-25-F-MP4	220 x 150 x 25 mm
SL-450-12-F-MP4	1500 x 800 x 12.5 mm
SL-450-25-F-MP4	1500 x 800 x 25 mm
SL-600-12-F-MP4	1500 x 800 x 12.5 mm
SL-600-25-F-MP4	1500 x 800 x 25 mm
SL-720-12-F-MP4	1500 x 800 x 12.5 mm
SL-720-25-F-MP4	1500 x 800 x 25 mm