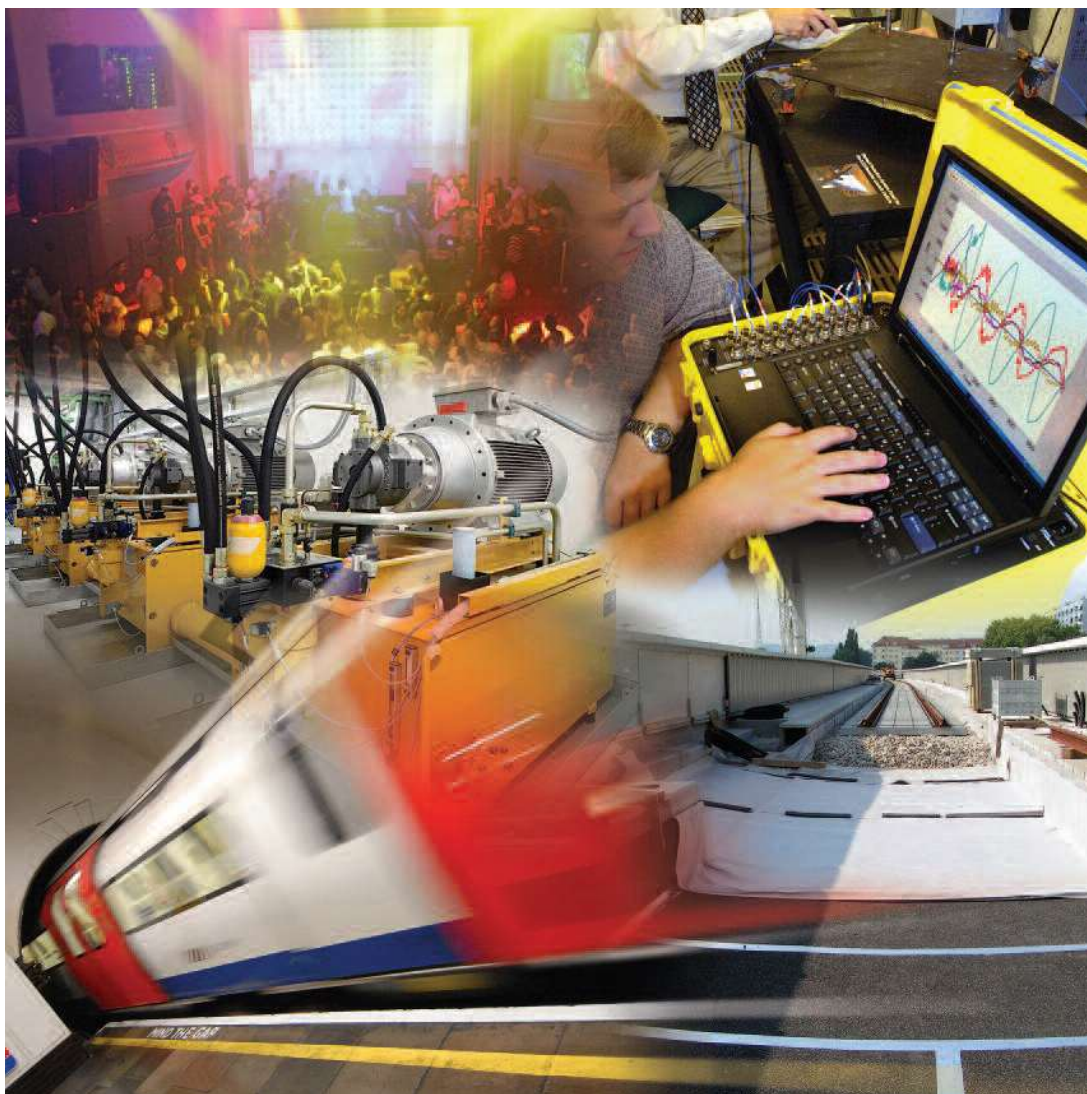


ISOVIBRA - PRODUCT SELECTOR

Vibration Isolation products for
domestic and commercial applications



Performance with Environmental and Economic benefits

For help choosing the right product for your project please contact Thermal Economics
Technical Department on 01582 544255

For all our Acoustic & Thermal insulation products visit: www.thermal-economics.co.uk

IsoVibra - Targeted Structural Isolation & Vibration Control for Construction Applications

IsoVibra products can be used in full-surface, strip and point load bedding applications in the construction industry to isolate vibrations in building structures, plant and machinery.

By using products with specific density, thickness, hardness and geometric shape in single or multiple layers it is possible to target

specific frequencies, ensuring the best possible solution to vibration problems.

It is also possible to use IsoVibra products in vertical applications, such as isolating basement walls from road or rail traffic. Where required these products can also be provided with pre-prepared self adhesive surfaces.

Full-surface bedding

By fully isolating a surface the vertical forces are evenly distributed giving rise to low compressive stresses.

Typical Applications:

Beneath raft foundations.
Beneath machine platforms.
Isolating vertical wall surfaces.

Typical Compressive Stress Range:

Very Low - Medium

Point Load bedding

Applies to high concentration point loads that focus the force onto a relatively small area creating very high compressive stresses. Pads can be made to order or cut to size on site.

Typical Applications:

Isolating structural columns.
Isolating beam bearings.
Beneath machinery support legs.

Typical Compressive Stress Range:

Medium - Very High

Strip layer bedding

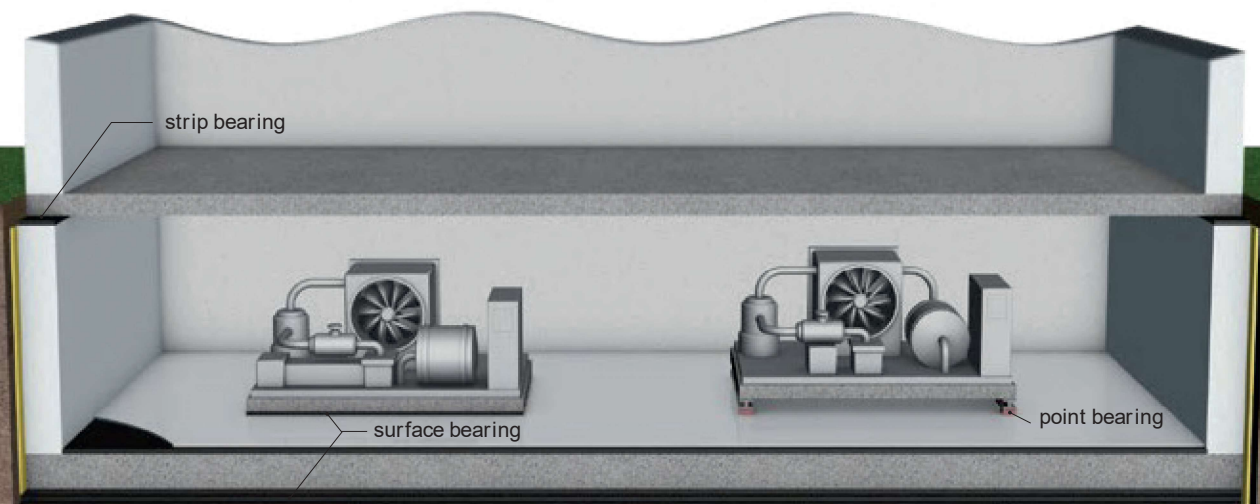
Uniformly distributed line loads focus the force onto a smaller area leading to increased compressive stresses. Strips can be made to order or cut to size on site.

Typical Applications:

Beneath strip foundations (walls).
Beneath strip machine foundations.
Isolating vertical movement joints.

Typical Compressive Stress Range:

Low - High



The Material

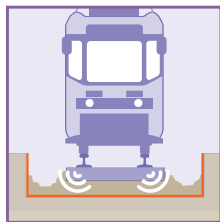
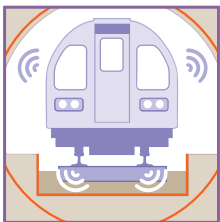
IsoVibra products are made of recycled rubber and foam-rubber granules. These granules are sourced from a wide range of industries, from processed car tyres to brand new rubber remnants created by automotive manufacturers and medical goods suppliers.

Products used in lower load applications are smooth on the upper surface but have profiled underside. This reduces the dynamic stiffness of the product, further enhancing the elasticity of the rubber.

All products use specific combinations of rubber and foam rubber to create an optimum balance for the anticipated load levels.

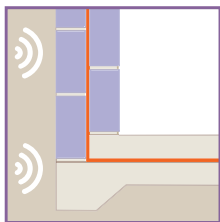
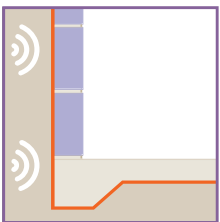


Causes of Vibration



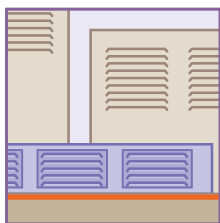
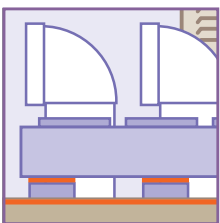
Re-radiated Noise

Vibration energy in the ground can excite structure foundations and manifest itself as re-radiated noise. Structures built near train lines and busy roads are susceptible to this problem. IsoVibra can be used to isolate the foundations, preventing re-radiating noise passing through the structure.



Slab Isolation

When the source of vibration is within the structure, such as dance floors or cinemas, the creation of a floating slab prevents vibration spreading throughout the rest of the structure. Using IsoVibra in this type of application can also prevent vibration energy re-radiating to nearby structures.



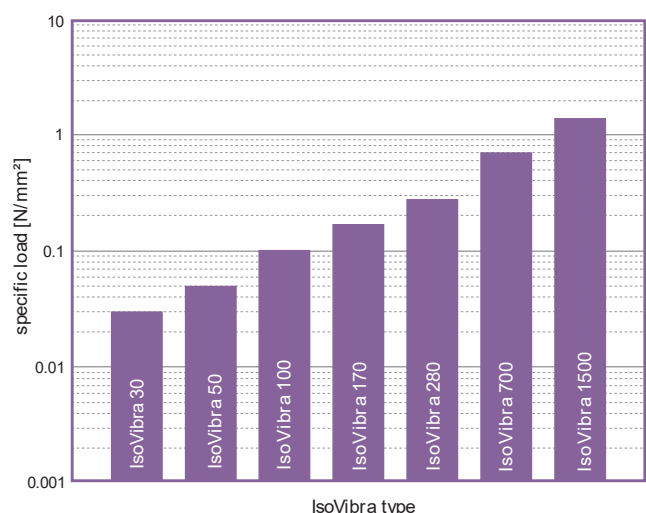
Machinery & Plant Isolation

Vibration energy from machinery and plant can radiate throughout a structure. In extreme cases this can cause damage requiring expensive remedial work. IsoVibra can be used to isolate individual machines or groups of machines that are situated on the same slab or platform.

Choosing the right product

To choose the correct IsoVibra product you must first understand the problem. This means that the disturbing frequency and the imposed load need to be identified, a product with the appropriate compressive stress and natural frequency can then be selected.

For more information or help with selecting the correct product please contact the Thermal Economics Technical Department on 01582 544255 or email info@thermal-economics.co.uk



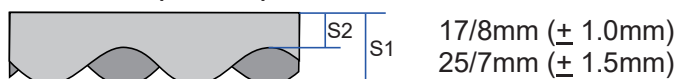
IsoVibra 30

IsoVibra 30 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

Material: Fine granules of Polyurethane foam with PU elastomer bonding agent.

Colour: Beige / multi-colour

Thickness (S1 / S2):



Roll width: 1.25m ($\pm 1.5\%$)

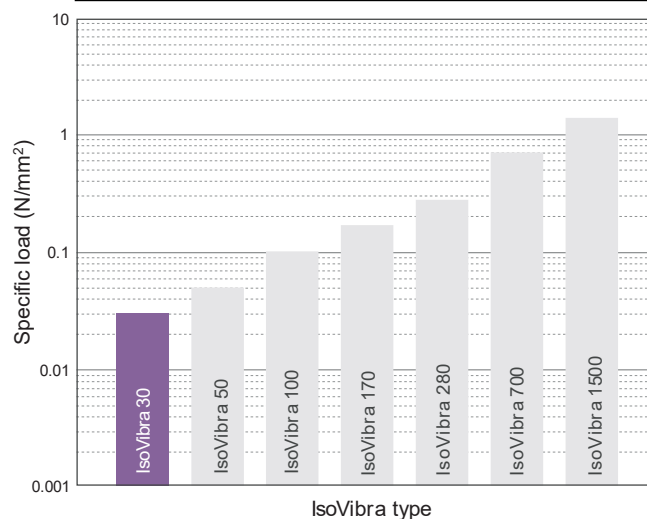
Roll length:

17/8mm: 8.0m ($\pm 1.5\%$)

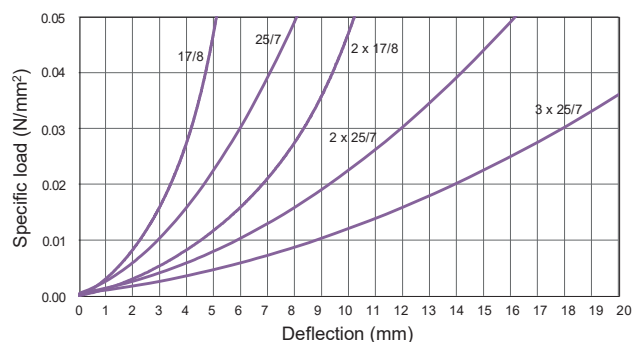
25/7mm: 4.0m ($\pm 1.5\%$)

Working Range

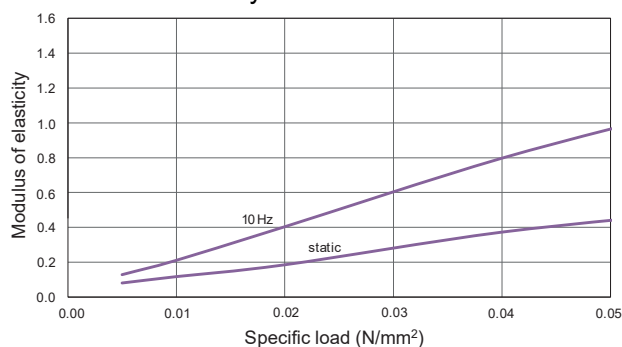
Load range	Load peak
up to 0.03 (N/mm ²)	up to 0.07 (N/mm ²)



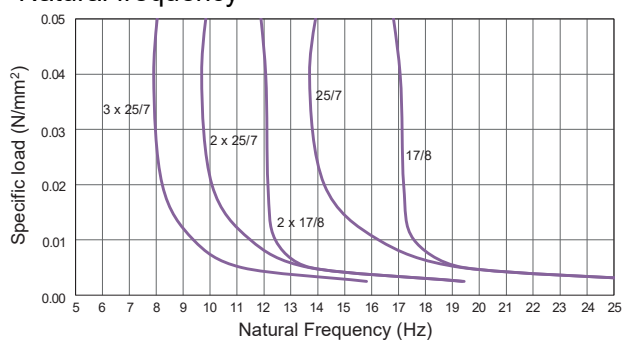
Load deflection curve



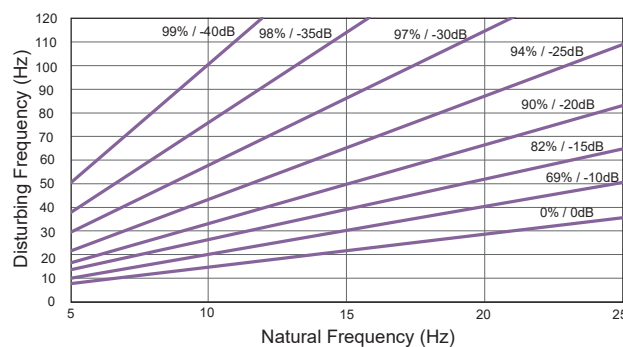
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	0.15 - 0.65 N/mm ²	ISO 1798	
Elongation at break	30 - 60%	ISO 1798	
Max. Pressure	0.03 N/mm ²	EN 826	
Bedding modulus	0.008 - 0.1 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	8 - 25 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80 °C		
Flammability rating	class E	EN 13501-1	
Density	300 - 400Kg/m ³		

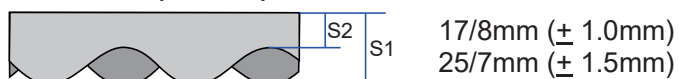
IsoVibra 50

IsoVibra 50 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

Material: High-grade fibres of rubber with PU elastomer bonding agent.

Colour: Black

Thickness (S1 / S2):



Roll width: 1.25m ($\pm 1.5\%$)

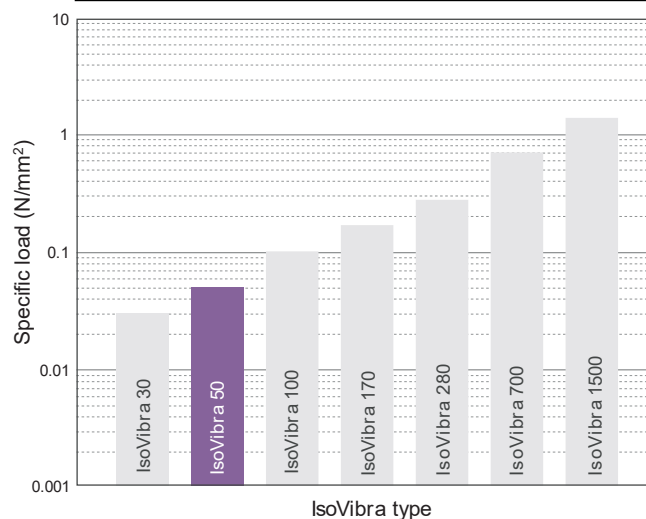
Roll length:

17/8mm: 8.0m ($\pm 1.5\%$)

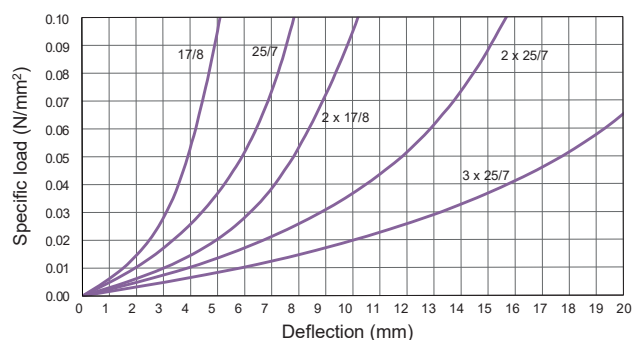
25/7mm: 4.0m ($\pm 1.5\%$)

Working Range

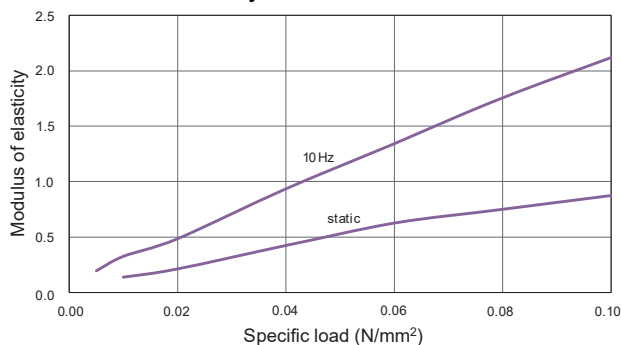
Load range	Load peak
up to 0.05 (N/mm ²)	up to 0.15 (N/mm ²)



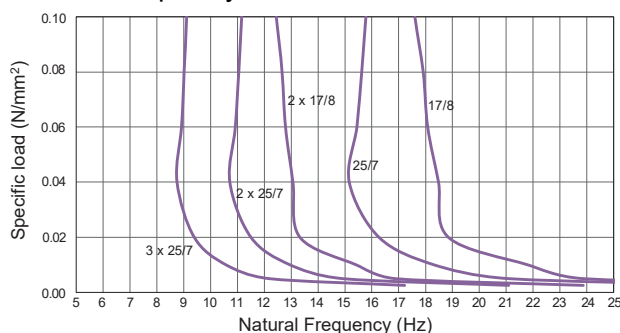
Load deflection curve



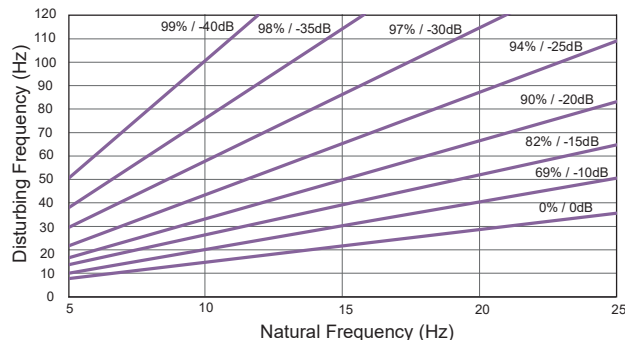
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	>0.2 N/mm ²	ISO 1798	
Elongation at break	>35%	ISO 1798	
Max. Pressure	0.05 N/mm ²	EN 826	
Bedding modulus	0.015 - 0.14 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	9 - 25 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	500 - 600Kg/m ³		

IsoVibra 100

IsoVibra 100 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

Material: Granules of Polyurethane foam with PU elastomer bonding agent.

Colour: Black

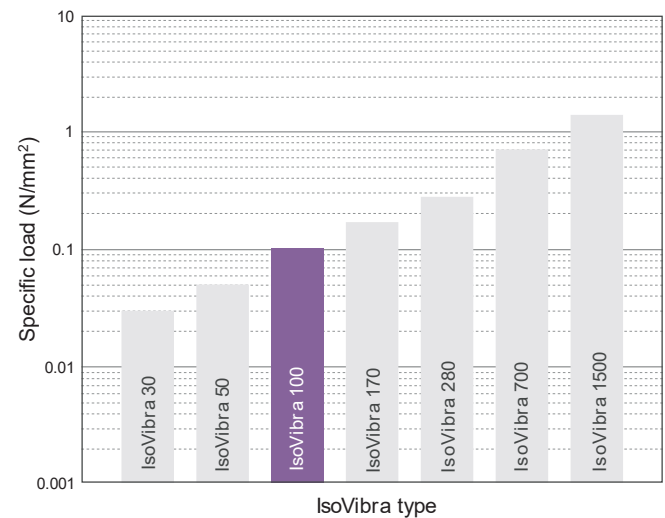
Thickness: 15mm / 20mm / 30mm (± 1 mm)

Roll width: 1.25m ($\pm 1.5\%$)

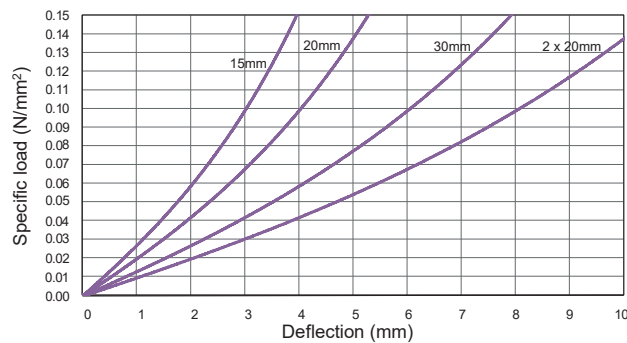
Roll length: 1.0m ($\pm 1.5\%$)

Working Range

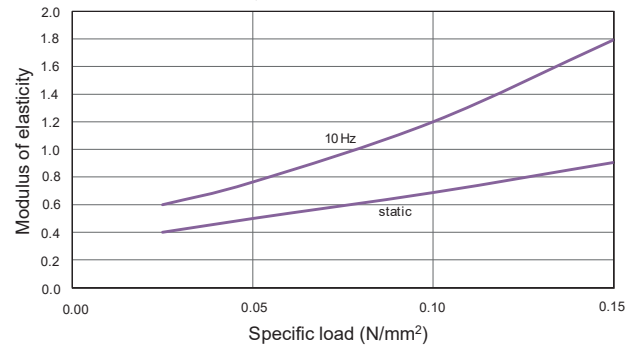
Load range	Load peak
up to 0.10 (N/mm ²)	up to 0.30 (N/mm ²)



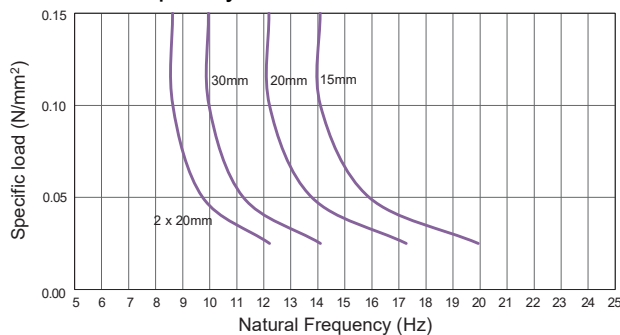
Load deflection curve



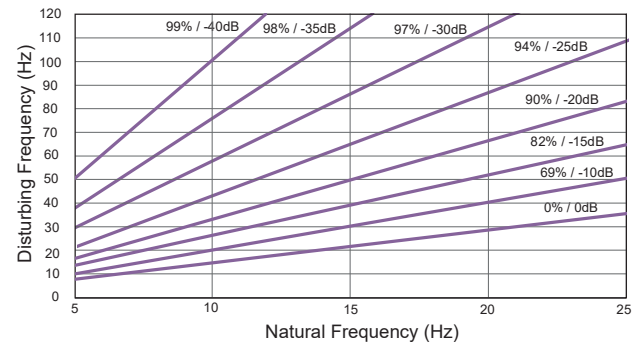
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	0.15 - 0.7 N/mm ²	ISO 1798	
Elongation at break	35 - 75%	ISO 1798	
Max. Pressure	0.10 N/mm ²	EN 826	
Bedding modulus	0.03 - 0.09 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	9 - 25 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	330 - 430Kg/m ³		

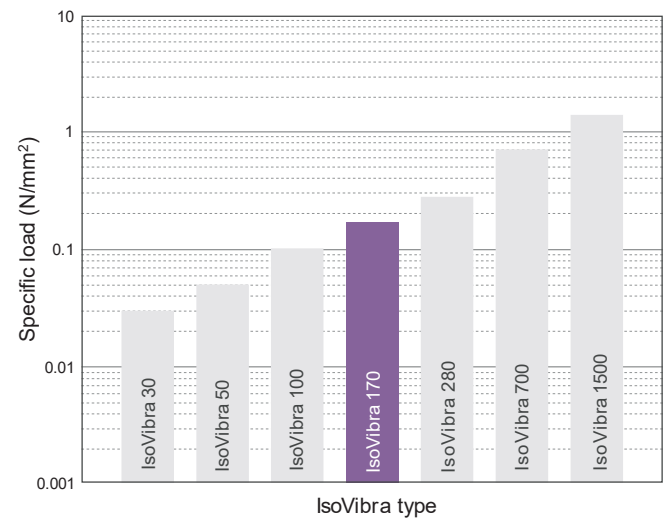
IsoVibra 170

IsoVibra 170 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

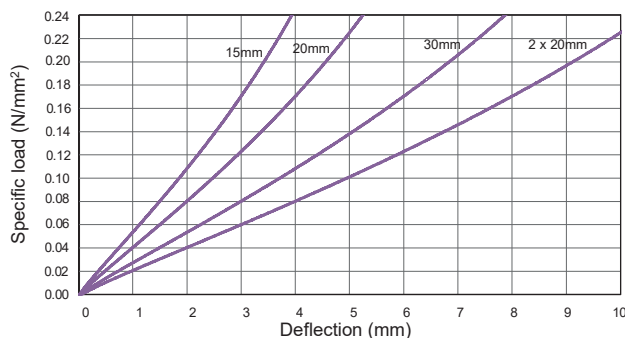
- Material:** Granules of PU and EVA foam with PU elastomer bonding agent.
- Colour:** Multi-coloured
- Thickness:** 15mm / 20mm / 30mm (± 1 mm)
- Roll width:** 1.25m ($\pm 1.5\%$)
- Roll length:** 1.0m ($\pm 1.5\%$)

Working Range

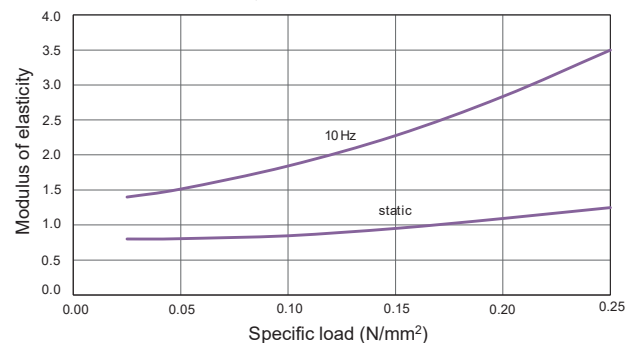
Load range	Load peak
up to 0.17 (N/mm ²)	up to 0.70 (N/mm ²)



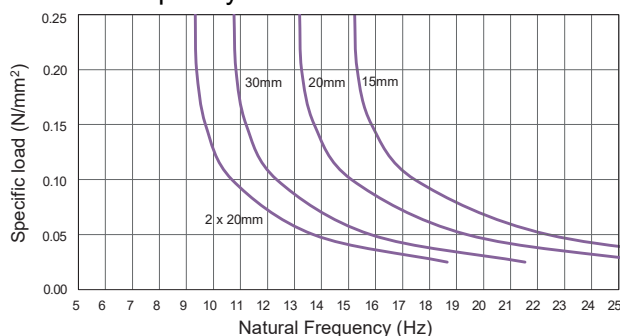
Load deflection curve



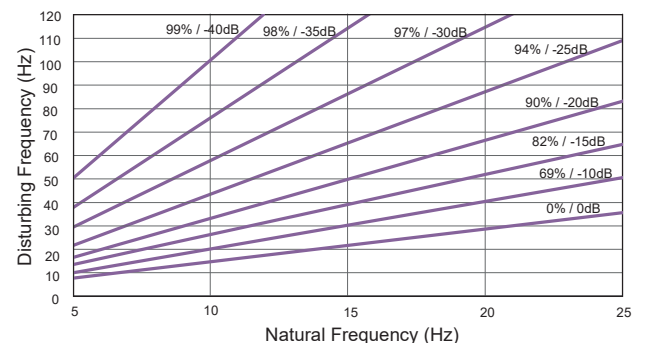
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	0.15 - 0.55 N/mm ²	ISO 1798	
Elongation at break	20 - 50%	ISO 1798	
Max. Pressure	0.17 N/mm ²	EN 826	
Bedding modulus	0.05 - 0.70 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	10 - 30 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	340 - 440Kg/m ³		

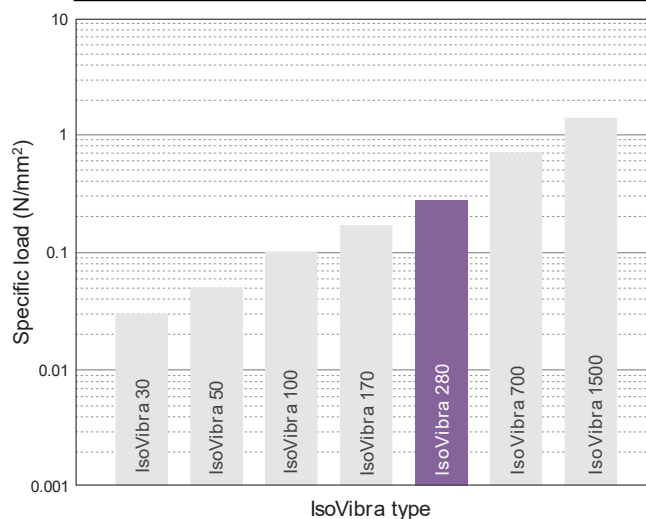
IsoVibra 280

IsoVibra 280 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

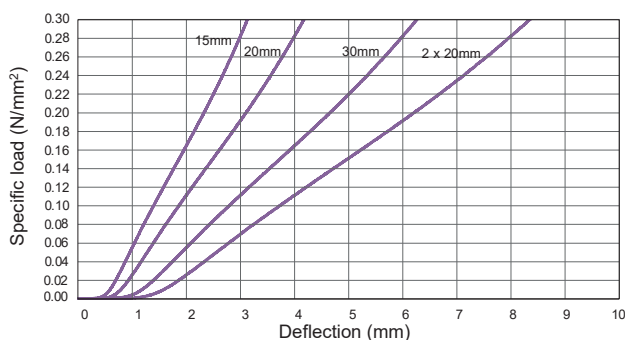
Material:	Rubber granules and fine cellular rubber with PU elastomer bonding agent.
Colour:	Black / Black with multi-colour
Thickness:	15mm / 20mm / 30mm (± 1 mm)
Roll width:	1.25m ($\pm 1.5\%$)
Roll length:	1.0m ($\pm 1.5\%$)

Working Range

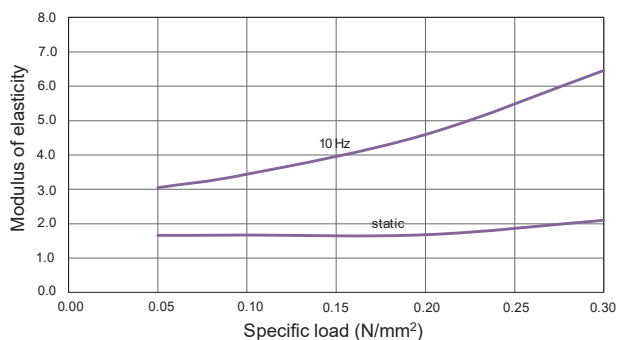
Load range up to 0.28 (N/mm ²)	Load peak up to 1.50 (N/mm ²)
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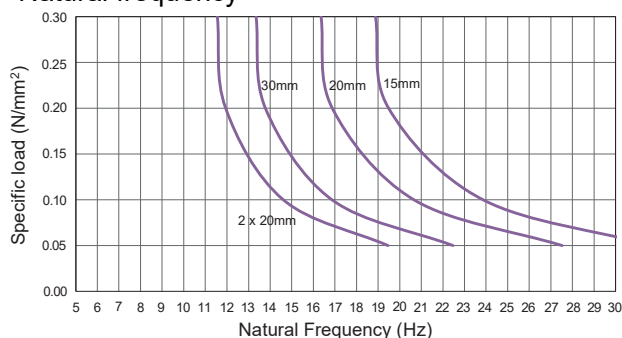
Load deflection curve



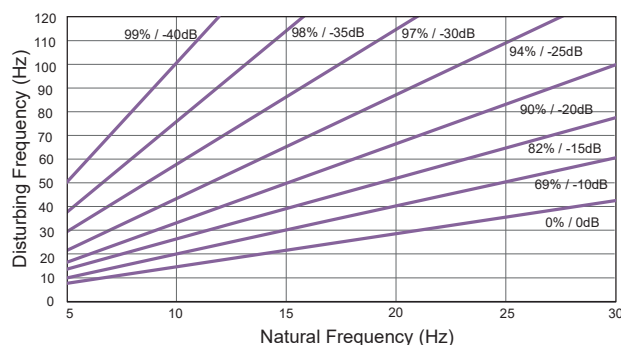
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	>0.5 N/mm ²	ISO 1798	
Elongation at break	>50%	ISO 1798	
Max. Pressure	0.28 N/mm ²	EN 826	
Bedding modulus	0.06 - 0.85 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	11 - 25 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	600 - 700Kg/m ³		

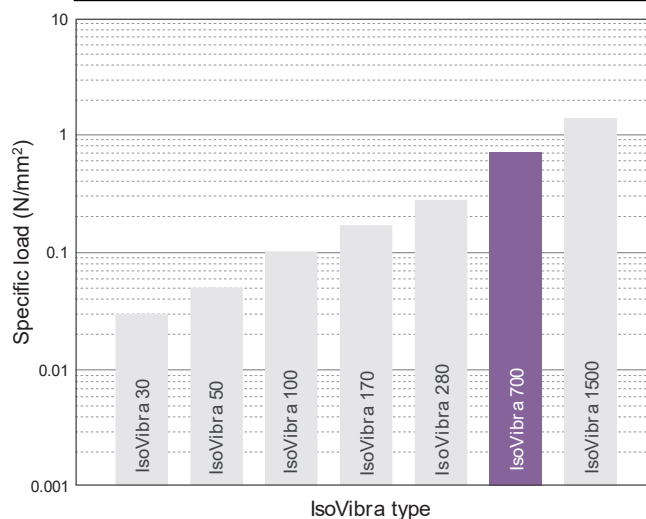
IsoVibra 700

IsoVibra 700 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

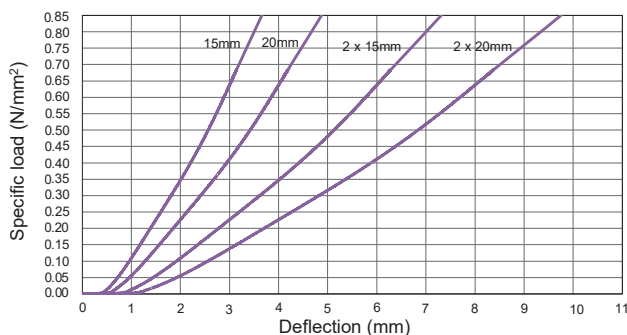
Material:	Rubber granules with PU elastomer bonding agent.
Colour:	Black / Black with multicolour
Thickness:	15mm / 20mm (± 1 mm)
Roll width:	1.25m ($\pm 1.5\%$)
Roll length:	1.0m ($\pm 1.5\%$)

Working Range

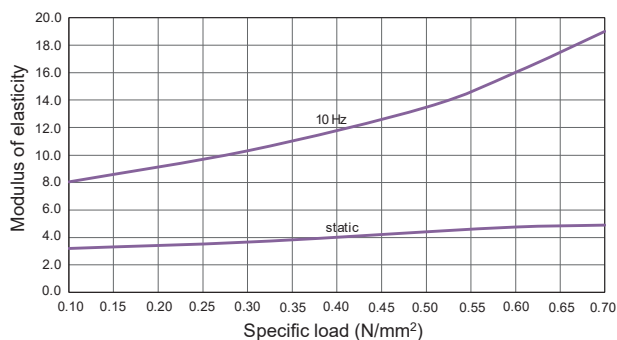
Load range up to 0.70 (N/mm ²)	Load peak up to 3.00 (N/mm ²)
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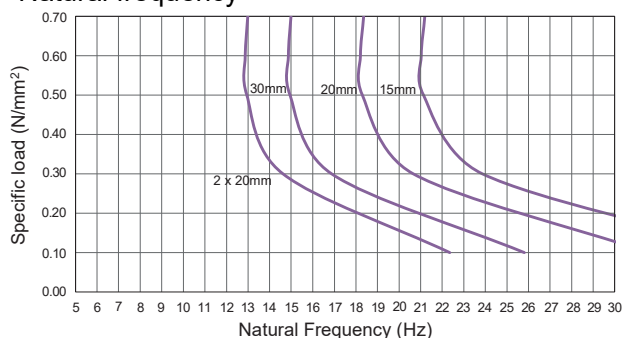
Load deflection curve



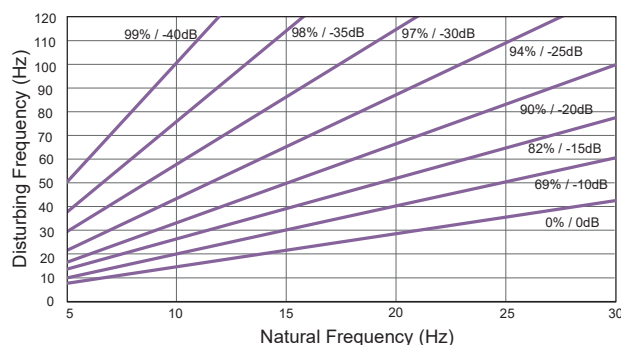
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	>0.5 N/mm ²	ISO 1798	
Elongation at break	>50%	ISO 1798	
Max. Pressure	0.7 N/mm ²	EN 826	
Bedding modulus	0.15 - 1.70 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	13 - 30 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	800 - 900Kg/m ³		

IsoVibra 1500

IsoVibra 1500 is an elastic layer with vibration dampening and impact sound insulating properties for use in structural and civil engineering applications.

Material: Rubber granules with PU elastomer bonding agent.

Colour: Black / Black with multicolour

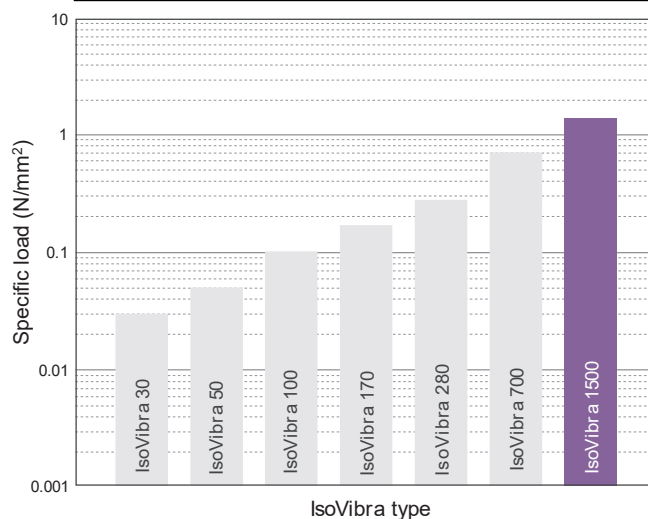
Thickness: 10mm (± 1 mm)

Roll width: 1.25m ($\pm 1.5\%$)

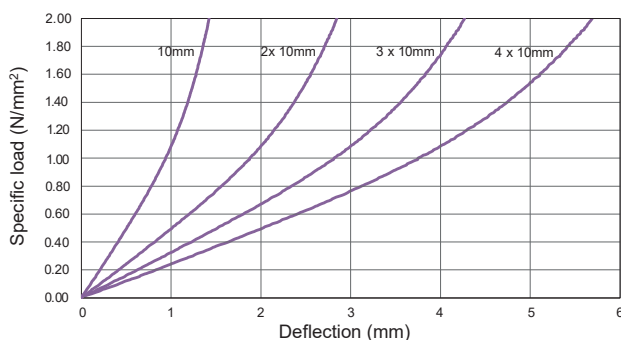
Roll length: 6.0m ($\pm 1.5\%$)

Working Range

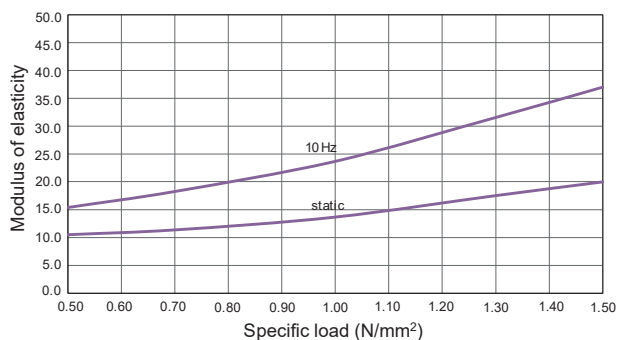
Load range	Load peak
up to 1.50 (N/mm ²)	up to 4.00 (N/mm ²)



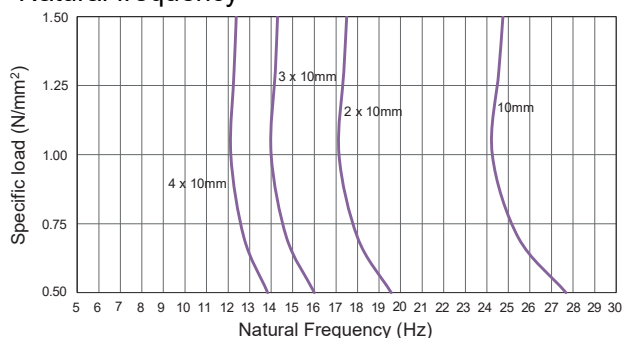
Load deflection curve



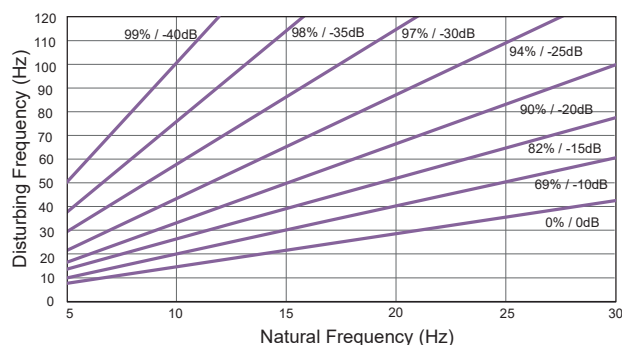
Modulus of elasticity



Natural frequency



Vibration isolation



Properties	Value	Test method	Comment
Tensile Strength	>1.5 N/mm ²	ISO 1798	
Elongation at break	>80%	ISO 1798	
Max. Pressure	1.5 N/mm ²	EN 826	
Bedding modulus	0.15 - 3.00 N/mm ³	DIN 53513	depending on configuration, load and frequency
Natural Frequency	14 - 30 Hz		depending on configuration, load and frequency
Service temp. Range	-30 to +80°C		
Flammability rating	class E	EN 13501-1	
Density	950 - 1050Kg/m ³		

IsoVibra Foam - Targeted Isolation & Vibration Control for Mechanical Engineering and Construction Applications

The Material

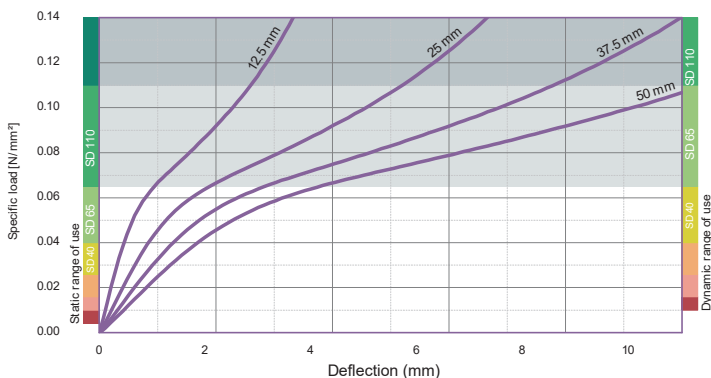
IsoVibra Foam products are cellular elastomers made of a special type of Polyurethane designed to isolate and/or damp vibration levels. This type of material provides outstanding performance as both pressure and compression-loaded springs, making it ideal for use in applications where temporary peak loads will be applied.

There are 13 basic types of IsoVibra Foam, ranging from SD 10 to SD 1900. Each type is available in multiple standard thicknesses and can be used in multiple layers. This allows for effective isolation in a vast number of applications across a wide range of frequencies.

Performance Under Static & Dynamic Loads

Under low compression, the material exhibits an almost linear characteristics curve. The long-term static loading of these flexible bearings should lie within this range. The left scale shows the optimum static application range for each type of IsoVibra Foam.

Quasi-static load deflection curve of an IsoVibra Foam material (SD 65)



Exacting Performance, Made to Order

IsoVibra Foam products are not only available as mats and pads, they can also be provided as technical moulded parts.

These products are made to order based upon the exact requirements of their application. Therefore, if moulded parts are required we recommend contacting the Thermal Economics Technical Department to discuss your specific project needs.

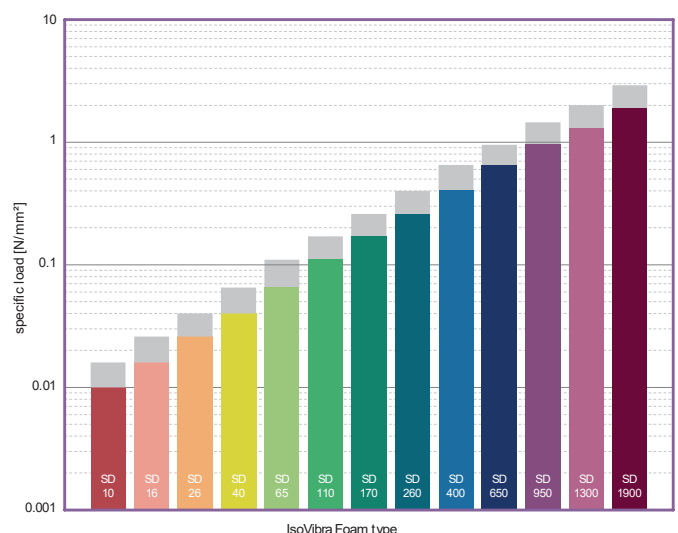
Tel: 01582 544255

email: info@thermal-economics.co.uk



As loading on these bearings increases, the spring characteristic curve trends downwards (light-grey area). IsoVibra Foam reacts in a very soft way to additional static and dynamic forces. In this dynamic application range, vibration isolation is at an optimum level. The right-hand scale indicates the optimum dynamic range for each type of IsoVibra Foam.

As compression levels rise, the characteristic curve follows a progressive line (dark grey area). Due to the specific properties of IsoVibra Foam, the material is unaffected by brief peak loads. The polymer structure also makes it possible, after brief high peak loads, for the material to return almost to its original position. The compression set defined in EN ISO 1856 is less than 5% for most types of IsoVibra Foam (please refer to the product data sheets for more precise details)



IsoRubber - acoustic products with **high recycled content**

The use of problematic waste rubber such as car tyres and technical rubber in our Isorubber products provides a beneficial way to use material that would otherwise go to landfill and saves CO₂ emissions when compared to the production of new rubber.

- High Performance
- Lasting Performance
- Reliable Performance
- Trusted Performance



Up to **90%**
recycled
material



Low impact
manufacturing process

**No blowing
agents used**
and off-cuts recycled



For more information on our IsoRubber range and how it could be used in your next project please contact our Sales or Technical Team.



BREEAM®

robustdetails



Made from recycled
waste rubber

T: 01582 450814

E: info@thermal-economics.co.uk

W: www.thermal-economics.co.uk



**Thermal
Economics**
THERMAL & ACOUSTIC INSULATION TECHNOLOGY

For help choosing the right product for your project please contact Thermal Economics
Technical Department on 01582 544255

For all our Acoustic & Thermal insulation products visit: www.thermal-economics.co.uk