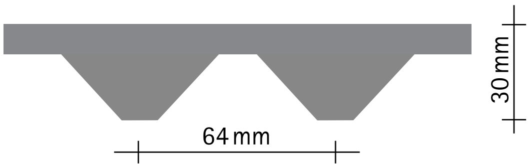
Cibatur®

Elastomeric bearing for vibration isolation

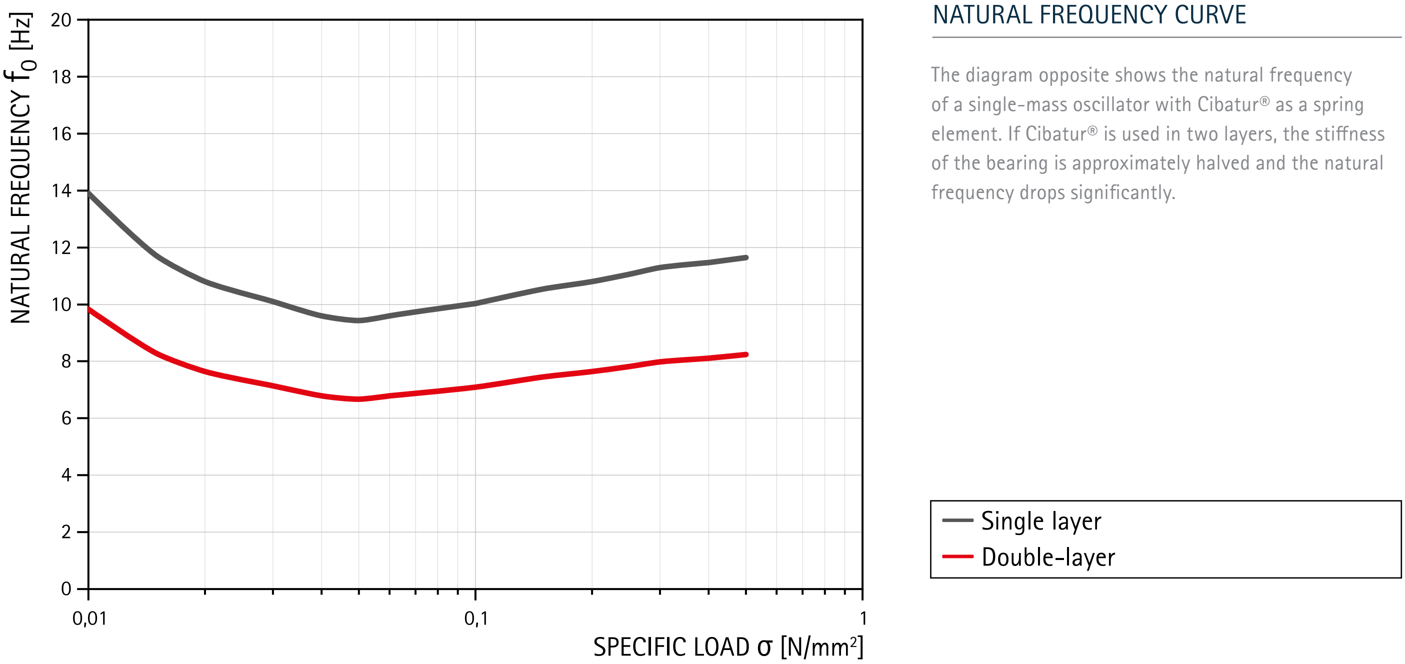
Product information

DIMENSIONS AND WEIGHTS	
Length	120 m
Width	1536 mm
Total thickness	30 mm
Thickness of the top layer	10 mm
Weight	16 kg / m²
Rolled goods	other rolls sizes or cut to size are available on request



FEATURES	
Materials	NR, CR
Storage	Outdoor
Building approval	No. Z-16.32-495
Permanent load	≤ 0.5 N/mm²
Permanent load + dynamic load	0.7 N/mm²
Load peaks (occasional and short-term)	≤ 1.2 N/mm²
Thermal stability	-40°C + 70°C
Flammability	B2 acc. to DIN 4102 (normal combustible)
Water absorption	< 2 %

Natural frequency



NATURAL FREQUENCY CURVE

The diagram opposite shows the natural frequency of a single-mass oscillator with Cibatur® as a spring element. If Cibatur® is used in two layers, the stiffness of the bearing is approximately halved and the natural frequency drops significantly.

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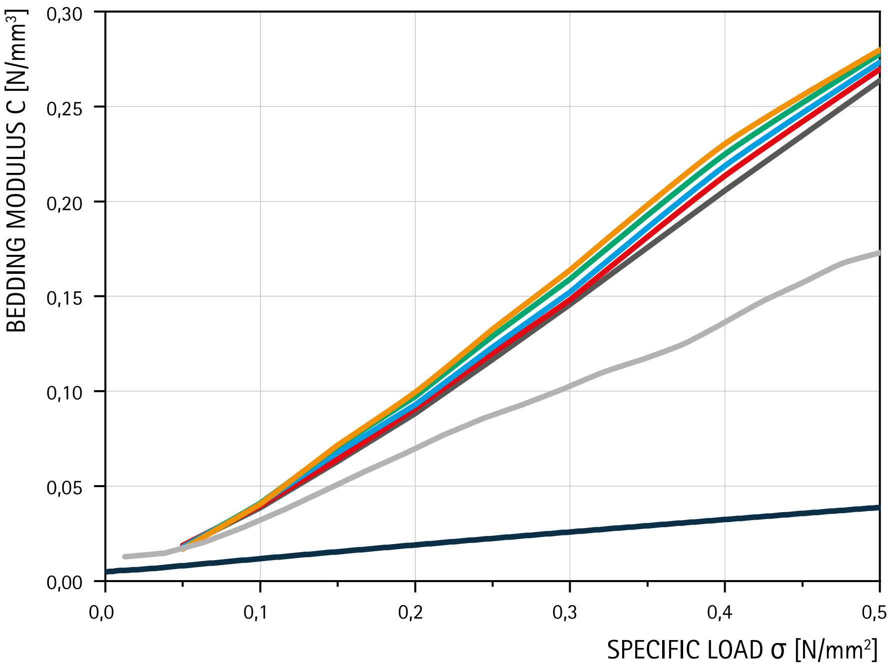
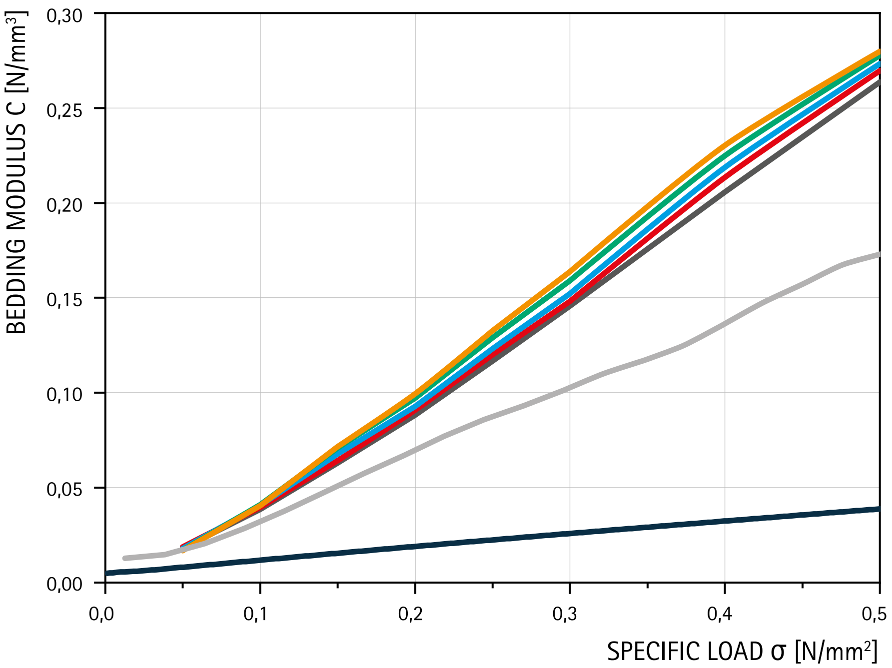
Bedding modulus subject to specific load, Cibatur® single layer



BEDDING MODULUS CURVE

In the adjacent diagrams, the static tangent module and secant module are shown for single and double-layer Cibatur® in addition to the dynamic bedding modulus.

Bedding modulus subject to specific load, Cibatur® double-layer



BEDDING MODULUS CURVE

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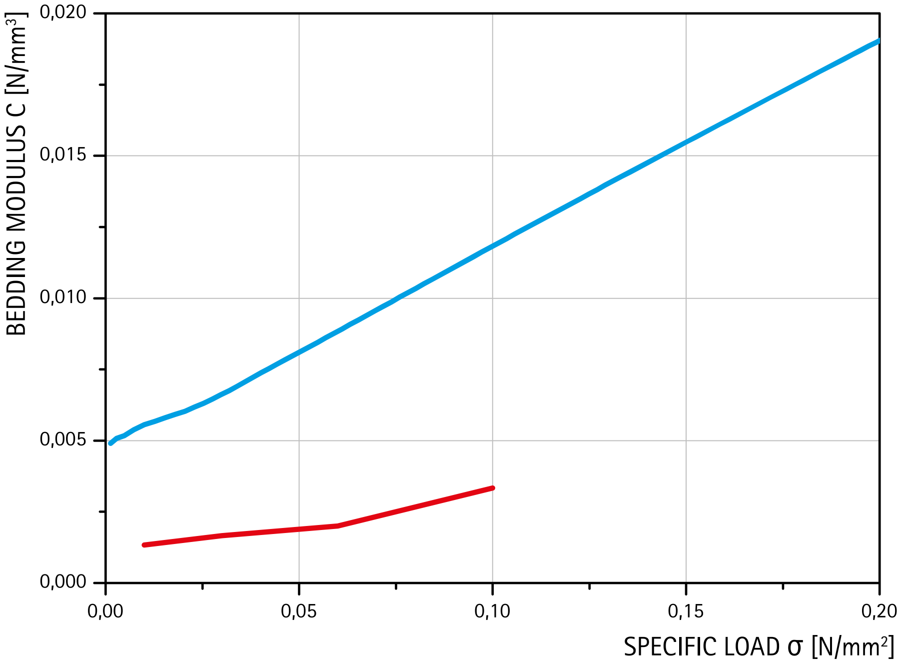
Vertical and horizontal stiffness

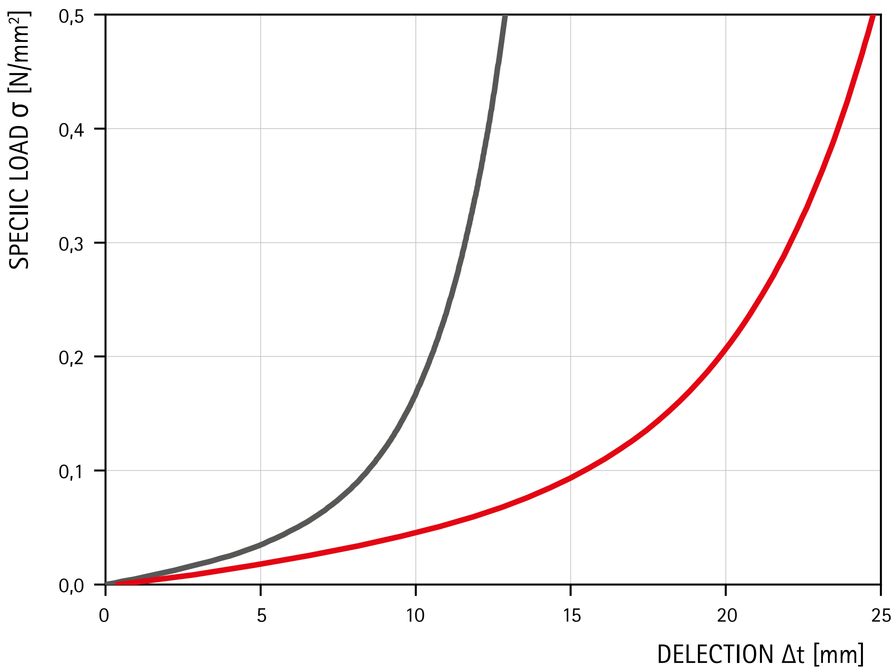


STIFFNESS CURVE

The diagram shows the vertical and horizontal secant modules of a layer of Cibatur® are plotted against the pressure. You can see that the shear modulus is much lower than the bedding modulus.

- vertical bedding modulus as static secant modulus
- horizontal bedding modulus as static secant modulus

Compression



LOAD DEFLECTION CURVE

Uniaxial pressure against vertical deformation for single and double-layer Cibatur®.

- Single layer
- Double-layer

CALENBERG

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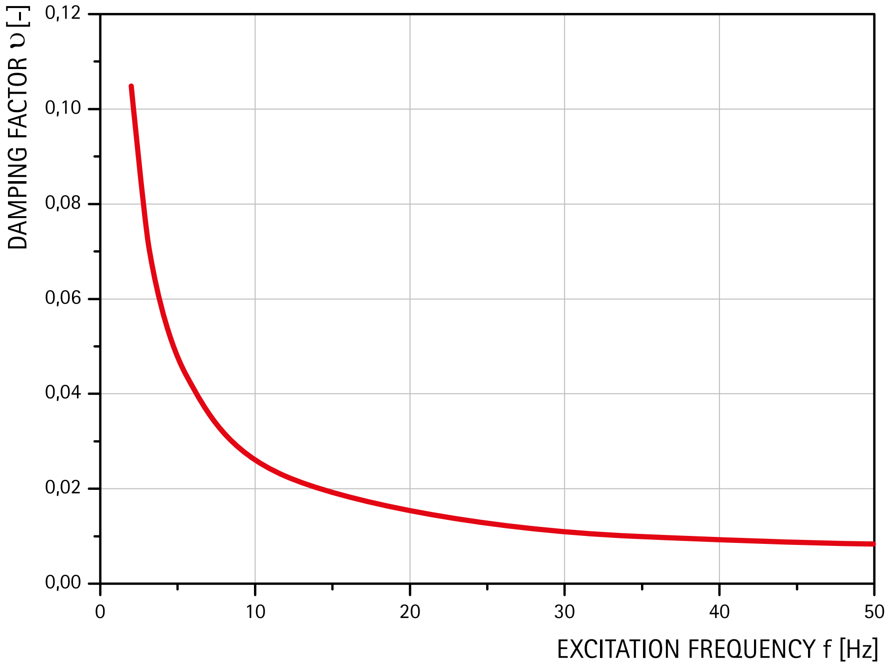
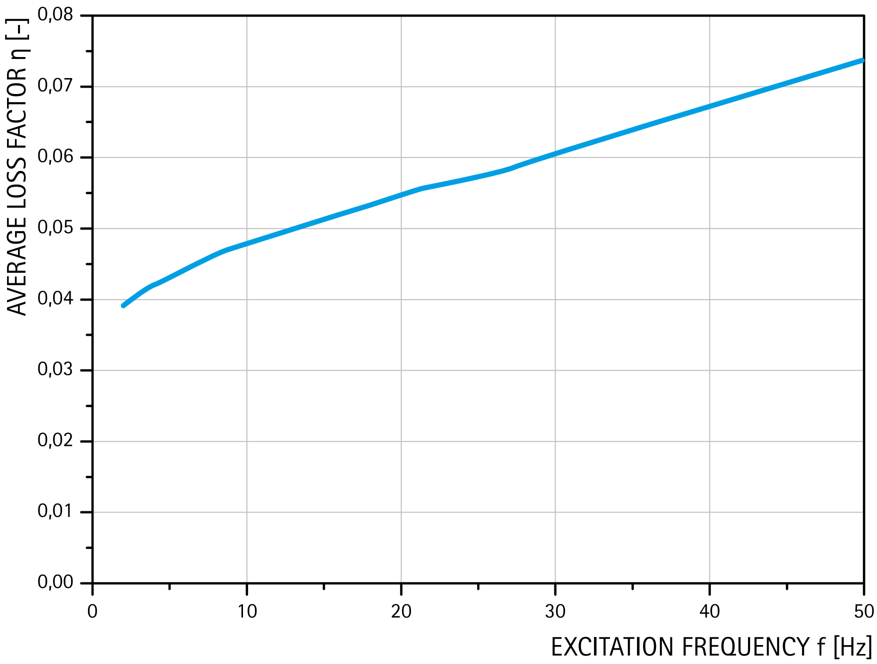
Damping factor



DAMPING FACTOR CURVE

The damping factor ϑ (frequently given as a percentage, previously referred to as Lehr damping factor D = ϑ) is a measurement of the decrease in amplitude of a free decay process.

Loss factor



LOSS FACTOR CURVE

Loss factor depending on specific load.

For a free oscillation, the two are related as follows:
Loss factor $\eta = 2\,D = 2\,\vartheta$

In general, the higher ϑ, the smaller are both the maximum increase of the amplitude in the case of resonance and the insulation effect for excitation frequencies higher than 1,4 times the natural frequency.

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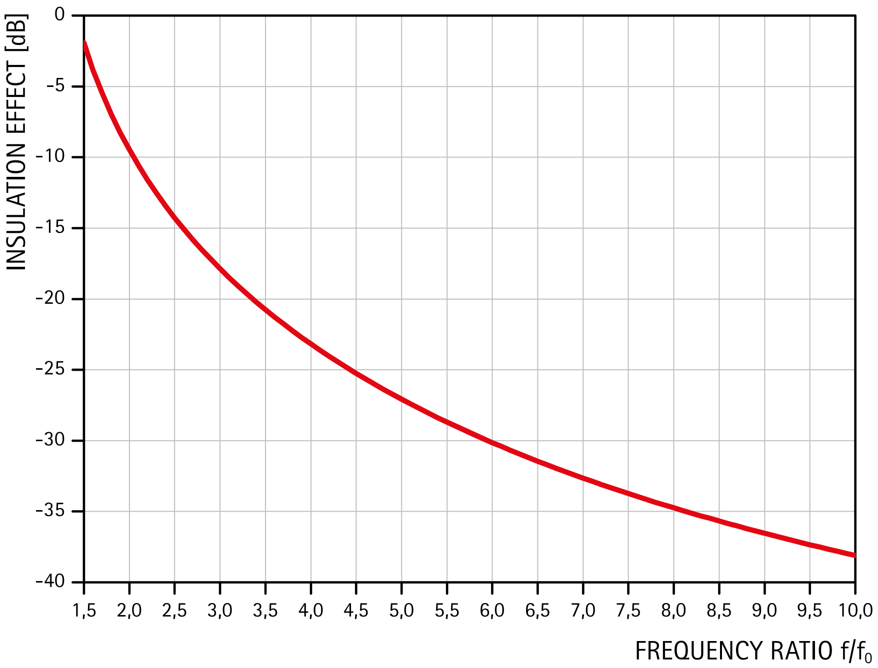
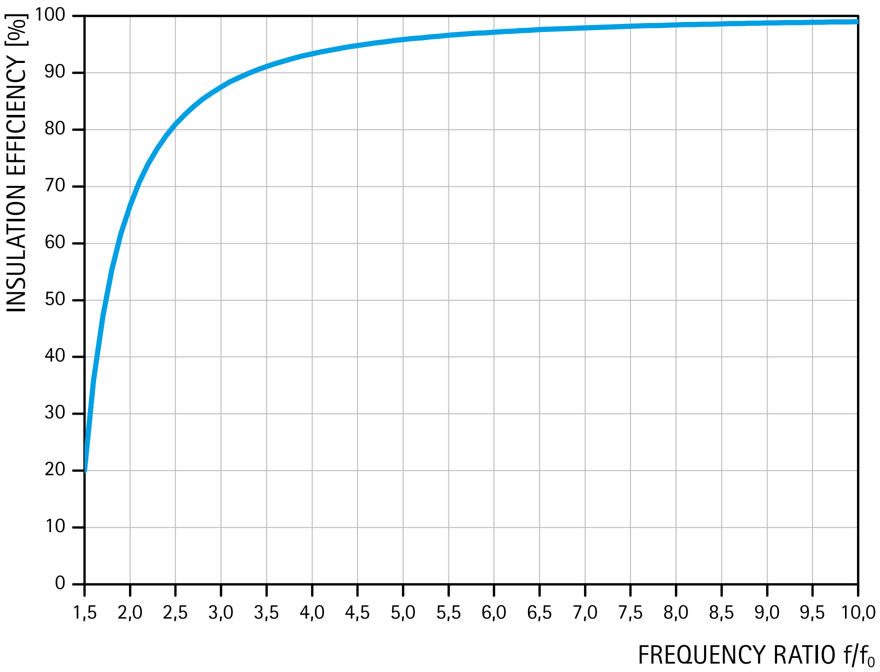
Insulation Effect



INSULATION EFFECT CURVE

Insulation effect and insulation efficiency (below) of a Cibatur® bedded single-mass oscillator.

Insulation efficiency



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