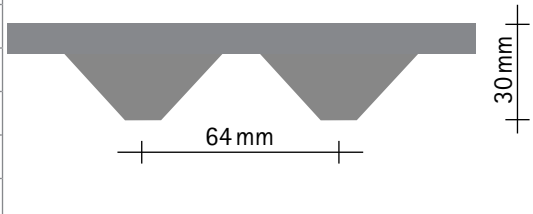


## Cibatur®

Elastomeric bearing for vibration isolation

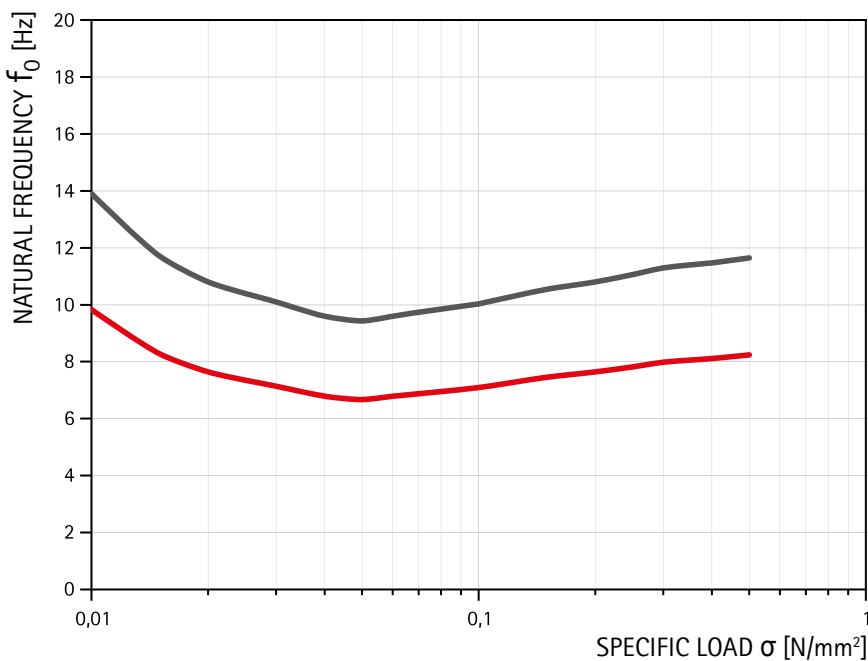
### Product information

DIMENSIONS AND WEIGHTS	
Length	120 m
Width	1536 mm
Total thickness	30 mm
Thickness of the top layer	10 mm
Weight	16 kg / m <sup>2</sup>
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/mm <sup>2</sup>
Permanent load + dynamic load	0.7 N/mm <sup>2</sup>
Load peaks (occasional and short-term)	≤ 1.2 N/mm <sup>2</sup>
Thermal stability	-40°C + 70°C
Flammability	B2 acc. to DIN 4102 (normal combustible)
Water absorption	< 2%

### Natural frequency



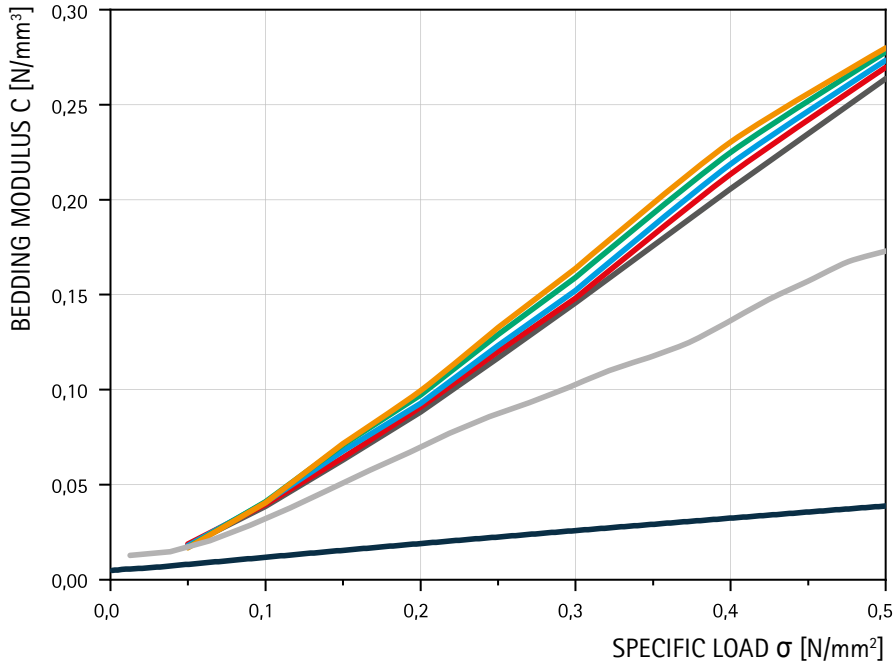
#### NATURAL FREQUENCY CURVE

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.

— Single layer  
— Double-layer

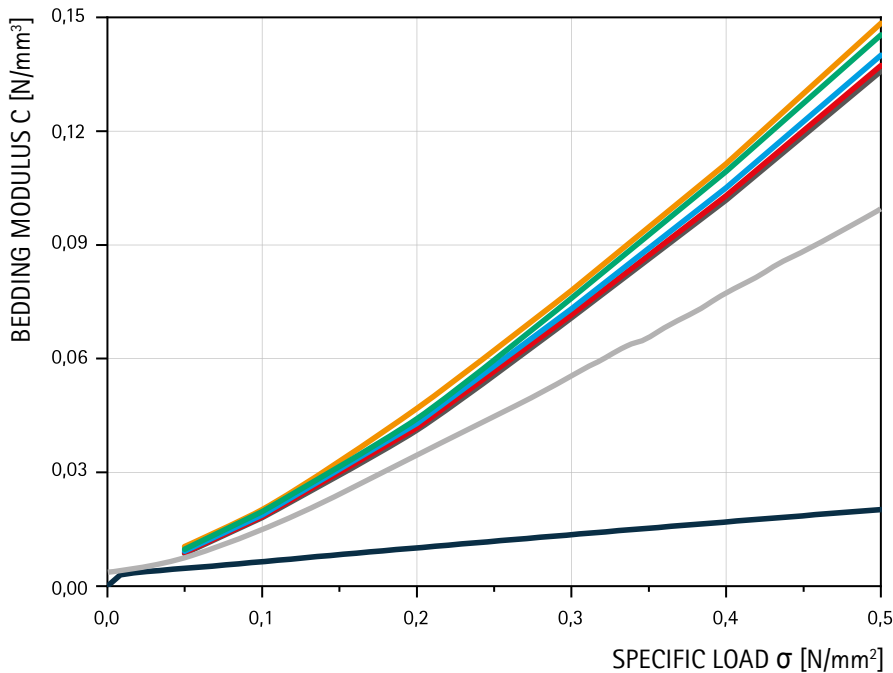
**Cibatur®**

Elastomeric bearing for vibration isolation

**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.

- $C_{dyn}$ ,  $f = 2.5$  Hz
- $C_{dyn}$ ,  $f = 5$  Hz
- $C_{dyn}$ ,  $f = 10$  Hz
- $C_{dyn}$ ,  $f = 20$  Hz
- $C_{dyn}$ ,  $f = 40$  Hz
- Stat. tangent modulus
- Stat. secant modulus

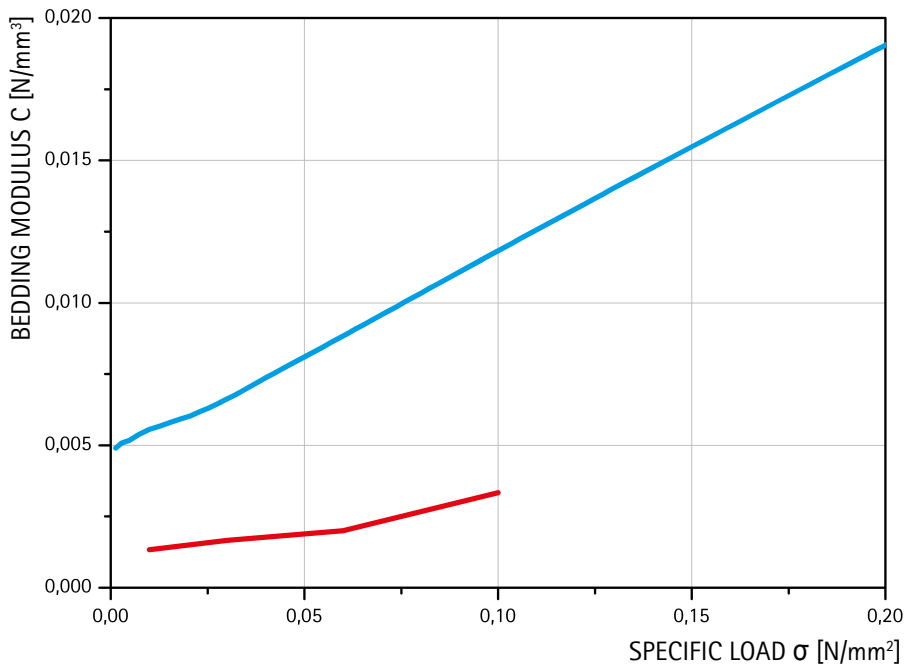
**Bedding modulus subject to specific load, Cibatur® double-layer**

**BEDDING MODULUS CURVE**

- $C_{dyn}$ ,  $f = 2.5$  Hz
- $C_{dyn}$ ,  $f = 5$  Hz
- $C_{dyn}$ ,  $f = 10$  Hz
- $C_{dyn}$ ,  $f = 20$  Hz
- $C_{dyn}$ ,  $f = 40$  Hz
- Stat. tangent modulus
- Stat. secant modulus

## Cibatur®

Elastomeric bearing for vibration isolation

### Vertical and horizontal stiffness

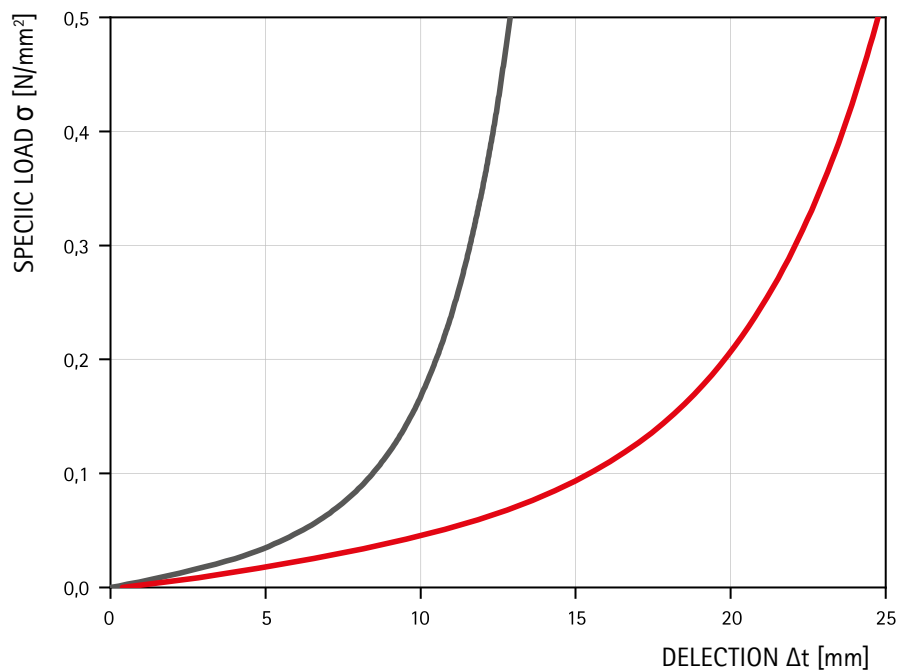


#### STIFFNESS CURVE

The diagram shows the vertical and horizontal secant modulus 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

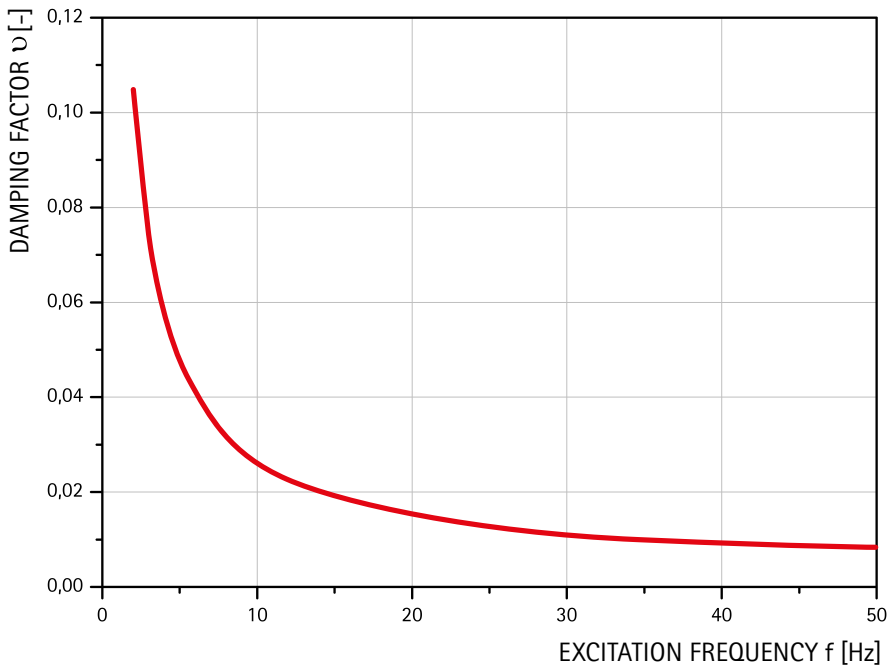
Uniaxial pressure against vertical deformation for single and double-layer Cibatur®.

- Single layer
- Double-layer

## Cibatur®

Elastomeric bearing for vibration isolation

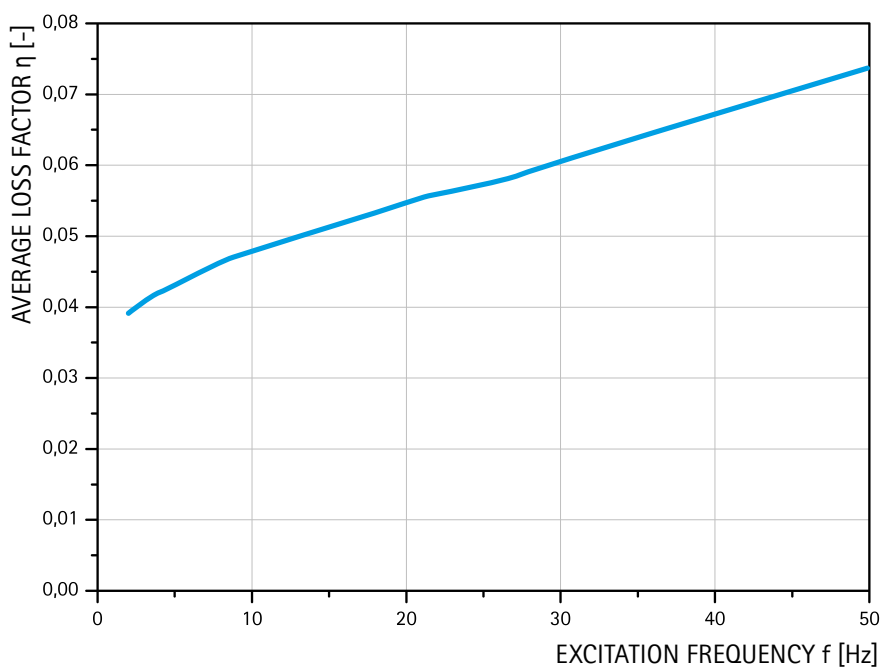
### Damping factor



#### DAMPING FACTOR CURVE

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

### Loss factor



#### LOSS FACTOR CURVE

Loss factor depending on specific load.

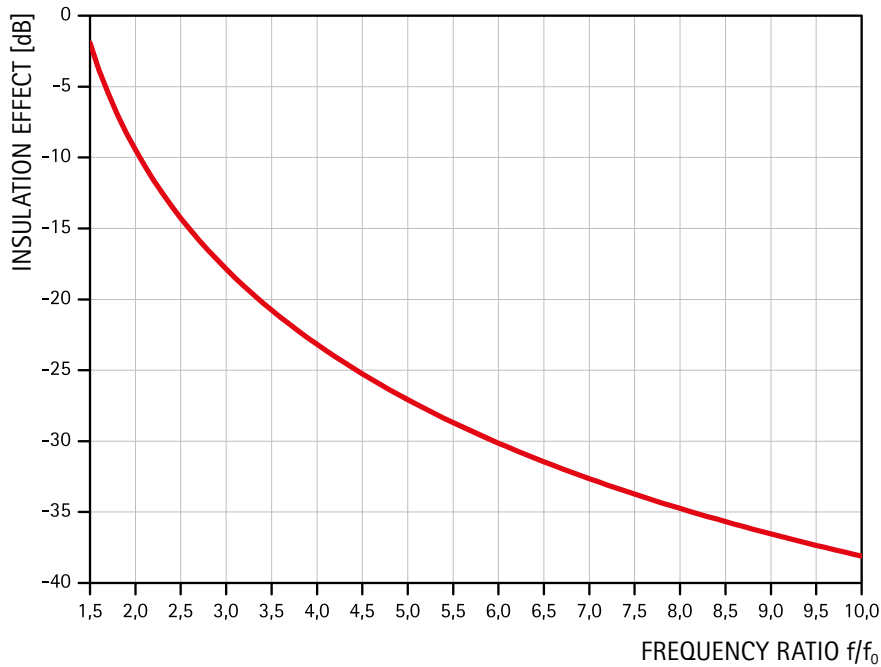
For a free oscillation, the two are related as follows:  
Loss factor  $\eta = 2 D = 2 \vartheta$

In general, the higher  $\vartheta$ , 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.

## Cibatur®

Elastomeric bearing for vibration isolation

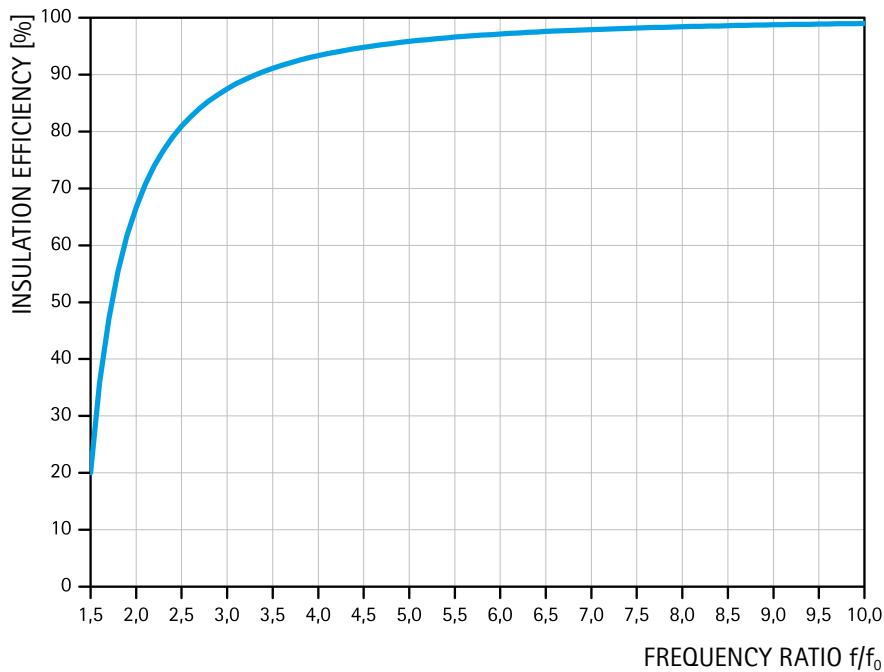
### Insulation Effect



### INSULATION EFFECT CURVE

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

### Insulation efficiency



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