GN 342.1 / GN 342.2 Vibration Damping Leveling Feet continued

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Compression of the damping pad [N/mm²]

Resonance frequency of the damping pad [Hz]

Vibration damping performance chart

When using GN 342.1 / GN 342.2 vibration damping leveling feet the following differentiation in vibration damping is made:

- Active vibrations:
  These vibrations originate from a device (a machine) and should be kept away from the equipment (table, frame).
- Passive vibrations:
  These vibrations originate from equipment and should be kept away from a device (a machine).

The efficiency of vibration damping depends on the frequency of the vibration to be damped (interference frequency) as well as on the natural frequency (resonance frequency) of the damping pad.

A vibration damping effect is only achieved when the interference frequency is greater than $\sqrt{2}$-times the resonance frequency of the damping pad. The greater the difference [Δ] between the two, the better the damping effect.

The resonance frequency of the damping pad depends on the type (composition, density) of the material, the cross section and the static load.

The performance chart on the left shows all the required data of the standard material (SR 450-12) of the damping pad. Damping pads with other damping properties are available on request.

Interference frequency [Hz]
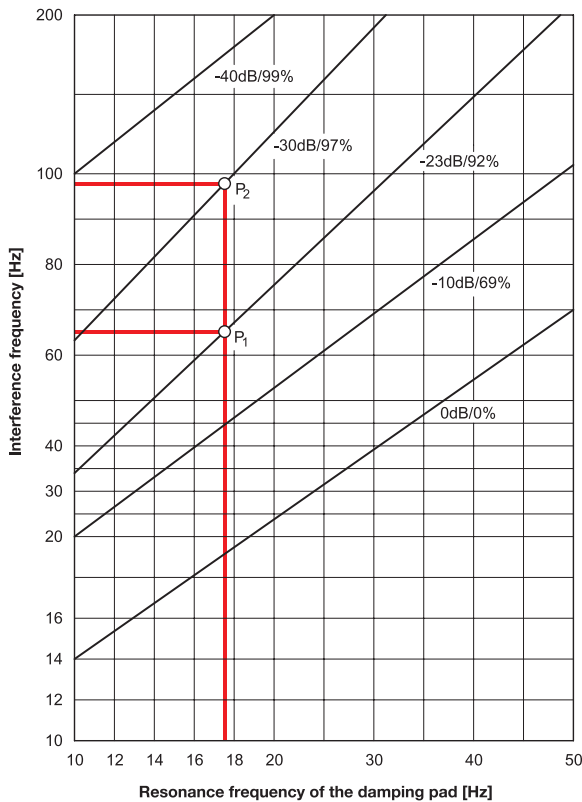
Parameter: power transmission in dB, degree of insulation in %

Resonance frequency of the damping pad [Hz]

Example

Static load per leveling foot: 400 N

Compression for leveling foot d_1 = 32 mm

$\frac{400 \text{ N}}{707 \text{ mm}^2}$ = 0.57 N/mm²

Compression for leveling foot d_1 = 40 mm

$\frac{400 \text{ N}}{1134 \text{ mm}^2}$ = 0.34 N/mm²

The leveling foot with d_1 = 40 mm should be preferred, at which the compression is closer to 0.4 N/mm².

The above chart shows:
Resonance frequency at compression of 0.34 N/mm² : 17.5 Hz

The lower chart shows:
Degree of insulation at 66 Hz interference frequency (P1): 92 %
Degree of insulation at 98 Hz interference frequency (P2): 97 %

At ≈ 200 Hz interference frequency the degree of insulation is at 100%.