# PRODUCT DATA SHEET

SONOTEC SOUND INSULATION CORK

PRODUCT DESCRIPTION

SonoTec sound insulation cork material is made of a combination of**cork and natural rubber.** The product is suitable for vibration damping applications that require a very high level of insulation. They are designed for use as **concealed insulation** (pads/strips) with a **low resonance frequency** and a medium-low load.
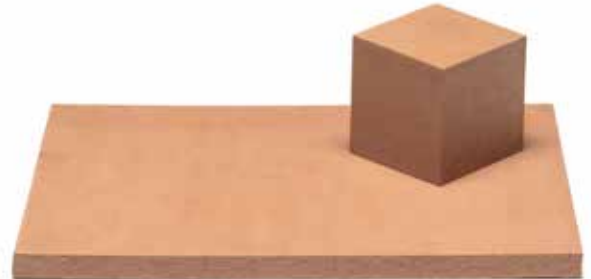
ADVANTAGES

· Sustainable material

· High load bearing capacity

· Concealed installation

· Easy to work with

· Depending on the component, impermeable to water and gas to some extent

· REACH compliant

MATERIAL

· SK02

· SK03

· SK04

APPLICATION IMAGE

SonoTec for use as separating and sound insulation layer between foundations and timber sleepers.

PRODUCT DATA SHEET

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PRODUCT TABLE

SonoTec sound insulation cork				
Art. no.	Material	Dimensions [mm]	Material thickness [mm]	PU
945305	SK02	80 x 1100	6	20
945306	SK02	100 x 1100	6	20
945307	SK03	80 x 1100	6	20
945308	SK03	100 x 1100	6	20
945309	SK04	80 x 1100	6	20
945310	SK04	100 x 1100	6	20

i INSTRUCTIONS FOR USE

Eurotec's sound insulation cork can be used in several ways, e.g. as a separating layer between a wooden frame and concrete floor/end plates. It can also be used as a support for purlins in the roof, as a separating layer between interior and exterior walls in solid wood construction and many other areas where there is a need for sound reduction.

Installing SonoTec sound insulation cork does not require any special training. It can either be laid straight on the floor in the appropriate position or pre-attached to wooden frames with staples. To do so, we recommend our EuroTec hammer tacker together with our 10 mm or longer hammer tacker staples.

Since staples are very thin, they do not transmit sound or vibrations. The respective loads to be born by the sound insulation layer have to be determined by a structural engineer.

SPECIFICATIONS

|	SK02	SK03	SK04
	Load ranges [N/mm²]		
Temperature range [°C]	10/+100	-10/+100	-10/+100
Density [kg/m³]	700	1100	1125
Shore hardness [shore A]	35 - 50	45 - 60	60 - 80
Elongation at fracture [%]	> 200	> 300	> 100
Tensile strength [N/mm²]	> 2.0	> 5.0	> 6.0
Compression 23 °C/70 h [%]	< 15	< 15	< 15

PRODUCT DATA SHEET

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IDENTIFYING THE CORRECT MATERIAL: AN EXAMPLE

We will be happy to identify the right material for you. To give you an idea of how we do so, we have outlined a sample identification process for you below.

First of all, we need to know the static continuous compressive stress that the sound insulation cork needs to absorb. This will be determined by the relevant architect, structural engineer or stress analyst.

Depending on the static continuous compressive stress, we then select one of three different materials:
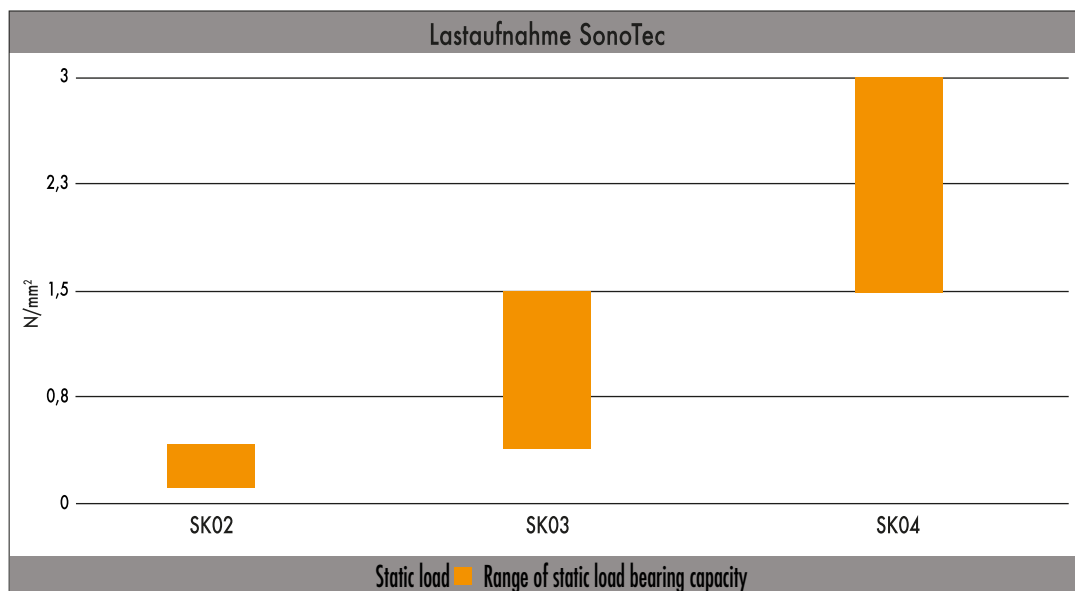
Caution: Make sure to verify all of the assumptions made. The values and type and number of fasteners provided will be based on preliminary analyses. Projects must always and only be dimensioned by authorised persons in accordance with the State Building Code (LBauO). Please contact a qualified structural engineer for a professional stability verification in accordance with the LBauO. We would also be happy to refer you to someone.

Art. no.	Static continuous compressive stress [N/mm²]	Material	Dimensions [mm]
945305	0.10 - 0.39	SK02	80 x 1100
945306	0.10 - 0.39	SK02	100 x 1100
945307	0.40 - 1.40	SK03	80 x 1100
945308	0.40 - 1.40	SK03	100 x 1100
945309	1.50 - 3.10	SK04	80 x 1100
945310	1.50 - 3.10	SK04	100 x 1100

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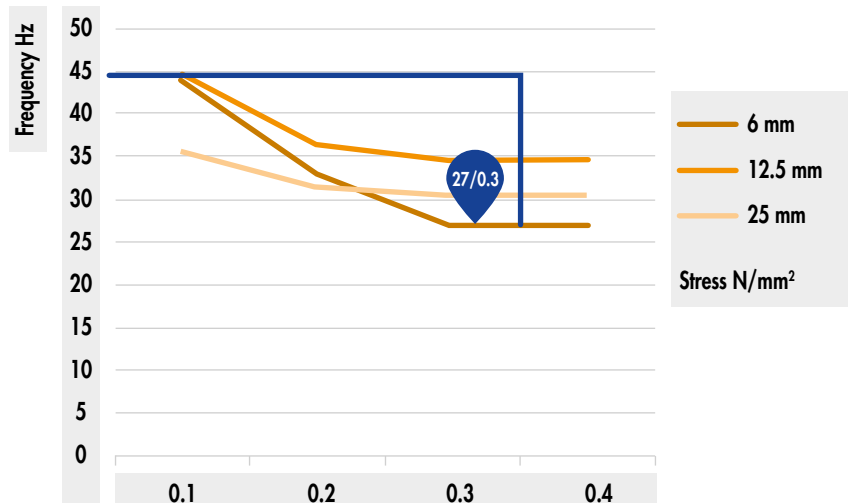
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In **the second step**, we need to determine the material's natural frequency, which depends on the load. These values are taken from the following table as approximate values.

	Continuous compressive stress [N/mm²]	6 mm			12 mm		
		Natural frequency [Hz]	Deflection [mm]	Elasticity modulus at 10 Hz [N/mm²]	Natural frequency [Hz]	Deflection [mm]	Elasticity modulus at 10 Hz [N/mm²]
SK02	0.1	44	0.2	4.0	27	0.5	3.7
	0.2	33	0.5	4.5	19	1.3	4.0
	0.3	27	0.8	5.6	17	1.9	5.1
	0.4	27	1.1	6.9	17	2.6	6.5
SK03	0.5	50	0.2	11.5	31	0.4	10.5
	0.8	38	0.4	15.75	22	1.0	14.0
	1.1	31	0.7	19.5	20	1.6	18.0
	1.5	31	0.9	28.5	20	2.2	27.0
SK04	1.6	58	0.3	18.5	36	0.6	17.0
	2.4	44	0.6	24.5	25	1.3	22.0
	3.2	35	1.0	30.5	23	2.0	28.0
	4.0	35	1.5	43.0	23	2.7	41.0

*Values for SK02 are based on test results provided by the University of Coimbra / Itecons. The values for SK03 and SK04 are standard values. The tests will confirm these values. The results will replace the preliminary values.

As an example, the following sample calculation assumes a pressure of 0.3 N/mm². Due to the specified load, we chose our **SK02** . As can be seen in the table above, the natural frequency therefore has to be 27 Hz. We can illustrate this as follows in the graphs below.

SK02 natural frequency [Hz]

Legend:
— 6 mm
— 12.5 mm
— 25 mm

Stress N/mm²

PRODUCT DATA SHEET   SONOTEC SOUND INSULATION CORK

In **the next step,** we take a closer look at the interference frequency. To this end, we look at the graphs below and can thus conclude that the sound reduction in the low frequency range has deteriorated. Low frequencies (basses) can only be isolated by mass. Since the range of frequencies to be isolated in building acoustics starts at 80 Hz, this is not an issue here. In general, frequencies of 80 Hz are always considered as a givens if no interference frequencies have been specified.

The sound reduction in dB can be determined in two ways:

1:
Based on a general interference frequency of 80 Hz, the following graph indicates a sound reduction of approx. 17 dB. These values are achieved under ideal conditions (optimum room temperature, room humidity, etc.).
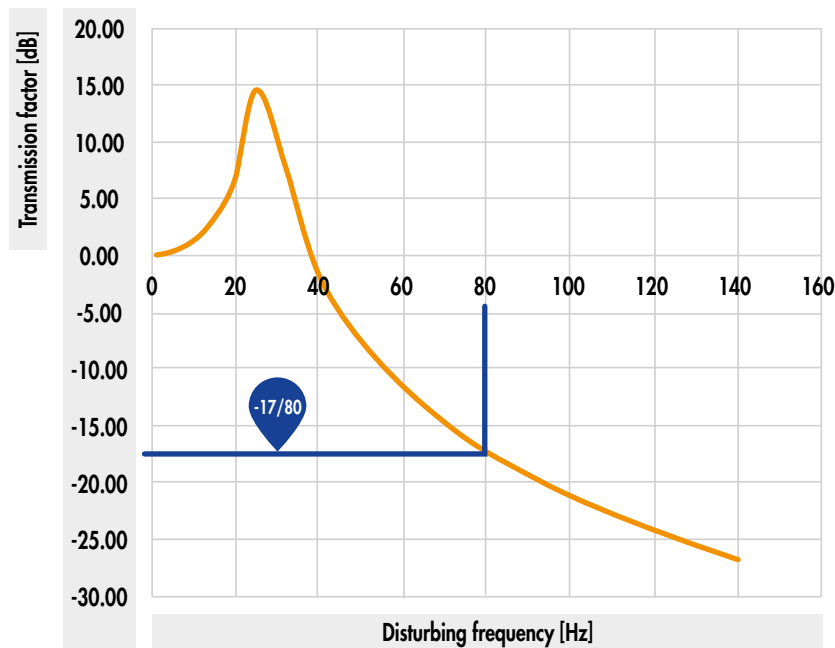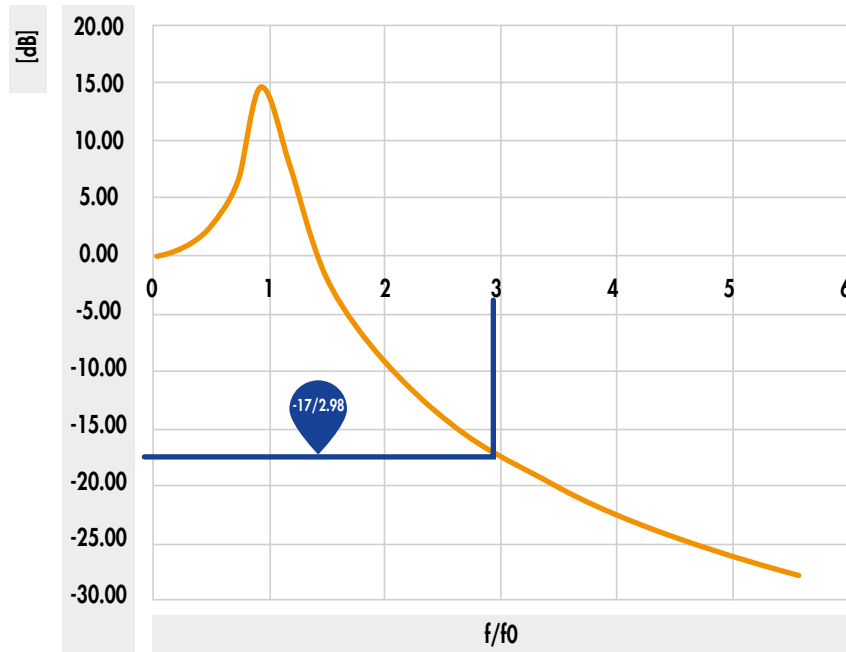

2:
The sound insulation factor can be calculated based on the natural frequency identified previously (27 Hz) and the specified interference frequency (80 Hz).

Sound insulation factor [f/f0]:   Interference frequency / natural frequency
→ **80 Hz / 27 Hz ≈ 2.96**

The sound reduction can then be identified based on the factor calculated previously. Under perfect conditions, this is 17 dB.
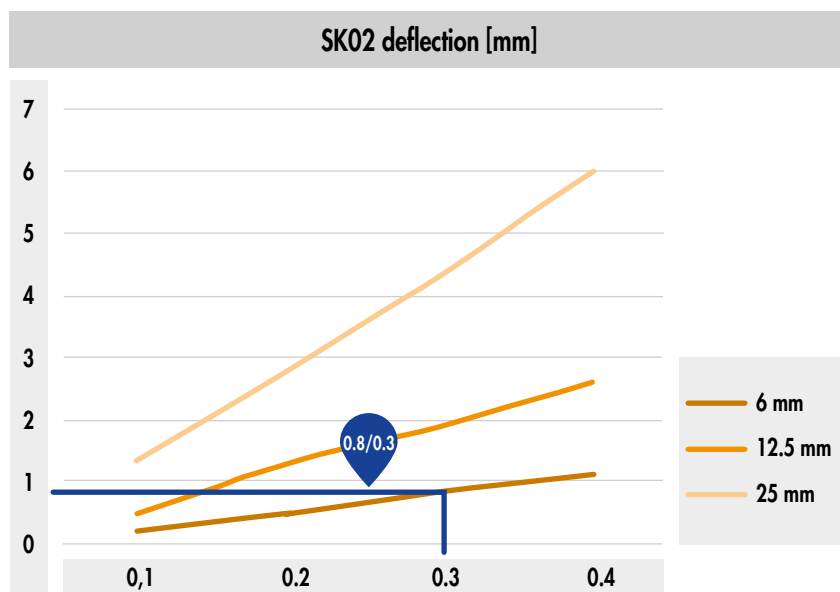
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In **the last step,** we identify the material's deflection. This step is particularly important for the building's designers. The deflection is also identified based on the continuous load, and there is a separate graph for each material. In the case of the sample calculation with SK02 and 0.3 N/mm², the following graph shows a deflection of 0.8 mm.

The graphs shown here have been adapted to the factors identified previously.

SK02 deflection [mm]

- 6 mm
- 12.5 mm
- 25 mm

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For our SK03 and SK04 materials, the following graphs apply to the deflection:

SK03 deflection [mm]

- 6 mm
- 12.5 mm
- 25 mm

SK04 deflection [mm]

- 6 mm
- 12.5 mm
- 25 mm
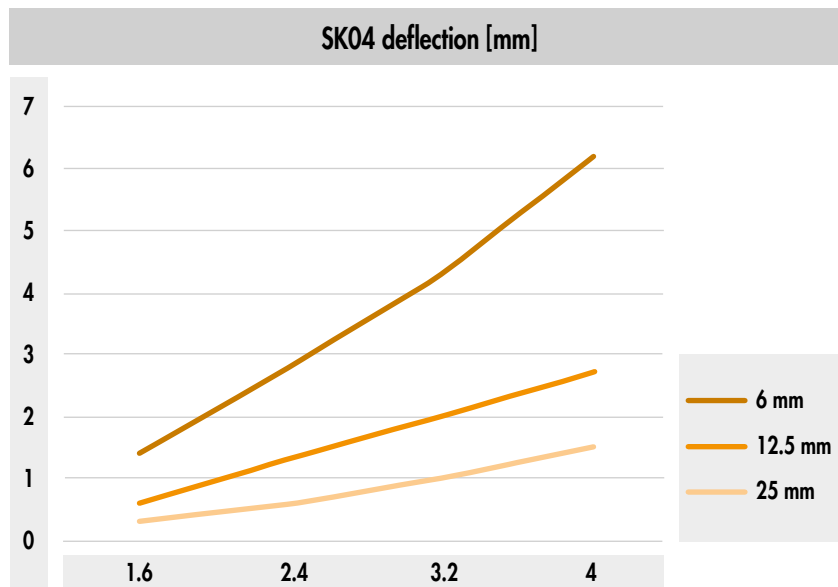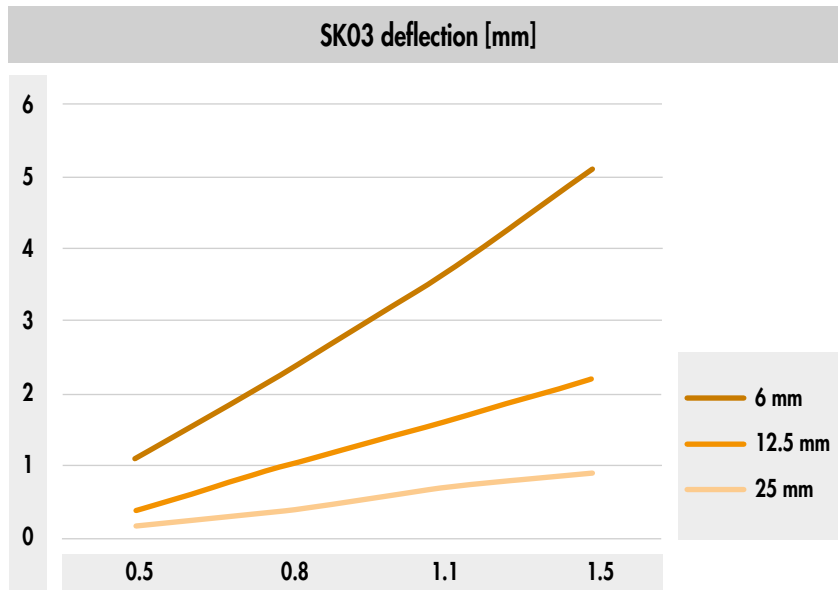
If you are not familiar with the application of this product, and particularly with the product's intended use, please contact our Application Technology Department (technik@eurotec.team).

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