ACOUSTICORK

AMORIM
CORK COMPOSITES

Reinventing construction

Silence, comfort and durability

VIBRATION ISOLATION

2018 EDITION

Construction

Cork, an exceptional raw material

Cork is the outer bark of the cork oak tree (Quercus Suber L.), the 100% natural plant tissue covering the trunk and branches.

It consists of a honeycomb-like structure of microscopic cells filled with an air-like gas and coated mainly with suberin and lignin. One cubic centimetre of cork contains about 40 million cells.

Cork is also known as “nature’s foam” due to its alveolar cellular structure. It has a closed-cell structure making it lightweight, airtight and watertight, resistant to acids, fuels and oils, and impervious to rot.

It is sustainably harvested by specialised professionals without damaging the trunk, thus enabling the tree to grow another layer of outer bark that, in time, will be re-harvested. Over the course of the cork oak tree’s life, that lasts 200 years on average, the cork may be stripped around 17 times. This means that cork is not only a natural raw material, it is also renewable and recyclable.

Excellent acoustic insulator

Extremely light

Excellent thermal insulator

Natural, reusable and recyclable

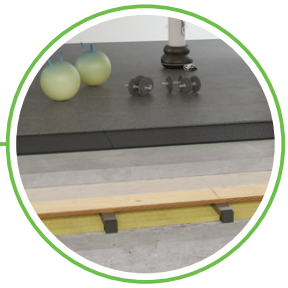
Good resilience
Excellent compressibility and recovery

Acousticork, the sound of silence

Amorim Cork Composites develops specific compound formulations for acoustic insulation and vibration isolation which offer highly insulating or dampening materials in compliance with a wide range of environmental conditions and chemical resistance levels.

See below the possible applications of Acousticork materials.

Batten support



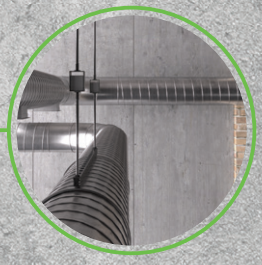
Floating floor

Box in box

Elastic bearing of stairs and landings

Two-tier construction

Separation of individual building parts



Suspension of pipes

Building bearing

Cork absorbs energy due to its unique compressibility and recovery characteristics. Cork improves the durability of acoustic mats or other decoupling elements.

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Why Acousticork?

Fast-moving times require acoustic comfort

Growing urbanization and rising populations in urban areas are leading to more stringent noise and vibration standards and norms. As a result there is higher demand for high-quality and efficient sound insulation and vibration isolation (from internal or external sources in each building).

Ensuring peace and quiet isn't a mere luxury. It's already a human need - to guarantee quality of life and work in our fast-moving era.

Every day, new buildings are being erected on plots of land subject to vibrations, in areas with dense infrastructures. Sources of disturbance are often located near railway lines, roads or industrial complexes. Unless appropriate action is taken, buildings are defenceless against such vibrations.

Many apartments blocks also have underground car parks, commercial establishments on the ground floor (such as a shopping mall) or even a gym on an intermediate floor. In these situations, various factors may subject buildings to shocks, which have an impact on their structure and are perceived by residents as noticeable vibrations or secondary airborne noise.

ACOUSTICORK natural base materials for demanding applications

Amorim Cork Composites develops specific compound formulations for acoustic insulation and vibration isolation which offer highly insulating or dampening materials in compliance with a wide range of environmental conditions and chemical resistance levels.

Cork absorbs energy due to its unique compressibility and recovery characteristics, yielding higher loss factors that are essential for the dampening function. Cork's extremely low Poisson Ratio improves the behaviour of such materials in dynamic loading applications. Cork also brings durability to the applied solution.

Vibration Isolation

The Acousticork range is divided into two main families: Acoustic Insulation and Vibration Isolation. This book refers to Vibration Isolation Materials and includes datasheets of each material, plus some ideas on the systems they can be used with.

ACOUSTICORK

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CORK COMPOSITES

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Vibration isolation

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Vibration Isolation

Acousticork's specific material formulations for vibration control combine performance with environmental concerns.

Cork & Natural Rubber Engineered Compound

Features
- Dynamic-to-static stiffness ratio (1,3–2,5)
- Low damping
- Low creep
- Low water absorption

Benefits
- Low resonance frequency
- Long term durability
- Can be used in mats, strips or pads and with different backings, such as double-sided tape.

Resin Bonded Cork & Recycled Rubber

Features
- Dynamic-to-static stiffness ratio (2–3,5)
- High damping
- Low Poisson ratio (no shape factor dependency)
- Recycled products

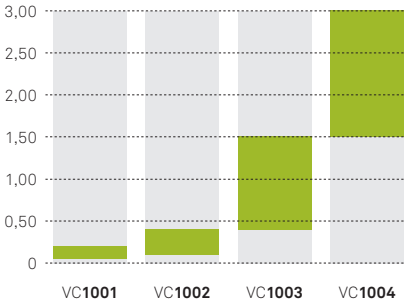
Benefits
- Lower amplification at resonance
- Long term durability
- Good Quality/Value ratio
- Can be used in pads

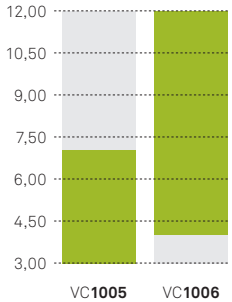
Resin Bonded Recycled Rubber

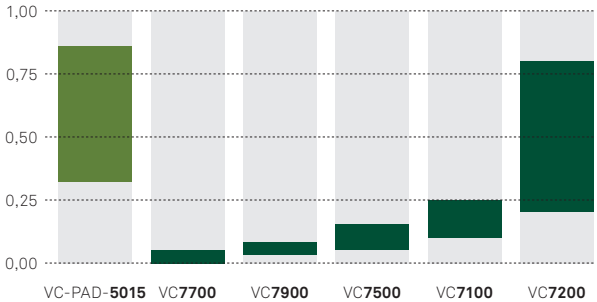
Features
- Dynamic-to-static stiffness ratio (2–3)
- Low damping
- Recycled products

Benefits
- Long term durability
- Good Quality/Value ratio
- Can be used in mats and strips

Work load range (MPa)







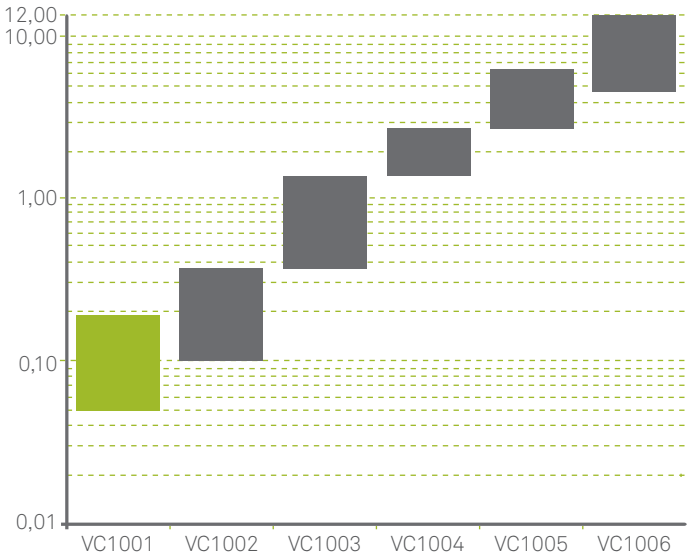
AMORIM
CORK COMPOSITES

VC1001

Material Data Sheet

CORK & NATURAL RUBBER

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- Low natural frequency / High vibration isolation
- Low water absorption
- Low creep rate

STANDARD DIMENSIONS*

915x915x10mm
915x915x20mm
915x915x30mm
915x915x50mm

* Other dimensions (like pads) available under request

VC1001 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and low load.

LOAD RANGE

• **STATIC**	0,05 - 0,20 MPa (7 - 29 psi)
• **TOTAL**	0,25 MPa (36 psi)
• **OCCASIONAL**	0,60 MPa (87 psi)

E-MODULE (@ stable load)

• **STATIC** (1)	0,8 - 1,5 MPa (116 - 217 psi)
• **DYNAMIC** (2)	1,2 - 3,6 MPa (174 - 522 psi)

TEMPERATURE

• **RANGE**	-10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	500 (31 lb/ft³)
Shore hardness (Shore A) (2)	20 - 35
Elongation at break (%) (3)	> 80
Tensile strength (MPa) (3)	> 0,25 (>36 psi)
Compression set 50%/23°C/70h (%) (4)	< 20

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
AMORIM CORK COMPOSITES

CERTIFICADO apcer ISO 9001 ISO 14001 OHSAS 18001 CERTIFIED IQNet MANAGEMENT SYSTEM

FSC www.fsc.org FSC® C022338
The mark of responsible forestry

PEFC PEFC/13-32-014 Promoting Sustainable Forest Management www.pefc.org

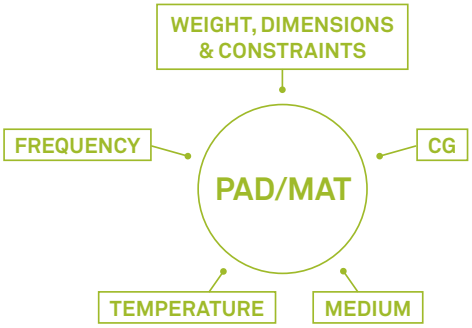
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

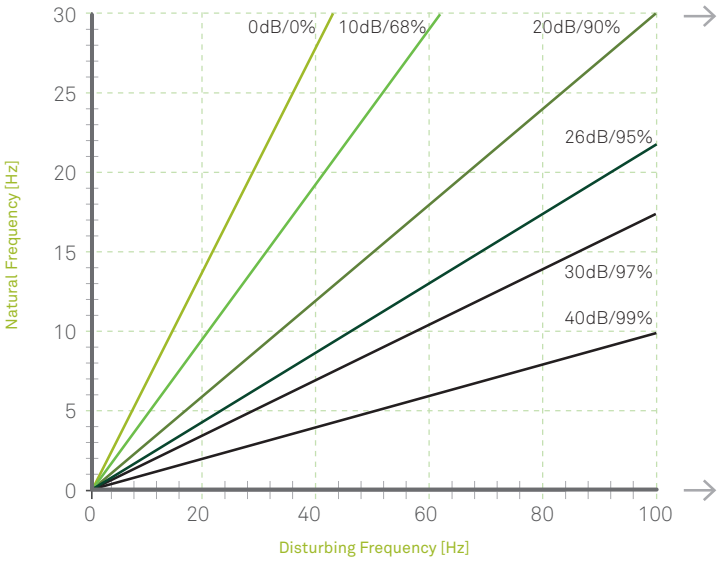
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

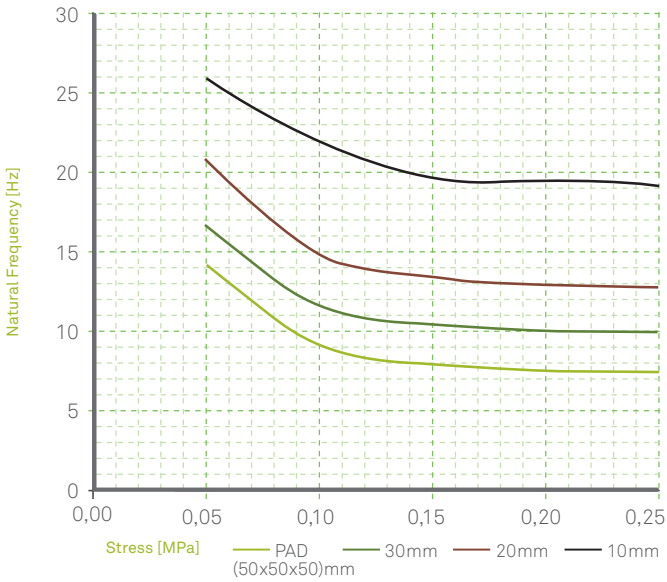
• Determine the material compression from the deflection curve at the specific load/ stress.

• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



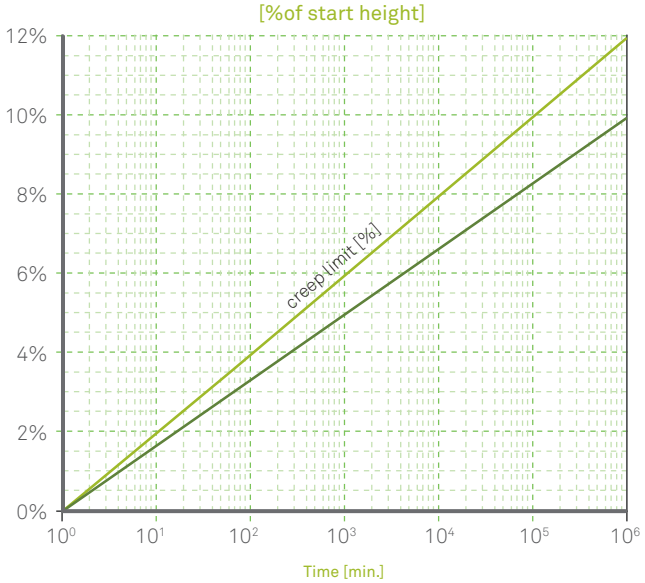
Vibration Isolation Level

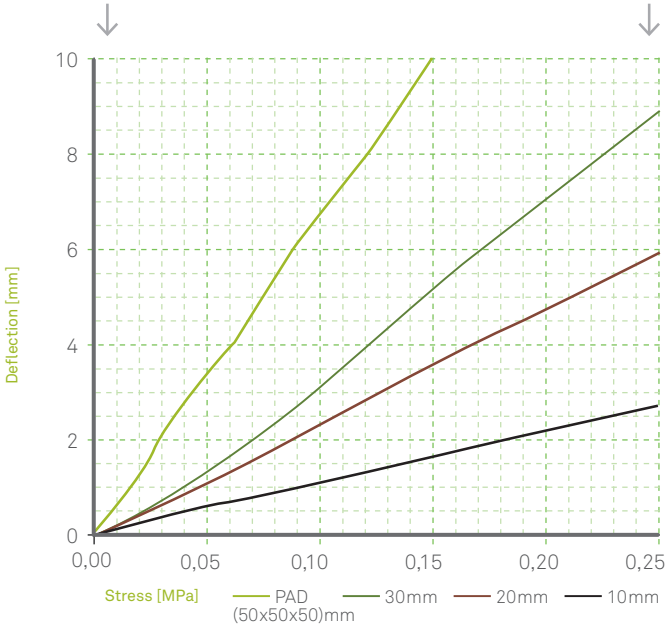




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 0.25 MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

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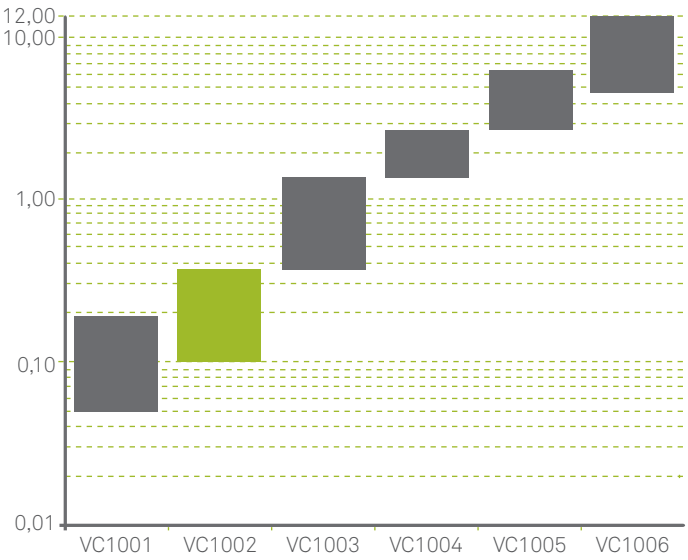
AMORIM
CORK COMPOSITES

VC1002

Material Data Sheet

CORK & NATURAL RUBBER

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- Low natural frequency / High vibration isolation
- Low water absorption
- Low creep rate

STANDARD DIMENSIONS*

1100x550x20mm
550x550x30mm
550x550x50mm

* Other dimensions (like pads) available under request

VC1002 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and medium low load.

LOAD RANGE

• **STATIC**	0,10 - 0,40 MPa (14 - 58 psi)
• **TOTAL**	0,60 MPa (87 psi)
• **OCCASIONAL**	1,50 MPa (218 psi)

E-MODULE (@ stable load)

• **STATIC** (1)	1,6 - 4,0 MPa (232 - 580 psi)
• **DYNAMIC** (2)	3,5 - 8,0 MPa (507 - 1160 psi)

TEMPERATURE

• **RANGE**	-10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	700 (44 lb/ft³)
Shore hardness (Shore A) (2)	35 - 50
Elongation at break (%) (3)	> 200
Tensile strength (MPa) (3)	> 2,0 (> 290 psi)
Compression set 50%/23°C/70h (%) (4)	< 15

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
AMORIM CORK COMPOSITES

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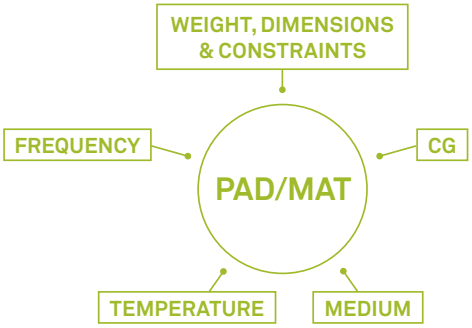
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

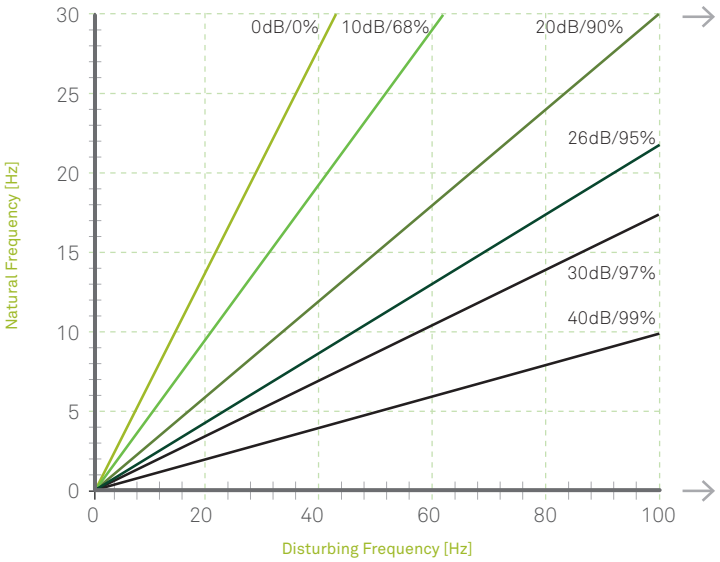
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

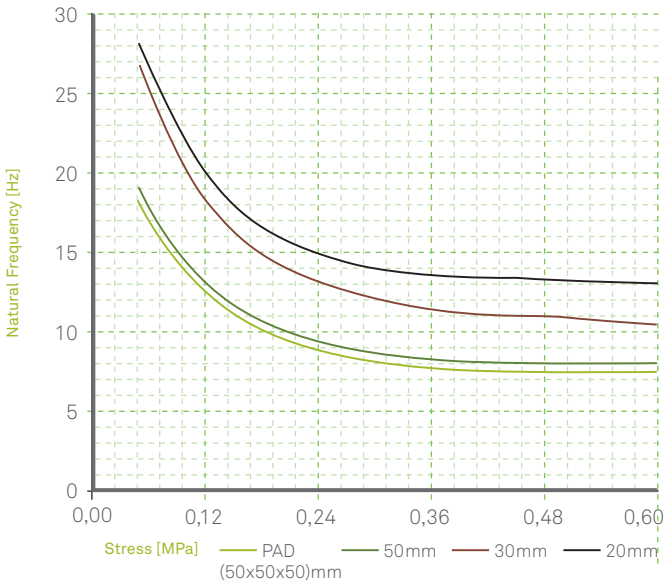
• Determine the material compression from the deflection curve at the specific load/ stress.

• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



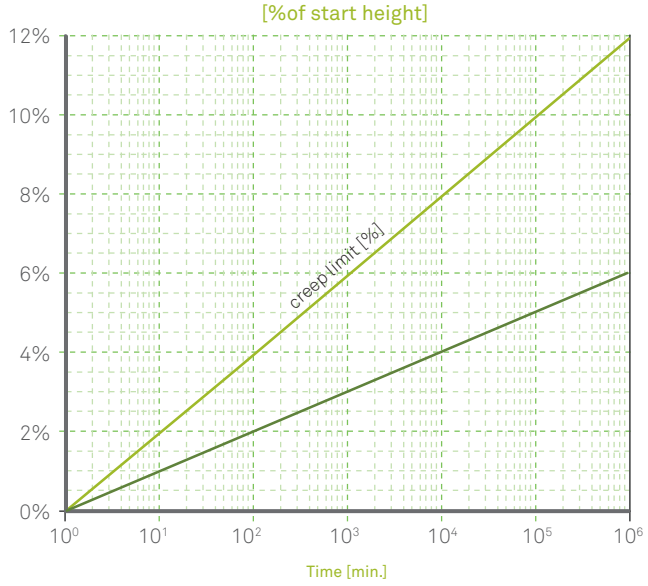
Vibration Isolation Level

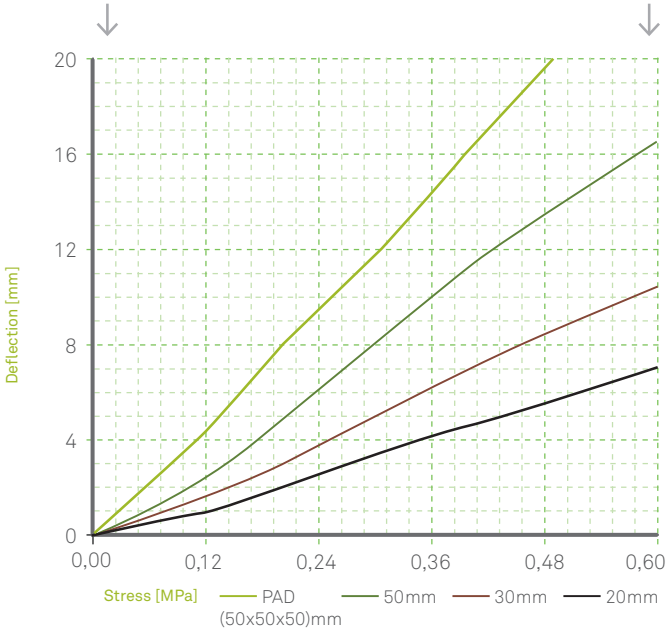




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 0.4 MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

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AMORIM
CORK COMPOSITES

VC1003

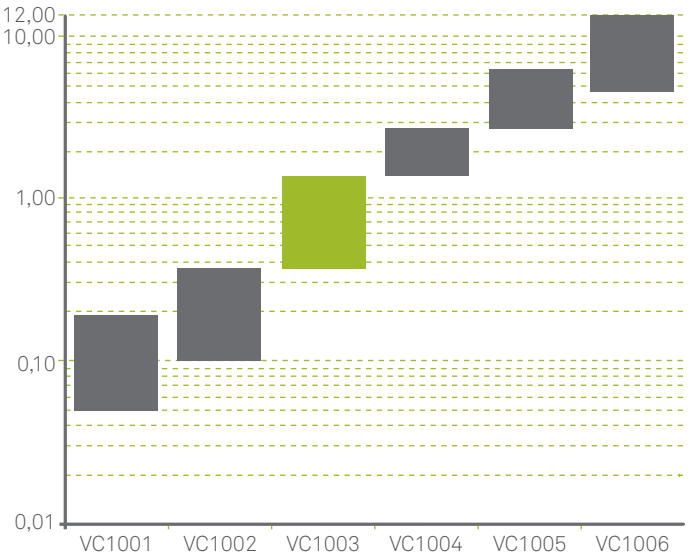
Material Data Sheet

CORK & NATURAL RUBBER

VC1003 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and medium load.

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- Low natural frequency / High vibration isolation
- Low water absorption
- Low creep rate

STANDARD DIMENSIONS*

1100x550x20mm
550x550x30mm
550x550x50mm

* Other dimensions (like pads) available under request

LOAD RANGE

• **STATIC**	0,40 - 1,50 MPa (58 - 218 psi)
• **TOTAL**	2,0 MPa (290 psi)
• **OCCASIONAL**	8,0 MPa (1160 psi)

E-MODULE (@ stable load)

• **STATIC** (1)	5,0 - 13,0 MPa (725 - 1885 psi)
• **DYNAMIC** (2)	10,0 - 33,0 MPa (1450- 4785 psi)

TEMPERATURE

• **RANGE**	-10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	1100 (68 lb/ft³)
Shore hardness (Shore A) (2)	45 - 60
Elongation at break (%) (3)	> 300
Tensile strength (MPa) (3)	> 5,0 (>725 psi)
Compression set 50%/23°C/70h (%) (4)	< 15

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
AMORIM CORK COMPOSITES

CERTIFICADO apcer ISO 9001 ISO 14001 OHSAS 18001 CERTIFIED IQNet MANAGEMENT SYSTEM

FSC www.fsc.org FSC® C022338
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PEFC PEFC/13-32-014 Promoting Sustainable Forest Management www.pefc.org

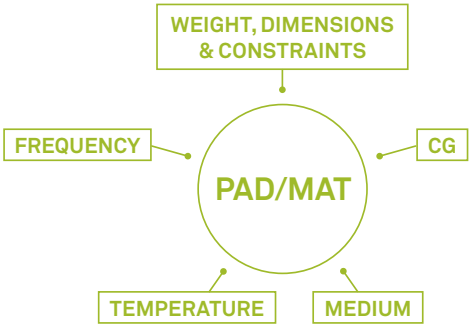
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

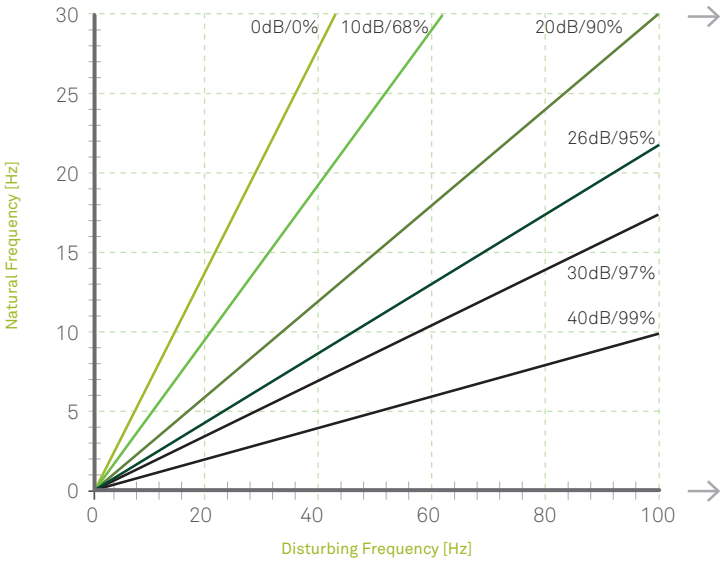
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

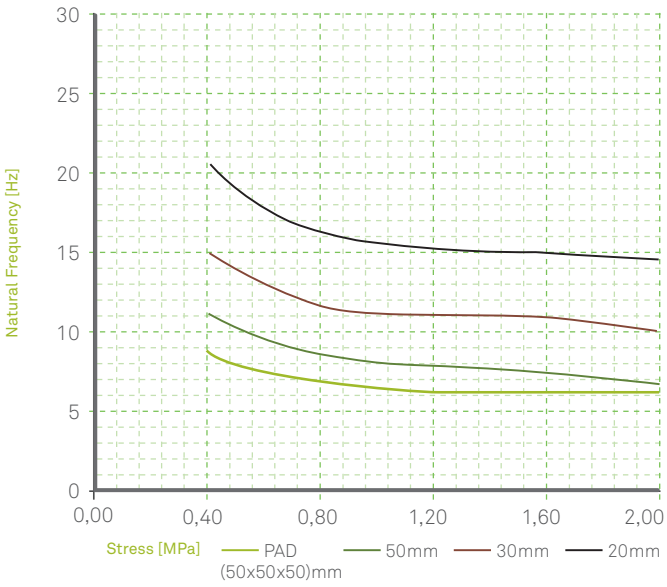
• Determine the material compression from the deflection curve at the specific load/ stress.

• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



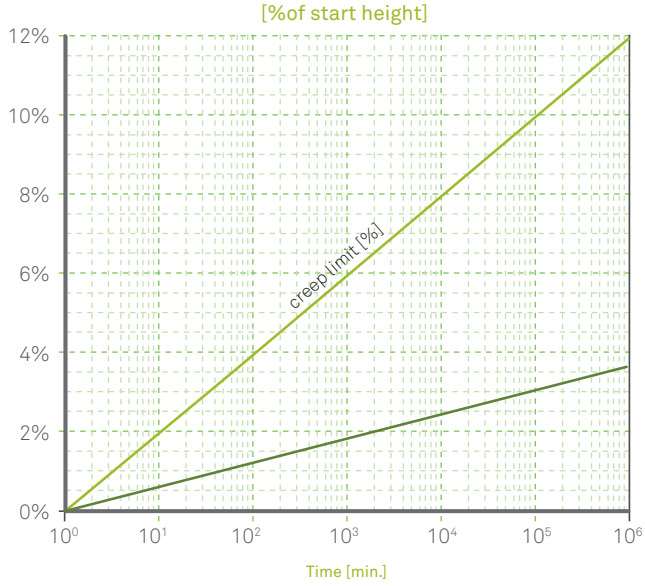
Vibration Isolation Level

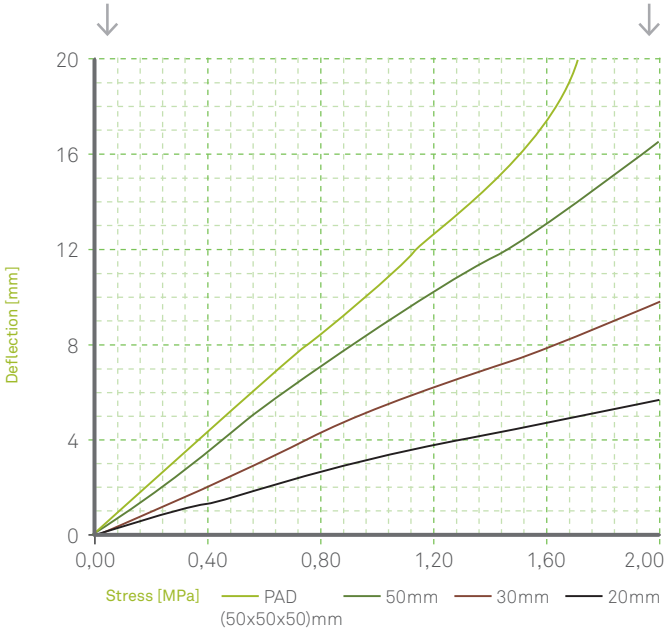




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 1,5MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

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AMORIM
CORK COMPOSITES

VC1004

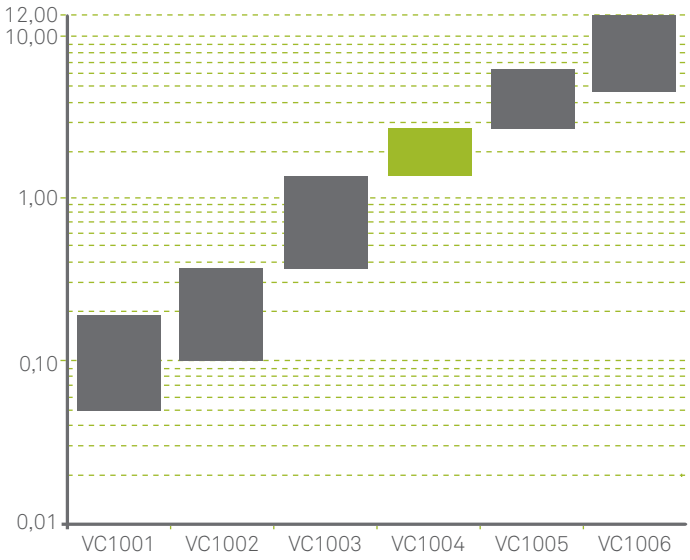
Material Data Sheet

CORK & NATURAL RUBBER

VC1004 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and medium high load.

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- Low natural frequency / High vibration isolation
- Low water absorption
- Low creep rate

STANDARD DIMENSIONS*

1100x550x20mm
550x550x30mm
550x550x50mm

* Other dimensions (like pads) available under request

LOAD RANGE

• **STATIC**	1,5 - 3,0 MPa (217 - 435 psi)
• **TOTAL**	4,0 MPa (580 psi)
• **OCCASIONAL**	10,0 MPa (1450 psi)

E-MODULE (@ stable load)

• **STATIC** (1)	8,0 - 20,0 MPa (1160 - 2900 psi)
• **DYNAMIC** (2)	16,0 - 50,0 MPa (2320- 7251 psi)

TEMPERATURE

• **RANGE**	-10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	1125 (70 lb/ft³)
Shore hardness (Shore A) (2)	60 - 80
Elongation at break (%) (3)	> 100
Tensile strength (MPa) (3)	> 6,0 (<870 psi)
Compression set 50%/23°C/70h (%) (4)	< 15

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
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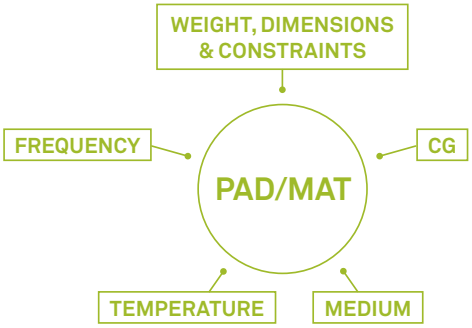
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

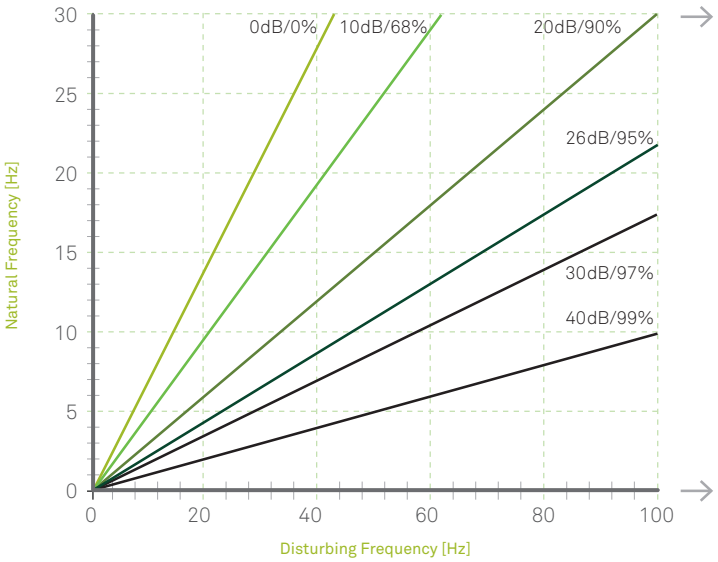
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

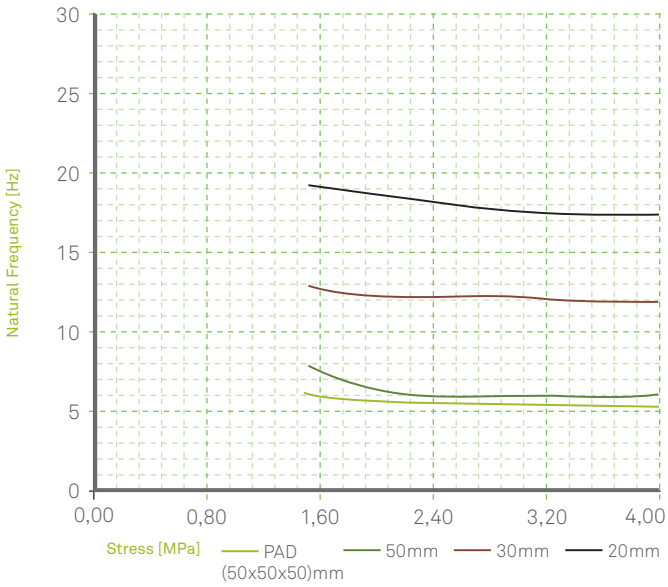
• Determine the material compression from the deflection curve at the specific load/ stress.

• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



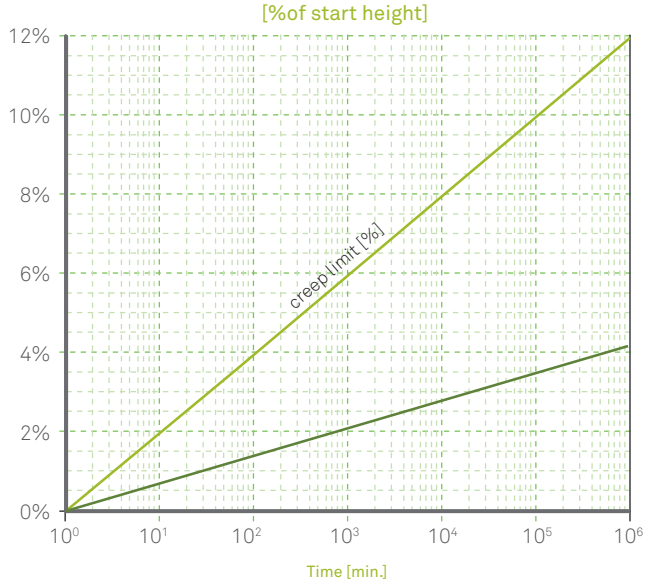
Vibration Isolation Level

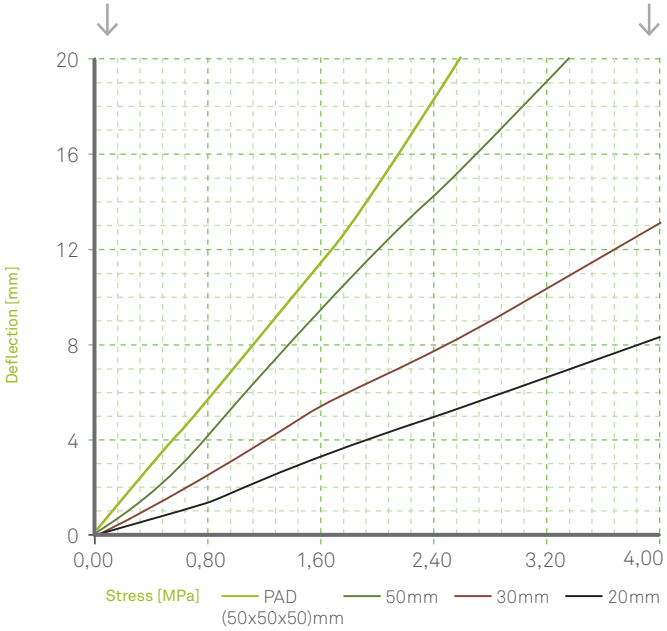




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 3 MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

AMORIM
CORK COMPOSITES

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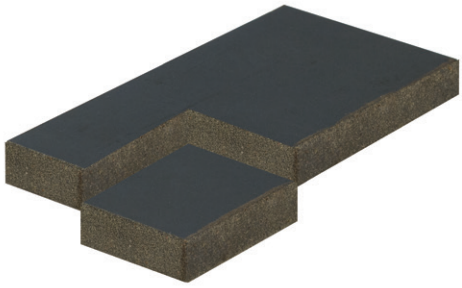
AMORIM
CORK COMPOSITES

VC1005

Material Data Sheet

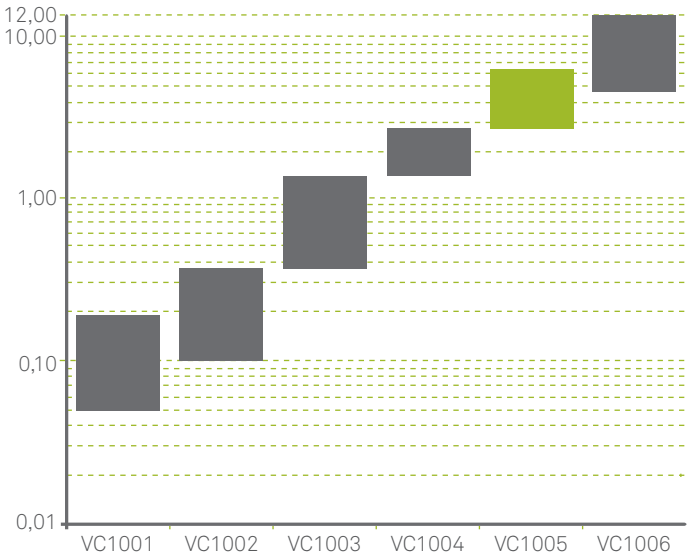
CORK & NATURAL RUBBER



VC1005 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and high load, such as: building bearings, separation of individual building parts, two-tier construction or crane runway bearings.

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- High dynamic effectiveness
- Simple handling and processing
- Excellent long-term creep behaviour
- High mechanical resistance
- High load decoupling with bearings in minimal space

STANDARD DIMENSIONS*

1100x550x10mm
1100x550x20mm
550x545x25mm
550x545x30mm
550x545x50mm

* Other dimensions (like pads) available under request

LOAD RANGE

- **STATIC** 3,0 - 7,0 MPa (435 - 1015 psi)
- **TOTAL** 8,0 MPa (1160 psi)
- **OCCASIONAL** 15,0 MPa (2176 psi)

E-MODULE (@ stable load)

- **STATIC** (1) 40,0 - 50,0 MPa (5802 - 7252 psi)
- **DYNAMIC** (2) 80,0 - 155,0 MPa (11603- 22481 psi)

TEMPERATURE

- **RANGE** -10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	1125 (70 lb/ft³)
Shore hardness (Shore A) (2)	70 - 85
Elongation at break (%) (3)	> 100
Tensile strength (MPa) (3)	> 10,0 (> 1450 psi)
Compression set 50%/23°C/70h (%) (4)	< 15

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
AMORIM CORK COMPOSITES

CERTIFICADO apcer ISO 9001 ISO 14001 OHSAS 18001
CERTIFIED IQNet MANAGEMENT SYSTEM

FSC www.fsc.org FSC® C022338
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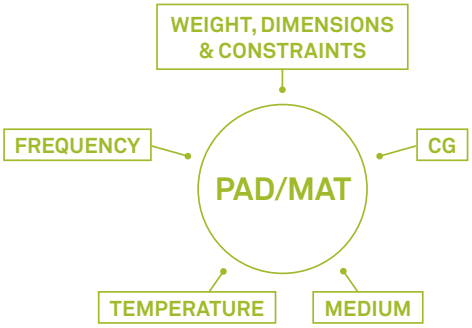
PEFC PEFC/13-32-014 Promoting Sustainable Forest Management www.pefc.org

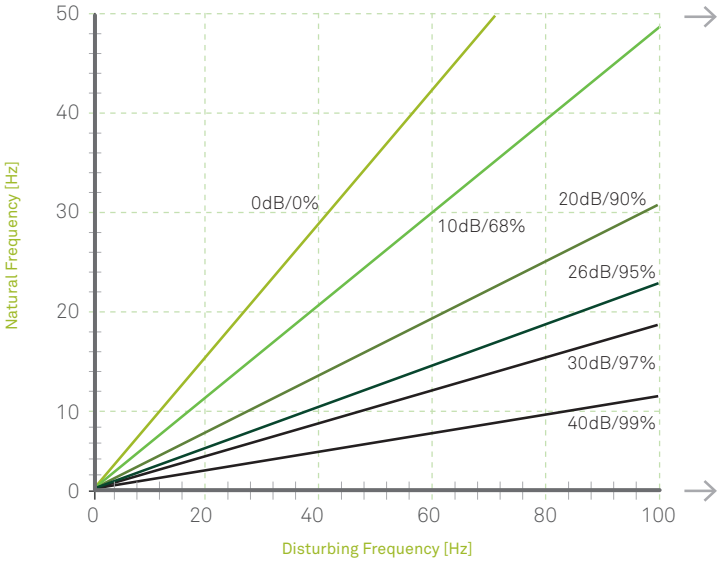
Selection Guideline

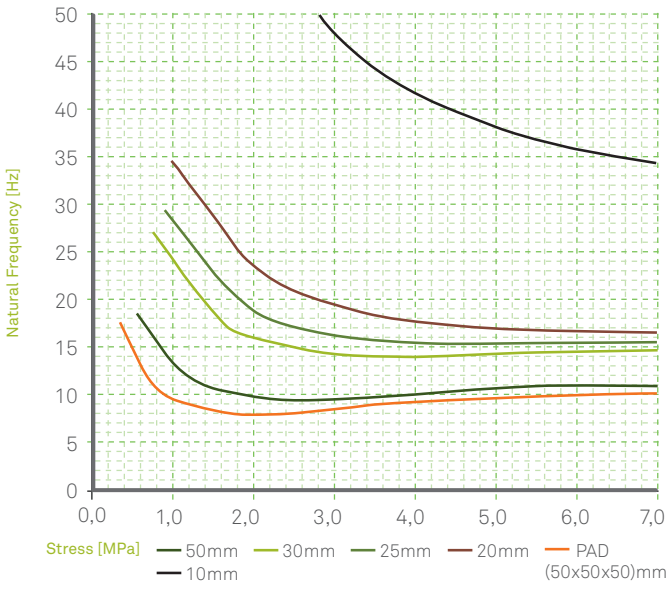
Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

- Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.
- Determine the material compression from the deflection curve at the specific load/ stress.
- Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



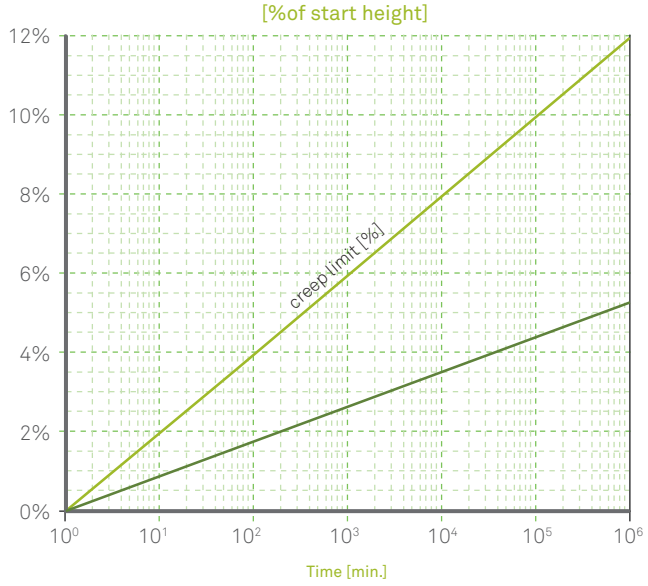
Vibration Isolation Level

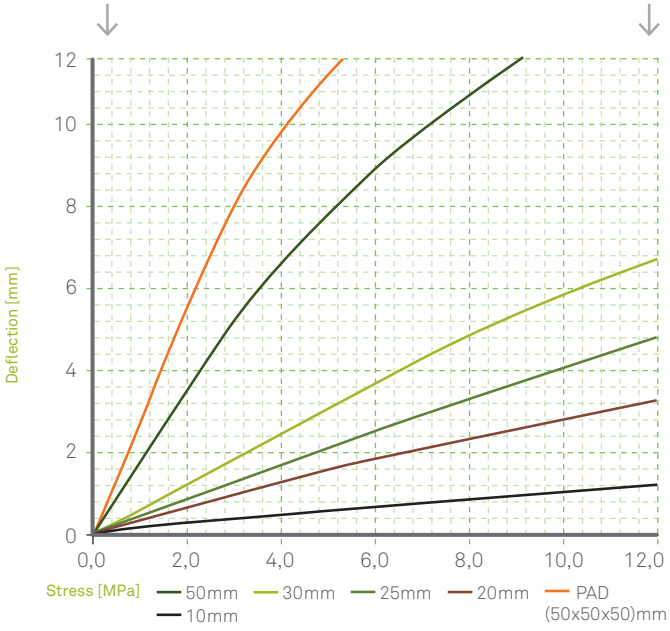




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 3,5 MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

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AMORIM
CORK COMPOSITES

VC1006

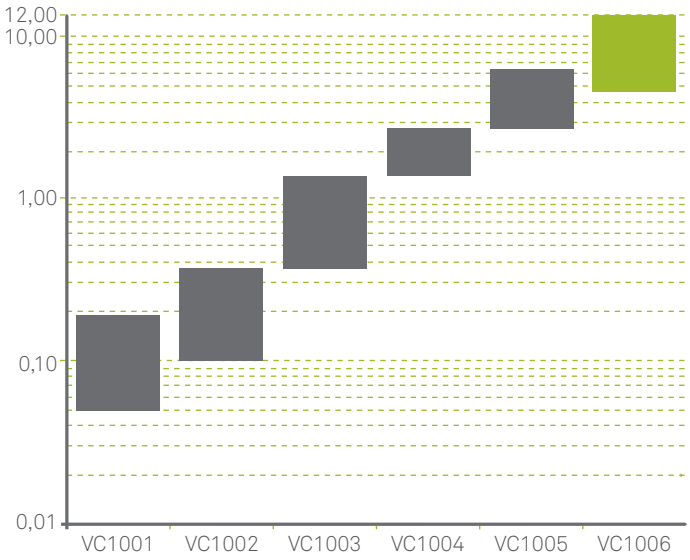
Material Data Sheet

CORK & NATURAL RUBBER

VC1006 Vibration Control material is an engineered compound with Cork and Natural Rubber.

This product is suitable for vibration control applications in need of very high isolation levels, used as discrete isolators (pads/strips) with a low ressonance frequency and high load, such as: building bearings, separation of individual building parts, two-tier construction or crane runway bearings.

WORK LOAD RANGE [MPa]



FEATURES

- Long term durability
- High dynamic effectiveness
- Simple handling and processing
- Excellent long-term creep behaviour
- High mechanical resistance
- High load decoupling with bearings in minimal space

STANDARD DIMENSIONS*

1100x550x10mm
1100x550x20mm
550x545x25mm
550x545x30mm
550x545x50mm

* Other dimensions (like pads) available under request

LOAD RANGE

- **STATIC** 4,0 - 12,0 MPa (580 - 1740 psi)
- **TOTAL** 15,0 MPa (2176 psi)
- **OCCASIONAL** 20,0 MPa (2900 psi)

E-MODULE (@ stable load)

- **STATIC** (1) 60,0 - 100,0 MPa (8702 - 14504 psi)
- **DYNAMIC** (2) 130,0 - 440,0 MPa (18855 - 63817 psi)

TEMPERATURE

- **RANGE** -10 / +100°C (+14 / 212 °F)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Density (kg/m³) (1)	1125 (70 lb/ft³)
Shore hardness (Shore A) (2)	80 - 95
Elongation at break (%) (3)	> 40
Tensile strength (MPa) (3)	> 8,0 (> 1160 psi)
Compression set 50%/23°C/70h (%) (4)	< 15

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN EN ISO 1856

RoHS Compliant
AMORIM CORK COMPOSITES

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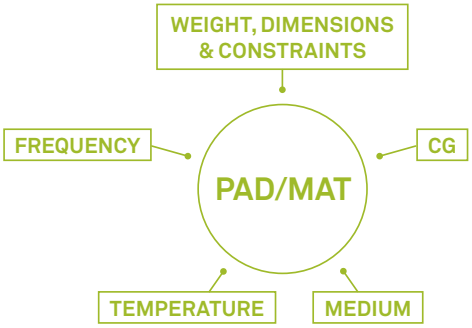
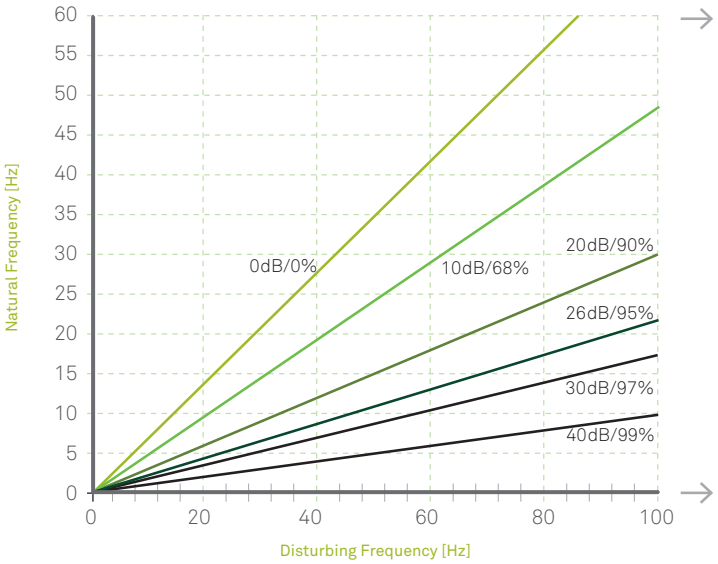
Selection Guideline

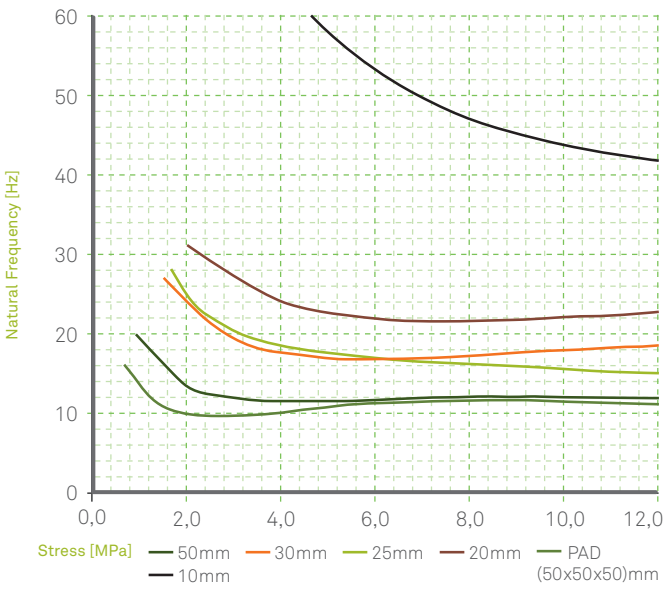
Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

- Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.
- Determine the material compression from the deflection curve at the specific load/ stress.
- Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.



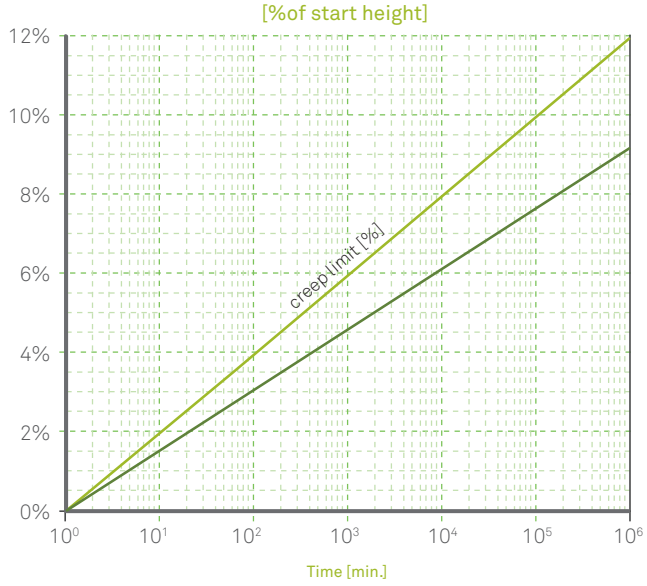
Vibration Isolation Level

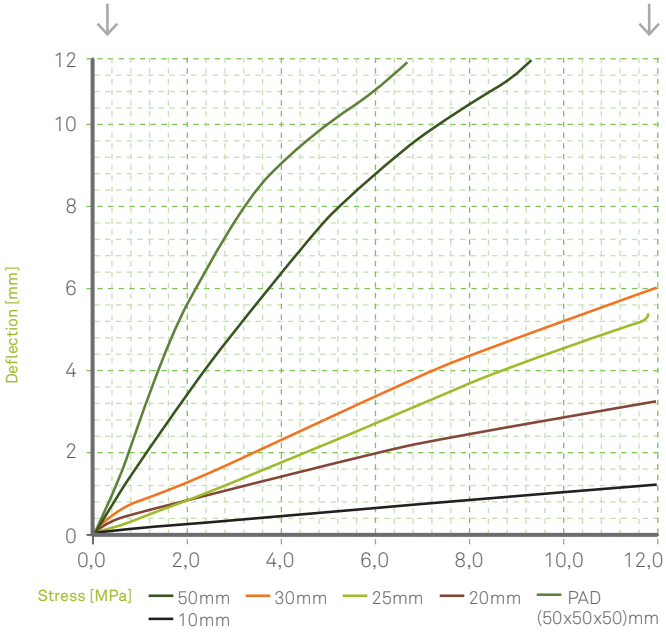




Note: When length and width are not listed, consider PAD's with 150x150 [mm]

Creep Deflection @ 6,0 MPa [%of start height]





Note: When length and width are not listed, consider PAD's with 150x150 [mm]

AMORIM CORK COMPOSITES

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ACOUSTICORK

AMORIM
CORK COMPOSITES

VC-PAD-5015

Material Data Sheet

RESIN BONDED CORK & RECYCLED RUBBER

VC-PAD-5015 is an engineered composite with Cork and polymeric matrix structure.

This product is suitable for vibration control in construction, used in the form of a cube, as discrete isolators in the decoupling of floating floors.

LOAD RANGE

- **STATIC** 0,30 - 0,85 MPa (43 - 123 psi)

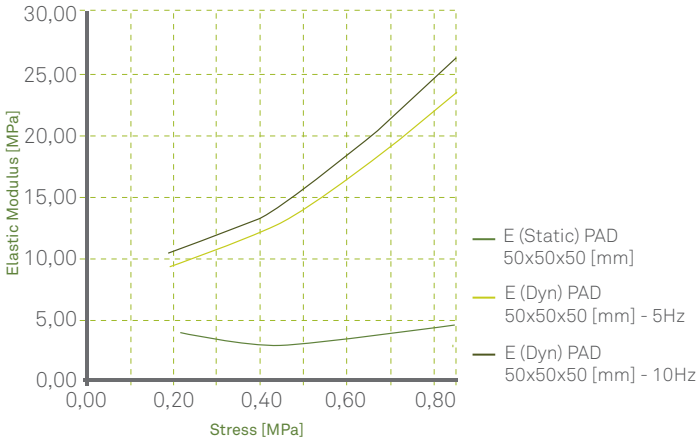
E-MODULE (@ stable load)

- **STATIC** 2,9 - 4,4 MPa (420 - 640 psi)
- **DYNAMIC** 13 - 27 MPa (1885 - 3920 psi)

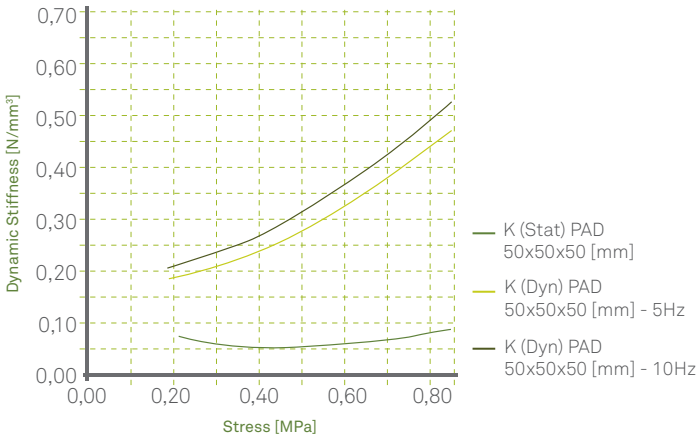
TEMPERATURE

- **RANGE** -10 / +100°C (+14 / 212 °F)

MODULUS OF ELASTICITY [MPa]



DYNAMIC STIFFNESS [N/MM³]



Density (kg/m³) (1)	600 (40 lb/ft³)
Shore hardness (Shore A) (2)	60 - 70
Elongation at break (%) (3)	> 15
Tensile strength (MPa) (3)	> 0,7 (>102 psi)
Compression set 50%/23°C/70h (%) (4)	< 15
Compressibility at 0,7 MPa (%) (5)	35 - 50
Recovery at 0,7MPa (%) (5)	> 70

(1) ASTM D297
(2) ASTM D2240
(3) ASTM F152
(4) DIN 53572
(5) ASTM F36

FEATURES

- Long term durability
- Low natural frequency / High vibration isolation
- Low water absorption
- Low creep rate

RoHS Compliant
AMORIM CORK COMPOSITES

CERTIFICADO apcer ISO 9001 ISO 14001 OHSAS 18001
CERTIFIED IQNet MANAGEMENT SYSTEM

FSC www.fsc.org FSC® C022338
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PEFC PEFC/13-32-014 Promoting Sustainable Forest Management www.pefc.org

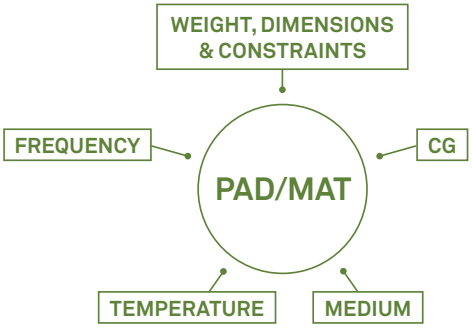
Selection Guideline

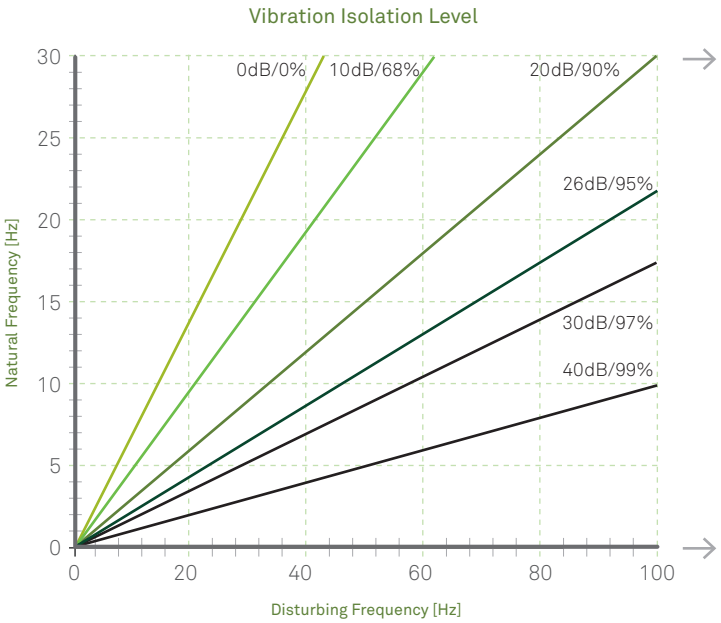
Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

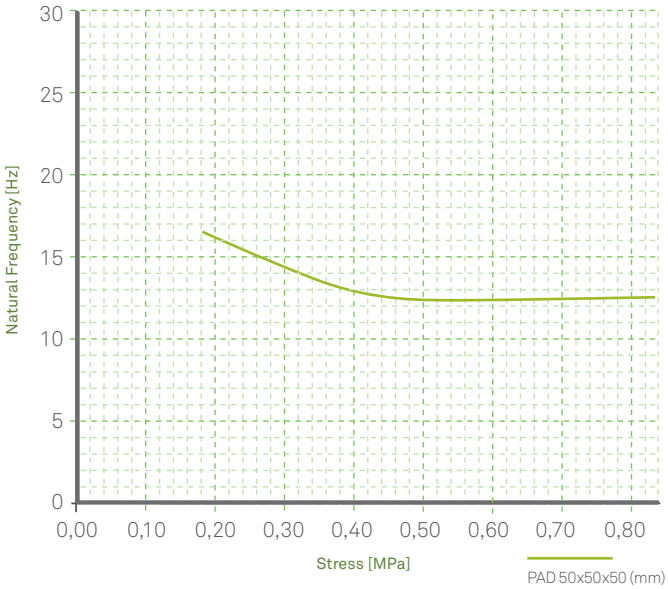
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

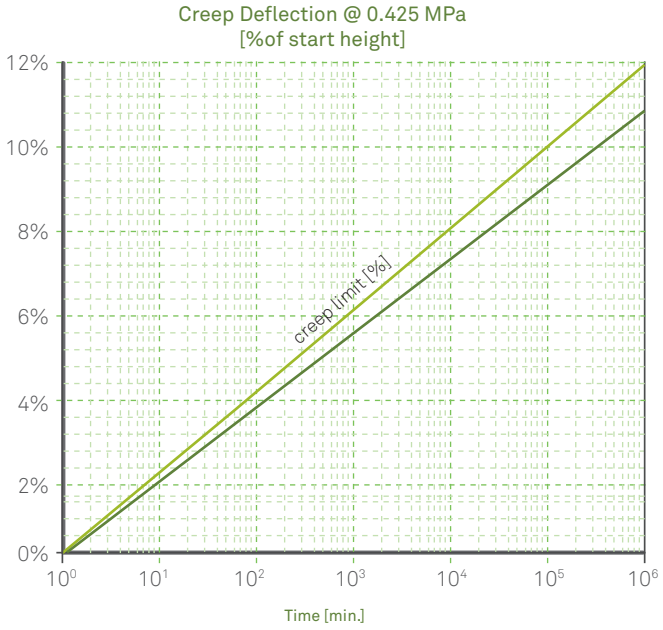
• Determine the material compression from the deflection curve at the specific load/ stress.

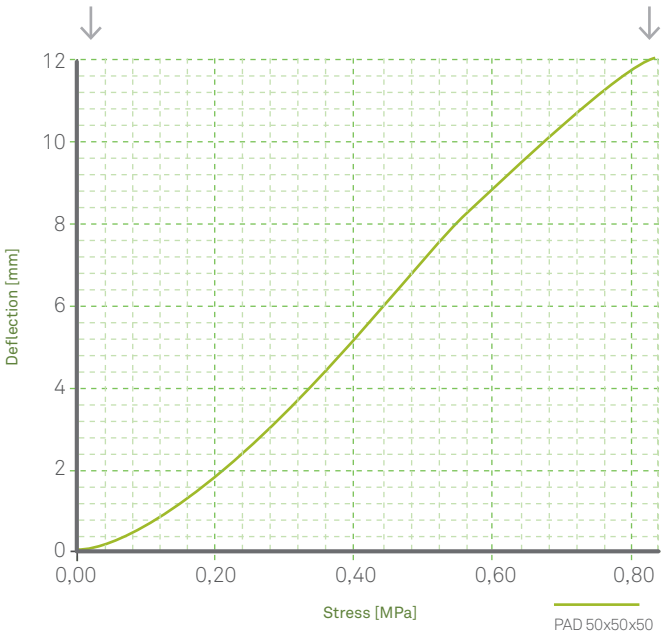
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.











AMORIM
CORK COMPOSITES

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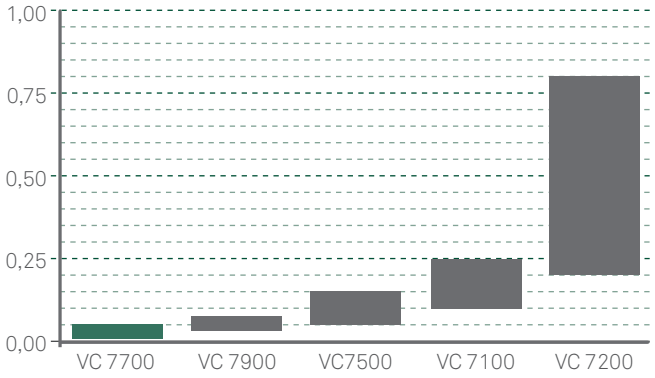
AMORIM
CORK COMPOSITES

VC7700

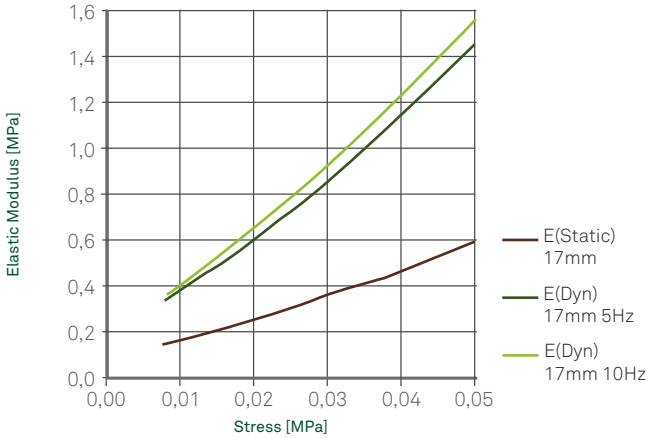
Material Data Sheet

RECYCLED RUBBER

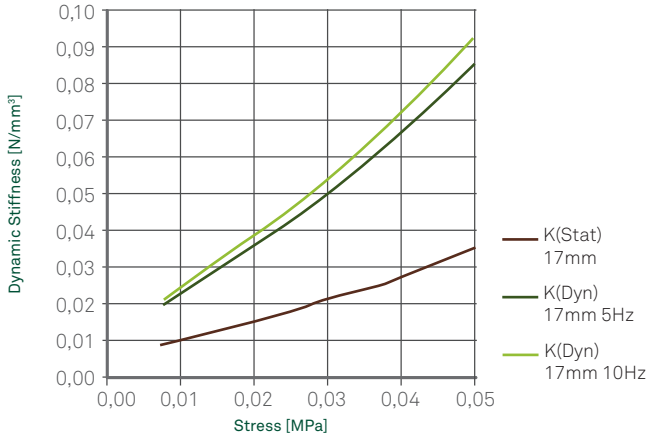
WORK LOAD RANGE [MPa]



ELASTIC MODULUS [MPA]



DYNAMIC STIFFNESS [N/mm³]



VC 7700 is an engineered polyurethane-bound recycled rubber-granulate material with a profiled surface.

This product is suitable for vibration control in construction, used as a mat or strip for ultra low loads, to reduce vibration, absorb shock and structural borne noise.

LOAD RANGE

- **PERMANENT STATIC** 0,01-0,05 MPa (1,5 - 7,3 psi)

E-MODULE

- **STATIC** (1) 0,17-0,60 MPa (25- 87 psi)
- **DYNAMIC** (2) 0,35-1,6 MPa (51 - 232 psi)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Compression Set (%) (1)	6,2
Tensile Strength (MPa) (2)	> 0,25 (36 psi)
Elongation at break (%) (2)	> 60
Tear- Resistance (N/mm) (3)	> 3,217
Flammability (4)	*B2
Density (Kg/m³) (5)	550 (34 lb/ft3)

(1) DIN 53572 - MEASURED 30MIN AFTER DECOMPRESSION WITH 50% DEFORMATION / 23ºC AFTER 72H
(2) DIN 53571
(3) DIN 53515
(4) DIN 4102
(5) DIN D297
* B2 = NORMAL FLAMMABLE

FEATURES

- Revalorised product
- Supplied in rolls, sheets or strips
- Available in a width of 1000 or 1250mm and up to a length of 10m.

RoHS Compliant
AMORIM CORK COMPOSITES

CERTIFICADO apcer ISO 9001 ISO 14001 OHSAS 18001
CERTIFIED IQNet MANAGEMENT SYSTEM

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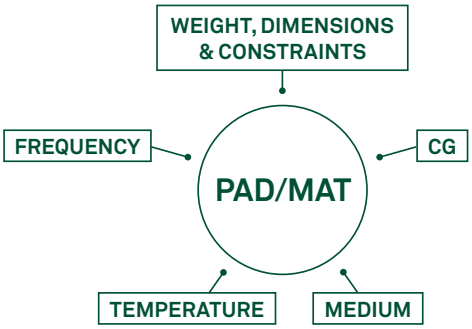
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

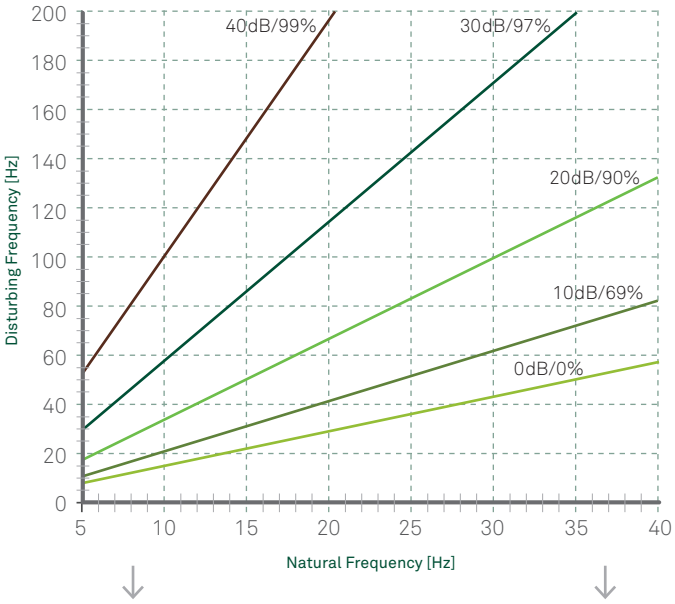
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

• Determine the material compression from the deflection curve at the specific load/ stress.

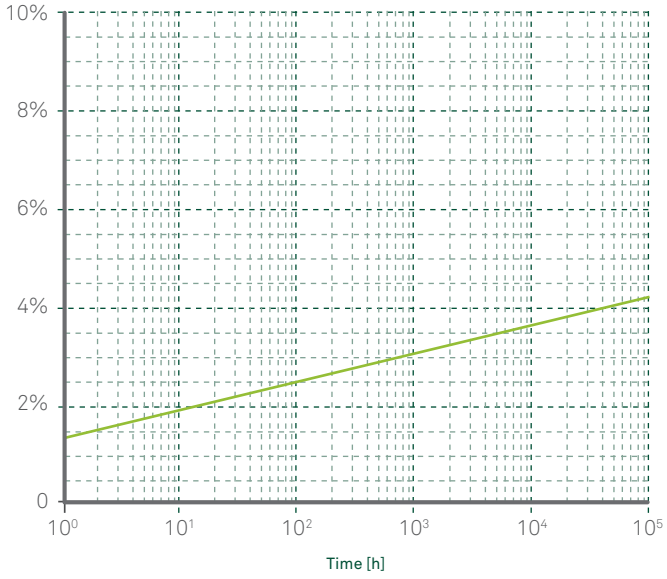
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.

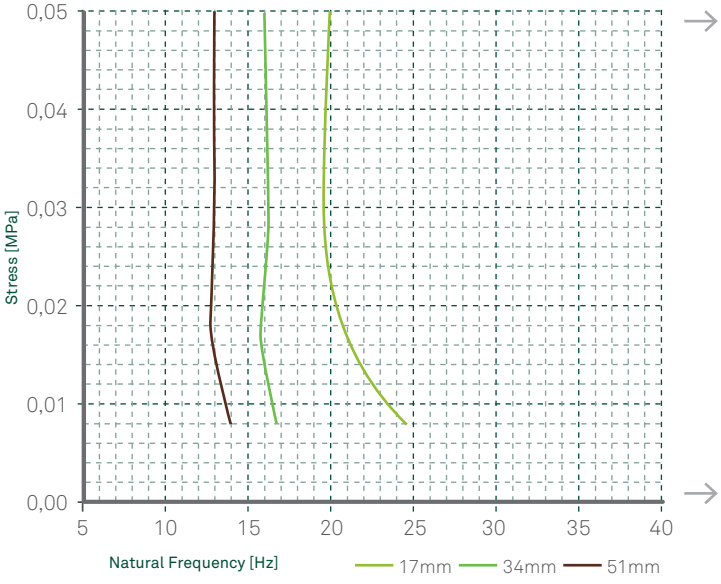


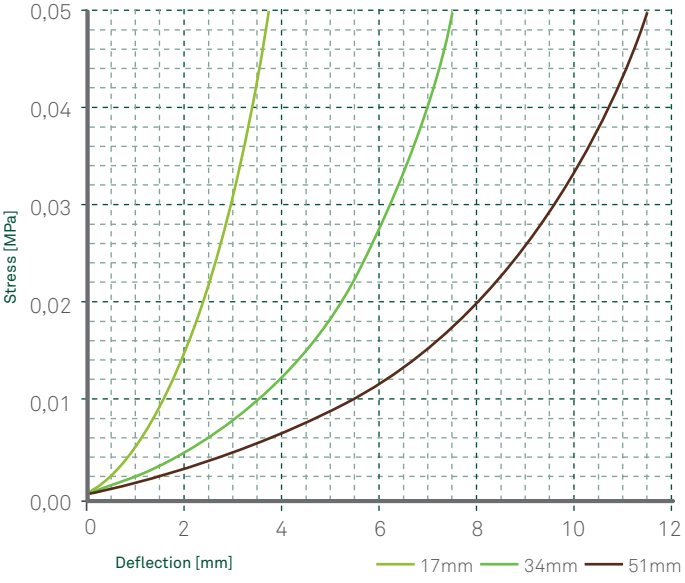
Vibration Isolation



Creep Deflection @ 0.125 MPa
[% of start height]







Note: 34mm and 51mm thickness achieved through stacking 17mm (profile) thickness layers.
Note: Samples tested - 300x300 [mm]

AMORIM
CORK COMPOSITES

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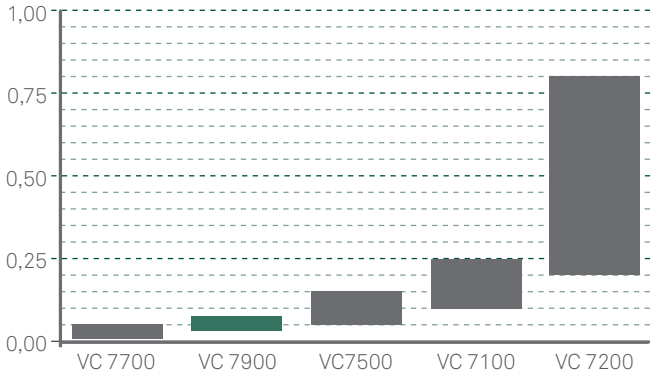
AMORIM
CORK COMPOSITES

VC7900

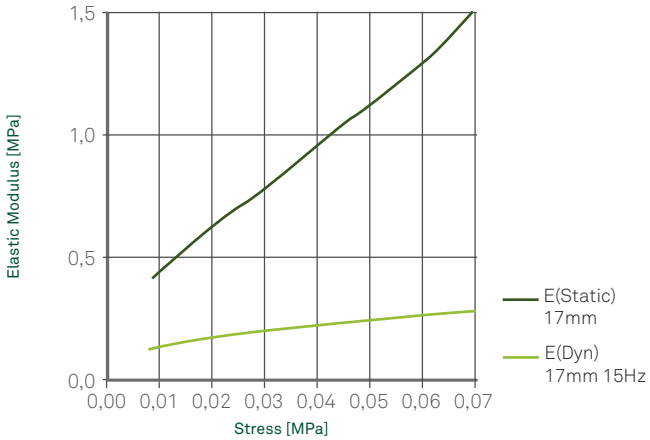
Material Data Sheet

RECYCLED RUBBER

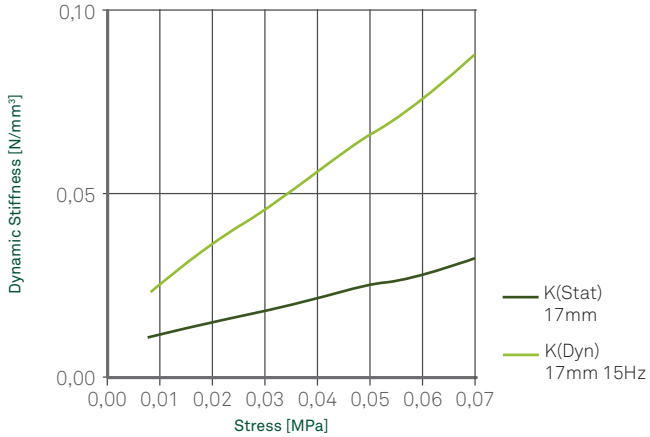
WORK LOAD RANGE [MPa]



ELASTIC MODULUS [MPa]



DYNAMIC STIFFNESS [N/mm³]



VC 7900 is an engineered polyurethane-bound recycled rubber-granulate material with a profiled surface.

This product is suitable for vibration control in construction, used as a mat or strip for ultra low loads, to reduce vibration, absorb shock and structural borne noise.

LOAD RANGE

- **PERMANENT STATIC** 0,025-0,070 MPa (3,6 - 10,2 psi)

E-MODULE

- **STATIC** (1) 0,04-0,25 MPa (6 - 36 psi psi)
- **DYNAMIC** (2) 0,27-1,60 MPa (39 - 232 psi)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Compression Set (%) (1)	6,8
Tensile Strength (MPa) (2)	>0,35 (51 psi)
Elongation at break (%) (2)	>75
Tear- Resistance (N/mm) (3)	>6,497
Flammability (4)	*B2
Density (Kg/m³) (5)	710 (44 lb/ft3)

(1) DIN 53572 - MEASURED 30MIN AFTER DECOMPRESSION WITH 50% DEFORMATION / 23ºC AFTER 72H
(2) DIN 53571
(3) DIN 53515
(4) DIN 4102
(5) DIN D297
* B2 = NORMAL FLAMMABLE

FEATURES

- Revalorised product
- Supplied in rolls, sheets or strips
- Available in a width of 1000 or 1250mm and up to a length of 10m

RoHS Compliant
AMORIM CORK COMPOSITES

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PEFC PEFC/13-32-014 Promoting Sustainable Forest Management www.pefc.org

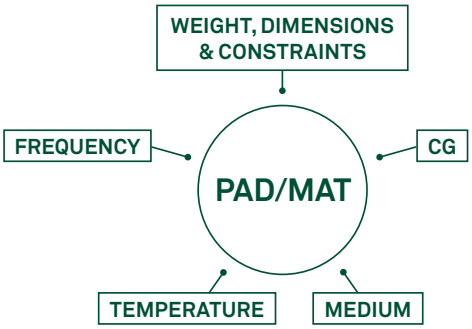
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

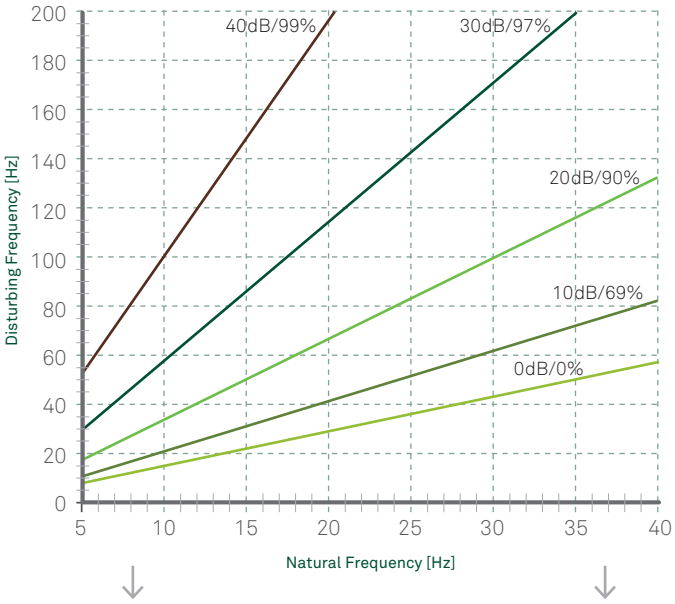
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

• Determine the material compression from the deflection curve at the specific load/ stress.

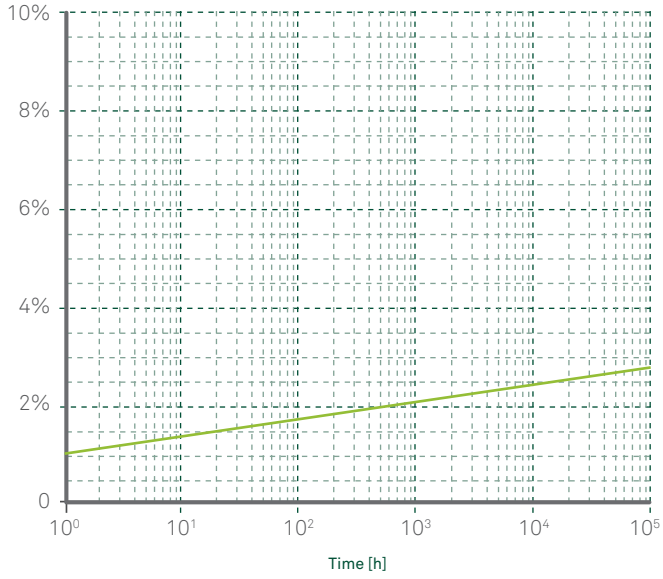
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.

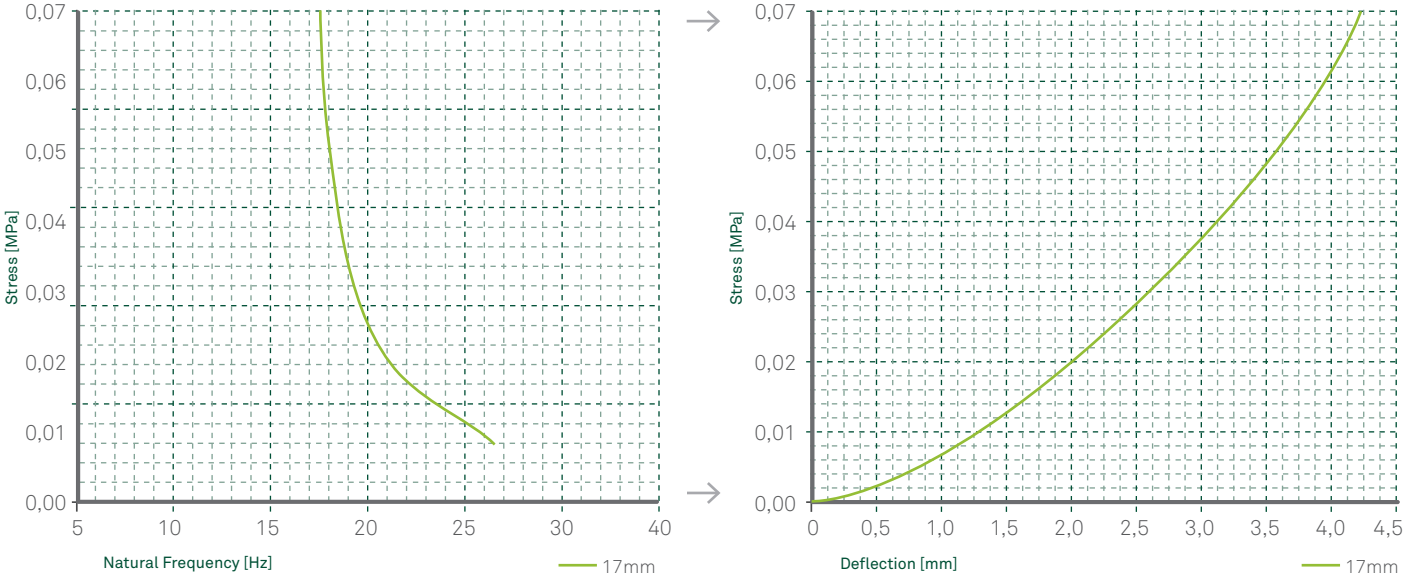


Vibration Isolation



Creep Deflection @ 0.035 MPa
[% of start height]





Note: Samples tested - 300x300 [mm]

AMORIM
CORK COMPOSITES

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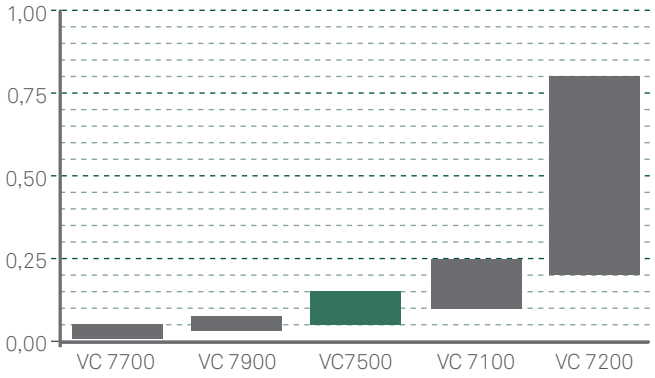
AMORIM
CORK COMPOSITES

VC7500

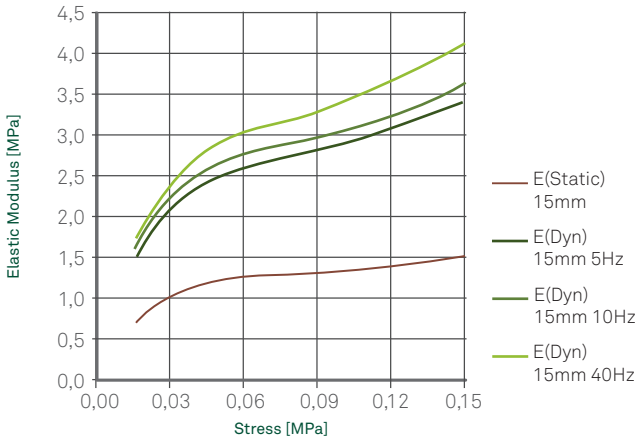
Material Data Sheet

RECYCLED RUBBER

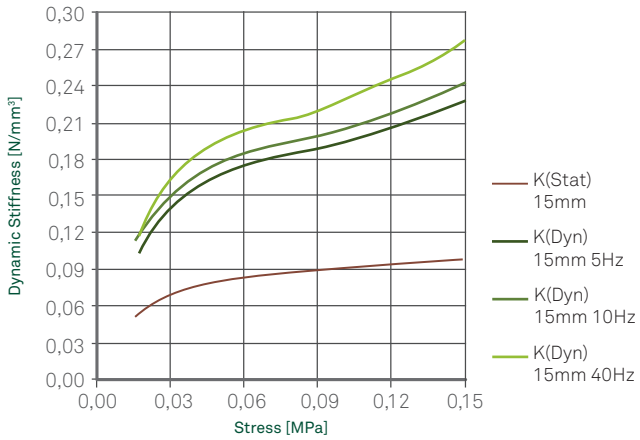
WORK LOAD RANGE [MPa]



ELASTIC MODULUS [MPa]



DYNAMIC STIFFNESS [N/mm³]



VC 7500 is an engineered polyurethane-bound recycled rubber-granulate material.

This product is suitable for vibration control in construction, rail infrastructure and industrial applications, used as a mat or strip for low loads, to reduce vibration, absorb shock and structural borne noise.

LOAD RANGE

- **PERMANENT STATIC** 0,05-0,15 MPa (7,3 - 21,8 psi)

E-MODULE

- **STATIC** (1) 1,20-1,50 MPa (174 - 218 psi)
- **DYNAMIC** (2) 2,30-4,30 MPa (333 - 624psi)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Compression Set (%) (1)	1,6
Tensile Strength (MPa) (2)	>0,25 (36 psi)
Elongation at break (%) (2)	> 60
Tear- Resistance (N/mm) (3)	> 3,5
Flammability (4)	*B2
Density (Kg/m³) (5)	550 (34 lb/ft3)

(1) DIN 53572 - MEASURED 30MIN AFTER DECOMPRESSION WITH 50% DEFORMATION / 23ºC AFTER 72H
(2) DIN 53571
(3) DIN 53515
(4) DIN 4102
(5) DIN D297
* B2 = NORMAL FLAMMABLE

FEATURES

- Revalorised product
- Supplied in rolls, sheets or strips
- Available in a width of 1000 or 1250mm and up to a length of 10m

RoHS Compliant
AMORIM CORK COMPOSITES

ISO 9001 ISO 14001 OHSAS 18001

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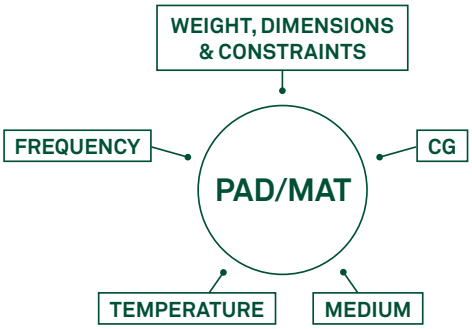
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

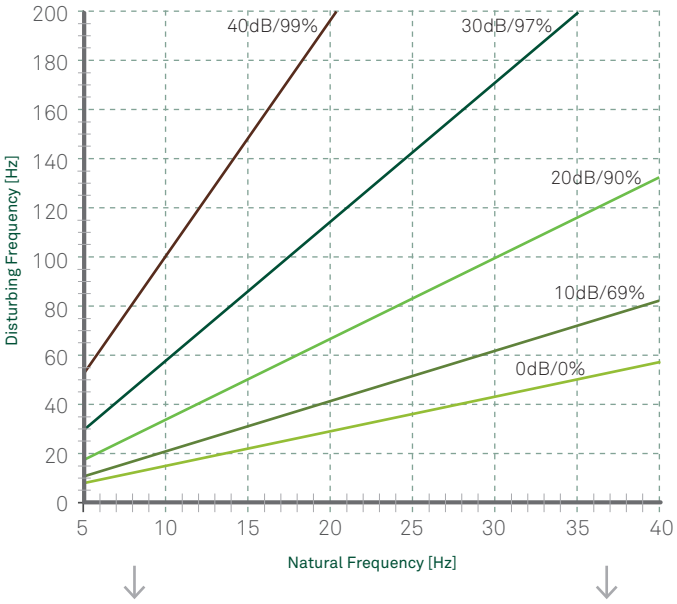
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

• Determine the material compression from the deflection curve at the specific load/ stress.

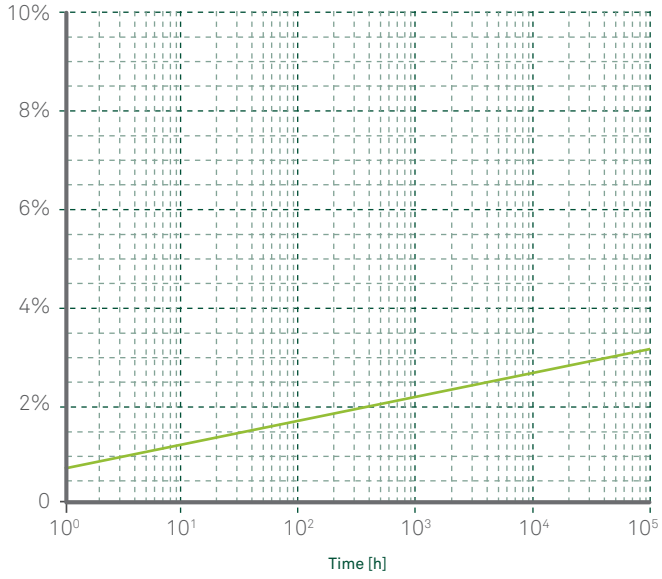
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.

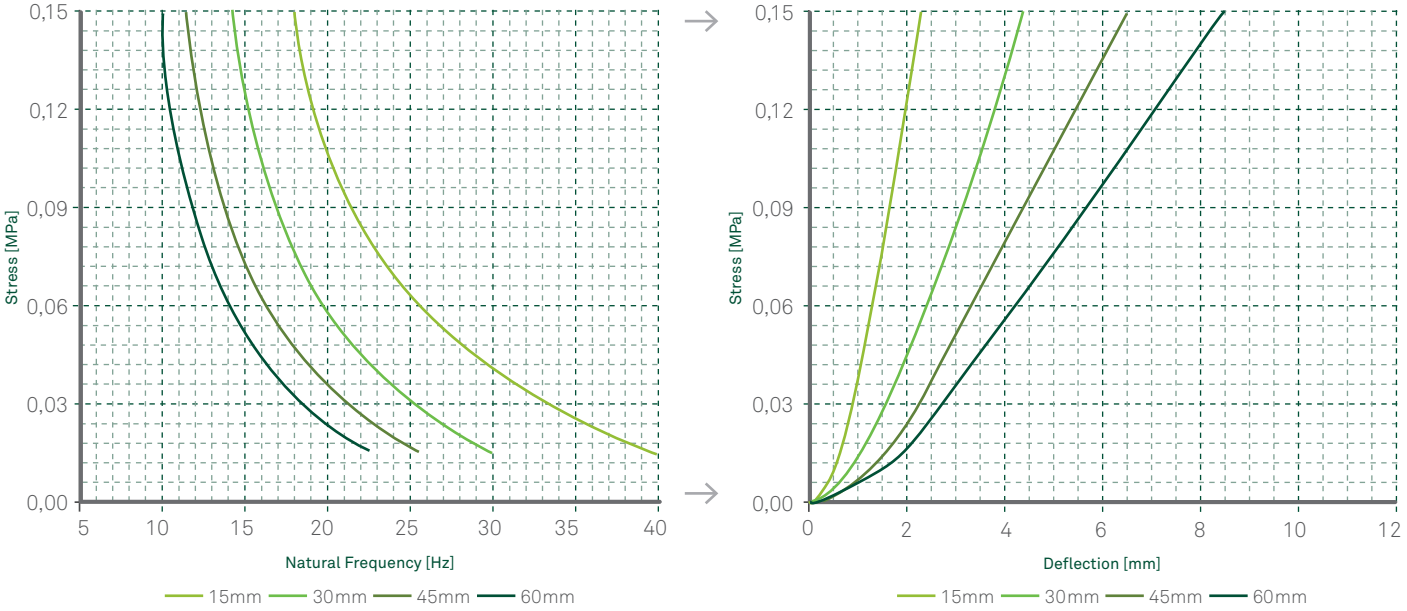


Vibration Isolation



Creep Deflection @ 0.125 MPa
[% of start height]





Note: 30mm, 45mm and 60mm thickness achieved through stacking 15mm (flat) thickness layers.
Note: Samples tested - 300x300 [mm]

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CORK COMPOSITES

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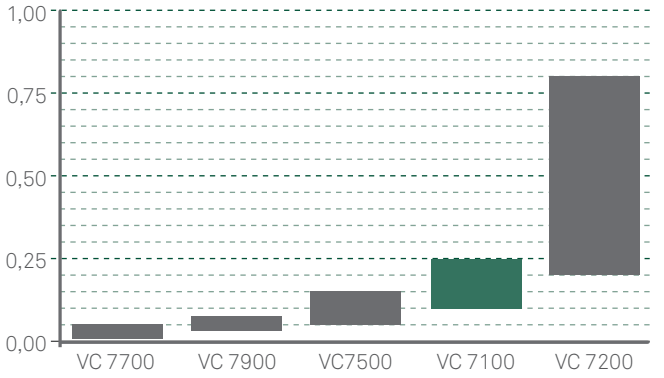
AMORIM
CORK COMPOSITES

VC7100

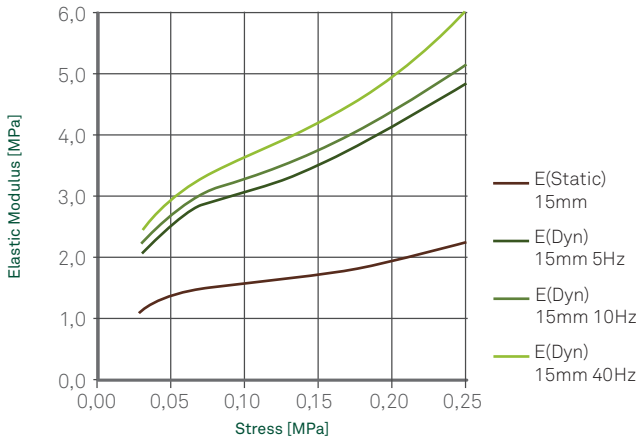
Material Data Sheet

RECYCLED RUBBER

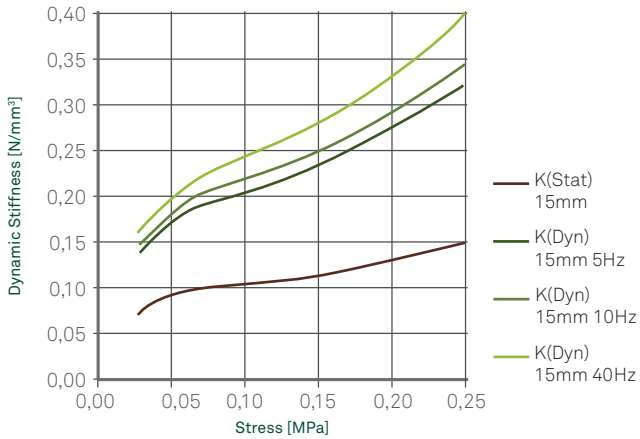
WORK LOAD RANGE [MPa]



ELASTIC MODULUS [MPa]



DYNAMIC STIFFNESS [N/mm³]



VC 7100 is an engineered polyurethane-bound recycled rubber-granulate material.

This product is suitable for vibration control in construction applications, used as a mat or strip for medium loads, to reduce vibration, absorb shock and structural borne noise.

LOAD RANGE

- **PERMANENT STATIC** 0,10-0,25 MPa (1,5 - 36,3 psi)

E-MODULE

- **STATIC** (1) 1,50-2,10 MPa (218 - 305 psi)
- **DYNAMIC** (2) 2,00-6,00 MPa (377- 870 psi)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Compression Set (%) (1)	4,1
Tensile Strength (MPa) (2)	> 0,35 (51 psi)
Elongation at break (%) (2)	> 75
Tear- Resistance (N/mm) (3)	> 6,5
Flammability (4)	*B2
Density (Kg/m³) (5)	710 (44 lb/ft3)

(1) DIN 53572 - MEASURED 30MIN AFTER DECOMPRESSION WITH 50% DEFORMATION / 23°C AFTER 72H
(2) DIN 53571
(3) DIN 53515
(4) DIN 4102
(5) DIN D297
* B2 = NORMAL FLAMMABLE

FEATURES

- Revalorised product
- Supplied in rolls, sheets or strips
- Available in a width of 1000 or 1250mm and up to a length of 10m

RoHS Compliant
AMORIM CORK COMPOSITES

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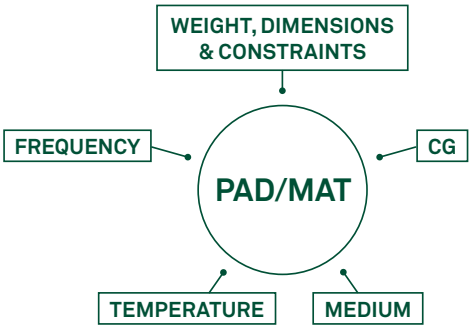
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

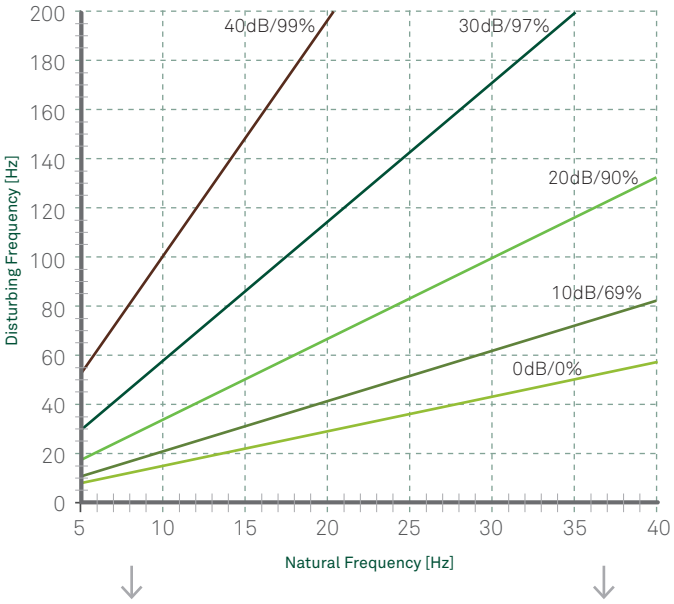
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

• Determine the material compression from the deflection curve at the specific load/ stress.

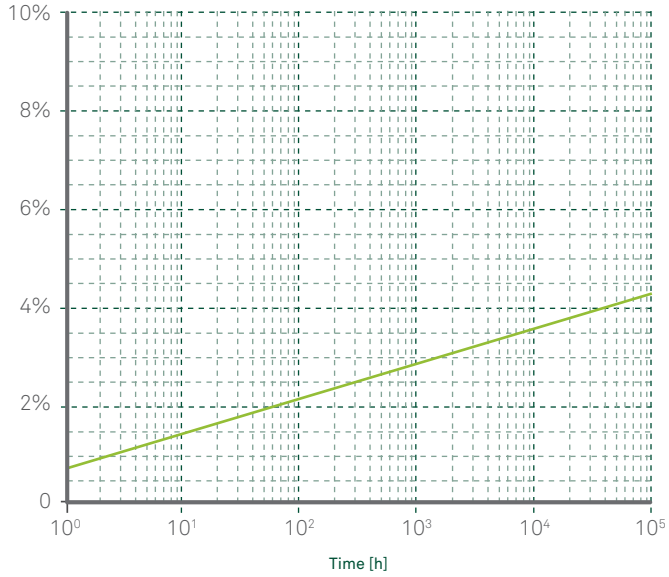
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.

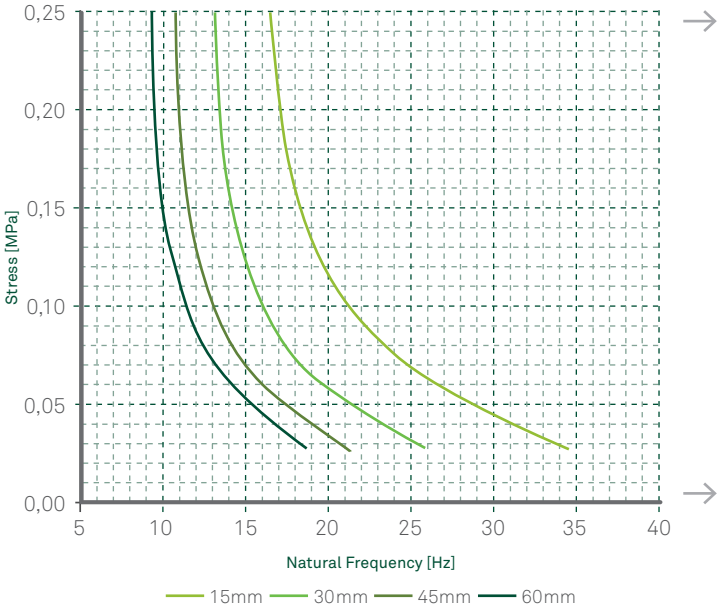


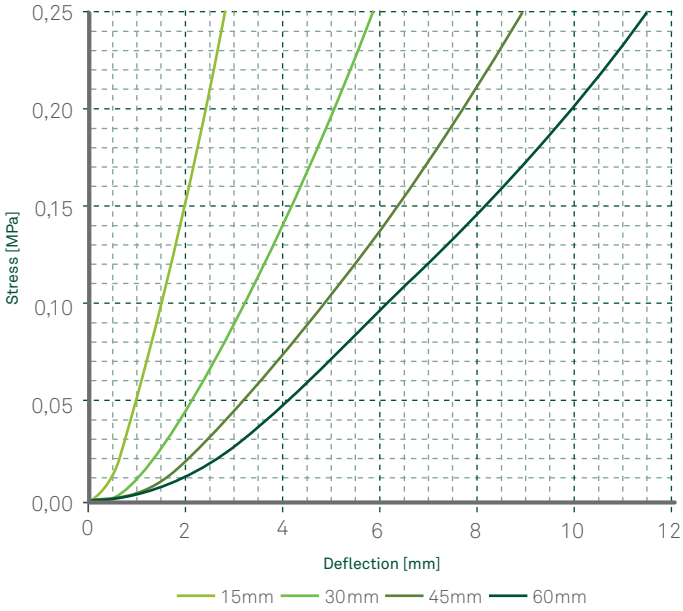
Vibration Isolation



Creep Deflection @ 0.125 MPa
[% of start height]







15mm 30mm 45mm 60mm

Note: 30mm, 45mm and 60mm thickness achieved through stacking 15mm (flat) thickness layers.
Note: Samples tested - 300x300 [mm]

AMORIM
CORK COMPOSITES

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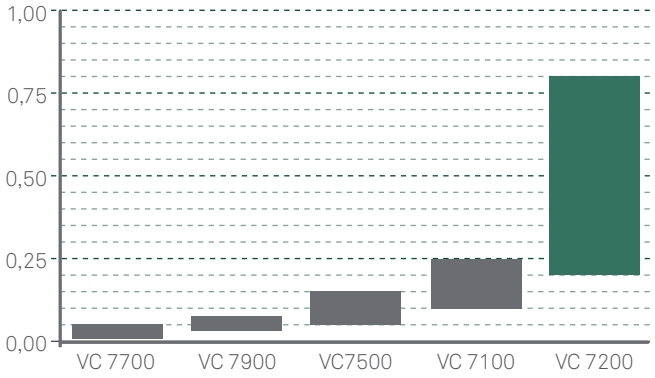
AMORIM
CORK COMPOSITES

VC7200

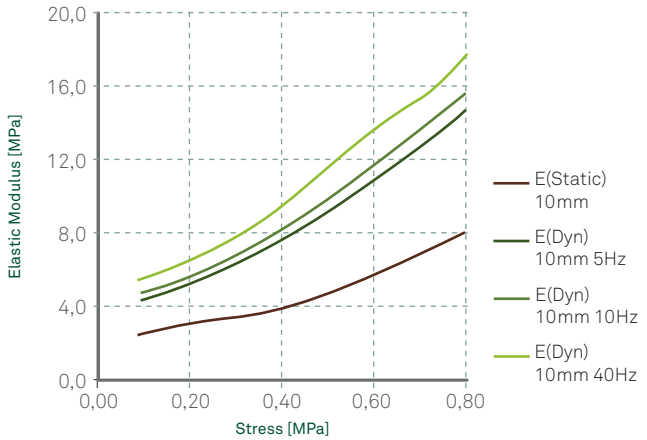
Material Data Sheet

RECYCLED RUBBER

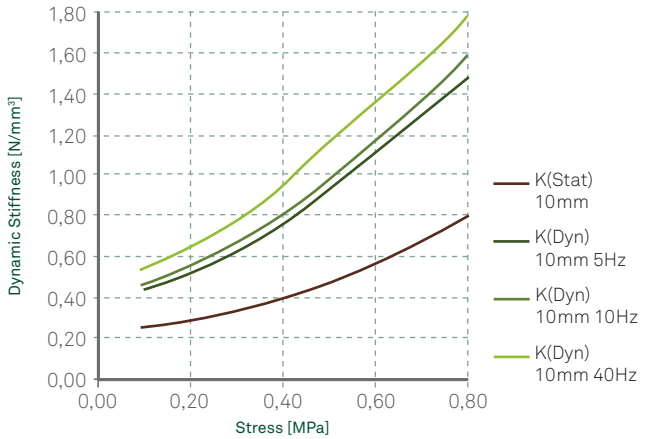
WORK LOAD RANGE [MPa]



ELASTIC MODULUS [MPa]



DYNAMIC STIFFNESS [N/mm³]



VC 7200 is an engineered polyurethane-bound recycled rubber-granulate material.

This product is suitable for vibration control in construction applications, used as a mat or strip for medium high loads, to reduce vibration, absorb shock and structural borne noise.

LOAD RANGE

- **PERMANENT STATIC** 0,20-0,80 MPa (29 - 116 psi)

E-MODULE

- **STATIC** (1) 3,00-8,00 MPa (435 - 1160 psi)
- **DYNAMIC** (2) 5,50-18,0 MPa (798 - 2610 psi)

(1) DIN 53513 (ADAPTED) - TANGENTIAL MODULUS
(2) DIN 53513 (ADAPTED) - DEPENDING ON LOAD AND FREQUENCY

Compression Set (%) (1)	4,3
Tensile Strength (MPa) (2)	> 0,5 (73 psi)
Elongation at break (%) (2)	> 75
Tear- Resistance (N/mm) (3)	> 5,6
Flammability (4)	*B2
Density (Kg/m³) (5)	750 (47 lb/ft3)

(1) DIN 53572 - MEASURED 30MIN AFTER DECOMPRESSION WITH 50% DEFORMATION / 23°C AFTER 72H
(2) DIN 53571
(3) DIN 53515
(4) DIN 4102
(5) DIN D297
* B2 = NORMAL FLAMMABLE

FEATURES

- Revalorised product
- Supplied in rolls, sheets or strips
- Available in a width of 1000 or 1250mm and up to a length of 10m

RoHS Compliant
AMORIM CORK COMPOSITES

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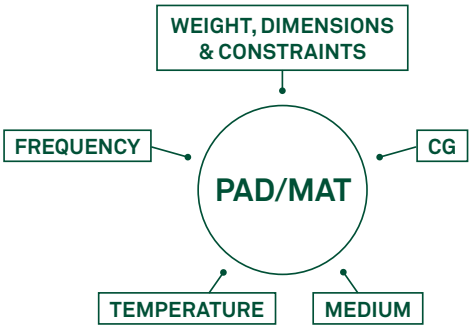
Selection Guideline

Material selection can be made using the Static/Dynamic E-Module in the respective load range or using the Vibration Isolation Level Abacus below:

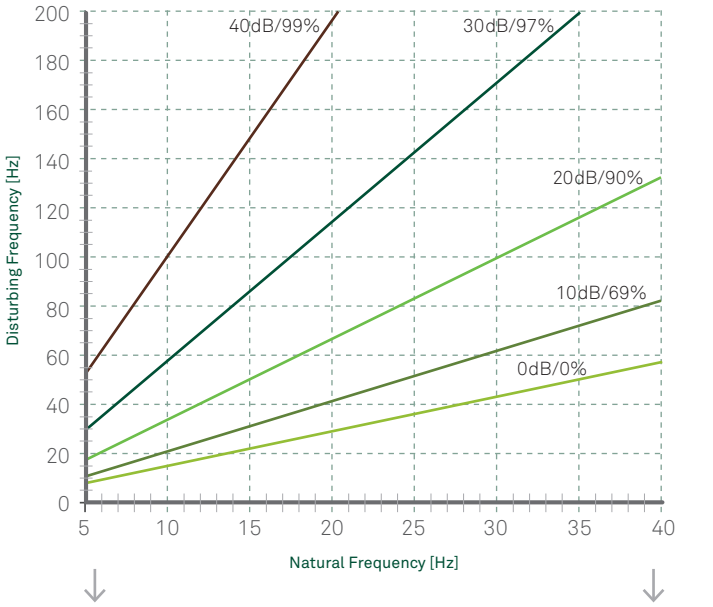
• Based on the machine/system disturbing frequency select the desired isolation level based on the material thickness and respective natural frequency for the specific load/ stress.

• Determine the material compression from the deflection curve at the specific load/ stress.

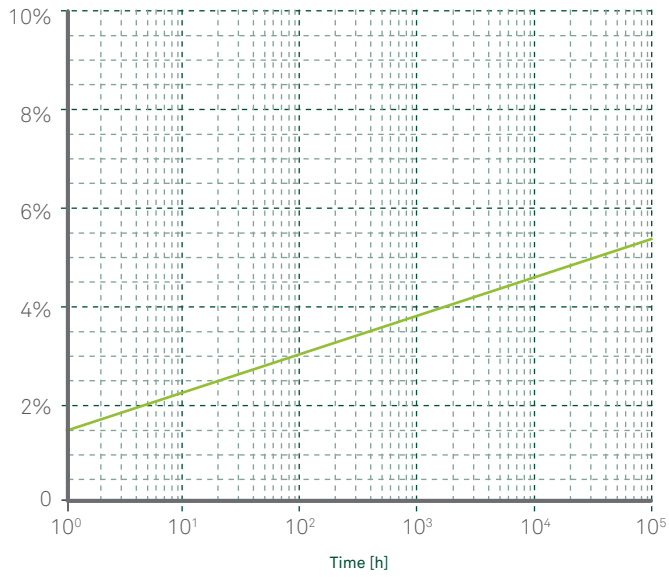
• Creep effect can be added to the above deflection via the Creep deflection graph calculating the additional deflection and adding.

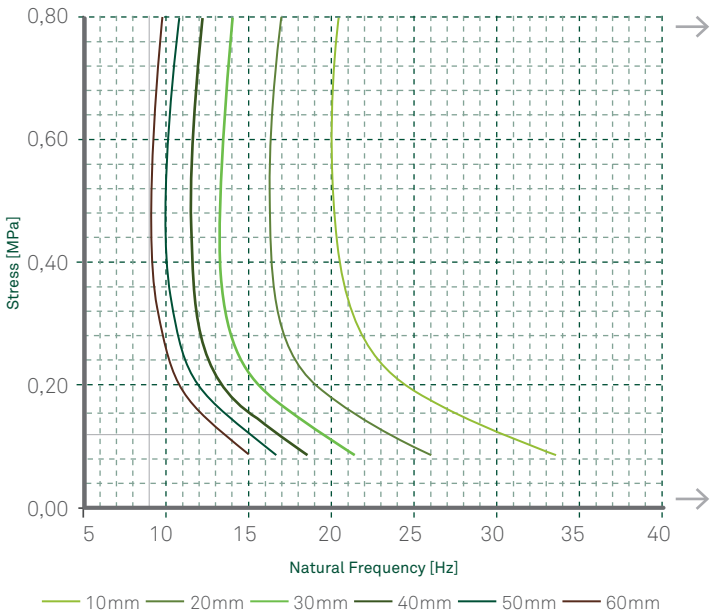


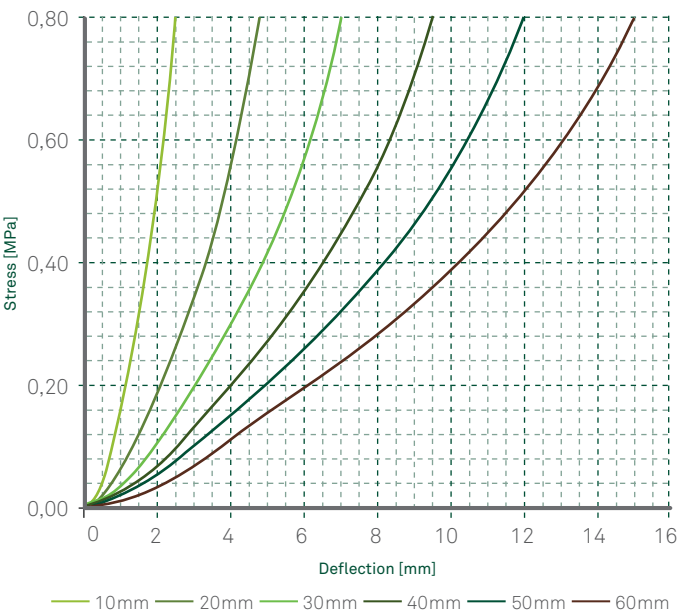
Vibration Isolation



Creep Deflection @ 0.4 MPa
[% of start height]







Note: 20mm, 30mm, 40mm, 50mm and 60mm thickness achieved through stacking 10mm (flat) thickness layers.
Note: Samples tested - 300x300 [mm]

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AMORIM CORK COMPOSITES
Rua de Meladas, 260 - P.O. Box 1
4536-902 Mozelos - VFR
Portugal
T. +351 22 747 5300
F. +351 22 747 5301
E. acc@amorim.com

www.amorimcorkcomposites.com