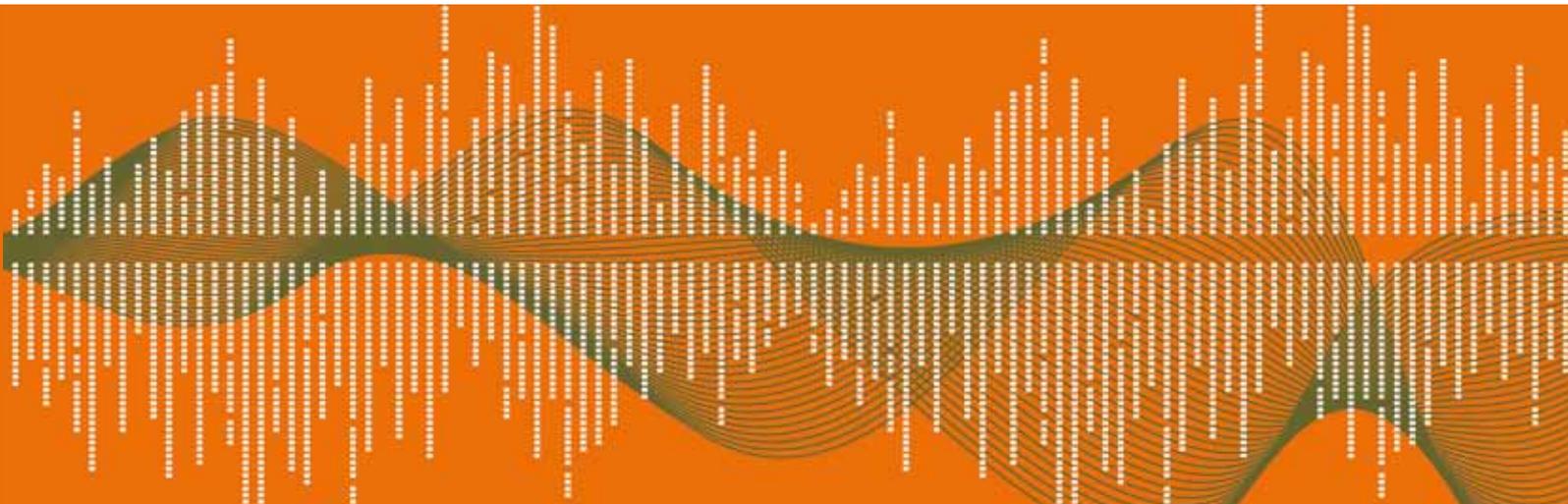


VIBRATION CONTROL • INDUSTRY

REINVENTING
THE SOUND
OF SILENCE



REDEFINING INDUSTRY

AMORIM industrial vibration control focuses its activities on products and solutions for high performance in vibration isolation and damping in a wide range of industry applications.

Most types of industrial plant equipment and machinery generate vibrations which are initially structural-borne, but also result in airborne noise which requires isolating to ensure that these levels are kept to a minimum.

Isolating the source of the vibration is essential not only to protect the quality of life of people in both the immediate location and those in the surrounding environment, it also helps to protect equipment from the long term degenerative effects of vibration.

AMORIM Vibration Control products are composite materials made from cork, natural and/or synthetic rubber and other elastomers.

● **INDUSTRY**

Balance in motion control



AMORIM
CORK COMPOSITES



Advantages of cork based products and solutions:

- **Loading capacity:** We adjust each composite material according to a load bearing capacity, which ranges from 50kPa to 8MPa;
- **Excellent damping:** Cork unique cell structure combined with our specific binder formulation grants our products with the desired damping qualities;
- **Lasting elasticity:** Even under static and dynamic fatigue loading, Amorim vibration control materials maintain their elasticity with excellent recovery;
- **Moisture resistance:** Our products are unaffected by moisture, resistant to rot and mould growth, having special formulations that resist to ozone effects;
- **Ageing resistance:** Our experience in numerous industrial applications shows that our materials when correctly used have virtually an unlimited life;
- **Deflection behaviour:** The deflection under load is largely done within the material and the vibration damper deforms only minimally to the outside. In addition, the cork-based composite materials withstand short term high peak loads without impairment of functionality;
- **Low heat conductivity:** With values between 0,055 to 0,25 W /m°C, the thermal characteristics of our dampers are also first-class in comparison to pure rubber, steel or polymers;
- **Chemical resistance:** Amorim industrial vibration dampers are resistant to oils, emulsions, weak bases, as well as mineral and organic acids, even in high concentrations.

Amorim Cork Composites vibration control applications

Examples of where our industrial solutions can be used to minimise the effects of noise and vibration:

- 1 **Textile manufacturing equipment**
 - Weaving / tufting / knitting equipment
 - Machine mounts
- 2 **Generator power systems**
 - Stationary engine
 - Generator sets
- 3 **Hvac systems**
 - Heating and ventilation equipment - ahu; chrv; chillers
- 4 **T&D power**
 - Medium & power transformers and reactors
 - Internal and external vibration isolation
- 5 **Pumps and compressors**
 - Stationary equipment
- 6 **Industrial machinery**
 - Saws, lathes, drills, guillotines, vibrating screens and presses etc.
 - Inertia pits



Vibration control

Our solutions allow for:

| | |
|--|---|
| | Longer Machine or Tooling Life. |
| | Longer Maintenance Periods. |
| | Reduced Transmission to the Surroundings. |

| | |
|--|-----------------------------------|
| | Noise Reduction. |
| | Flexible shaping. |
| | High isolation or damping effect. |

The key for performance

Our vibration control materials have high loss factors which are essential to the damping function; due to corks' closed cell structure filled with air, it dissipates vibration energy into low grade heat in each vibration cycle, resulting in a low amplification at resonance, giving our materials operational

effectiveness in a wide range of frequencies. Ultimately, specific polymer formulation with the inclusion of cork, with unique compressibility and recovery characteristics, enhances dampening and customises the effective isolation performance in function of the final part dimensions.

Key design guidelines

- FREQUENCY**
 Identify the disturbing frequency of the application.
- TEMPERATURE AND MEDIUM**
 Identify the environmental factors indoor or outdoor application or specific medium contact and temperature.
- MASS, DIMENSIONS AND CONSTRAINTS**
 Define quantity of supporting points, available space, equipment mass or other loadings as well as design constraints.
- CENTRE OF GRAVITY**
 Identify and distribute uniformly the position of the supporting points.



Product range*

| | VC1001 | VC1047 | VC5200 | VC6400 | VC6500 | VC2100 | VC7000 | VC7100 | VC7500 |
|-------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Max. Load | 0.25 MPa (36 psi) | 1.5 MPa (218 psi) | 0.6 MPa (87 psi) | 2.0 MPa (290 psi) | 8.0 MPa (1160 psi) | 2.0MPa (290 psi) | 8.0 MPa (1160 psi) | - | - |
| Work Load Range | 0.05–0.2 MPa (7-29 psi) | 0.25–1.0 MPa (36-145 psi) | 0.2–0.5 MPa (29-72 psi) | 0.5–1.5 MPa (72-217 psi) | 1.5–6.0 MPa (217-870 psi) | 0.5–1.5 MPa (72-217 psi) | 2.0–6.0 MPa (290-870 psi) | 100–500 KPa (14.5-72 psi) | 50–250 kPa (7.2 – 36.2psi) |
| Temperature Range | -40°C to 90°C (-40°F to 194°F) | -25°C to 120°C (-13°F to 248°F) | -40°C to 110°C (-40°F to 230°F) | -50°C to 110°C (-58°F to 230°F) | -25°C to 120°C (-13°F to 248°F) | -40°C to 125°C (-40°F to 257°F) | -60°C to 175°C (-76°F to 347°F) | -40°C to 100°C (-40°F to 212°F) | -40°C to 100°C (-40°F to 212°F) |
| Creep Rate** | <2.0% | 1.7% | <2.0% | 1.4% | 1.5% | <2.0% | <1.0% | <2.0% | <2.0% |
| Application | External Vibration Control | External Vibration Control | External Vibration Control | External Vibration Control | External Vibration Control | Oil Immersed Vibration Control | High Temperature | External Vibration Mats | External Vibration Mats |

* Please refer to our **Material Data Sheets** for detailed information.
 ** Tested according to ISO8013 above their load working conditions.