stravibase
by CDM Stravitec

Stravibase Mat
Datasheet

Easy Installation

Medium Performance

High Lateral Stiffness

Compatible with steel, wood & concrete constructions

Stravibase Mat is a full-surface elastomeric mat designed to protect buildings exposed to ground-borne vibrations and designed to meet natural frequencies as low as 6 Hz. The Stravibase Mat range covers closed cell polyurethane and recycled rubber mats. Stravibase Mat can be plain or wavy and can be applied both horizontally and vertically to decouple a building from its surrounding area.

DESIGN REQUIREMENTS

For each project, the CDM Stravitec engineering service will help you find the optimum Stravibase Mat solution to achieve the acoustic performance required and the load bearing resistance needed to withstand the static and dynamic loads in your structure. For this reason, our team will require:

- Natural frequency requirements;
- The vertical and lateral load combinations (including dead loads and variable loads such as service live loads, wind loads, etc.);
- Occasional loads for stability checks;
- Substructure and superstructure drawings (sections, plan views, etc.).

Note:

To enhance the isolation performance of Stravibase Mat, a reasonably rigid substructure (subgrade or slabs underneath the mats) is required.
The stability of the substructure (the bottom slab together with the sub-grade) is checked by the structural engineer of the project.
The sub-grade should be clean, dry, flat, and stable under the building load pressure.

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PHYSICAL & MECHANICAL PROPERTIES

Polyurethane Mats	101	102	103	104	105	106	107
Color	Yellow	Green	Blue	Red	Orange	Dark Blue	Dark Grey
Thickness [mm][1]	12.5-75	12.5-75	12.5-75	12.5-75	12.5-75	12.5-75	12.5-75
Resonance Frequency [Hz]	6-25	6-25	6-25	6-25	6-25	6-25	8-25
Max. Service Load [MPa]	0.12	0.25	0.5	1.2	2	4.5	9
Occasional load [MPa]	2	3	4	6	8	10.5	18
Static Modulus [MPa] @ 70% of max. Service load	0.7	1.5	2.9	4.9	7.0	15.9	27.5
Dynamic Modulus [MPa] @ 70% of max. Service load	0.9	1.8	3.2	7.9	13.5	33.9	103
Creep Rate [as % of Initial Thickness per decade]	<=2%						
Temperature Range[2]	-30°C / 70°C						

[1]A 50 mm mat of Stravibase Mat-101 for example, will be referred to as Stravibase Mat-101050

[2]The temperature range indicates where the bearing maintains both structural and acoustic performance. However, the acoustic performance will be affected as the temperature lowers.

Recycled Rubber Mats	42	W_a[3]	43	45	46
Color	Black	Black	Black (grey inserts)	Black (red inserts)	Black
Thickness [mm][1]	20-60[5]	$W15_a$: 15/7 $W17_a$: 17/8 $W20_a$: 20/10	20-60[5]	20-60[5]	20-60[5]
Resonance Frequency [Hz]	10-25	10-25[2]	10-25	10-25	10-25
Max. Service Load [MPa]	0.12	0.2	0.6	1	1.6
Occasional load [MPa]	1	2	3	8	10
Static Modulus [MPa] @ 70% of max. Service load	0.6	0.5	1.9	3.5	9.9
Dynamic Modulus [MPa] @ 70% of max. Service load	2.5	5	10.8	18.4	60.5
Creep Rate [as % of Initial Thickness per decade]	<=2%				
Temperature Range[4]	-30°C / 70°C				

[1]A 40 mm mat of Stravibase Mat-42 for example, will be referred to as Stravibase Mat-42040.

[2]Frequency range is valid for 1 to 3 layers of Stravibase Mat-W_a.

[3]The wavy (W) form allows a lower contact area and reduces the dynamic stiffness of the material to maximise its performance. For wavy products, a 20 mm of Stravibase Mat-W_a for example will, be referred to as Stravibase Mat-$W20_a$.

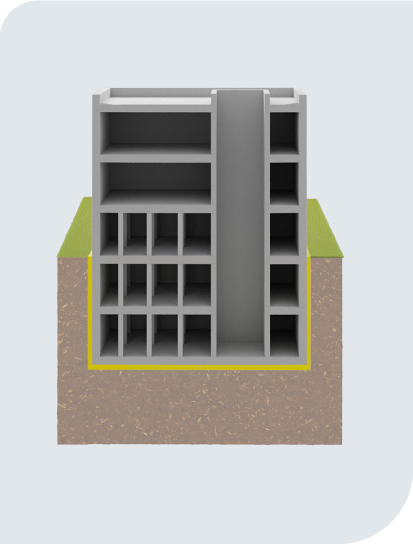
[4]The temperature range indicates where the bearing maintains both structural and acoustic performance. However, the acoustic performance will be affected as the temperature lowers.

[5]To meet the acoustic requirements of the project, the mat thickness can be increased up to 80 mm for vertical isolation and up to 120 mm for lateral isolation by adding additional layers of mats.

TYPICAL APPLICATIONS

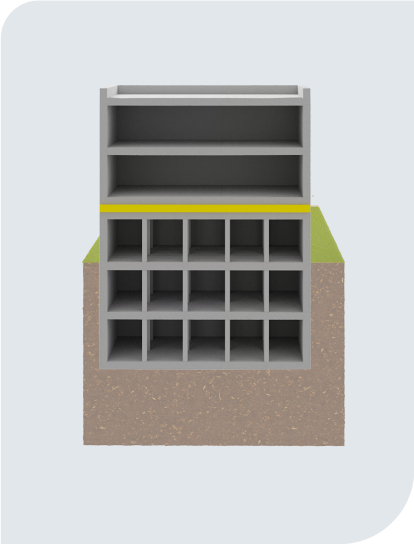
Stravibase Mat (▬) can be applied at different levels:

Figure 1.1 - Decoupling the entire building from the soil



Stravibase Mat can be applied when the full underground building structure needs to be decoupled from the surrounding soil (both at foundation level and around its perimeter).

Figure 1.2 - Decoupling at floor level



Stravibase Mat could be integrated at any level in a building for vertical isolation between two relatively rigid surfaces.

DISCLAIMER

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