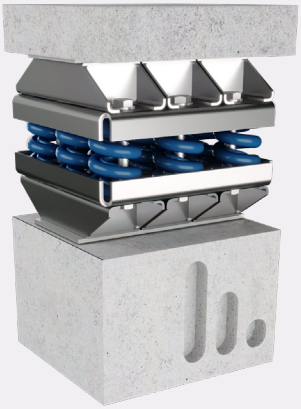

stravibase
by CDM Stravitec

Stravibase SpringBox
Datasheet

Easy Installation

Durability & Performance

Replaceable & Inspectable

Limited Deflection

Stravibase SpringBox bearing consist of a pre-compressed box hosting an arranged series of single springs or double (nested) structural springs and are designed to meet natural frequencies between 2.5Hz and 5Hz. Stravibase SpringBox bearings are available in different sizes and are recommended when limited settlement is required during construction. This type of bearing can be pre-compressed up to 80% of the design load.

DESIGN REQUIREMENTS

For each project, the CDM Stravitec engineering service will help you find the optimum Stravibase SpringBox solution to achieve acoustic performance required and the load bearing resistance needed to withstand the static and dynamic forces 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;
- Contact surface areas of each contact point;
- Location of any fixing bolt;
- Substructure and superstructure drawings (sections, plan views, etc.).

EXTRA FEATURES

Depending on clients needs and the intended use of the building, additional architectural and structural design considerations may be required by the project design team.

CDM Stravitec will support the design team with integrating all possible additional features to the Building Base Isolation solutions; with the objective of maintaining the integrity and durability of the solutions without compromising the acoustic performance of the bearings.

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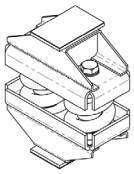
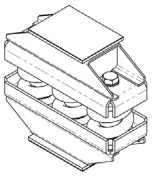
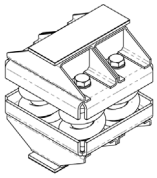
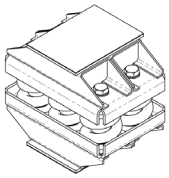
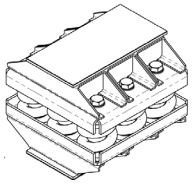
PHYSICAL & MECHANICAL PROPERTIES

	Stravibase SpringBox B2	Stravibase SpringBox B3	Stravibase SpringBox B4	Stravibase SpringBox B6	Stravibase SpringBox B9
					

Types	Box B2	Box B3	Box B4	Box B6	Box B9
Dimensions [inch]	14.57 - 7.28	19.68 - 7.28	14.57-13.38	19.68 - 13.38	19.68-19.68
Height [inch]	17.08 - 22.60				
Resonance Frequency [Hz]	2.5 – 3.5				
Main Springs (G-springs)	2	3	4	6	9
Nested Springs (P-springs)[1]	0-2	0-1-2-3	0-4	0-2-4-6	0-3-6-9
Maximum Load Capacity (SLS) [kip]	56.20	84.30	112.40	168.61	252.91
Design Loads[2] [kip]	33.05 - 41.36	49.46 - 62.05	66.32 - 82.73	99.37 -124.09	148.82 - 186.37
Fire Resistance	>2 hours (R120)				

[1]Extra springs used for finetuning
[2]The design load range presents ADL_{min} & ADL_{max}; the optimal acoustic design load provided that the box is filles with minimum and maximum number of springs respectively.

Springs[3]		G-springs		P-springs	
		2.5 Hz	3.5 Hz	2.5 Hz	3.5 Hz
Outside Diameter [inch]	Coil Bound	5.91	5.91	2.83	2.83
	Wire	1.42	1.42	0.71	0.71
Free Height [inch]		12.79	7.28	12.79	7.28
Design Loads [kip]		16.6	16.6	4.2	4.2
Vertical Spring Rate (R) [lb/in]		10496	20991	2643	5208
Horizontal Spring Rate (R) [lb/in]		3102	18753	0	1034

[3]For all spring types, the coil resonance is situated between 100 and 500Hz. To reduce audible transmission at the coil resonance, the Stravibase SpringBox bearings are always treated with sound stop layers of 2.5 mm thick cork elastomer. All structural springs used by CDM Stravitec are designed according to EN13906-1:2013 and made of a chrome alloy material (type 51CrV4). The springs are always protected by an epoxy coating (70 µm) and produced by a specialized ISO9001 certified company.

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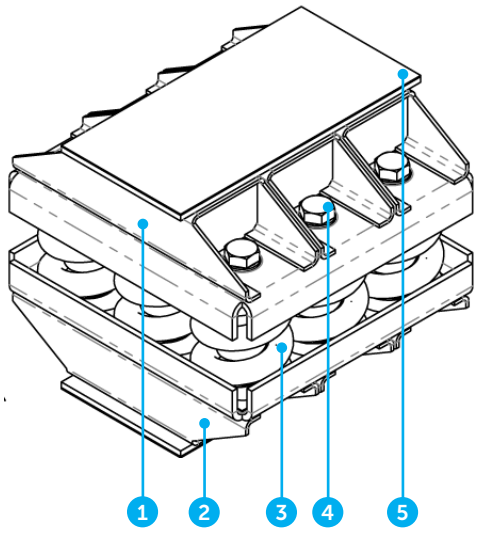
TYPICAL ASSEMBLIES

Stravibase SpringBox is designed to withstand loads up to 2 times the acoustic design load (ADL_{max}) without risk of instability. In a pre-compressed state, the box will undergo a deflection of 1 to 2 mm only.



1. Top lid
2. Bottom lid
3. Structural springs
4. Precompression bolts
5. Anti-slip layer

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DISCLAIMER

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