stravibase
by CDM Stravitec

Stravibase VHS
Datasheet

High Load Capacity

Easy Installation

Durability & Performance

Replaceable & Inspectable

Compatible with steel, wood & concrete constructions

Stravibase Very High Stress bearing, commonly called Stravibase VHS, consists of successive layers of high resilience elastomeric pads and steel plates. It is the optimal solution for limited surface areas meeting natural frequencies between 7 and 16 Hz.

Stravibase VHS is designed to support important design loads and can be accommodated with structural failsafes Stravibase VHS-FS. Stravibase VHS can be supplied with or without formwork.

DESIGN REQUIREMENTS

For each project, the CDM Stravitec engineering service will help you find the optimum Stravibase VHS solution to achieve the 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:

- The isolation bearing natural frequency requirements;
- The vertical and lateral load combinations (including permanent loads - dead and superimposed loads - and variable loads such as service live loads, wind loads, etc.);
- Occasional loads for stability checks;
- Surface areas at each bearing location;
- Structural and architectural drawings with sections from substructure and superstructure (plan views, sections, etc).

Note:
All CDM Stravitec elastomeric bearings are designed according to the EN 1337-3 principles. EN 1337-3: Structural Bearings - Part 3: Elastomeric Bearings.

EXTRA FEATURES

Depending on the 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 (failsafes, shear keys, etc.), 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

Type	without failsafe (VHS)			with failsafe (VHS-FS)
Thickness Elastomeric Layers [mm (inches)]	20 (13/16")	20 (13/16")	30 (1-3/16")	20 (13/16")
Solution[1]	VHS-100	VHS-150	VHS-150-L30	VHS-150-FS
Unloaded Solution Thickness [mm (inches)][2]	66-144 (2-10/16"-5-11/16")	66-196 (2-10/16"-5-11/16")	86-194 (2-10/16"-5-11/16")	81-226 (2-10/16"-5-11/16")
Bearing dimensions [mm x mm (inches x inches)]	100 x 100 (4" x 4")	150 x 150 (5" x 5")	150 x 150 (5" x 5")	150 x 150 (5" x 5")
Max. Service Load [kN (blf)]	100 (22,480)	245 (55,076)	220 (49,456)	210 (47,208)
Occasional Load [kN (blf)]	135 (30,348)	345 (77,556)	305 (68,564)	300 (67,440)
Static Modulus [MPa (psi)] @ 70% of max. Service Load	60.1 (8,717)	93.8 (13,605)	58.7 (8,514)	64.8 (9,398)
Dynamic Modulus [MPa (psi)] @ 70% of max. Service Load	99.7 (14,460)	286.5 (41,553)	226.1 (32,793)	226.6 (32,866)
Color	Black/Grey			Black/Grey
Creep Rate [as % of Initial Thickness per Decade]	<= 1%			
Temperature Range[3]	-30°C / 70°C (-22/158°F)			

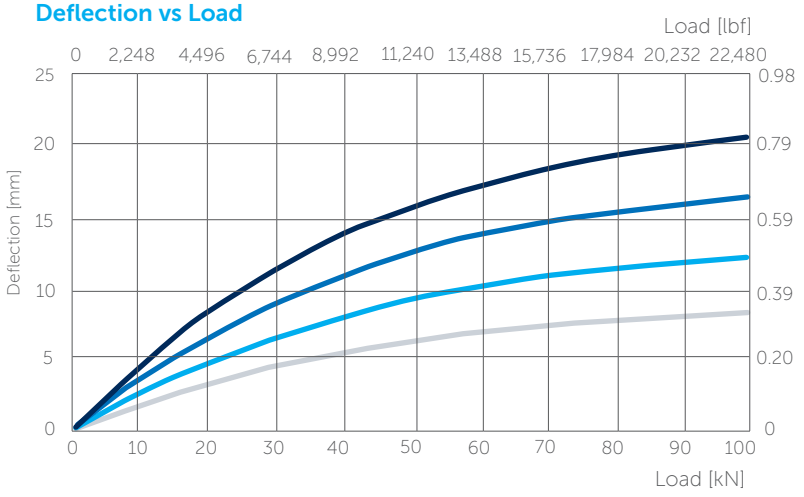
[1]A 4 layer of Stravibase VHS-150 for example, will be referred to as: Stravibase VHS-150-4L.
[2]A product thickness is determined by the number of elastomer layers.
[3]The temperature range indicates where the bearing maintains both structural and acoustic performance. However, the acoustic performance will be affected as the temperature lowers.

Notes:
All CDM Stravitec elastomeric bearings are designed based on the EN1337-3.
EN1337-3 - Structural bearings – Part 3: elastomeric bearings It is important to note that the scope of application of the EN1337-3 covers a broad range of applications. CDM Stravitec bearings are only applicable to the building application.
Structural stability of Stravibase bearings are checked at different load combinations according to the building codes, e.g. Eurocode in Europe and United Kingdom, IBC in United States and Canada.
All CDM Stravitec bearings go through a rigorous testing programme. Materials datasheets are available on demand.

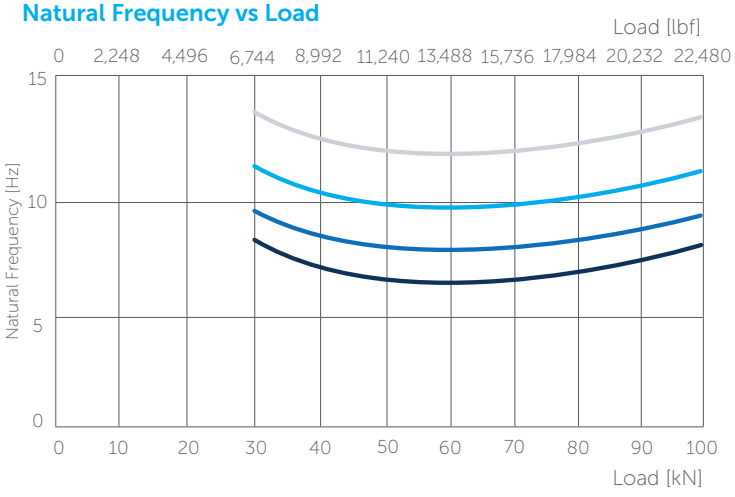
Stravibase VHS-100

2 layers 3 layers 4 layers 5 layers

Deflection vs Load



Natural Frequency vs Load



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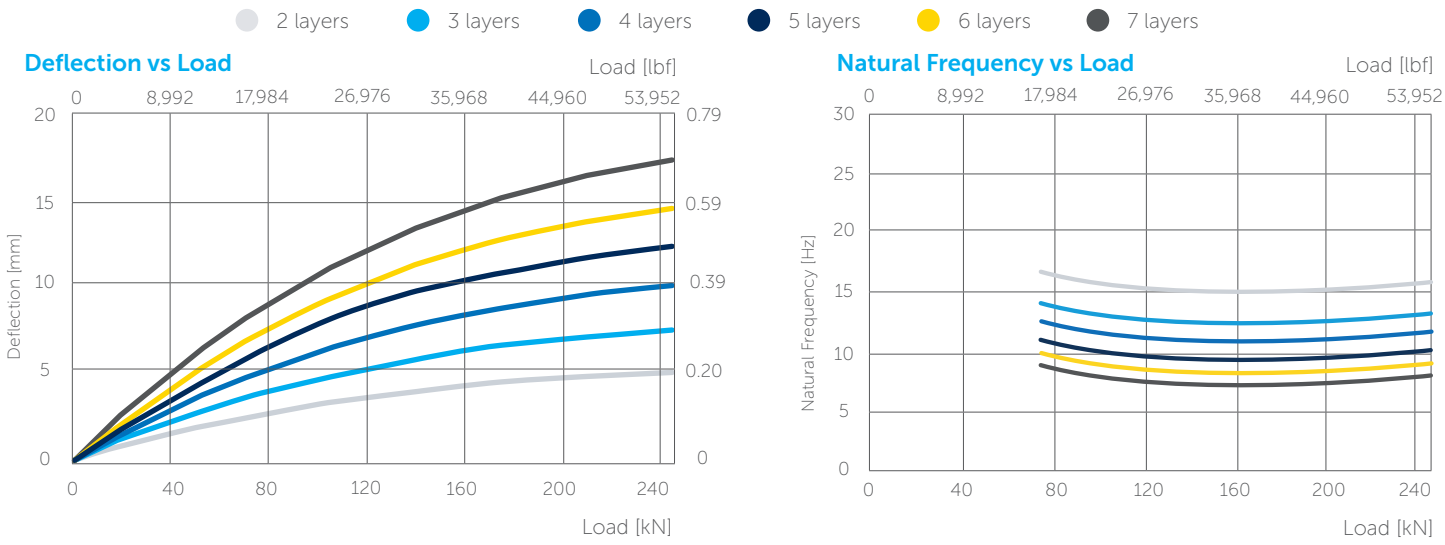
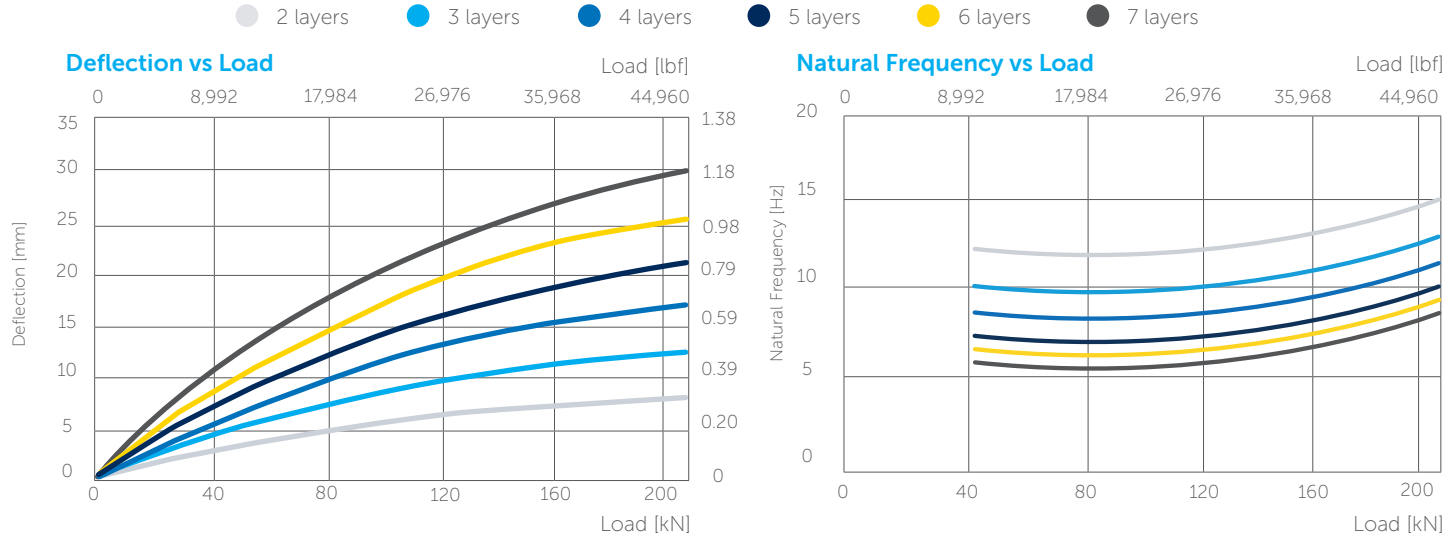
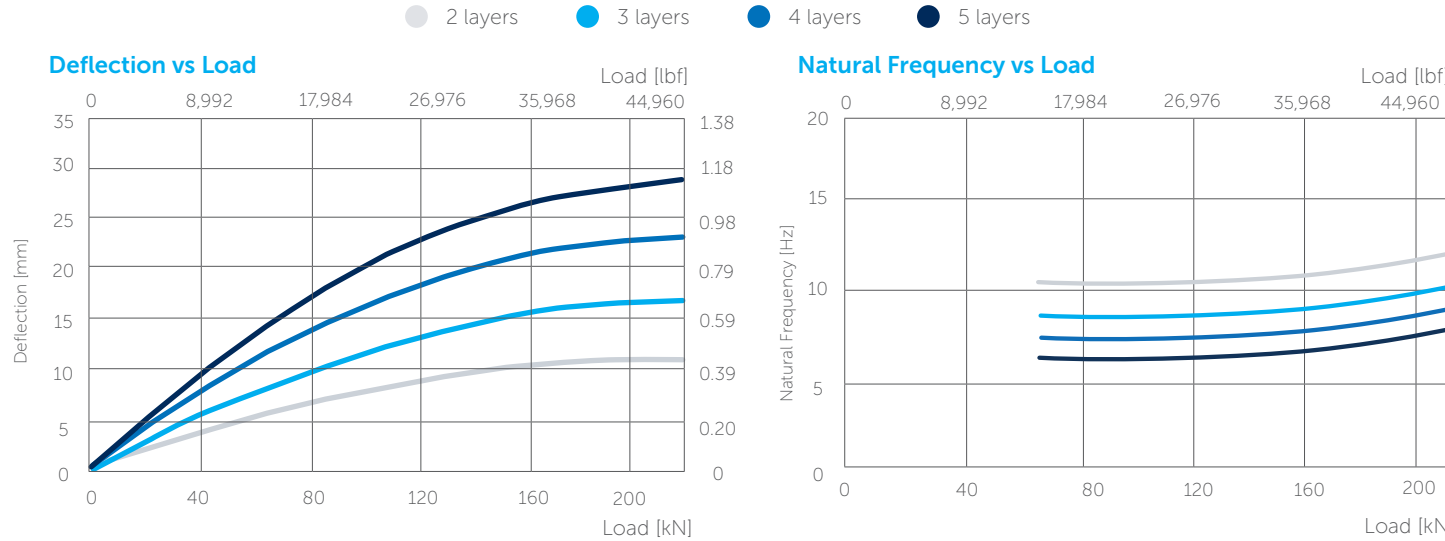
Stravibase VHS-150



Stravibase VHS-150-FS



Stravibase VHS-150-L30



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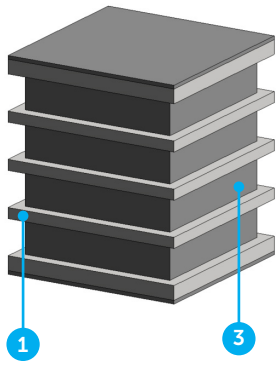
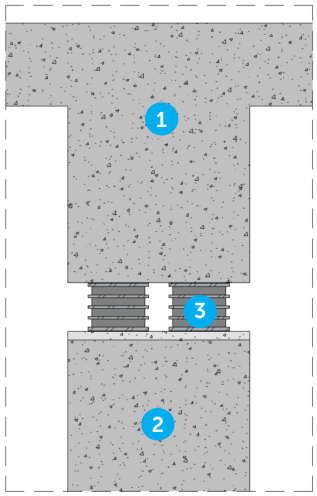
TYPICAL ASSEMBLIES

Stravibase VHS



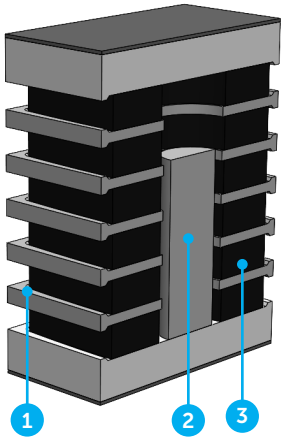
1. Steel plate
2. Elastomeric bearing

Stravibase VHS



1. Superstructure
2. Substructure
3. Stravibase VHS

Stravibase VHS with integrated failsafe (VHS-FS)



1. Steel plate
2. Integrated failsafe
3. Elastomeric bearing

For patent information, please visit
https://cdm-stravitec.com/en-uk/patents

DISCLAIMER

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