



Constrained Layer Damping Tiles

Constrained-layer damping (CLD) tiles are used to increase damping in stiff structures. A "sandwich" is formed by laminating a damping layer in between two structural constraining base layers. When the system flexes during vibration, shear strains develop in the damping layer and energy is lost through shear deformation of the material. Varying layer thickness ratios permits optimizing system loss factors for various temperatures without changing the material's composition.

Product Characteristics

Constrained Layer Damping Tiles consist of a constraining sheet and a viscoelastic polymer that consists of a high performance acrylic system. The polymer is primarily characterized by its joining strength, load-dissipating properties as well as temperature and weather resistance. Additionally it has a high loss factor in a wide temperature range, depending on the viscoelastic core type.

Due to the products unique composition, the double adhesive acrylic viscoelastic polymer combines very high adhesion levels including the ability to absorb and dissipate vibrational energy. The products viscoelastic core can also compensate for thermal elongation of bonded parts.

CLD tile performs well on materials that are difficult to join, such as powder coatings or plastic materials. Even in connection with combinations of such materials, this product provides advanced security due to its innovative design.

Vibratec CLD-tile VT-WL44

Temperatur range: Good for higher temperatures

Vibratec CLD-tile VT-WL55

Temperatur range: Good for lower temperatures

Vibratec CLD-tile VT-WL44-55 Hybrid

Temperatur range: Wide range of both temperatur and frequency

A realistic insertion loss are expected to be lower due to different in-situ conditions. Expect 6-10 dB for most applications.

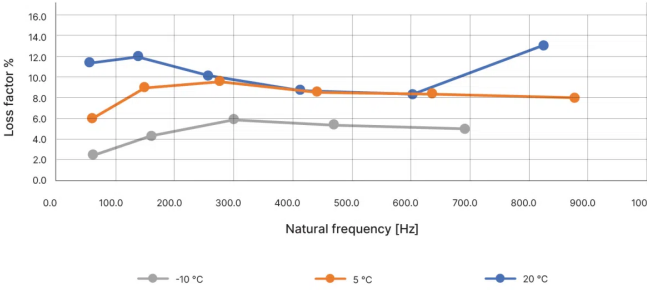
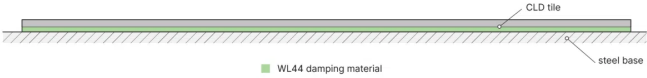
Product Applications

- Reduction of structure borne noise radiation from steel bridges
- Reduction of structure borne noise radiation in marine & offshore applications
- Reduction of structure borne noise radiation in industrial applications, gensets, generators, wind turbine towers etc.
- Reduction of structure borne noise radiation in steel balcony applications

Technical Specifications

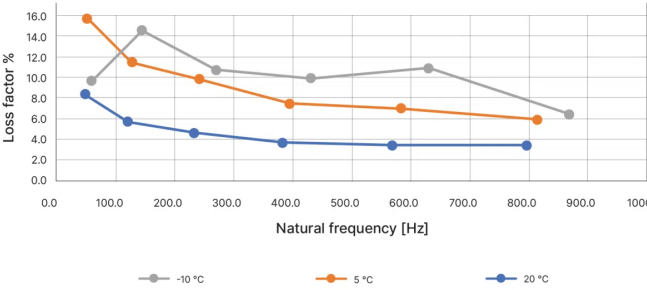
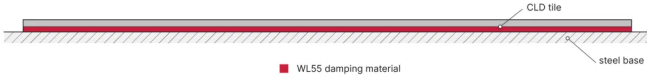
CLD Tile WL44 - Composite loss factor measurements

Optimum for app. +20 °C



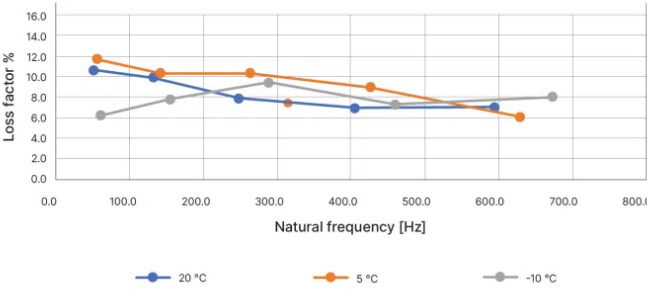
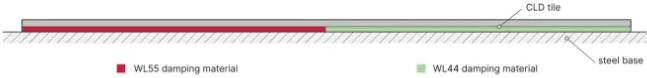
CLD Tile WL55 - Composite loss factor measurements

Optimum for app. -10 °C



CLD Tile WL44- 55 Hybrid - Composite loss factor measurements

Optimum for app. -10°C to +30°C



Insertion Loss

CLD-Tile	Max. Theoretical Insertion Loss I _{lp} , dB Measured on test specimens in a lab			Comments
	+20 °C	+5 °C	-10°C	
VT-WL44	14	13	14	Good for higher temperatures
VT-WL55	11	14	14	Good for lower temperatures
VT-WL-Hybrid	13	14	13	Wide range of temperature and frequency
Note: The realistic insertion loss is expected to be lower due to different in-situ conditions. Expect 6-10 dB for most applications				

Characteristics

Characteristic	VT-WL44	VT-WL55	VT-WL44-55-Hybrid
Core material	Viscoelastic Acrylic Polymer	Viscoelastic Acrylic Polymer	2 Viscoelastic Acrylic Polymers
Adhesive	Acrylic	Acrylic	Acrylic
Color	Grey / White	Transparent	Transparent / Grey / White
Thickness of acrylic polymer	app. 1 mm	app. 1 mm	app. 1 mm
Adhesive strength on steel (After 72 h)	36 N/cm	24 N/cm	24 N/cm
Release liner	Yes	Yes	Yes
Multiple layers	Yes (special option for increase damping further, and widen the temperature range)	Yes (special option for increase damping further, and widen the temperature range)	Yes (special option for increase damping further, and widen the temperature range)
Constraining sheets available in	- Galvanized steel, AISI 304 or AISI 316 - Aluminum & seawater resistant aluminum - Carbon fiber & FRP panels	- Galvanized steel, AISI 304 or AISI 316 - Aluminum & seawater resistant aluminum - Carbon fiber & FRP panels	- Galvanized steel, AISI 304 or AISI 316 - Aluminum & seawater resistant aluminum - Carbon fiber & FRP panels
Size & shape	Customized/ Project specific	Customized/ Project specific	Customized/ Project specific
Thickness	2-20 mm, customized	2-20 mm, customized	2-20 mm, customized

Downloads



CLD Damping Tile |
Technical data –
english

Contact information

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