

## **B<sup>n</sup>** CHEMICAL **BN-D5500 SL**

Noise Protection Sheetting with innovative graphene material

Product description	<p>"BN-D5500 SL", Visco Elastic Damping Layer is a laminated damping sheet developed by BN Steel Chemical for reduces noise levels generated by vibration of the structure.</p> <p>"BN-D5500 SL" is Consists of a metal and a vibration-damping resin layer with innovative graphene material. Products can achieve superior workability because Simply peel off the protective film and affix. No special tools or skills are required.</p>
Application Tool	No require
Appearance	Steel plate and Vibration-damping resin layer with innovative graphene material
Operating temperature	-20°C to approx. +60°C
Flammability	Not flammable
Applications	



Marine



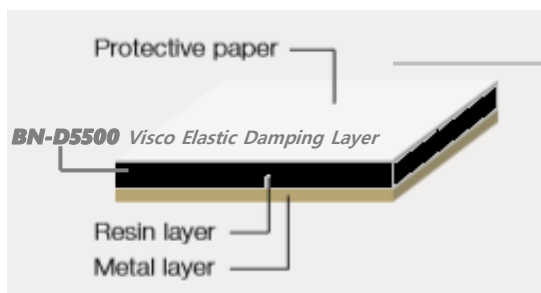
Construction



Automobile



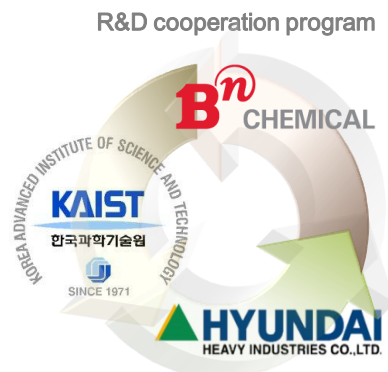
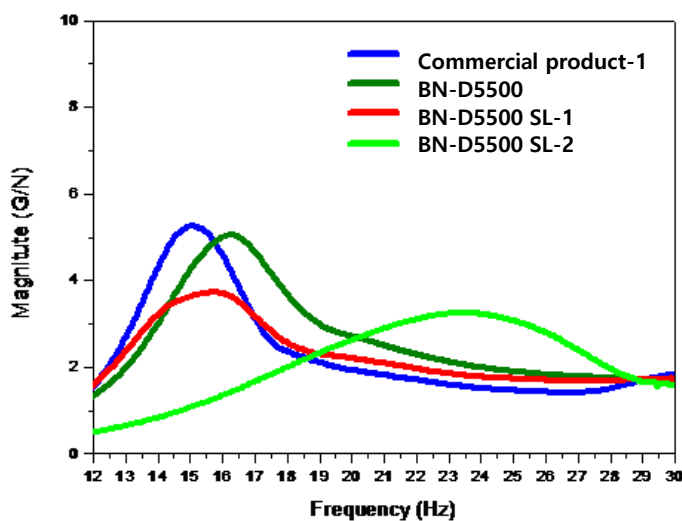
Heavy equipment



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Specifications		
The name of the product		BN-D5500 SL
Width (mm)×length (mm)		300 × 500
Thickness (mm)	Resin layer	1.0
	Metal layer	0.8
Weight per one piece (kg)		1.1
The number of sheets per one containing (piece)		15
Technical benefits		Highly Vibration-Absorbing / Extremely Durable / Light and Thin / Highly Fire-Retardant / Easy Installation



Sample	F <sub>1</sub> (Hz)	Damping ratio %	비 고
Commercial- 1	15.062	9.759	Sticker type, 日本社
BN-D5500	16.250	11.377	Visco-Elastic damping layer, BN社
BN-D5500 SL-1	15.687	14.541	Sticker type, BN社
BN-D5500 SL-2	23.375	17.914	Sticker type, BN社

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### Intended Uses

Noise sources like main engines, thrusters, pumps, generators, HVAC and more creates not only airborne noise but also a lot of vibrations in the whole structure. If nothing is being done to stop the vibrations, the crew and passengers on board soon will start to feel uncomfortable for various reasons. But when any of BN-D5500 SL are applied, vibrations are dampened to a level not fatiguing to either the structure of the vessel or to the body; health and safety, and the environment on board, are improved accordingly.

The excellent feature of BN-D5500 SL is that it is a self-adhesive sheet composed of a resin layer with high performance in noise & vibration reduction. The resin layer has the chemical technical capacity to convert vibration energy into heat making use of the principle of Innovative Graphene material and molecular friction. BN-D5500 SL consists of two layers: 1 mm resin layer with innovative graphene material and 0.8 mm metal layer in thickness. So it has thickness of 1.8 mm in total and the weight is 7.3 kg/m<sup>2</sup>. This makes the product easy to be handled. As the deck flexes under vibration transmitted to it from engines or propellers, the visco elastic layer is placed in shear. The special property of a visco elastic material is that it does not recover at the same rate as which it is distorted, and energy from the vibration is therefore absorbed, leaving less to be radiated as noise. The bond between the visco elastic layer and the deck, and the bond between the visco elastic layer and the constraining layer is therefore of outmost importance.

### Installation

**BN-D5500 SL can be installed quickly and easily as follows:**

1. Before the application of BN-D5500 SL, all the dusts and grease shall be removed from the surface.
2. Protective paper must be peeled from the resin layer.
3. BN-D5500 SL with 300 x 500 mm is applied to the surface with hands of one person, as its weight is around 1.1 kg.
4. It shall be manually pressed onto the surface and its edge shall be pressed down by edge roller
5. For the wall application each corner of BN-D5500 SL shall be fixed by spot welding or taped
6. In order to get an optimum noise reduction level, it is sufficient to install BN-D5500 SL only on the area of around 60-70% of the whole surface (It depends on the application).

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<b>Product Characteristics</b>	<p><b>Shortening Interior Construction Time</b></p> <ul style="list-style-type: none"><li>- No curing time is required for the installation on the steel construction.</li><li>- Curing time is needed only for deck composition after installation. Compared with the conventional products, BN-D5500 SL will reduce the total curing time Significantly</li></ul> <p><b>Easy Installation</b></p> <ul style="list-style-type: none"><li>- Special tools, skills and adjustment works in thickness are not required.</li></ul> <p><b>Space Saving</b></p> <ul style="list-style-type: none"><li>- The flexibility of designing is high because its thickness is only 1.8 mm.</li><li>- Because of the thin thickness, cabin can secure wider space, ceiling is kept higher and wiring works under the roof becomes easy.</li></ul>
<b>Storage (special notes)</b>	<p>In dry conditions, do not expose to moisture and ignition temperature.</p>
<b>Safety</b>	<p>Please read our Safety-Data-Sheet and the labels of each product before use.</p> <p>Pay particular attention to the directions given in the Dangerous Substance Regulations. Make sure the safety data sheet is readily available as it gives valuable information regarding the safe usage and disposal of the product and what to do in the event of an accident involving the product.</p>

*For additional technical information, please contact our technical department.*