Total Material Solutions for Noise & Vibration Control

Creating Quiet Environment by Controlling Noise & Vibration

NYCO NAMYANG NOVITECH Co., Ltd.
NYCO NOVITECH R&D CENTER
“Creating Quiet Environment by Controlling Noise & Vibration”

★ Noise & Vibration cause Vicious Stresses!!
★ Solution for Noise & Vibration Control by Complex Products of Engineering Technologies. (Material Technology / Design Technology / Vibration Technology)

Namyang Novitech Co.,Ltd. will solve the problems!!

Namyang Novitech Co.,Ltd.

• Since 1975
• Venture Capital for Noise & Vibration Control
• NYCO NOVITECH R&D Center
• Various Patents & Utility Models for Noise & Vibration Control
• R&D for High-functional Noise & Vibration Control Materials with health affinity
• ISO9001, ISO14001, TS 16949, Eco-Partner, S-Partner, UL, FMVSS, Recognized Venture Capital, RoHS

Main Products & Businesses

• Noise & Vibration Damping Sheet
• Vibration Damping Paint
• Vibration Damping Tape
• Thermal Conductive Sheet
• Laminated Composite Products for Noise & Vibration Control
• High-functional and Noise & Vibration Proofing Rubbers
• Fabricated Noise Proofing Chamber / Curtain / Partition / Wall
• Various Acoustic Interior for Art Wall / Piano Room / Concert Hall / Studio, etc.
• Noise & Vibration Control Technology, Installation, Service, and Consultation
• Melt-Blown Sound Absorption Sheet
• PET Sound Absorption Soft Board
• Acoustic Interior Board
• Electric Insulating Sheet
• DIY Materials for Car & Audio
• Special Rubbers

Customer Service

• Consulting Service Technical Advise, etc. for Solution of Noise & Vibration Control

Comprehensive Technologies and Manufacturer for Noise & Vibration Control

Dear sirs,

Namyang Novitech is the most dynamic and fastest growing manufacturing enterprise in the noise & vibration control and thermal composites industry. Throughout the history of the company, since 1975 we have dedicated ourselves to provide the best customer service and technical support available within the industries we serve. Our philosophy is to be a resource to our customers and develop close working relationships. In 1988 the company established and has been operating NYCO NOVITECH R&D CENTER as its annex organization to perform continuous research and development of up-to-date technologies for new materials. We are proud of our technical team which provides the most efficient solutions and improve performance. The company has filed or registered many patents, utility models and trade marks and obtained certificates of ISO 9001, ISO 14001, Eco-Partner, S-Partner, UL mark, Q mark, RoHS compliance, etc, and thus has been designated as a most promising small and medium enterprise.

Namyang Novitech is committed to offer the best service, technical support and overall value to our customers. Working with your team, we will help design and give the best solution that will improve your products functionality and manufacturing efficiencies in a cost effective manner. We would be more than happy to serve you with our technical and engineering supports for the best solution of your noise & vibration problems.
"Creating Quiet Environment by Controlling Noise & Vibration"

Namyang Novitech Co., Ltd. is a technology intensified small and medium enterprise established in 1975 and has developed and manufactured the best quality products of noise and vibration control materials as well as multi-functional high precision special rubbers and foam products.

General Properties

- Head Office • R&D Center • Factory
  Hwaseong Factory :
    - Damping Rubbers - Various Damping Sheets
    - Damping Paints - Thermal Materials
    - Composites - Special Rubbers

- Branch Offices & Sub-Factories
  Anyang Factory :
    - Various processing for rubbers, sheets & foams
  Uijeongbu Factory :
    - Sound absorption sheets & boards
  Changwon Factory :
    - Various processing & Shopping Mall

- Beijing TDL Tech - Trade Co., Ltd. (China)
Quality Systems & Advanced Technology

- ISO 9001, ISO 14001, TS 16949
- SQS-9000, Eco-Partner, S-Partner
- UL, BS, ISO, ASTM, FMVSS & Various Spec.
- NYCO NOVITECH R&D Center
- Patents & Utility Models for Noise & Vibration Control Materials and Methods
- The most promising small & medium enterprise
- RoHS Compliance

Main Products & Business Items

- Total Material Solutions for Noise & Vibration Control
- Noise & Vibration Damping Rubber (ZERONY RUBBER)
- Noise & Vibration Damping Sheet (ZERONY SHEET)
- Noise & Vibration Damping Paint (ZERONY PAINT)
- Noise & Vibration Damping Tape (ZERONY TAPE)
- Noise & Vibration Damping Mat (ZERONY COMBO & MAT)
- PP Melt-Blown Type Sound Absorption Sheet (ZERONY WEBSULER)
- PET-based Sound Absorption Soft Board (ZERONY PET)
- PET-based Sound Absorption Rigid Board (ZERONY ACOUSTIC BOARD)
- High Performance Special Rubber
- Various Processing for Foams
- Various Acoustic Interior
- Noise & Vibration Control Technology, Service and Consultation
- Technical Advise for Solutions of Noise & Vibration Problems

Applications

- Aircrafts & Vessels
- Mining & Constructions
- Vehicles & Heavy Equipments
- Electronic Instruments & OA Equipments
- Electric & Communication Instruments
- Industrial Equipments
- Medical Instruments
- High Technology Machines
- UL & Int’l Standard Qualities
- Order-made to Sample, Drawing & Specifications
# ZERONY Series

Vibration Damping & Noise Insulation

<table>
<thead>
<tr>
<th>Product</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damping Rubber Foots</td>
<td><img src="image1" alt="Image" /></td>
</tr>
<tr>
<td>Various Rubbers</td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td>Damping Rubber Pads</td>
<td><img src="image3" alt="Image" /></td>
</tr>
<tr>
<td>Damping Rubber Pad</td>
<td><img src="image4" alt="Image" /></td>
</tr>
<tr>
<td>DFT</td>
<td><img src="image5" alt="Image" /></td>
</tr>
<tr>
<td>PS</td>
<td><img src="image6" alt="Image" /></td>
</tr>
<tr>
<td>TP</td>
<td><img src="image7" alt="Image" /></td>
</tr>
<tr>
<td>EV</td>
<td><img src="image8" alt="Image" /></td>
</tr>
<tr>
<td>BAL</td>
<td><img src="image9" alt="Image" /></td>
</tr>
<tr>
<td>BAL (w/o logo)</td>
<td><img src="image10" alt="Image" /></td>
</tr>
<tr>
<td>BRR</td>
<td><img src="image11" alt="Image" /></td>
</tr>
<tr>
<td>BV</td>
<td><img src="image12" alt="Image" /></td>
</tr>
<tr>
<td>Thermal-Pad B-F</td>
<td><img src="image13" alt="Image" /></td>
</tr>
<tr>
<td>Thermal-Pad Sil-F</td>
<td><img src="image14" alt="Image" /></td>
</tr>
<tr>
<td>Tape DT</td>
<td><img src="image15" alt="Image" /></td>
</tr>
<tr>
<td>Heat Resistant Tape</td>
<td><img src="image16" alt="Image" /></td>
</tr>
<tr>
<td>Electric Insulating Tape</td>
<td><img src="image17" alt="Image" /></td>
</tr>
<tr>
<td>DP-SP</td>
<td><img src="image18" alt="Image" /></td>
</tr>
<tr>
<td>DP-MPU</td>
<td><img src="image19" alt="Image" /></td>
</tr>
<tr>
<td>Putty</td>
<td><img src="image20" alt="Image" /></td>
</tr>
</tbody>
</table>
ZERONY Rubber DR series is noise and vibration damping pad or molded material to be mounted under the machines or various equipments, efficiently controlling and insulating solid-borne noise and sound transmitted from such machines or equipments.

**General Properties**

- Usable in a wide range of temperature and excellent in vibration absorption efficiency in a broad range of frequency
- So excellent in vibration and shock absorption as to reduce noise effectively, isolating solid-borne sound efficiently from the source
- Various shapes are available
- High mechanical properties
- RoHS compliance

**Specifications**

<table>
<thead>
<tr>
<th>Appearances</th>
<th>Various Shapes, Pads, Sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>1.2 ~ 3.0</td>
</tr>
<tr>
<td>Hardness</td>
<td>30 ~ 80</td>
</tr>
<tr>
<td>Loss factor (η)</td>
<td>0.1 ~ 0.5</td>
</tr>
<tr>
<td>Comments</td>
<td>Order-made Satisfied with various Spec</td>
</tr>
</tbody>
</table>

- Special grades are available.
- The listed data are obtained from tests made in our company and are legally ineffective.
- Information on and directions for the use of ZERONY Damping Rubber DR series are based on experimental and practical experiences.
- Local conditions and materials may influence the final result and it is desirable to make tests before use.
High Performance Special Rubbers

PRECISION MINIPARTS

GASKETS (RUBBER, FOAM, CORK etc)

O-RINGS

BOOT HOSES

EXTRUDED & COLORS

COMPOSITES

OTHER MOLDED PARTS
ZERONY Sheet PS/EV/TP/DFT Series is a noise and vibration damping sheet made from resins blended with hard chemical resin of good mechanical and weatherproof property and with soft chemical resin of good vibration damping and sound insulating efficiency and also compounded with high functional fillers and additives. ZERONY Sheet PS/EV/TP/DFT Series is vibration damping and sound isolating material of excellent vibration control and sound isolation effect. Resin-based damping sheet is convenient for use as they may be processed with adhesive on either one side or both sides of sheets and accordingly time of application at working site is shorter.

**General Properties**

- High sound isolating efficiency and high damping efficiency for solid-borne noise
- High water-resistance and good weather-ability
- Easy to adjust stiffness
- High mechanical properties
- Excellent stability against fire with high self-extinguishing property obtained by special fire-retardant treatment
- Able to adjust the thickness of sheets
- Easy to laminate with various other materials
- Short processing time with easy workability

**Specifications**

<table>
<thead>
<tr>
<th>Appearances</th>
<th>Sheet type, Generally dark black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (mm)</td>
<td>1, 2, 3, 4 (±0.2)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Generally 2.0</td>
</tr>
<tr>
<td>Loss factor (η)</td>
<td>0.1 ~ 0.5</td>
</tr>
<tr>
<td>Adhesive treatment</td>
<td>None</td>
</tr>
<tr>
<td>Fire classification</td>
<td>ROHS</td>
</tr>
</tbody>
</table>

- Special grades are available.
- The listed data are obtained from tests made in our company and are legally ineffective.
- Information on and directions for the use of ZERONY Sheet series are based on experimental and practical experiences.
- Local conditions and materials may influence the final result and it is desirable to make tests before use.
Designation System

ex) ZERONY Sheet PS-2S-20 (TP-2S-20)
PS : TPR with polyvinylchloride
TP : TPR with polyolefin resin
2 : Thickness : 2mm (±0.2) (1 = 1mm, 3 = 3mm, 4 = 4mm)
S : One side heat-resistant acryl adhesive treated (SS : Both)
20 : Specific gravity (20 = 2.0, 18 = 1.8, 22 = 2.2) (Generally : 20)

Delivery Form

Sheet size : 1000mm X1000mm (2mm thickness)
Other sizes and die-cut shapes on request.
500 sheets / pallet (PS-2)

Sound transmission loss of Zerony Sheet PS-2 (KS F 2808)

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
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<tr>
<td>40</td>
<td>40</td>
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<td>50</td>
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<td>70</td>
<td>70</td>
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<tr>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

Applications

- Construction and civil engineering
- Transportation means
- Electric · OA equipments
- Others

Water resistance
Water resistance : 8896:zrn
Resistance to wetting : 4.4

UL
UL94V0 : PS grade

IMO Res. A 653 (16)
- satisfied with the technical fire requirements for low flame spread of building and ceiling finish materials

Flame retardant efficiency
Residual flame time : 0.1 sec
Residual spot time : 0.9 sec
Carried length : 8.5 cm
Carried area : 45.5 cm²

Loss factors and damping behavior of Zerony Sheets (JIS G 0602)

Instruction for Use

1. Cut with scissors, knife or die to the desired size and shape before the release paper is removed.
2. Remove dust, grease, moisture and other foreign matter from the application surface.
3. Peel off the releasing paper. Use adhesive for improving weather proof efficiency.
4. Apply ZERONY Sheet PS/EVTP/DFT Series with proper pressure.
5. When necessary, use tack, self-tapping screw or other form tie.

Trade Marks :
ZAMZAM, ZAMZAM-E, NAMyang, NAMyang-HI-TEC, SOVI, SOVA, NOVI, NOVA, NOVCOM, NOVCOAM, NOVCONIC, ATOPONE, MINO, PRO MINO, NYCO A

High Acoustic Materials

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Gyeonggi-do, Korea
Uijeongbu Factory
Gyeonggi-do, Korea
Zerony Shopping Mall
Busan, Korea
ZERONY Sheet B Series and ZERONY Tape DT Series are vibration damping materials made from the complex of rubbers and resin with excellent vibration damping and weatherproofing properties, added with high functional inorganic fillers and have self-adhesiveness with releasing paper easy to peel off. There are several types - BRR, BV and BAL, etc.. BRR is a sole vibration damping sheet with self-adhesiveness on both sides of the sheet, so easy to apply with other materials in the form of sandwich structure. BV is faced with film, simple and easy to use. BAL is faced with aluminium foil, excellent in vibration damping property. Excellent fire and heat resistant types are available.

ZERONY Tape DT Series is a rolled tape which is convenient for use. Particularly, it is handy to apply the tapes on pipe or cylinder creating noise.

General Properties
- High sound isolating efficiency and high damping efficiency for solid-borne noise
- Excellent adhesiveness
- High heat resistant and high flame retardant product is available
- Easy to laminate with various other materials
- Easy to install on uneven irregular surface
- Easy workability and good processability

 Specifications

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appears</td>
<td>Sheets or roll type</td>
</tr>
<tr>
<td></td>
<td>Sorts on surface treatment :</td>
</tr>
<tr>
<td></td>
<td>BRR (without facing), BAL (Al foil), BV (PE film)</td>
</tr>
<tr>
<td>Thickness (mm)</td>
<td>1~8 (±0.2)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Generally 1.5 ~ 2.0</td>
</tr>
<tr>
<td>Loss factor (η)</td>
<td>0.1 ~ 0.5</td>
</tr>
<tr>
<td>Adhesive treatment</td>
<td>Self-adhesiveness</td>
</tr>
<tr>
<td>Fire classification</td>
<td>General type</td>
</tr>
<tr>
<td></td>
<td>Fire and heat resistant type : F grades</td>
</tr>
</tbody>
</table>

- Special grades are available.
- The listed data are obtained from tests made in our company and are legally ineffective.
- Information on and directions for the use of ZERONY Sheet and Tape series are based on experimental and practical experiences.
- Local conditions and materials may influence the final result and it is desirable to make tests before use.
### Designation System

- **ZERONY Sheet BAL-F2**
  - B: Modified butyl rubber-based damping sheet
  - AL: Aluminium foil facing (R: releasing paper, V: PE film)
  - F: Fire and heat resistant special grade
  - 2: Thickness: 2 mm (±0.2) (1 ~ 8 mm)

- **ZERONY Tape DT - W40T3.5 (Typical Grade)**
  - DT: Modified butyl rubber-based damping tape
  - W40: Width 40 mm
  - T3.5: Thickness: 3.5 mm (±0.2)

### Delivery Form

Sheets or rolls in carton boxes. (generally sheets)

Max width is 900 mm.

Other sizes and die-cut shapes on request.

### Sound transmission loss of Zerony Sheet BAL

![Graph showing sound transmission loss](image)

### Loss factors and damping behavior of Zerony Sheets (AS 6009)

![Graph showing loss factors and damping behavior](image)

### Applications

- Construction and civil engineering
- Transportation means
- Electric · OA equipments
- Others

### Fire Characterization Test

- BS ISO 6999, Part 2: Oxygen Index: 36.0 ~ 36.5%
- BS6853, D.8.4 - Panel test:
  - $A_{0}$(ON): 59.9
  - $A_{0}$(OFF): 60.9
- BS6853, D.8.6 - Floor test:
  - $A_{0}$: 12.97

### Heavy-metal test

- UL 94V0: BV-F0
- 94V1: B - F

### Instruction for Use

1. Cut with scissors, knife or die to the desired size and shape before the release paper is removed.
2. Remove dust, grease, moisture and other foreign matter from the application surface.
3. Peel off the releasing paper.
4. Apply ZERONY Sheet B or Tape DT Series with proper pressure.

※ Caution: Don’t put heavy matter on ZERONY SHEET B series.
**ZERONY Sheet BAL Series** is a constrained type vibration damping material made from the complex of rubbers and resins with excellent vibration damping and weatherproofing properties, added with high functional inorganic fillers and has self-adhesiveness with releasing paper easy to peel off. BAL is faced with aluminium foil with various thicknesses. Excellent fire and heat resistant types are available.

<table>
<thead>
<tr>
<th>General Properties</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>- High vibration damping property for solid-borne noise</td>
<td><strong>Appearances</strong> Sheet (generally silver color)</td>
</tr>
<tr>
<td>- Excellent self-adhesiveness</td>
<td><strong>Thickness (mm)</strong> AL = 40<del>300 μm, Rubber = 0.8</del>5 mm</td>
</tr>
<tr>
<td>- High heat resistance</td>
<td><strong>Specific gravity</strong> Generally 1.5 ~2.0</td>
</tr>
<tr>
<td>- High flame resistance</td>
<td><strong>Loss factor (η)</strong> 0.1 ~ 0.5</td>
</tr>
<tr>
<td>- Easy to laminate with various other materials</td>
<td><strong>Adhesive treatment</strong> Self-adhesiveness</td>
</tr>
<tr>
<td>- Easy to install on uneven irregular surface</td>
<td><strong>Fire classification</strong> General type Fire and heat resistant type : F grade</td>
</tr>
<tr>
<td>- Easy workability and good processability</td>
<td></td>
</tr>
<tr>
<td>- Various thickness of aluminium foils</td>
<td></td>
</tr>
</tbody>
</table>

- Special grades are available.
- The listed data are obtained from tests made in our company and are legally ineffective.
- Information on and directions for the use of ZERONY sheet BAL series are based on experimental and practical experiences.
- Local conditions and materials may influence the final result and it is desirable to make tests before use.