



**CAHAYA AULIA SDN.BHD**  
(Co.No.1162368-X)

# ABSORPTIVE & ISOLATION NOISE BARRIERS

## EFFECTIVE NOISE ABATEMENT SOLUTIONS FOR VARIOUS APPLICATIONS



Railway / Metro



Neighborhoods

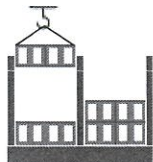


Highway / Road



### COMPOSITION

100% Made in  
Korea metals.



### QUICK AND EASY INSTALLATION

Rapid installation using  
H beam supports  
Expert installation  
guidance available.



### ADAPTABLE

Harmonize with the  
surrounding landscape with  
customized colors and designs



### INTERLOCKING

Additional mechanical resistance  
Minimal sound leakage.



### TESTED PERFORMANCE

Absorption and insulation tests  
conducted by KOLAS accredited  
and authorized testing  
laboratories (ILAC MRA member).



### CUSTOMIZE

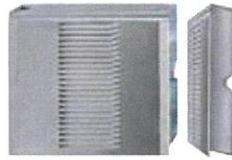
Mix and match for the  
perfect noise control solution.  
Avoid wall enclosure effect!



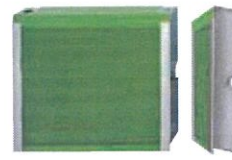
# Absorptive Noise Barriers

## SPECIFICATIONS

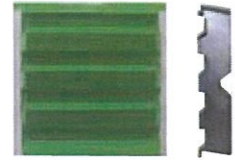
### PERFORATED TYPES



GALLERY TYPE

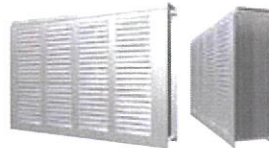


PUNCHING TYPE

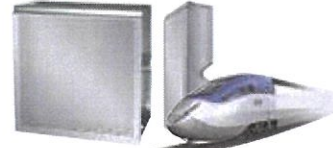


RIBBED SHELL  
PUNCHING TYPE

### HIGH PERFORMANCE TYPES

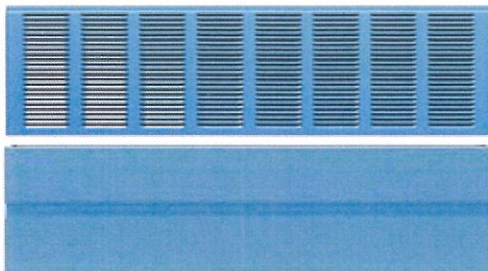


DOUBLE FACE TYPE



HIGH SPEED RAILWAY TYPE

Front Panel



Rear Panel

| Component          | Material Selection                               | SPEC                            |
|--------------------|--|---------------------------------|
| Front Plate        | Aluminum, High Anti Corrosion Steel              | 0.6T ~ 1.2T                     |
| Rear Plate         | Galvanized steel, High Anti Corrosion Steel      | 1.0T ~ 1.6T                     |
| Side Plate         | Galvanized steel, High Anti Corrosion Steel      | 1.2T ~ 1.6T                     |
| Rivet Fastener     | Blind rivet: Aluminum                            | 4Φ x 10                         |
| Absorptive Infill  | Glass wool, Polyester, Mineral wool              | Varying thickness and densities |
| Encapsulating Film | PE, PVF, ETFE                                    |                                 |
| Finish             | PVDF, Powder Coating (Light reflectance 10% max) |                                 |

|      | Length (mm)                   | Width (mm) | Thickness (mm) |
|------|-------------------------------|------------|----------------|
| SIZE | 1960 / 2960 / 3960 / 400-5000 | 500        | 60~150T        |

## TESTED PERFORMANCE



한국조선해양기자재연구원  
Korea Marine Equipment Research Institute



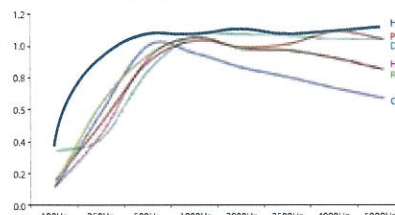
Sound absorption and sound insulation tests are conducted by the Korean Marine Equipment Research Institute, an accredited and authorized testing laboratory by KOLAS (a member of ILAC MRA)



Sound Absorption Performance  
Test Standard: ISO 354:2003 and ASTM C 423:17

|              | 100Hz | 250Hz | 500Hz | 1000Hz | 2000Hz | 2500Hz | 4000Hz | 5000Hz | NRC  |
|--------------|-------|-------|-------|--------|--------|--------|--------|--------|------|
| GALLERY      | 0.13  | 0.60  | 1.01  | 0.96   | 0.87   | 0.81   | 0.74   | 0.68   | 0.86 |
| Punching     | 0.17  | 0.53  | 0.91  | 1.04   | 1.00   | 1.02   | 1.10   | 1.05   | 0.87 |
| Ribbed Shell | 0.14  | 0.65  | 0.95  | 1.06   | 0.99   | 0.98   | 0.93   | 0.86   | 0.91 |
| Double Face  | 0.35  | 0.43  | 0.85  | 1.07   | 1.08   | 1.07   | 1.05   | 1.05   | 0.86 |
| Hiding       | 0.13  | 0.46  | 0.93  | 1.06   | 0.99   | 0.98   | 0.93   | 0.86   | 0.86 |
| High Speed   | 0.38  | 0.93  | 1.08  | 1.08   | 1.11   | 1.08   | 1.10   | 1.12   | 1.05 |

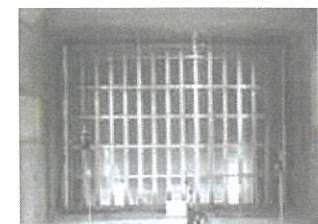
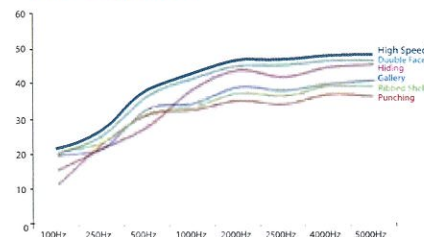
NRC = Up to 1.05



Sound Insulation Performance  
Test Standard: ISO 10140-2:2010 and ASTM E 413:2016

|              | 100Hz | 250Hz | 500Hz | 1000Hz | 2000Hz | 2500Hz | 4000Hz | 5000Hz | STC  |
|--------------|-------|-------|-------|--------|--------|--------|--------|--------|------|
| GALLERY      | 20.3  | 22.6  | 33.6  | 35.1   | 39.8   | 38.8   | 40.7   | 41.7   | 32.8 |
| Punching     | 12.2  | 23.9  | 32.0  | 33.4   | 36.0   | 35.0   | 37.8   | 37.2   | 31.3 |
| Ribbed Shell | 21.6  | 24.2  | 32.5  | 34.2   | 38.1   | 37.3   | 40.1   | 40.0   | 32.3 |
| Double Face  | 20.8  | 26.3  | 37.5  | 42.5   | 46.0   | 46.3   | 47.5   | 47.6   | 38.1 |
| Hiding       | 16.3  | 22.5  | 28.8  | 39.4   | 44.9   | 42.9   | 45.7   | 46.5   | 33.9 |
| High Speed   | 20.8  | 27.3  | 37.5  | 42.5   | 46.0   | 46.3   | 47.5   | 48.6   | 45.0 |

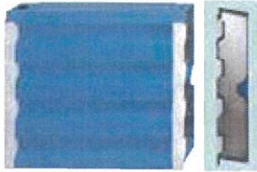
STC = Up to 45



# Isolation Noise Barriers

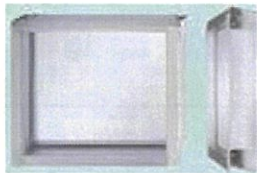
## Specifications

### STEEL



| Component         | Material Selection                          | SPEC                            |
|-------------------|---|---------------------------------|
| Front Plate       | Aluminum, High Anti Corrosion Steel         | 0.6T ~ 1.2T                     |
| Rear Plate        | Galvanized steel, High Anti Corrosion Steel | 1.0T ~ 1.6T                     |
| Side Plate        | Galvanized steel, High Anti Corrosion Steel | 1.2T ~ 1.6T                     |
| Rivet Fastener    | Blind rivet: Aluminum                       | 4Φ x 10                         |
| Absorptive Infill | Glass wool, Polyester, Mineral wool         | Varying thickness and densities |
| Finish            | Honey Comb                                  |                                 |

### TRANSPARENT



| Components | Material Selection | SPEC     |
|------------|--------------------|----------|
| Frame      | Aluminum           | 1.2T     |
| Window     | PMMA, PC, Glass    | 8T ~ 10T |
| Gasket     | Custom Rubber      |          |

|             | Length (mm)                   | Width (mm) | Thickness (mm) |
|-------------|-------------------------------|------------|----------------|
| Steel       | 1960 / 2960 / 3960 / 400-5000 | 500        | 60~100T        |
| Transparent | 1960 / 2960 / 3960 / 400-5000 | 500        | 60 - 95T       |

## Tested Performance

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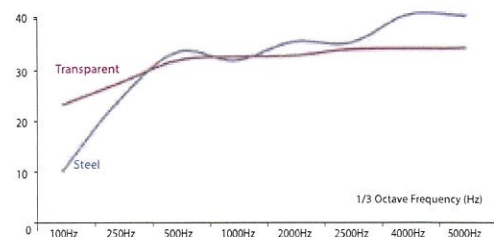
### Sound Insulation Performance

Test Standard: ISO 10140-2:2010 and ASTM E 413 2016

|                  | 100hz | 250hz | 500hz | 1000hz | 2000hz | 2500hz | 4000hz | 5000hz | STC  |
|------------------|-------|-------|-------|--------|--------|--------|--------|--------|------|
| Steel(95t)       | 9.9   | 23.6  | 32.7  | 31.1   | 34.6   | 34.5   | 39.8   | 39.6   | 30.5 |
| Transparent(95t) | 22.6  | 26.8  | 31.1  | 31.8   | 32.0   | 33.2   | 33.0   | 35.5   | 40.4 |

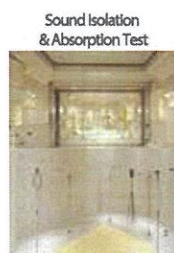
( Grade: 500Hz : 25 ↑ 1000Hz : 30 ↑ )

STC = Up to 40.4



## Beyond Acoustic Performance

Additional tests conducted by Korean Marine Equipment Research Institute.



Fire Hazard Rating HB40 / Fire Ignitability



Impact Test Tests



Tensile & Flexural Strength Test & Wind Deflection Test





## Temporary Noise Barriers

### Smart TNB Series

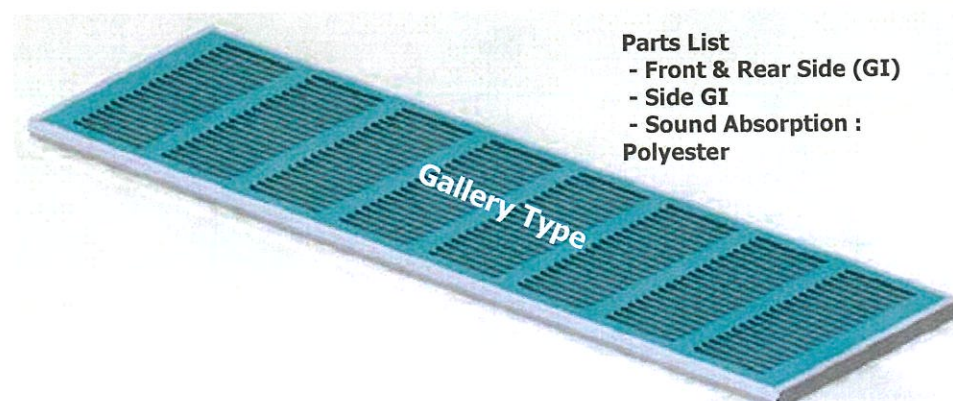
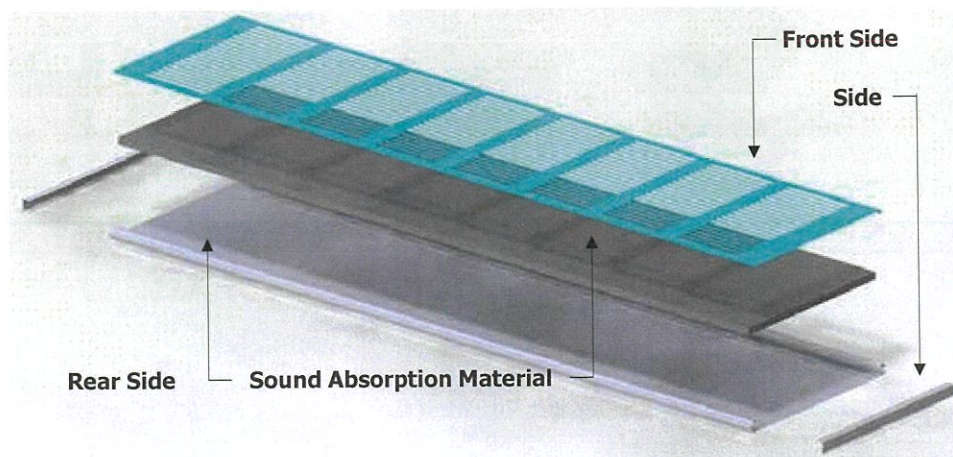
SMART TNB Series, is a temporary noise barrier that has been developed specially for the needs of constructions sites. This gallery type noise absorption barrier is the ideal choice and efficient noise absorptive capabilities while also acting as a durable wall.

Durable and reusable, panels are made of hot dipped galvanized steel

- ▶ Quick and easy installation by using H beam supports and concrete foundation.
- ▶ Customizable, available in a variety of colors & designs with using powder coating.
- ▶ High noise absorption capabilities with a NRC value of up to 0.63
- ▶ High reinforcement with thinner but stronger lightweight steel and longer maintenance by using hot dipped galvanized steel.
- ▶ Proven test results by the authorized Test Institution, PSB Singapore and KCL Korea.

### Product Description and Specifications

| Name        | Thickness (mm) | Width (mm) | Length (mm) | Weight (Kg) |
|-------------|----------------|------------|-------------|-------------|
| SMART NB-01 | 30             | 500        | 1960        | 11.7        |
| SMART NB-02 | 30             | 500        | 1960        | 16          |



**Parts List**  
 - Front & Rear Side (GI)  
 - Side GI  
 - Sound Absorption : Polyester



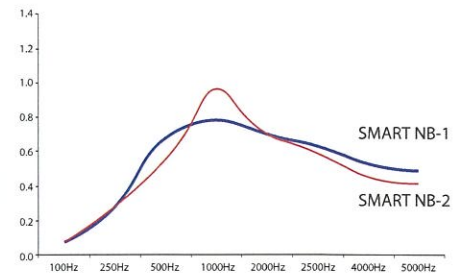
# Temporary Noise Barriers

## Smart TNB Series Tested Performance



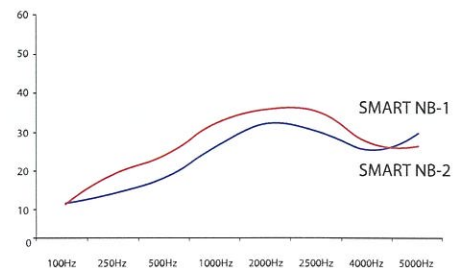
Sound Absorption Performance  
Test Standard:ISO 354:2003 and ASTM C 423:17

|            | 125hz | 250hz | 500hz | 1000hz | 2000hz | 2500hz | 4000hz | 5000hz | NRC  |
|------------|-------|-------|-------|--------|--------|--------|--------|--------|------|
| SMART NB-1 | 0.07  | 0.29  | 0.67  | 0.79   | 0.70   | 0.63   | 0.54   | 0.48   | 0.60 |
| SMART NB-2 | 0.07  | 0.29  | 0.57  | 0.96   | 0.70   | 0.59   | 0.45   | 0.41   | 0.63 |



Sound Insulation Performance  
Test Standard:ISO 10140-2:2010 and ASTM E 413

|            | 100hz | 250hz | 500hz | 1000hz | 2000hz | 2500hz | 4000hz | 5000hz | STC |
|------------|-------|-------|-------|--------|--------|--------|--------|--------|-----|
| SMART NB-1 | 11.6  | 14.1  | 18.5  | 25.6   | 32.1   | 30.1   | 25.9   | 30     | 25  |
| SMART NB-2 | 11.3  | 19.1  | 24.5  | 32.3   | 36.9   | 36.3   | 27.4   | 26.5   | 29  |







Railway / Metro



Neighborhoods



Highway / Road

## Installation Cases



Yongin-Seoul Highway No.1, No.4  
South Korea



Seoul Sindorim to Dearim  
South Korea



Seoul Outer Circular Highway  
Pangyo, South Korea



LRT Line1  
Philippines



Quang Ngai  
Vietnam



Singapore Chinese Girl School  
Singapore



Yoshinogawa Downstream  
Region Disaster Prevention Project.  
Japan



Prefectural Highway  
No.218 Ohirayama Tunnel  
Japan



MRT2 (Sungai Buloh Serdang-Putrajaya)  
Malaysia



**CAHAYA AULIA SDN.BHD**  
(Co.No.1162368-X)

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