WEATHERING STEEL ACOUSTIC PANEL

PANACOR **AC100W**

SPECIALLY DESIGNED
TO REDUCE NOISE GENERATED BY RAIL AND ROAD TRAFFIC.

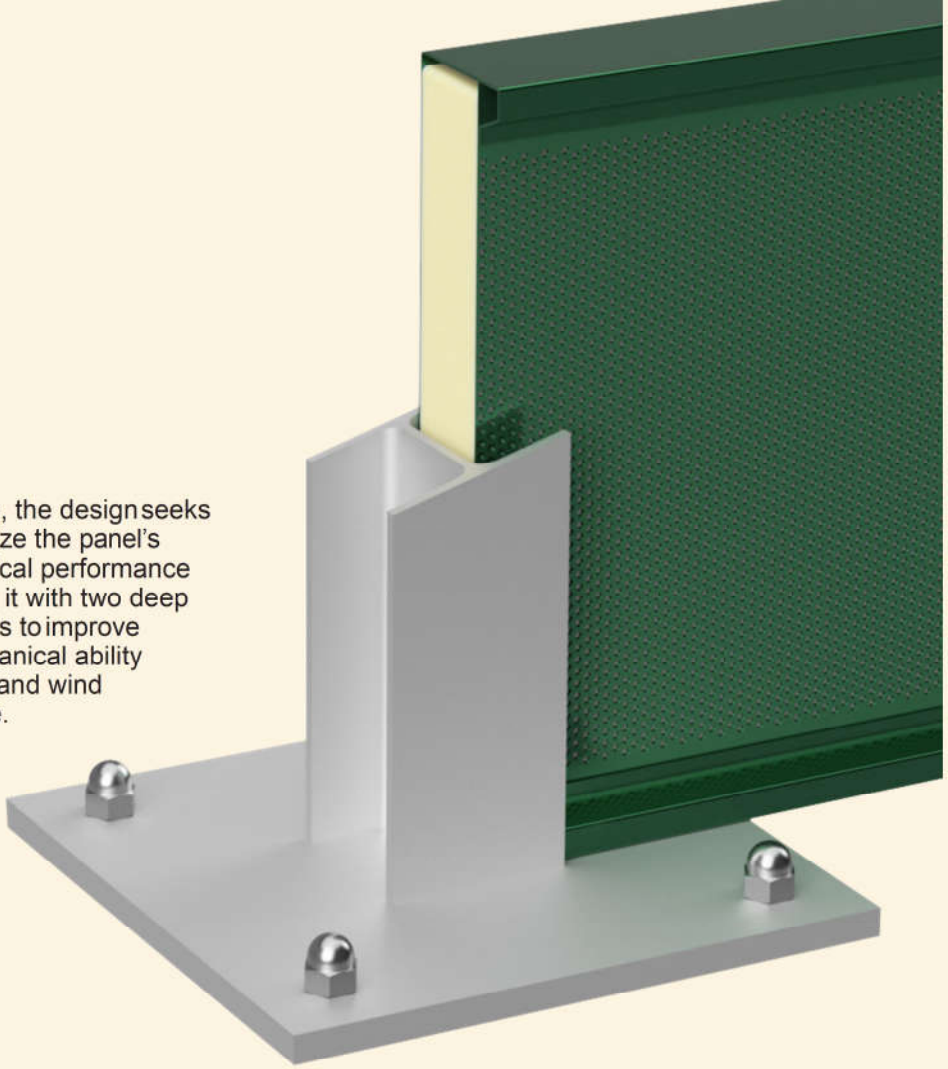
WWW.PANACOR2000.COM

TECHNICAL DESCRIPTION OF PRODUCT

The Panacor AC100W noise barrier is a product specially designed to reduce the noise generated by road and rail traffic.

Its design criteria use the noise signature of road and rail traffic as a reference, subsequently adapting the barrier's noise abatement properties to optimize its overall efficiency.

Likewise, the design seeks to optimize the panel's mechanical performance by fitting it with two deep guiderails to improve its mechanical ability to withstand wind pressure.



STRUCTURAL COMPONENTS

The barrier support structure is made up of HEA/HEB metal profiles with a welded baseplate, both grade S275JR according to standard EN 10025, can be galvanized and powder coated in accordance with the requirements of standards EN 1461 and EN 15773 or weathering steel.

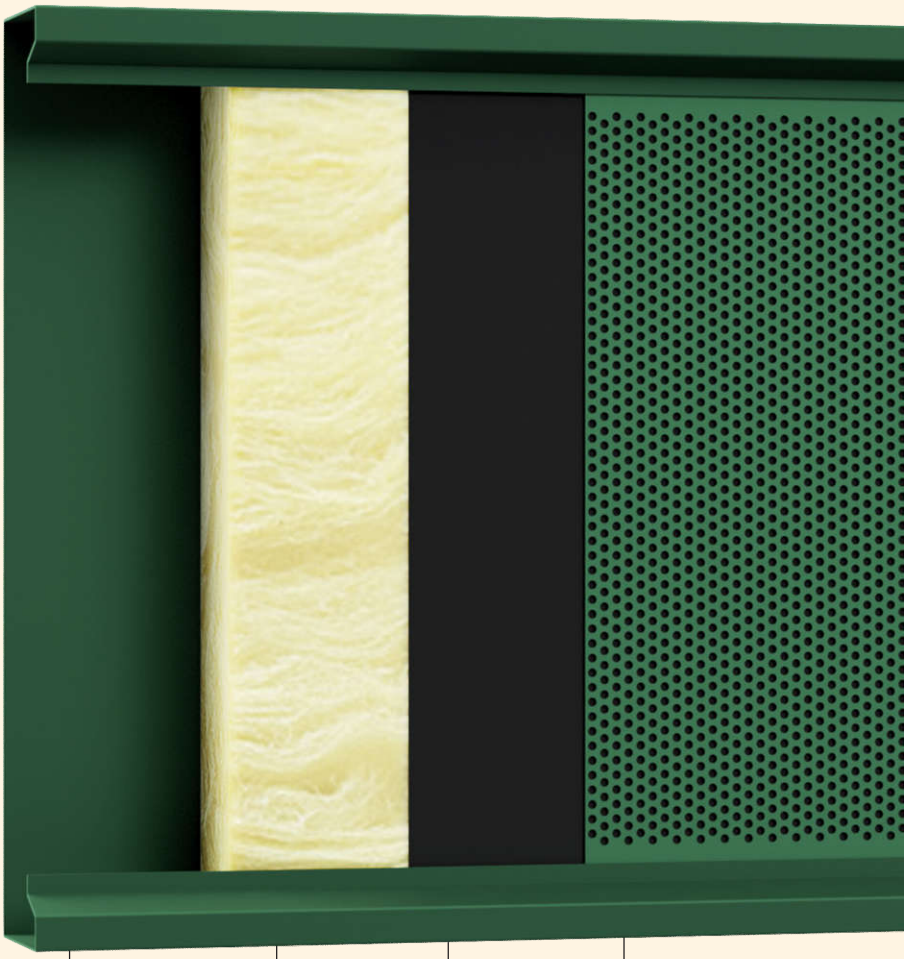
The profile posts are anchored to the foundations by means of anchor bolts of varying diameters, lengths and grades depending on the specific requirements of each individual project.

BARRIER
COMPOSITION

The noise barrier can be made of weathering steel plating with powder coating finish, customized as required in any shade on the RAL colour chart or even unpainted.

The inside of the composite panel is made up of sound-absorbing mineral wool of various densities and thickness depending on the precise noise-abatement properties required.

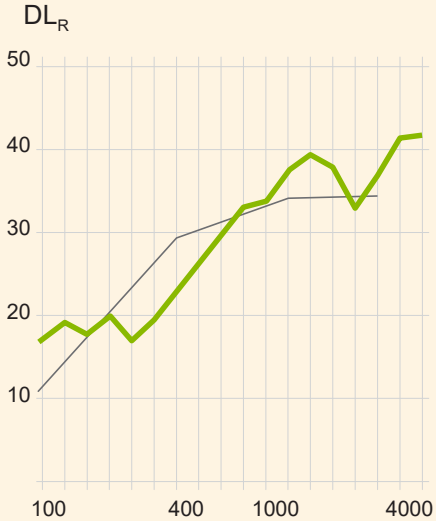
Thus, panels comprise four metal parts. The inner face (directed at the noise source) has holes over 36% of the surface area to provide for noise absorption, while the outer face is a plain, reflective panel. Barrier panels are installed between vertically arranged HEB/HEA profiles to achieve the desired overall height, in 300, 400 or 500 mm modules, and the distance between posts can be varied.

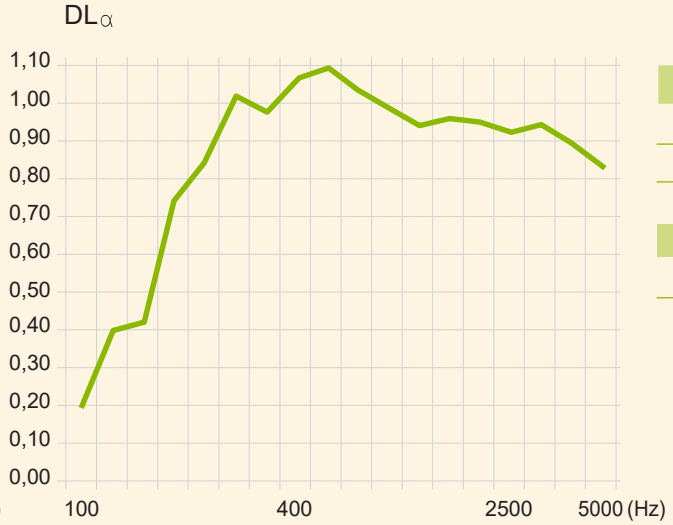


ACOUSTIC AND MECHANICAL
FEATURES

REFERENCE STANDARDS

UNE EN-EN 1794-1; UNE EN-EN 1794-2; UNE EN 1793-1; UNE EN 1793-2; UNE EN 1793-5/6;





ACOUSTIC PROPERTIES:	
B3 class	DL_R = 26-28 dB
A5 class	DL_α = 20 dB

MECHANICAL FEATURES:

Conforms to standard UNE EN1794-1

Design load: up to 300 kg/m² for a span of 4 m
Test load: up to 450 kg/m² for a span of 4 m

WEATHER **CONDITIONS**

When weathering steel is exposed to the atmosphere, it develops an initial layer of rust as ordinary steel does. But, as time goes by, this early product gradually converts to a fine-textured rust (protective rust called patina) that tightly adheres to the base metal, providing a protective layer that both protects the base metal and suppresses further corrosion.

The technical solution is to protect the acoustic panels from inclement weather and at the same time minimize the maintenance of their surface, even in snow locations.

BARRIER **ASSEMBLY**

The barrier panel is designed to be mounted without any need for rivets or bolts and thus can easily be installed manually by two people without any need for electricity.

This rivet- and bolt-free solution is highly suited to situations where fatigue problems may appear, for example in hi-speed railway construction projects.

SURFACE **FINISH**

The proposed technical solution is to protect the acoustic panels from inclement weather and at the same time minimize the maintenance of their surface. The surface treatment of CORTEN steel is a more environmentally friendly variant compared to other steel elements that require additional coatings.

MAIN ADVANTAGES

ECONOMIC SOLUTION

Because COR-TEN has high weather resistance, it can be used without painting. Unpainted applications not only offer the economic advantage of reducing repainting costs; they also offer aesthetic benefits associated with the calming color of the protective rust.

SAVING MAINTENANCE COST

The technical solution is to protect the acoustic panels from inclement weather and at the same time minimize the maintenance of their surface.

ENVIRONMENTALLY FRIENDLY

The surface treatment of CORTEN steel is a more environmentally friendly variant compared to other steel elements that require additional coatings.

WEATHER RESISTANCE

While weather resistance depends on the product grade and the application environment, COR-TEN's weather resistance is nearly 4~8 times that of ordinary steel.

DURABILITY

Until 60 years depending on weather conditions.

Secular Changes in Rust Appearance

In the initial stage of application, COR-TEN shows a yellowish appearance. This is followed by a gradual change in the color of the protective rust from brown to a stable dark brown after one to two years in general application environments. Afterwards, the coloration shows no clear change except perhaps to a deeper dark brown.

QUALITY ASSURANCE **CERTIFICATION**

PANACOR®
PANTALLAS ACÚSTICAS

PANACOR 2000 S.L.
Avda. de los Castros nº 38 6ºD - 39005 Santander (CANTABRIA)
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UNE – EN 14388:2006

Pantalla antiruido para reducir el ruido aéreo procedente del tráfico en carreteras y ferrocarril mediante un elemento acústico de tipo "panel metálico fonoabsorbente PANACOR AC10", longitud 4 mts., poste "perfil normalizado Tipo HEA/HEB".

Peso propio en seco y mojado reducido de un elemento acústico:

Peso propio en seco:	22,2 kg/m²
Peso mojado reducido:	41,3 kg/m²

Resistencia a cargas:

Carga vertical máxima que un elemento puede soportar:	10,79 kN/m
Carga normal (90º) que un elemento acústico puede soportar:	0,62 kN/m²

Absorción sonora: DLα	A4 (12,0 dB)
Aislamiento del ruido aéreo: DLR	03 (27,0 dB)
Reflexión de la luz:	PND (NPD)
Riesgos de caída de trozos desprendidos:	PND (NPD)

Durabilidad prevista de las características acústicas:
Cambio en el índice de flexión del sonido DLRI después de (5, 10, 15 y 20 años):

En clases de exposición típicas	PND (NPD)
En condiciones climáticas 4K3	PND (NPD)

Cambio en el índice de aislamiento de ruido aéreo DLαI después de (5, 10, 15 y 20 años):

En clases de exposición típicas	PND (NPD)
En condiciones climáticas 4K3	PND (NPD)

ENAC ENSAYOS Nº 149/LE367

INFORME DE ENSAYO
Report of test
Referencia CTA 262 / 12 / AER_1793-2
Ref.
Página 1 de 5 páginas
Page of pages

AUDIOTEC S.A.
Centro Tecnológico de Acústica
Parque Tecnológico de Boecillo, Parcelas 28-30.
47151 Boecillo (Valladolid)
TIf.: 983 36 13 26 Fax: 983 36 13 27

Audiotec Ingeniería y Control del Ruido

LUGAR DE ENSAYO: CÁMARAS DE ENSAYO NORMALIZADAS DE AUDIOTEC PARCELAS 28 Y 30. PARQUE TECNOLÓGICO DE BOECILLO (VALLADOLID) ESPAÑA
ENSAYO: Determinación de las características intrínsecas relativas al aislamiento al ruido aéreo de una:

Pantalla acústica compuesta por paneles **sandwich metálicos PANACOR AC10/55** constituidos por chapa metálica de acero galvanizado (1 mm) multiperforada al 36 % + núcleo de lana de roca con velo negro de 5 cm y 55 kg/m3 + chapa metálica de acero galvanizado (1 mm). Espesor total del panel 80 mm.
Nota: paneles cerrados en los cantos mediante dos tapetas de plástico.

MÉTODO DE ENSAYO: UNE EN 1793-2:1998
Method of Test
PETICIONARIO: PANACOR 2000, S.L.
Customer
FECHA DE ENSAYO: 16 de Julio de 2012
Date of Test
Signatario/s autorizado/s — Fecha de emisión
Authorized signatory/ies — Date of issue
17 de Julio de 2012
Fdo.: Ángel Mª Arenas Gombáu
Director Técnico del Laboratorio

ENAC ENSAYOS Nº 149/LE367

INFORME DE ENSAYO
Report of test
Referencia CTA 262 / 12 / REV - 1793-1
Ref.
Página 1 de 5 páginas
Page of pages

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LUGAR DE ENSAYO: CÁMARAS DE ENSAYO NORMALIZADAS DE AUDIOTEC PARCELAS 28 Y 30. PARQUE TECNOLÓGICO DE BOECILLO (VALLADOLID) ESPAÑA
ENSAYO: Determinación de las características intrínsecas relativas a la **absorción sonora** de una:

Pantalla acústica compuesta por paneles **sandwich metálicos PANACOR AC10/55** constituidos por chapa metálica de acero galvanizado (1 mm) multiperforada al 36 % + núcleo de lana de roca con velo negro de 5 cm y 55 kg/m3 + chapa metálica de acero galvanizado (1 mm). Espesor total del panel 80 mm.
Nota: paneles cerrados en los cantos mediante dos tapetas de plástico.

MÉTODO DE ENSAYO: UNE EN 1793-1:1998
Method of Test
PETICIONARIO: PANACOR 2000, S.L.
Customer
FECHA DE ENSAYO: 23 de Julio de 2012
Date of Test
Signatario/s autorizado/s — Fecha de emisión
Authorized signatory/ies — Date of issue
25 de Julio de 2012
Fdo.: Ángel Mª Arenas Gombáu
Director Técnico del Laboratorio

EUSKO JAURLARITZA GOBIERNO VASCO
LANBIDEREN GIZARTE POLITIKETAKO SAILA
DEPARTAMENTO DE EMPLEO Y POLÍTICAS SOCIALES

Informe de Ensayo Nº B2015-LACUS-IN-15 V
Medidas de aislamiento acústico en laboratorio

tecnalia

MUESTRA DE ENSAYO: Pantalla anti-ruido de paneles sándwich de acero galvanizado y lana de roca, *Ref. PANACOR AC100 10/08.*

SOLICITANTE: PANACOR 2000, S.L.
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39005 Santander.

NORMA APLICADA: UNE-EN 1793-2:2014.

FECHA DE ENSAYO: 5 de mayo de 2.015.
FECHA DE EMISIÓN DE INFORME: 20 de mayo de 2.015.

Firma

tecnalia

Susana Lopez de Aretxaga
Técnico Superior Laboratorio Acústica

EL PRESENTE INFORME CONSTA DE:
Nº total de páginas: 12 (+1 Anexo).

ENAC ENSAYOS Nº 149/LE367

CHANGES IN RUST
APPEARANCE

The color of the noise barrier change since the initial installation. During installation gray color turns orange first weeks and after few months turns uniform light brown color. Generally, depending on the environmental conditions, between 1 and two years after installation, the patina formation stabilizes, forming a darker brown color that is properly integrated into the landscape.

2 Weeks after installation

2 Months after installation

PANACOR
NOISE BARRIERS

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