



## Noishield® Sound Barriers Protect Communities Against Noise

### Highly Absorptive Noishield® Panels Maximize Noise Reduction

HVAC Equipment | Chillers | Pumps | Compressors | Fans | Transformers & Electrical Substations  
Highway & Rail Transportation Systems | Loading Docks | Rail-Yards | Drive-Thrus | Salvage Yards

### Overview

- Galvanized Steel or Aluminum
- Free-Draining
- Light Weight
- Easily Installed
- Highly Sound Absorptive
- Weather-Tested Finishes
- Freestanding or Add-on Cladding Panels
- Relocatable
- Horizontal or Vertical Installation

### Standard Features



Laboratory Rated Acoustic Performance  
STC-30 to STC-33  
NRC 1.00 to 1.05



Excellent weather and corrosion resistance. Galvanized steel materials with powder coated finish applied post assembly. Fully non-welded construction to avoid damage to galvanized coating.





Freestanding, able to span supports of up to 20 feet depending on local codes and wind-speed requirements.



## Freestanding Barriers

Noishield Types: FS and SFS Barriers — sound absorptive on one and two sides respectively — optimize sound transmission loss and sound absorption properties in a durable and attractive wall system in harmony with the community.




- Excellent low frequency absorption for heavy equipment
- Laboratory-rated sound absorption on one or both sides
- Low weight, rugged construction — ideal for wall or roof mounting
- 5" thick (127mm) modular metal module system in steel or aluminum
- Abuse resistant dual-coated, galvanized steel or aluminum construction
- Withstands wind velocities of 110 mph (177 km/hr) — designs for specific wind loads are available
- Readily relocated in the event of expansion or other projects

Configuration		Type FS	Type SFS
		 Thickness 5" / 127 mm	 Thickness 5" / 127 mm
Weight lb/ft <sup>2</sup> (kg/m <sup>2</sup> )	Steel	FS/S-6.5 (31.7)	SFS/S-9.9 (48.3)
	Aluminum	FS/A-4.5 (22.0)	SFS/A-5.2 (25.4)
Application		Freestanding along-side noisy equipment	Freestanding between multiple noise sources

## Sound Absorptive Treatment for New Construction & Retrofit Applications

Noishield Type C Cladding Modules — sound absorptive to control reflections from acoustically hard barriers

- Apply to new or existing wood, concrete or steel barriers to reduce reflected noise levels in the community
- Retrofit existing barriers to eliminate or mitigate noise complaints
- Low weight, rugged construction — ideal for retrofit applications
- Laboratory-rated sound absorption coefficients
- 2-1/2" (64 mm) thick metal module system
- Abuse resistant galvanized steel or aluminum construction
- Individual modules readily manufactured and replaced if damaged

Configuration		Type C	Type C12	Type C38
		 Thickness 2.5" / 64 mm	 Thickness 3" / 76 mm	 Thickness 4" / 102 mm
Weight lb/ft <sup>2</sup> (kg/m <sup>2</sup> )	Steel	C/S-3.25 (15.9)	C12/S-3.55 (17.3)	C38/S-4.05 (19.8)
	Aluminum	C/A-1.1 (5.4)	C12/A-1.4 (6.8)	C38/A-1.9 (9.3)
Application		Apply to new or retrofit existing metal, wood, brick, concrete, stone or other noise-reflecting walls. Select Types C12 & C38 for enhanced 125Hz sound absorption.		



## Acoustic Performance

Noishield barrier panels are rated with sound transmission loss values fully compatible with typical acoustic screen performance requirements. All Noishield barrier panels incorporate sound absorbing materials to prevent noise reflections that degrade barrier performances. Type C modules are used to clad new or existing non-absorbing barriers while Type FS and SFS are free-standing walls that combine excellent sound transmission loss (used for 125 Hz insertion loss up to 10 dB) with high sound absorption ratings.

\* Freestanding Type FSt is used for applications requiring 125 Hz insertion loss between 10 and 14 dB.

Barrier Model	1/3 Octave Band Center Frequency, Hz							
	125	250	500	1k	2k	4k	8k	STC
	Sound Transmission Loss, dB							
FS/S and SFS/S	21	34	40	33	32	26	37	30
FSt/S	24	38	41	33	35	29	34	33
FS/A and SFS/A	21	32	37	30	37	28	30	31
	Sound Absorption Coefficients							NRC
FS/S, FS/A and FSt/S	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05
SFS/S and SFS/A	0.49	1.04	1.14	1.05	0.96	0.95	0.87	1.05
C/S and C/A	0.30	1.05	1.07	1.01	0.96	0.88	0.78	1.00
C12/S and C12/A	0.48	1.08	1.10	0.99	0.92	0.83	0.78	1.00
C38/S and C38/A	0.68	1.19	1.10	1.03	0.90	0.81	0.76	1.05

- Sound Transmission Loss: All data in accordance with ASTM E90 and E413
- Sound Absorption Coefficients: All data in accordance with ISO Standard 354, ASTM C423 and E413 with 120 ft<sup>2</sup> (11.15 m<sup>2</sup>) test sample in 10,000 ft<sup>3</sup> (262 m<sup>3</sup>) reverberation room. Type A mounting. Coefficients greater than 1.0 result from edge diffraction effects. Do not use sound absorption values greater than 0.95.

## Durable Noishield Barrier Finishes

Noishield Barriers are finished with a tough, thermosetting, polyester powder coating which is not damaged by the harsh cleaning chemicals used to remove spray paint graffiti. A wide variety of standard colors allow complementary decorative schemes and attractive designs to reduce apparent wall height as perceived by the community.

- Tested for accelerated weathering per ASTM G23 for 2,400 hours with chalking not less than No. 8 rating (ASTM D 659) and color changes less than 5 NBS units (ASTM D 2244)
- Salt spray tested for checking, blistering, loss or adhesion, or evidence of corrosion per ASTM B117 for more than 4,000 hours without coating failure

## Weather Shedding Construction

Noishield Sound Barrier Modules are constructed with solid top surfaces to minimize water infusion and perforated bottom surfaces to allow any entrapped water to escape. Infill is non-hygroscopic — water does not “wick” into the modules. Hence, traditional polymer fill protection is neither required or desirable due to adverse effects on sound absorbing characteristics.

## Ground Mount / Roof Mount / Structure Mount

Noishield Sound Barriers are engineered from the foundation up for structural and acoustical integrity and economic installation. Low weight modules stack between posts to achieve required wall heights. Noishield Barriers can be installed with horizontal or vertical reveals to satisfy aesthetic and architectural considerations.

# Specifications | Noishield® Sound Barriers FS/S Module

Section 32 35 16 | Sound Barriers | FS Noishield Barriers

## Part 2 — Products

### 2.01 Manufacturers

A. Basis of Design: IAC Acoustics, Noishield Barrier Wall System

1. IAC Acoustics, 40 Shuman Boulevard, Suite 201, Naperville, IL, 60563; Telephone: (630) 270-1790; Website: www.iacacoustics.com

### 2.02 Performance Requirements

Specifier Note: Select one of the following options for panel construction. Delete the alternative. Apply to panel structural requirements as well.

A. FS/S (steel construction) Sound Transmission Loss (dB) per ASTM E90 & Sound Transmission Class (STC) per E413:

1/3 Octave Band Center Frequency (Hz)	125	250	500	1K	2K	4K	8K	STC
Noishield FS/S (steel construction)	21	34	40	33	32	26	37	30

B. FS/S (steel construction) Sound Absorption Coefficients per ASTM C423:

1/3 Octave Band Center Frequency (Hz)	125	250	500	1K	2K	4K	8K	NRC
Noishield FS/S (steel construction)	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05

C. FS/A (aluminum) Sound Transmission Loss (dB) per ASTM E90 & Sound Transmission Class (STC) per E413:

1/3 Octave Band Center Frequency (Hz)	125	250	500	1K	2K	4K	8K	STC
Noishield FS/A (aluminum construction)	21	32	37	30	37	28	30	31

D. FS/A (aluminum) Sound Absorption Coefficients per ASTM C423:

1/3 Octave Band Center Frequency (Hz)	125	250	500	1K	2K	4K	8K	NRC
Noishield FS/A (aluminum construction)	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05

Specifier Note: Retain the longest applicable span. Delete the remaining options.

- E. Structural: Galvanized steel panels shall be designed to withstand a wind pressure of [24.2 PSF at a span of twenty (20) feet] [37.8 PSF at a span of sixteen (16) feet] [67.3 PSF at a span of twelve (12) feet] without reinforcement.
- F. Structural: Aluminum panels shall be designed to withstand a wind pressure of [14.3 PSF at a span of twenty (20) feet] [22.3 PSF at a span of sixteen (16) feet] [39.7 PSF at a span of twelve (12) feet] without reinforcement.
- G. Corrosion Testing: Modules shall prove testing for corrosion resistance in accordance with ASTM B117. After 2,400 hours of exposure, the coating system shall not fail due to blistering, loss of adhesion or corrosion along the score lines.
- H. Weather Testing: Modules shall prove testing for accelerated weathering in accordance with ASTM G23. After 2,400 hours of testing, module samples shall not exhibit chalking greater than No. 8 per ASTM D4214 or a color change greater than 5 NBS units per ASTM D2244.

### 2.03 Components

A. Standard Panel Construction

1. Individual panels shall be two (2) feet high or one-and-a-half (1.5) feet high x five (5) inches thick x up to twenty (20) feet in length.

Specifier Note: Select one of the following two options for panel construction. Delete the alternative. Apply to panel structural requirements as well.

2. Panels shall be constructed of [galvanized steel manufactured in accordance with ASTM A924 and ASTM A653] [aluminum type 5052].
3. Panel components shall meet the following structural requirements:
  - a. Perforated face sheet shall be [20 gauge steel] [0.050 mill finished aluminum].
  - b. Solid face sheet shall be [14 gauge steel] [0.050 mill finished aluminum].
  - c. Solid end caps shall be [18 gauge steel] [0.050 mill finished aluminum]

B. Acoustic Fill

1. Fiberglass, non-corrosive, resistant to attack by fungus, vermin proof and non-hygroscopic.
2. Free draining, self-supporting and shall retain physical and sound absorptive characteristics after long term exposure to the elements.
3. Class A Fire Rating with a Flame Spread not greater than 25.

C. Bearing Blocks shall be:

1. Used to support the bottom panel of the wall system
2. 1 inch thick x 2.25 inch wide x 4 inch long
3. 65 durometer EPDM, neoprene or rubber.

D. Steel columns:

Specifier Note: Select one of the following two options for steel column finish.

1. Fabricated structural steel members to [be hot-dipped galvanized after fabrication per ASTM A123] [receive epoxy paint coating].
2. Steel for wide flange shapes and built-up column members shall conform to ASTM A992. All other structural steel base plates and braces shall conform to ASTM A36.
3. Anchor Bolts: ASTM A36 galvanized.

E. Post Footing: Refer to Section 03 30 0.

### 2.04 Fabrication

- A. Perforated and solid sheets shall be roll-formed in lengths up to twenty (20) feet.
- B. Panel shall be assembled to form a free-draining module.
- C. Spot welds or mechanical fasteners shall not be acceptable to join the solid inner and perforated outer panel sheets together. Internal reinforcement shall not be acceptable.
- D. Fabricate panels to be rigid, neat in appearance and free from defects.
- E. Panel assembly shall such so as to compress and hold the fill materials in place under severe conditions of vibration such as encountered in shipment and installation. Any voids in the panel will be unacceptable.
- F. Panel manufacturer, where required, shall provide openings for any large known penetrations. Pipe and conduit penetrations shall be located and cut in the field and sealed in accordance with manufacturer's instructions.

### 2.05 Finish

- A. Panels shall be finished with a factory-applied polyester powder coating system.
- B. Finish coating shall have a dry film thickness of three (3) mils (+/- 0.5 mils).
- C. Powder colors shall be selected from manufacturer's list of available colors.

All designs and specifications subject to change without notice. Metric dimensions nominal. Request CSI format specifications on disk or hard copy for Types FS/S, FS/A, FS/S, SFS/S, SFS/A and C.