

# Noise-Foil™ Acoustic Metal Panels

Sound Absorption Systems  
for Industry & Commerce



- Abuse resistant metal jacketed constructions
- Lab certified acoustic performances
- Suitable for interior and exterior installations
- Durable and attractive powder coated finish
- Broad palette of available colors
- Easily installed
- Class A fire resistant materials
- Decades of successful installations





# Noise-Foil™ Acoustic Metal Panels

## Acoustical Conditioning & Reverberation Control

IAC Acoustics Noise-Foil acoustical metal panels combine maximum noise absorption and durability in an attractive, modular unit. Our functional perforated panels can be located anywhere on walls and ceilings to instantly reduce noise levels and control reverberation — addressing work-place safety, worker productivity and potential property line noise complaints. They also solve problems that make communication and concentration difficult in many environments.

Noise-Foil units are rugged enough for industrial environments and attractive enough for placement in commercial and institutional spaces; Noise-Foil is one of the most versatile sound absorption systems available. With high noise reduction characteristics, most problems can be addressed with 50% – 60% coverage making Noise-Foil a very cost-effective solution to your problem.

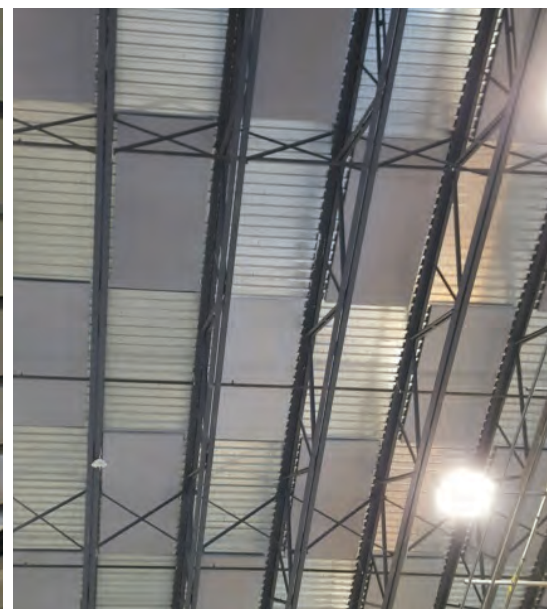
Offered in a variety of styles, colors, and sizes, Noise-Foil acoustical panels can be installed in rows or a variety of configurations that will best address your project's configuration. All versions are available with mounting channel details and performance data is provided for both continuous and intermittent coverages to address a broad range of installation possibilities.

### Construction Features Include:

- High-performance noise absorption characteristics up to NRC 1.30
- All panels feature sturdy attractive fully formed perforated metal panel shell
- Panels are available with a range of installation options for all project requirements
  - Available in our flat panel design and our roll formed pan section
- Variety of standard dimensions, custom widths and lengths available
  - Individual panels available up to 12' long
  - Components constructed from corrosion resistant G90 galvanized steel, cold rolled steel, aluminum and stainless steel
    - Available in 22 gauge through 14 gauge thickness

## Versatile Interior and Exterior Sound Absorption and Reverberation Control

- Self-draining panel designs for outdoor use
- Durable powder coated finish
- Galvanized materials of construction; aluminum & stainless steel available
- Available fill protection options include polywrap & acoustic spacer



## Typical Noise-Foil Applications

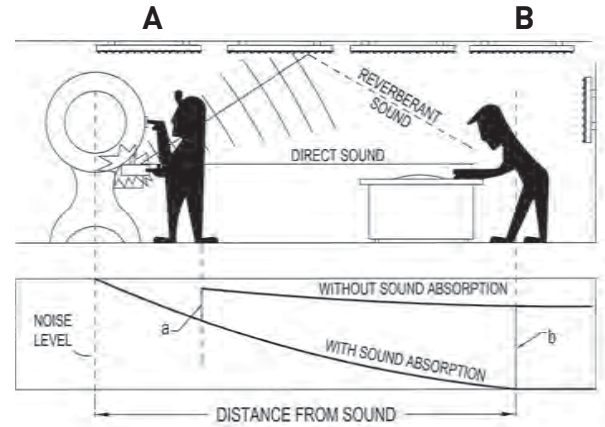
- Power Plants
- Engine Gen-Set Halls
- Pump & Compressor Stations
- Sheet Metal Shops
- Structural Shops
- Textile Plants
- Auditoriums
- Gymnasiums
- Convention Centers
- Concert Halls
- Restaurants
- Houses of Worship
- Engine Test Facilities
- Schools/Theaters
- Plasma Spray Shops
- Correctional Facilities
- Broadcasting/Recording Studios
- Rail & Roadway Transit Systems
- Plate Fabrication Shops
- Tank Fabrication Shops

# How Sound Absorbing Panels Reduce Plant Noise Levels






Noise-Foil Sound Absorbing Modules are practical and effective for reducing high noise levels in industrial and commercial facilities. Maximum benefit is achieved for workers and areas affected by the reverberant sound path, typically a substantial distance from the offending source.

**In drawing at right:** Operators at A are affected primarily by the direct sound. Noise-Foil panels address personnel at B who benefit from reduced noise levels as reflected sound is absorbed 'en route'. The risk of hearing loss is reduced and speech intelligibility is improved.

Noise reduction of 3-5 dB are typical and as much as 8-10 dB may be achieved in highly reverberant areas.

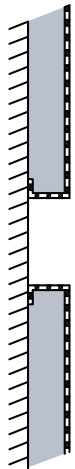


## Noise-Foil Panel Types

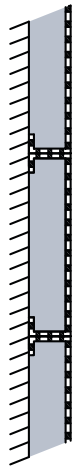
Type	Acoustic Ratings	Description	Applications
 NF-I	<ul style="list-style-type: none"> <li>NRC 0.70 to 1.30</li> <li>ASTM C 423-84a</li> </ul>	<ul style="list-style-type: none"> <li>Open back – non-welded construction</li> <li>Face sheet fully perforated</li> <li>Max width 14" W &amp; 4" thick; 18" W &amp; 2" thick</li> <li>Galvanized, steel, aluminum &amp; stainless materials, with a powder coated finish</li> </ul>	<ul style="list-style-type: none"> <li>Wall mount</li> <li>No air space</li> <li>No joiners required</li> <li>Mounting track available</li> </ul>
 NF-II	<ul style="list-style-type: none"> <li>NRC 0.70 to 1.30</li> <li>ASTM C 423-84a</li> </ul>	<ul style="list-style-type: none"> <li>Open back – welded steel construction with fully perforated face sheet</li> <li>Max width 48" &amp; 4" thick</li> <li>Galvanized, steel, aluminum &amp; stainless materials, with a powder coated finish (after fabrication)</li> </ul>	<ul style="list-style-type: none"> <li>Wall mount</li> <li>No air space</li> <li>H-Joiners or trim required</li> </ul>
 NF-III	<ul style="list-style-type: none"> <li>NRC 0.70 to 1.30</li> <li>ASTM C 423-84a (Apply to total panel surface area, i.e. both sides)</li> </ul>	<ul style="list-style-type: none"> <li>Fully perforated front &amp; back and non-welded construction</li> <li>Max width 42" x 66" x 2" thick, 38" x 62" x 4" thick</li> <li>Galvanized, steel, aluminum &amp; stainless materials, with a powder coated finish (after fabrication)</li> </ul>	<ul style="list-style-type: none"> <li>Ceiling hung</li> <li>Wall mount with air space</li> <li>Mounting track available</li> </ul>
 NF-IV	<ul style="list-style-type: none"> <li>NRC 0.95 – ASTM C 423-84a</li> <li>STC 33 – AMA two room method, ASTM E 413</li> </ul>	<ul style="list-style-type: none"> <li>Closed back panel</li> <li>Max width 42" x 66" x 2" thick, 38" x 62" x 4" thick</li> <li>Galvanized, steel, aluminum &amp; stainless materials, with a powder coated finish (after fabrication)</li> </ul>	<ul style="list-style-type: none"> <li>Wall, stud and ceiling grid</li> </ul>
 NF-V	<ul style="list-style-type: none"> <li>NRC 1.00</li> <li>ASTM C 423-84a</li> </ul>	<ul style="list-style-type: none"> <li>Open back roll formed single piece construction</li> <li>Solid top surface, perforated bottom surface</li> <li>18" &amp; 24" widths x 2 1/2" thick, suitable for standoff mounting for 3" &amp; 4" overall depth</li> <li>Galvanized, steel, aluminum &amp; stainless materials, with a powder coated finish (after fabrication)</li> <li>Accelerated Weather Tested – 4000 hr/ASTM B 117, 2400 hr/ASTM G 23</li> </ul>	<ul style="list-style-type: none"> <li>Wall mount</li> <li>Ideal for outdoor applications</li> <li>No air space</li> <li>No joiners required</li> <li>Mounting track available</li> </ul>



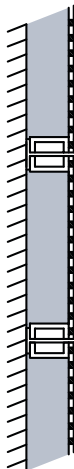
# Noise-Foil Installation Details



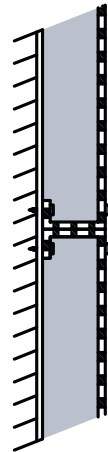
Type I  
Intermittent



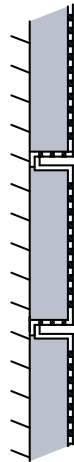
Type I  
Continuous



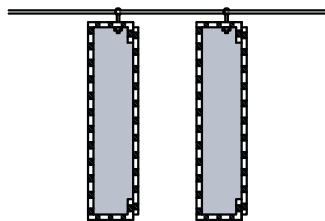
Type II  
Continuous



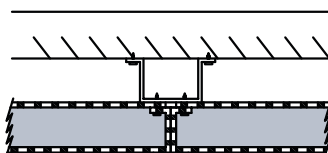
Type IV  
Wall Mount



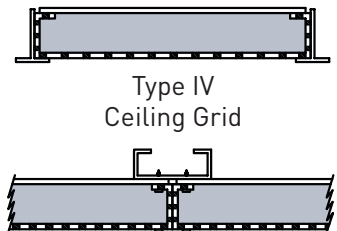
Type V  
Wall Mount



Type III  
Ceiling Hung



Type III  
Air Space Mount



Type IV  
Ceiling Grid

Type IV  
Stud Mount

# Design Guidelines

Acoustic panel sound absorption is affected by the panel-module placement as demonstrated in the NVLAP accredited Aero-Acoustic Laboratory test results.

**Wall/Ceiling-Mounted Noise-Foil Modules** can be very effective in long narrow spaces and relatively low ceilings. See Table 1 for sound absorption coefficients in continuous installations and Table 2 for Sabins per array in intermittent installations; Table 3 gives Sabins per module for ceiling-hung arrangements.

**Ceiling-Hung Panels** were tested in several configurations as per ASTM C 423. Sound absorption per sq. ft. of panel area improved with increased spacing. In the Speech Frequencies (500, 1000, and 2000 Hz) a 63 in. (1600 mm) panel spacing provides highest number of Sabins per module (Sabin or Metric Sabin is the equivalent of 1 sq. ft. or 1 sq. m. respectively of a perfectly sound absorptive surface). Increased spacing reduces the total number of panels that can be installed and the total sound absorptive Sabins that can be provided. Cost-effective applications can be maximized by considering ceiling-hung and/or ceiling wall-mounted configurations.

**Ceiling-Hung Noise-Foil Type III Modules** can be used to great advantages where there are larger areas with widely spaced walls. For cost-effective recommendations please check with IAC Acoustics.

**Table 1: Continuous, Wall-Mounted (Types I, II, III and V)**

Fill Protection Option	Sound Absorption Coefficients, 1/3 Octave Band Center Frequency, Hz						
	125	250	500	1K	2K	4K	NRC
<b>4" (102mm) Thick</b>							
-N	0.97	1.39	1.34	1.29	1.19	1.01	1.30
-P	0.86	0.89	0.93	0.89	0.84	0.77	0.90
-PS	0.57	0.60	1.01	1.06	0.99	0.86	0.90
<b>2½" (64mm) Thick TYPE V</b>							
-N	0.24	0.95	1.13	0.99	0.94	0.86	1.00
<b>2" (51mm) Thick</b>							
-N	0.35	0.65	1.20	1.21	1.07	0.92	1.00
-P	0.41	0.47	0.64	0.79	0.85	0.72	0.70
-PS	0.39	0.48	0.71	1.01	0.93	0.77	0.80

**Table 2: Intermittent, Wall-Mounted (Types I, II, III and IV)**

Fill Protection Option	Spacing Inches (mm)	Total Absorption, Sabins/Array, 1/3 Octave Band Center Frequency, Hz					
		125	250	500	1K	2K	4K
<b>4" (102mm) Thick 6 panels 14" x 120" (356 mm x 3048 mm) Total area 70 ft² (6.5 m²)</b>							
-N	3 (76)	66	111	110	98	95	84
	14 (356)	81	116	140	117	112	100
-P	3 (76)	67	74	88	70	66	75
	14 (356)	75	71	91	92	77	67
-PS	3 (76)	47	56	94	85	85	58
	14 (356)	63	52	102	105	94	67
<b>2" (51mm) Thick 5 panels 18" x 120" (457 mm x 3048 mm) Total area 75 ft² (7 m²)</b>							
-N	3 (76)	24	48	98	98	88	75
	18 (457)	25	58	112	114	107	82
-P	3 (76)	25	42	54	64	60	65
	18 (457)	32	32	50	61	66	63
-PS	3 (76)	37	38	54	80	72	65
	18 (457)	36	32	58	86	82	63

Table 3: Ceiling Hung (Types III)

Fill Protection Option	Spacing Inches (mm)	Total Absorption, Sabins/Panel, 1/3 Octave Band Center Frequency, Hz					
		125	250	500	1K	2K	4K
<b>2" (51 mm) Thick 42" x 66" (1067 mm x 1676 mm)</b>							
-N	14 (356)	6	10	12	10	12	9
	32 (813)	6	11	16	16	20	14
	42 (1067)	6	12	18	18	25	17
	63 (1600)	6	13	23	25	31	19
-P	14 (356)	6	12	12	12	12	7
	32 (813)	6	13	16	18	20	12
	42 (1067)	6	15	18	20	25	14
	63 (1600)	6	15	23	27	30	16
-PS	14 (356)	5	12	11	12	13	8
	32 (813)	5	14	15	19	21	12
	42 (1067)	5	16	17	22	27	15
	63 (1600)	5	16	22	30	32	17
<b>4" (102mm) Thick 38" x 62" (965 mm x 1575 mm)</b>							
-N	13 (330)	5	11	13	12	13	8
	29 (737)	5	12	18	19	21	12
	38 (965)	5	14	21	21	27	15
	57 (1448)	5	15	26	29	32	17
-P	13 (330)	7	10	12	11	11	7
	29 (737)	7	11	16	17	18	11
	38 (965)	7	13	19	19	23	14
	57 (1448)	7	13	24	26	27	16
-PS	13 (330)	6	10	13	12	11	8
	29 (737)	6	12	18	19	19	11
	38 (965)	6	13	21	22	24	13
	57 (1448)	6	14	26	30	28	16

How to Designate Noise-Foil Panels

NF

- 1



Type

- 2



Thickness

- PS



Fill Protection Option

Code for Fill Protection Options

N = No fill protection

P = All wrapped in polyethylene

PS = Fill wrapped & set back by acoustic spacer

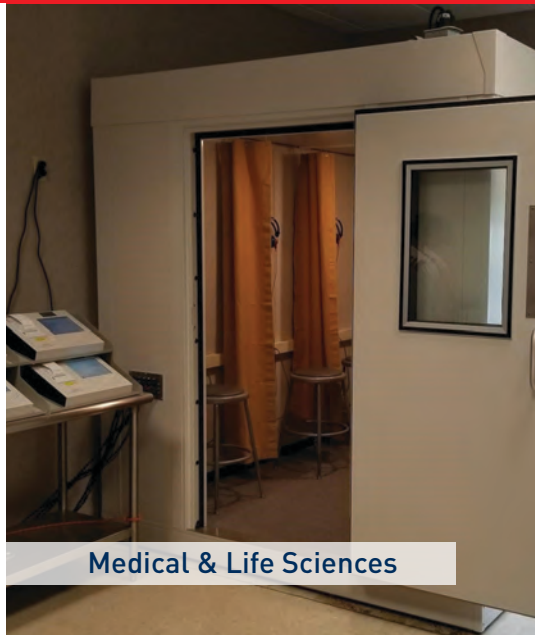


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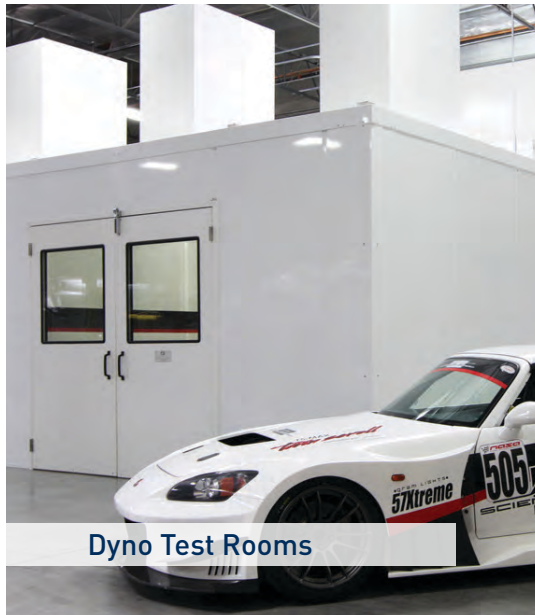
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