

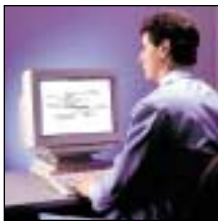


CUSTOM-ENGINEERED SHIELDING PRODUCTS

METEX has been a pioneer in EMI/RFI gasketing and shielding products for more than five decades. In fact, METEX developed the very first EMI/RFI gasket to help MIT solve a severe interference problem for the earliest high-power, high-frequency airborne radar.

That pioneering spirit is still alive today—with a complete line of military and commercial-grade EMI/RFI shielding solutions.

As communications and information technologies expand, the need to provide EMI/RFI solutions becomes more critical than ever before.



Complete support—from technical review to design and application assistance



World-class EMI/RFI manufacturing capabilities



TECHNICAL BULLETIN NUMBER 202



EMI VENT PANELS

Metex EMI vent panels provide maximum attenuation with minimal air flow resistance. Shielding effectiveness is greater than 80 dB at 10 MHz for chrome finished, single layer honeycomb and is increased to 105 dB using our cross cell construction. By selecting the appropriate frame style, finish, and gasket type, performance can be custom tuned to meet your shielding requirements and your budget constraints.

Vent panels are constructed of aluminum alloy honeycomb with a perimeter frame of aluminum extrusion for mounting and gasket applications. Various gasket options include wire mesh, spring finger or conductive fabrics.

Honeycomb Shielding

Aluminum: The standard structure is 1/8" cell adhesive bonded honeycomb, available in 1/2" or 1/4" thickness. Steel and Brass honeycomb shields are available on a custom basis.

Shielded Mesh Screens

Shielded Mesh Screens replace honeycomb media with several layers of woven wire mesh. They are designed for use on shielded electronic enclosures which require filtered air. Mesh screens are easily removable for cleaning.

Framing Options

Standard frame material is extruded aluminum 6063 T-4 alloy. Various C-frame cross sectional configurations are shown on page 2. Many other sizes and styles are available. EMI gasket options include wire mesh and elastomer, groove mounted wire mesh, spring finger gaskets, Metex oriented wire or Metex CF conductive fabric over foam gaskets.

Mounting

Panels are typically mounted to an enclosure using captive threaded inserts, and threaded fasteners.

Shielding Effectiveness

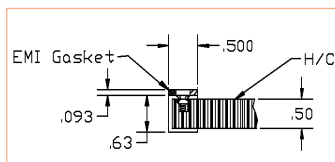
Depending on their size, type of material, finish and gasket type used, vent panels vary in shielding effectiveness. As an example, a 12" square, tin plated aluminum vent panel with a wire mesh gasket, will provide greater than 90 dB of attenuation, at 1 GHz plane wave. Metex can provide shielding effectiveness data for your specific vent panel design.





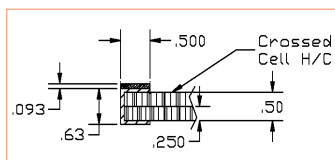
Cross Sections

706-23F3



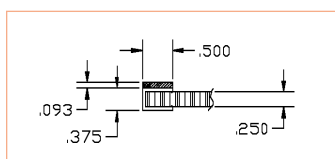
1/8" cell, single layer H/C with 8-32 captive fastener.

706-24F1



1/8" cell, double layer H/C with .204D through hole (not shown).

706-13F1



1/8" cell, single layer H/C with .204D through hole (not shown).

KEY FEATURES

- Maximum Shielding with minimum pressure drop
- Lightweight aluminum honeycomb
- Many mounting styles and gasket options to suit your application
- Custom designs available
- No polarization effects
- Panel frames fully gasketed
- All honeycomb panels can be mounted in circular frames
- Ready to install

EMI Vent Panel Construction

The cross sections shown to the left depict the construction of the basic C-channel vent panel, with examples of the material codes from the materials table. Many other frame styles and materials are available. Consult a Metex Shielding Applications Engineer for design assistance.

Standard gasket construction consists of knitted monel wire mesh, bonded to a neoprene sponge gasket. For other gasket materials, please consult a Metex Shielding Sales Engineer.

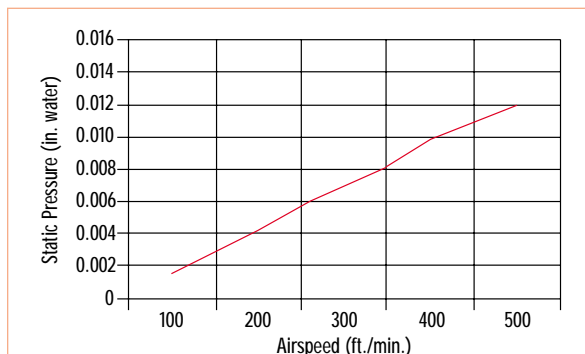
Vent Panels

Digit	Frame	Filter	Finish (F)	Fastener
1	3/8" aluminum C channel	1/16" cell single layer, aluminum H/C	Mil-C-5541 iridite	None .204 D through hole
2	1/2" aluminum C channel	1/16" cell double layer, aluminum H/C	Mil-T-10727 type 1 tin	6-32 threaded captive insert
3	Flush mount aluminum	1/8" cell single layer, aluminum H/C	Electroless nickel	9-32 threaded captive insert
4	_____	1/8" cell double layer, aluminum H/C	_____	M-4 threaded captive fastener
5	_____	1/8" cell, 60 degree single layer alum. H/C	_____	_____
6	_____	1/8" cell, 60 and 90 degree double layer alum. H/C	_____	_____

Airspeed vs. Airflow Resistance

Resistance to air flow is extremely low in all panel designs, although varying from style to style. In particular, airflow resistance with steel and brass honeycomb is approximately double that of aluminum honeycomb. Airspeed vs. airflow resistance is charted for typical vent panels below.

When the outer honeycomb is slanted at 60° from horizontal intake axis than at 30°, an increase to the resistance to airflow will occur.



Frame Dimensions (inches)

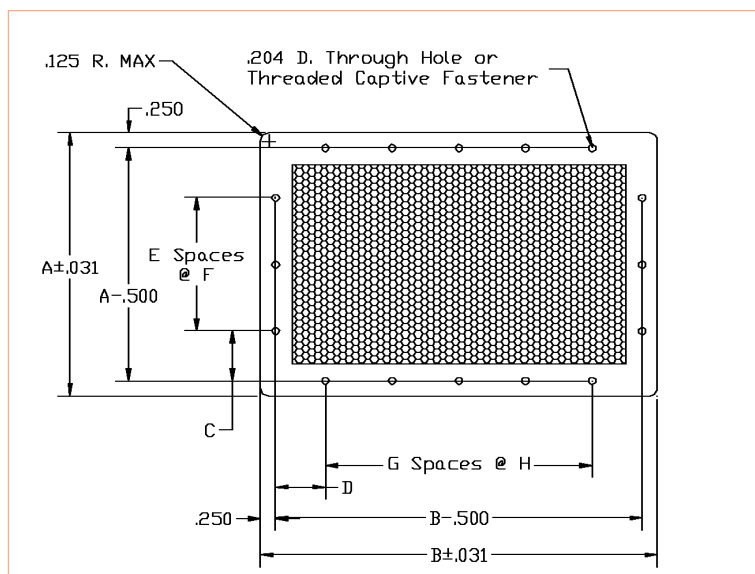
Part Number*	Vent Opening	A	B	C	D	E	F	G	H
706-2XXX-9903-03	3X3	4.00	4.00	1.75	—	—	—	—	—
706-2XXX-9903-05	3X5	4.00	6.00	1.75	1.00	—	—	1	3.50
706-2XXX-9903-11	3X11	4.00	12.00	1.75	1.25	—	—	3	3.00
706-2XXX-9904-04	4X4	5.00	5.00	2.25	0.75	—	—	1	3.00
706-2XXX-9904-09	4X9	5.00	10.00	2.25	1.25	—	—	2	3.50
706-2XXX-9905-05	5X5	6.00	6.00	1.00	1.00	1	3.50	1	3.50
706-2XXX-9905-11	5X11	6.00	12.00	1.00	1.25	1	3.50	3	3.00
706-2XXX-9906-06	6X6	7.00	7.00	1.50	1.50	1	3.50	1	3.50
706-2XXX-9906-09	6X9	7.00	10.00	1.50	1.25	1	3.50	2	3.50
706-2XXX-9907-14	7X14	8.00	15.00	0.75	0.75	2	3.00	4	3.25
706-2XXX-9909-09	9X9	10.00	10.00	1.25	1.25	2	3.50	2	3.50
706-2XXX-9911-11	11X11	12.00	12.00	1.25	1.25	3	3.00	3	3.00
706-2XXX-9914-14	14X14	15.00	15.00	1.25	1.25	4	3.00	4	3.00
706-2XXX-9918-18	18X18	19.00	19.00	1.75	1.75	5	3.00	5	3.00

* Specify 23F3, 24F1, or 13F1 from cross sections shown on page 2 (left).

Specify "F" as 1, 2 or 3 for Finish

This is only a small listing of possible sizes, shapes and combinations.

For other sizes and materials, please contact Metex Shielding Sales Engineering at 732-287-0800.



PRODUCT APPLICATIONS

- **Shielding for Containment—**
 To prevent escape of most or all of the interference generated by a particular device, circuit or system as a disturbing source
- **Shielding for Exclusion—**
 To prevent the intrusion of anticipated or known levels of interference on the performance of a specific device, circuit or system
- **Exclusion/Containment Shielding Plus Pressure Sealing—**
 To provide pressure containment as well as EMI/RFI attenuation
- **Grounding and Contacting—**
 Not to contain or exclude but to conduct electrical current such as discharging electrostatic energy from imperfectly grounded structures to ground, providing a dependable, low impedance connection between removable circuit assemblies and the host circuit ground plane and/or power busses, thus ensuring good contact between large or massive electrical structures that do not mate mechanically due to dimensional tolerance

In all of these applications, the solution is found in the use of highly resilient, high-conductive shielding materials.

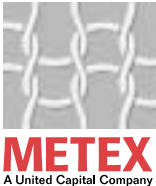


Metex Electronic Shielding Products

The diversity and versatility of our product line enables Metex to offer a wide range of custom solutions to optimize shielding effectiveness. We provide both off-the-shelf and custom designs in commercial and military-grade materials to ensure EMC integrity and quality. From prototype to volume production, our product line includes:

- Knitted Wire Mesh
- Vent Panels/Mesh Screens
- Spring Fingers
- Conductive Fabric
- Oriented Wire
- Braided Sleeving
- Shielded Windows, Instrumentation and Rooms
- Conductive Silicone Adhesive
- Shielding Tape/Foil Laminates
- Fabric Over Foam Gaskets
- Connector Gaskets
- Braided Rope
- Wire Mesh Gaskets

Our **EMI Vent Panels** continue a long-standing Metex tradition of integrating the right designs, materials and production methods to meet customer needs for optimal performance at the lowest possible cost.



Metex Corporation
 970 New Durham Road
 Edison, New Jersey 08818
 Phone: 732-287-0800
 1-800-222-0969
 Fax: 732-287-8546
 E-mail: sales@metexcorp.com
 Website: www.metexcorp.com

Metex Europe
 4, Rue Pierre Brossolette
 92130 Issy Les Moulineaux
 France
 Phone: 33 (0)1 46 45 99 55
 Fax: 33 (0)1 46 45 99 07

Metex Mexico
 Metex Mexico
 Parque Industrial La Mesa
 Calle 34 sur s/n fracc. Rubio Edif. B. Suite B-2 La Mesa
 Tijuana, Baja California Mexico
 Phone: 011-52-66-45-11-49, 011-52-66-45-11-48
 Fax: 011-52-66-45-11-46