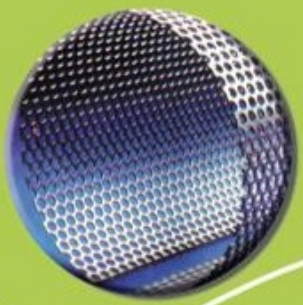
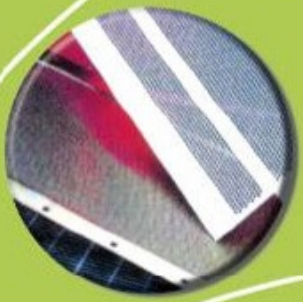
Your Partner in

PERFORATED MATERIAL





METAL PERFORATORS (M) SDN. BHD.

(Co. No. 12583-P)

Contents

Perforated Metal | Aesthetics meets functionality

Solid and visually pleasing, perforated metals provide the solution for many design challenges. From inconspicuous final touches to feats of architectural ingenuity, the design and architectural profession together with the manufacturing industries are constantly pushing the boundaries of this incredibly malleable material.

Hole sizes from thousandths of a centimetre in diameter to more than eight centimetres, and shapes ranging from circles to customized shapes – the creative possibilities are endless. Fashioning signages, fixtures, appliances and even public art installations, perforated metals create visual pleasures.

Applying the concept that the equivalent strength of perforated material is used in place of the strength of the solid material, perforated metals are able to support monumental structures. Design consultants' and architects' imagination lead in the construction of aesthetically and structurally astounding living, working, and breathing spaces - from the top, the sides, the insides.

The holes in perforated metals also allow the passage of air, liquids, sound, and even other solid materials. Using this specialized property, perforated metals too have been applied in industrial design for heavy industries such as petro-chemical processing, mining, pollution controls, vehicle and even aircraft manufacturing.

At Metal Perforators (M) Sdn Bhd, we deliver top quality perforated metals efficiently at competitive prices. As a member of the Industrial Perforators Association (IPA), we are highly specialized in perforating techniques. By keeping abreast with the latest technological advances of the industry, we are always able to guarantee our business partners the best in advanced perforated metals.

1 | Maxis Tower, Kuala Lumpur, Malaysia
2 | Close-up view of perforated metal
3 | Suzanne Martinson, Suzanne Martinson Architects | *Photo courtesy of Industrial Perforators Association*
4 | Michael Jacobs, Omni Architects | *Photo courtesy of Industrial Perforators Association*

Interior Design

Innovative interior design and architectural firms are meeting clients' needs with spectacular uses of perforated metals. Creatively applied, perforated metals orchestrate the rhythm and melody of spaces. Alternate perforated aluminium panels to break a long hall, or even as a light fixture canopy over a conference table to create an atmosphere of sophistication in a professional setting.

Create high-end outdoor furniture that withstands the elements of nature, build server cases that allow for sufficient ventilation, or make professional kitchens.

Practical appliances made from perforated materials are showing up in functional spaces such as hospitals, malls, office buildings, cinemas, educational establishments, airports, and train stations.

1 | Perforated metal server case
2 | Close-up view of perforated metal used for server case
3 | Perforated metal kitchen work area
4 | Joe Slagle, JLS Architects, Inc. | *Photo courtesy of Industrial Perforators Association*
5 | Perforated metal chairs at train terminal

Perforated Metal | Air Handling | Canopies

Air Handling | Ceilings

Different combinations of perforated holes facilitate different degrees of airflow allowance, creating varying intensities of circulation. Perforated metals are used in specialised facilities such as wind tunnels and air-conditioning, regulating the airflow between spaces.

Perforated metals add the touch of sophistication that transforms a mundane ceiling to a distinctive architectural feature that not only enhances air circulation but also adds aesthetic value to any building project. This places your proposals and projects ahead of your competitors.

Canopies | Sunscreens | Awnings | Accents | Special Effects

Combining astounding architectural imagination and basic engineering principles, perforated metals produce visually stimulating canopies, roofs, awnings and sunscreens. What's more, aerodynamics and temperature control in metal elements shape exquisite functional public structures. Variations of perforated material can also be found in art pieces, signs, building accents and decor. Perforated materials add a sleek finishing touch to lightings and fixtures.






1 | KL Sentral, Kuala Lumpur, Malaysia
2 | Close-up view of perforated metal used for ceiling
3 | Perforated metal hallway ceiling
4 | Maxis Tower, Kuala Lumpur, Malaysia
5 | John Caldwell, Caldwell Architects | Photo courtesy of Industrial Perforators Association
6 | Shubin + Donaldson Architects | Photo courtesy of Industrial Perforators Association
7 | Mark Bowers, AIA, Architectural Workshop LLC | Photo courtesy of Industrial Perforators Association

Perforated Metal | Walls | Railings | Acoustics

Walls | Security | Privacy

By allowing the flow of light and air, perforated metals cover, enclose, divide, secure, and decorate spaces – creating an atmosphere of privacy without compromising openness in shared spaces.

Applied as a security measure in open spaces such as fences and gates, perforated metals heighten security with its solid presence. The structures that protect can be protected too, perforated aluminium wall cladding preserves the surface of walls.

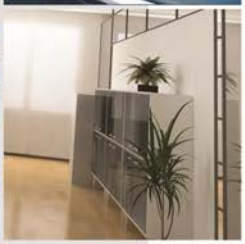
Staircase | Railings

By incorporating slotted, perforated metal balustrade and stainless steel handrails, a visible striking circulating image is created. Be it spiral or straight staircases, perforated panels complement contemporary structures by adding depth to spaces.

Acoustics

Perforated metals function to selectively absorb sound frequencies or allow "transparency" for greater clarity. This innovative use of material provides the solution for noise reduction and noise control treatment for highways, airports, rapid transit venues and concert halls.

Expanding its application, noise control initiatives in commercial and administrative buildings are using perforated metals as well. Heavy industrial equipments are also treated to limit the noise exposure level of workers to prevent hearing damage, ensuring compliance to health and safety standards in the workplace.



1 | Perforated metal gate
2 | KL Sentral, Kuala Lumpur, Malaysia
3 | Michael Jacobs, Omni Architects | *Photo courtesy of Industrial Perforators Association*
4 | Tom Place, Construction Services | *Photo courtesy of Industrial Perforators Association*
5 | Hokkien Hall, Klang, Malaysia
6 | Perforated metal partition

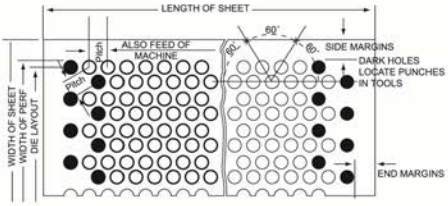
Displays | Signages

Applying the concept that the equivalent strength of perforated material is used in place of the strength of the solid material – perforated metals are ideal for gigantic billboards. As the holes allow for lighter material, structural costs of signages are also reduced significantly.

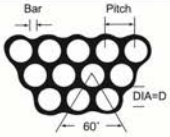
1 | Billboard on highway to KLIA, Kuala Lumpur, Malaysia
2 | Mark Bonnette, Bonnette Design Group | *Photo courtesy of Industrial Perforators Association*
3 | Merv. Eckman, Action Signs | *Photo courtesy of Industrial Perforators Association*
4 | Audrey Matlock, Audrey Matlock Architect | *Photo courtesy of Industrial Perforators Association*
5 | Michelle Meyer, Hammers & Partners Architecture | *Photo courtesy of Industrial Perforators Association*

Perforation Configuration

THE DIAGRAM BELOW INDICATES THE PRODUCT HOLES PATTERN FINISH



OPEN AREA CALCULATION

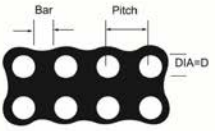


60 Deg Staggered Pitch

$$\% \text{ OPEN AREA} = \frac{\frac{TTd^2}{4}}{P^2 \sin 60^\circ} \times 100$$

$$= \frac{0.7854}{0.8660} \times \left(\frac{d}{p}\right)^2 \times 100$$

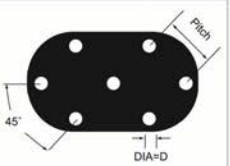
$$= 90.69 \left(\frac{d}{p}\right)^2$$



Square Pitch

$$\% \text{ OPEN AREA} = \frac{\frac{TTd^2}{4}}{P^2} \times 100$$

$$= 78.54 \left(\frac{d}{p}\right)^2$$



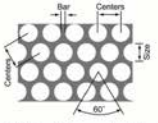
45 Deg Staggered Pitch

$$\% \text{ OPEN AREA} = \frac{\frac{TTd^2}{4}}{P^2} \times 100$$

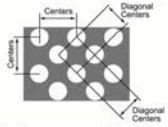
$$= 78.54 \left(\frac{d}{p}\right)^2$$

Hole Patterns

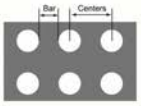
60 DEG STAGGERED ROUND HOLE



45 DEG STAGGERED ROUND HOLE



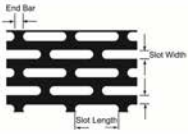
SQUARE ROUND HOLE



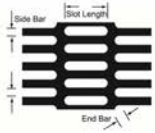
The 60 Deg Staggered pattern is the most popular hole arrangement due to its wide range of open area and inherent strength

• Other shape of holes and configuration can bemade to customer specification (depending on quantity of order)

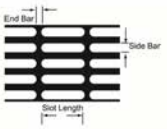
Round End Slot Side Stagger (SS)



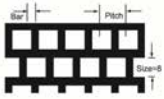
Round End Slot Side Stagger



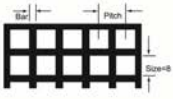
Round End Slot Straight



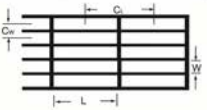
Square Perforations Staggered



Square Perforations Straight Line

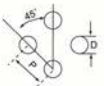


Square End Slot



Technical Information

Quick Reference On Percentage Of Open Area

Diameter Divided by Pitch $\frac{D}{P}$	Round Holes Standard 60 Deg Staggered 	Round Holes Standard Square 	Round Holes Standard 45 Deg Staggered 
	% Open	% Open	% Open
.200	3.6	3.1	3.1
.255	4.6	4.0	4.0
.250	5.7	4.9	4.9
.275	6.9	5.9	5.9
.300	8.1	7.1	7.1
.325	9.6	8.3	8.3
.350	11.1	9.6	9.6
.375	12.8	11.0	11.0
.400	14.5	12.6	12.6
.425	16.4	14.2	14.2
.450	18.4	15,9	15.9
.475	20.5	17.7	17.7
.500	22.7	19.6	19.6
.525	25.0	21.6	21.6
.550	27.4	23.8	23.8
.575	30.0	26.0	26.0
.600	32.7	28.3	28.3
.625	35.4	30.7	30.7
.650	38.3	33.2	33.2
.675	41.3	35.8	35.8
.700	44.4	38.5	38.5
.725	47.7	41.3	41.3
.750	51.0	44.2	44.2
.775	54.4	47.2	47.2
.800	58.0	50.3	50.3
.825	61.7	53.5	53.5
.850	65.5	56.7	56.7
.875	69.5	60.1	60.1
.900	73.5	63.6	63.6
.925	77.6	67.2	67.2
.950	81.9	70.9	70.9

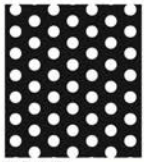
Weight Table - Ferrous & Non-Ferrous Material (kg/m²)

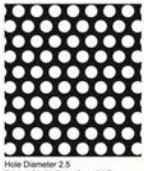
Thickness (mm)	Thickness (in)	Gauge	Aluminium	Mild Steel	Copper	Stainless Steel
6.40	0.2520	3	17.28	50.21	56.80	50.24
5.90	0.2323	4	15.93	46.32	52.36	46.32
4.90	0.1920	6	13.23	38.47	43.49	38.47
4.00	0.1600	8	10.80	31.40	35.50	31.40
3.20	0.1280	10	8.64	25.12	28.40	25.12
3.00	0.1250	10	8.10	23.55	26.63	23.55
2.60	0.1024	12	7.02	20.41	23.08	20.41
2.50	0.0990	12	6.75	19.63	22.19	18.63
2.20	0.0880	14	5.94	17.27	19.53	17.27
2.00	0.0780	14	5.40	15.70	17.75	15.70
1.60	0.0640	16	4.32	12.56	14.20	12.56
1.20	0.0472	18	3.24	9.42	10.65	9.42
1.00	0.0394	20	2.70	7.85	8.88	7.85
0.90	0.0360	20	2.43	7.07	7.99	7.07
0.80	0.0320	21	2.16	6.28	7.10	6.28
0.70	0.0280	22	1.89	5.50	6.21	5.50
0.60	0.0240	24	1.62	4.71	5.33	4.71
0.56	0.0220	24	1.51	4.40	4.97	4.40
0.50	0.0190	26	1.35	3.93	4.44	3.93
0.45	0.0180	26	1.22	3.53	3.99	3.53
0.40	0.0150	28	1.08	3.14	3.55	3.14
0.38	0.0148	28	1.03	2.98	3.37	2.98
0.31	0.0124	30	0.84	2.43	2.75	2.43
0.30	0.0120	30	0.81	2.36	2.66	2.36

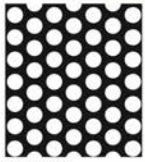
Technical Information

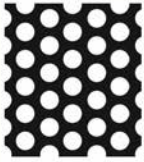
List Of Hole Diameters & Pitches Available For Round Hole Perforation

PATTERN : 60 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1219 mm (4 feet)


Hole Diameter 2.4
Pitch 4.8, % Open Area 22.7


Hole Diameter 2.5
Pitch 4.04, % Open Area 34.7


Hole Diameter 3.3
Pitch 4.9, % Open Area 41.1


Hole Diameter 3.95
Pitch 5.89, % Open Area 40.8


Hole Diameter 5.0
Pitch 7.53, % Open Area 40.0

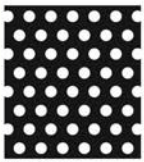
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
2.40	4.80	22.7	31.40	0.5
2.40	4.80	22.7	31.40	1.0
2.50	4.04	34.7	44.20	0.5
2.50	4.04	34.7	44.20	1.0
3.00	4.51	40.1	35.50	0.4
3.00	4.51	40.1	35.50	0.7
3.00	8.00	12.8	11.30	0.5
3.30	4.90	41.1	30.00	0.4
3.30	4.90	41.1	30.00	0.7
3.30	4.90	41.1	30.00	1.0
3.30	4.90	41.1	30.00	1.2
3.45	5.18	40.2	26.90	0.5
3.70	5.49	41.2	23.90	0.4
3.70	5.49	41.2	23.90	0.7
3.95	5.89	40.8	20.80	0.4
3.95	5.89	40.8	20.80	0.7
4.15	6.07	42.4	19.60	0.4
4.15	6.07	42.4	19.60	0.7
4.50	6.58	42.4	16.70	0.4
4.50	6.58	42.4	16.70	0.7
4.70	6.81	43.2	15.60	0.4
4.70	6.81	43.2	15.60	0.7
4.80	6.35	51.8	17.90	0.5
4.80	6.35	51.8	17.90	1.0
5.00	7.53	40.0	13.00	1.0
5.35	7.77	43.0	12.00	0.4
5.35	7.77	43.0	12.00	0.7
6.00	7.87	52.7	11.60	0.4
6.00	7.87	52.7	11.60	0.7
6.00	7.87	52.7	11.60	1.0
6.75	9.67	44.2	7.70	0.4
6.75	9.67	44.2	7.70	0.7
7.00	9.32	51.2	8.30	0.4
7.00	9.32	51.2	8.30	0.7

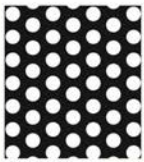
Technical Information

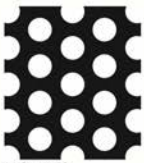
List Of Hole Diameters & Pitches Available For Round Hole Perforation

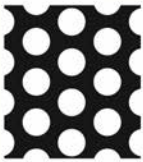
PATTERN : 60 DEGREE STAGGERED
MATERIAL : STAINLESS STEEL
MAX WIDTH : 1524 mm (5 feet)

Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
2.0	3.5	29.6	58.9	1.0
2.0	3.5	29.6	58.9	1.5
2.5	5.0	22.7	28.9	1.5
2.5	8.0	8.8	11.2	1.5
3.0	5.0	32.6	28.8	0.5
3.0	5.0	32.6	28.8	0.7
3.0	5.0	32.6	28.8	0.9
3.0	5.0	32.6	28.8	1.0
3.0	5.0	32.6	28.8	1.2
3.0	5.0	32.6	28.8	1.5
3.0	6.0	22.6	20.0	1.5
3.0	8.0	12.8	11.3	1.0
3.5	5.5	36.7	23.8	1.5
4.0	6.0	40.3	20.0	2.0
4.0	7.0	29.6	14.7	2.0
4.5	7.0	37.5	14.7	1.2
5.0	7.0	46.3	14.7	0.7
5.0	7.0	46.3	14.7	0.8
5.0	7.0	46.3	14.7	1.0
5.0	8.0	35.4	11.3	0.6
5.0	8.0	35.4	11.3	0.9
5.0	8.0	35.4	11.3	1.2
5.0	8.0	35.4	11.3	1.5
5.0	8.0	35.4	11.3	2.0
5.0	8.0	35.4	11.3	3.0
5.0	10.0	22.7	7.2	1.2
6.0	8.0	51.0	11.3	0.5
6.0	9.0	40.3	8.9	0.9
6.0	9.0	40.3	8.9	1.0
6.0	9.0	40.3	8.9	1.2
6.0	9.0	40.3	8.9	1.5
6.0	9.0	40.3	8.9	2.0
6.0	19.0	7.8	1.7	1.5
8.0	12.0	40.3	5.0	1.5
9.0	12.0	51.0	5.0	0.9
9.0	12.0	51.0	5.0	2.0
10.0	14.0	46.3	3.7	1.2
10.0	15.0	40.3	3.2	1.5
10.0	15.0	40.3	3.2	2.0
13.0	18.0	47.3	2.2	0.9


Hole Diameter 2.5
Pitch 5.0, % Open Area 22.7


Hole Diameter 3.0
Pitch 5.0, % Open Area 32.6


Hole Diameter 5.0
Pitch 8.0, % Open Area 35.4


Hole Diameter 6.0
Pitch 9.0, % Open Area 40.3

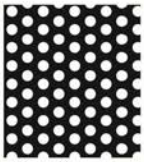

Hole Diameter 8.0
Pitch 12.0, % Open Area 40.3

Technical Information

List Of Hole Diameters & Pitches Available For Round Hole Perforation

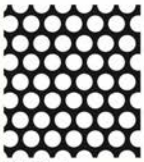
PATTERN : 60 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)


Hole Diameter 1.5
Pitch 3.0, % Open Area 22.6


Hole Diameter 2.0
Pitch 3.5, % Open Area 29.6


Hole Diameter 3.0
Pitch 6.0, % Open Area 22.7


Hole Diameter 3.0
Pitch 10.0, % Open Area 8.2


Hole Diameter 3.5
Pitch 5.0, % Open Area 44.4

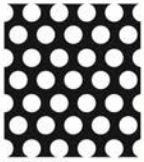
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
1.5	2.50	32.6	115.3	1.0
1.5	4.50	10.1	35.7	1.0
2.0	3.20	35.4	70.4	1.2
2.0	3.50	29.6	58.8	1.0
2.0	3.50	29.6	58.8	1.5
2.0	5.80	10.8	21.5	1.2
2.0	6.00	10.1	20.0	1.0
2.0	6.06	9.9	20.1	1.5
2.0	4.50	17.9	35.6	2.0
2.0	7.79	6.0	11.9	2.0
2.0	5.50	12.0	23.9	2.0
2.0	9.53	4.0	8.0	2.0
2.5	12.00	3.9	5.0	1.5
2.8	4.50	35.0	35.5	1.0
3.0	5.00	32.6	28.8	1.0
3.0	5.00	32.6	28.8	1.5
3.0	4.50	40.3	35.6	0.7
3.0	5.00	32.6	28.8	0.7
3.0	5.00	32.6	28.8	0.8
3.0	8.66	10.9	9.6	1.5
3.0	5.00	32.6	28.8	2.0
3.0	8.66	10.9	9.6	2.0
3.0	6.00	22.7	20.0	2.0
3.0	5.00	32.6	28.8	1.5
3.0	6.00	22.7	20.0	1.0
3.0	6.00	22.7	20.0	1.5
3.0	8.00	12.8	11.3	2.0
3.0	9.00	10.1	8.9	3.0
3.0	9.00	10.1	8.9	2.0
3.0	10.00	8.2	7.3	2.0
3.0	11.00	6.7	5.9	0.9
3.0	12.50	5.2	4.6	0.7
3.2	4.50	45.9	35.7	1.0
3.2	5.00	37.1	28.8	1.0
3.5	5.00	44.4	28.8	1.0

Technical Information

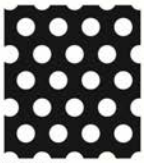
List Of Hole Diameters & Pitches Available For Round Hole Perforation

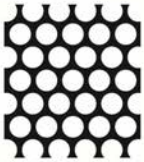
PATTERN : 60 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)

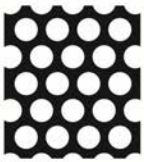
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
3.5	6.00	30.9	20.1	2.0
3.6	5.00	47.0	28.9	1.2
3.6	6.00	32.6	20.1	1.0
3.6	8.66	15.7	9.6	1.5
3.6	4.35	62.0	38.1	1.5
4.0	6.50	34.3	17.1	0.6
4.0	6.00	40.3	20.0	2.0
4.0	6.00	40.3	20.0	3.0
4.0	10.39	13.4	6.7	3.0
4.0	6.20	37.7	18.7	1.5
4.0	8.00	22.7	11 .3	1.5
4.0	8.00	22.7	11.3	0.8
4.0	8.00	22.7	11.3	3.0
4.0	8.50	20.1	10.0	2.0
4.0	9.00	17.9	8.9	3.0
4.0	9.00	17.9	8.9	2.5
4.0	10.39	13.4	7.0	2.0
4.0	16.40	5.4	2.7	2.0
4.0	10.39	13.4	6.7	2.0
4.0	11.00	12.0	6.0	4.0
4.0	7.00	29.6	14.7	3.0
4.0	12.00	10.1	5.0	1.5
4.0	12.00	10.1	5.0	3.0
4.0	12.18	9.8	4.9	3.0
4.0	12.23	9.7	4.9	2.0
4.0	12.18	9.8	4.9	1.5
4.0	12.29	9.6	4.8	3.0
4.0	14.00	7.4	3.7	4.0
4.0	20.00	3.6	1.8	1.0
4.0	17.32	4.8	2.4	1.0
4.0	30.00	1.6	0.8	1.0
4.5	6.00	51.0	20.0	1.2
4.7	7.00	29.6	10.7	3.0
4.7	7.00	29.6	10.7	1.2
5.0	7.00	46.3	14.7	1.0


Hole Diameter 4.0
Pitch 6.0, % Open Area 40.3


Hole Diameter 4.0
Pitch 8.0, % Open Area 22.7


Hole Diameter 4.0
Pitch 7.0, % Open Area 29.6


Hole Diameter 4.5
Pitch 6.0, % Open Area 51.0

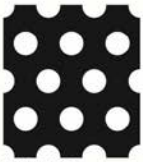

Hole Diameter 5.0
Pitch 7.0, % Open Area 46.3

Technical Information

List Of Hole Diameters & Pitches Available For Round Hole Perforation

PATTERN : 60 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)


Hole Diameter 5.0
Pitch 8.0, % Open Area 35.4


Hole Diameter 5.0
Pitch 10.0, % Open Area 22.7


Hole Diameter 8.0
Pitch 12.0, % Open Area 40.3


Hole Diameter 10.0
Pitch 12.5, % Open Area 58.0


Hole Diameter 13.0
Pitch 18.0, % Open Area 47.3

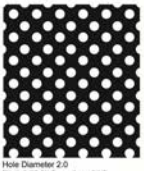
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
5.0	6.50	53.7	17.10	1.5
5.0	6.50	53.7	17.10	1.2
5.0	7.00	46.2	14.70	1.5
5.0	8.00	35.4	11.30	1.0
5.0	8.00	35.4	11.30	4.0
5.0	13.86	11.8	3.80	4.0
5.0	8.00	35.4	11.30	3.0
5.0	13.86	11.8	3.80	3.0
5.0	10.00	22.7	7.20	1.5
5.0	10.00	22.7	7.20	2.5
5.0	12.00	15.7	5.00	3.0
5.0	12.00	15.7	5.00	2.0
6.0	12.13	22.2	4.90	1.5
6.0	24.00	5.7	1.20	3.0
6.0	26.00	4.8	1.10	3.0
7.0	24.50	7.4	1.20	0.8
7.0	9.00	54.9	8.90	0.8
7.0	9.30	51.4	8.30	1.0
8.0	12.00	40.3	5.00	3.0
8.0	12.00	40.3	5.00	5.0
8.0	12.00	40.3	5.00	1.5
10.0	12.50	58.0	4.60	1.0
10.0	15.00	40.3	3.20	3.0
10.0	15.00	40.3	3.20	1.0
10.0	17.00	31.3	2.50	1.0
10.0	18.00	28.0	2.20	1.5
10.0	19.50	23.9	1.90	1.5
10.0	20.00	22.6	1.80	2.0
10.0	20.50	21.6	1.70	1.5
10.0	28.00	11.6	0.90	4.0
10.0	38.00	6.3	0.50	3.0
13.0	18.00	47.3	2.20	1.0
13.0	18.00	47.3	2.20	6.0

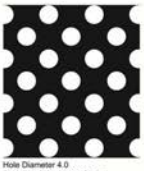
Technical Information

List Of Hole Diameters & Pitches Available For Round Hole Perforation

PATTERN : 60 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)

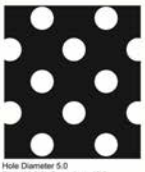
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
15.0	20.0	51.0	1.8	3.0
16.0	25.0	37.1	1.1	1.0
18.0	27.0	40.3	1.0	1.5
20.0	26.0	53.7	1.0	1.0
20.0	28.0	46.3	0.9	3.0


Hole Diameter 2.0
Pitch 3.60,% Open Area 24.2


Hole Diameter 4.0
Pitch 7.0, %Open Area25.6

PATTERN : 45 DEGREE STAGGERED
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)

Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
2.0	3.60	24.2	48.1	1.00
4.0	7.00	25.6	12.7	1.00
5.0	10.00	19.6	6.2	1.50
5.0	11.18	15.7	5.0	1.00
5.0	12.00	13.6	4.3	0.60
5.0	15.00	8.7	2.8	5.00
5.0	15.00	8.7	2.8	2.50
5.0	16.00	7.7	2.5	2.50
5.0	17.50	6.4	2.0	2.50
5.0	18.00	6.1	2.0	2.50
5.0	20.00	4.9	1.6	1.00
5.0	17.00	6.8	2.1	2.50
5.5	9.00	29.3	7.7	3.00
6.0	9.00	34.9	7.7	3.00
6.0	9.20	33.4	7.4	1.50
6.0	10.00	28.3	6.3	1.50
7.0	9.00	54.9	8.9	0.80
8.0	12.00	34.9	4.3	1.20
8.0	12.00	34.9	4.3	1.20


Hole Diameter 5.0
Pitch 10.0,% Open Area 19.6

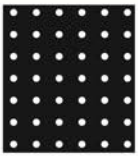

Hole Diameter 6.0
Pitch 9.00,% Open Area 34.9


Hole Diameter 7.0
Pitch 90,% Open Area 54.9

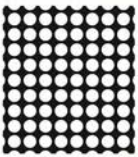
Technical Information

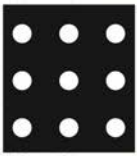
List Of Hole Diameters & Pitches Available For Round Hole Perforation

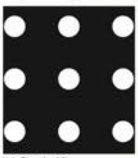
PATTERN : SQUARE
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)


Hole Diameter 1.5
Pitch 5.0, % Open Area 7.1


Hole Diameter 2.5
Pitch 12.1, % Open Area 3.4


Hole Diameter 3.0
Pitch 4.5, % Open Area 34.9


Hole Diameter 4.0
Pitch 10.5,% Open Area 1 1.4


Hole Diameter 4.5
Pitch 12.25,% Open Area 10.6

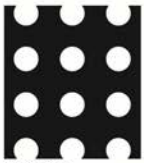
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
1.50	3.00	19.60	69.3	1.0
1.50	5.00	7.10	25.1	0.9
2.00	10.50	2.80	5.6	0.9
2.50	12.10	3.40	4.3	1.5
2.50	4.50	24.20	30.8	1.0
3.00	6.00	19.60	17.3	1.0
3.00	20.00	1.80	1.6	1.5
3.00	25.00	1.10	1.0	1.5
3.00	4.50	34.90	30.9	0.8
3.80	7.50	20.20	11.1	0.5
4.00	8.50	17.40	8.7	1.5
4.00	10.50	11.40	5.7	2.0
4.00	15.00	5.60	2.8	1.5
4.00	25.00	2.00	1.0	1.0
4.00	26.00	1.90	1.0	1.5
4.50	12.25	10.60	4.2	1.0
4.50	15.00	7.10	2.8	1.5
4.50	15.00	7.10	2.8	1.0
4.50	20.00	4.60	1.8	2.0
4.50	20.50	3.80	1.5	2.0
4.50	25.00	2.90	1.1	1.0
5.00	9.00	24.20	7.7	1.5
5.00	10.00	19.60	6.2	1.5
5.00	10.00	19.60	6.2	2.5
5.00	10.00	19.60	6.2	2.0
5.00	10.44	18.00	5.7	2.0
5.00	12.00	13.60	4.3	2.0
5.00	12.20	13.20	4.2	1.5
5.00	18.00	6.10	2.0	0.7
5.00	20.00	4.90	1.6	1.0
5.00	20.88	4.50	1.4	1.0
5.00	25.00	3.10	1.0	1.5
6.00	41.60	1.60	0.4	3.0
6.00	10.00	28.30	6.3	1.0
6.00	12.13	19.20	4.2	1.0
6.00	15.50	11.80	2.6	1.5
6.00	41.60	1.60	0.4	3.0
6.25	25.00	4.90	1.0	2.0
8.00	12.00	34.90	4.3	1.0

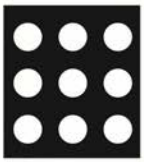
Technical Information

List Of Hole Diameters & Pitches Available For Round Hole Perforation

PATTERN : SQUARE
MATERIAL : COLD ROLLED/GALV. STEEL/ HOT ROLLED
MAX WIDTH : 1524 mm (5 feet)

Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
8.0	16.0	19.6	2.4	1.5
8.0	20.0	12.6	1.6	2.0
8.0	40.0	4.0	0.4	1.0
10.0	30.0	8.7	0.7	3.0
10.0	40.0	4.9	0.4	1.0
10.0	50.0	3.1	0.4	4.0
10.0	38.0	5.4	0.2	1.0
10.5	16.5	31.8	2.3	1.0
11.0	30.0	10.6	0.7	6.0
12.0	20.0	28.3	1.6	1.0
14.0	20.0	38.5	1.6	0.9
14.0	21.0	34.9	1.4	2.0
14.0	26.0	22.8	1.0	0.6
14.0	38.0	10.7	0.9	1.5
18.0	28.0	32.5	0.8	3.0
20.0	25.0	50.3	1.0	0.5
20.5	29.0	39.2	0.7	2.5


Hole Diameter 5.0
Pitch 10.0,% Open Area 19.6


Hole Diameter 8.0
Pitch 10.0,% Open Area 28.3

PATTERN : 45 DEGREE STAGGERED
MATERIAL : ALUMINIUM
MAX WIDTH : 1219 mm (4 feet)

Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
8.0	12.0	34.9	4.3	1.5
1.2	25.5	20.9	1.1	4.0


Hole Diameter 8.0
Pitch 12.0,% Open Area 34.9

PATTERN : 45 DEGREE STAGGERED
MATERIAL : ALUMINIUM
MAX WIDTH : 1219 mm (4 feet)

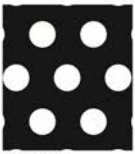
Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
2.5	5.0	19.6	25.0	3.0
3.0	25.0	1.1	1.0	1.0
4.0	9.0	15.5	7.7	1.8
10.0	50.0	3.1	0.2	2.0
12.5	16.0	47.9	2.4	3.0


Hole Diameter 8.0
Pitch 12.0,% Open Area 34.9

Technical Information

List Of Hole Diameters & Pitches Available For Round Hole Perforation

ATTERN : 60 DEGREE STAGGERED
MATERIAL : ALUMINIUM
MAX WIDTH : 1219 mm (4 feet)

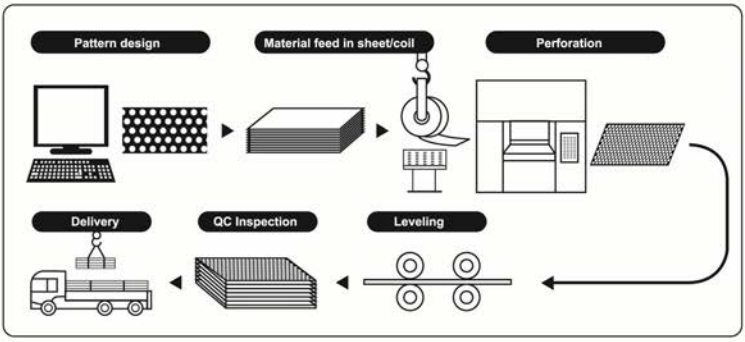


Hole Diameter 6.0
Pitch 12.0, % Open Area 22.7

Hole Diameter 10.0
Pitch 12.5, % Open Area 58.0

Hole Did. (mm)	Pitch (mm)	Open Area %	Approx Holes Per 25mm Sq.	Thickness (mm)
1.5	7.50	3.6	12.7	1.0
2.0	7.00	7.4	14.7	1.5
2.0	4.62	17.0	33.8	2.0
2.0	8.00	5.7	11.3	2.0
2.0	13.00	2.1	4.2	1.0
2.1	4.04	24.5	44.2	2.0
2.1	7.00	8.2	14.7	2.0
3.2	10.00	9.3	7.2	2.0
5.0	8.00	35.4	11.2	1.5
6.0	12.00	22.7	5.0	2.0
10.0	12.50	58.0	4.6	2.5
18.0	25.00	45.2	1.1	1.5

Perforation Process



Perforation Specifications

All MPM perforated material and the relevant specifications are in compliance with the International Perforator Association (IPA) standards and practices; unless specified otherwise by Buyer and agreed by MPM in quoted specifications or drawings.
Our experienced sales personnel are in a position to offer advice on your specific perforated material and its application free of charge.

Perforated Patterns

Hole Diameter 8.0
Pitch 12.0, % Open Area 40.2

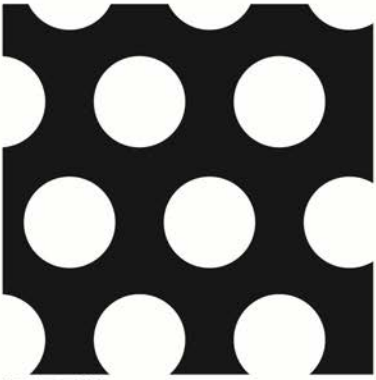
Hole Diameter 9.0
Pitch 12.0, % Open Area 50.9

Hole Diameter 10.0
Pitch 15.0, % Open Area 40.2

Hole Diameter 12.0
Pitch 15.0, % Open Area 57.9

Hole Diameter 15.0
Pitch 20.0, % Open Area 50.9

Hole Diameter 18.0
Pitch 26.0, % Open Area 43.4



Hole Diameter 20.0
Pitch 30.0, % Open Area 40.2

How To Order

Please furnish the following information in order for us to meet your perforation requirements

1. QUANTITY - To state the number of perforated pieces required

2. MATERIALS - To state the type of metal required.

3. THICKNESS - To specify material thickness in mm.

4 PERFORATION SIZE - To state the Width and Length.
(Unless specified, the Length will be the long dimension of the sheet).

5. PERFORATION CONFIGURATION - Specify the Hole Size, Pitch and Pattern
(Staggered or Straight Line. Ref see page 7 to 18)

6. SHEET MARGIN - To specify End Margin and Side Margin (if any)
(Otherwise state "minimum or no margin")

7. OTHER INFORMATION - To specify any secondary process such as fabrication or bending operation, bolt & screw holes and blank portion where required

Remarks :
We recommend to receive your full detailed submission with technical drawings where ever possible for our pre-perforation's evaluation and production planning purposes. We carry a wide range of perforation patents from our off-the-shelf tooling. Please contact our experienced sales personnel for free consultation and recommendation.

Other Information

IPA, SIRIM ISO CERTIFICATE & MOF REGISTRATION

KEMENTERIAN KEWANGAN MALAYSIA

No. 275938

AKUAN PENDAFTARAN KONTRAKTOR

No. RUJUKAN PENDAFTARAN

TEMPOH

KABEL, AKSESORI DAN KONDUKTOR

PEMBUAT (PERFORATED SCREEN PLATES, BUTT STRAPS, G-LOC SPLICES, CABLE TRAYS, TUBELOCK HOLLOW CHANNEL SECTION & CHANNEL SECTION SUPPORT SYSTEM)

OTHMAN BIN SEMAIL

Kementerian Kewangan Malaysia

This certifies that

METAL PERFORATORS (MALAYSIA) SDN. BHD

Is a member of

INDUSTRIAL PERFORATORS ASSOCIATION

In good standing

2008

With all rights and privileges pertaining thereof.

CERTIFICATE

SIRIM QAS International Sdn. Bhd. hereby certifies that

METAL PERFORATORS (M) SDN. BHD.
LOT 5 & 7, JALAN TUKANG 16/4
40700 SHAH ALAM
SELANGOR DARUL EHSAN
MALAYSIA

has implemented a Quality Management System complying with

ISO 9001 : 2000
Quality Management Systems - Requirements

Scope of Certification

1. MANUFACTURE OF PERFORATED METALLIC SHEET/COILS
2. MANUFACTURE OF CABLE SUPPORTING SYSTEM (CABLE LADDERS, TRAYS AND MOUNTING SYSTEMS)

Original Certification Date	27 August 1996
Issue Date	27 August 2008
Expiry Date	26 August 2011
Certification No.	AR 0884

Dato' Mariani Mohammad
Managing Director

Ir. Hj. Yahaya Ahmad
Chairman

IQNet

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and SIRIM QAS International Sdn. Bhd
hereby certify that

METAL PERFORATORS (M) SDN. BHD.
LOT 5 & 7, JALAN TUKANG 16/4
40700 SHAH ALAM
SELANGOR DARUL EHSAN
MALAYSIA

has implemented and maintains a

QUALITY MANAGEMENT SYSTEM

which fulfills the requirements of the following standard

ISO 9001 : 2000

for the following field of activities

1. MANUFACTURE OF PERFORATED METALLIC SHEET/COILS
2. MANUFACTURE OF CABLE SUPPORTING SYSTEM (CABLE LADDERS, TRAYS AND MOUNTING SYSTEMS)

Issued on : 27 August 2008
Validity date : 26 August 2011

Certification Number : MY-AR 0884

The products manufactured by MPM conform to stringent quality procedures and manufacturing operations, having a close technical working relationship with the Industrial Perforators Association (IPA,an international governing body on perforation standards and specifications).

This concerted effort has enabled MPM to be certified as the first ISO 9001 manufacturing company in Malaysia for Perforated Metals and Cable Support System.

METAL PERFORATORS (M) SDN. BHD.

(Co. No. 12583-P)

Lot 5 & 7, Jalan Tukang 16/4, P.O. Box 7045,
40700 Shah Alam, Selangor Darul Ehsan,
Malaysia.

Tel : (603) 5519 1470
Fax : (603) 5519 6978
Website : www.metalperforators.com.my
E-mail : mpm@metalperforators.com.my
: sales@metalperforators.com.my