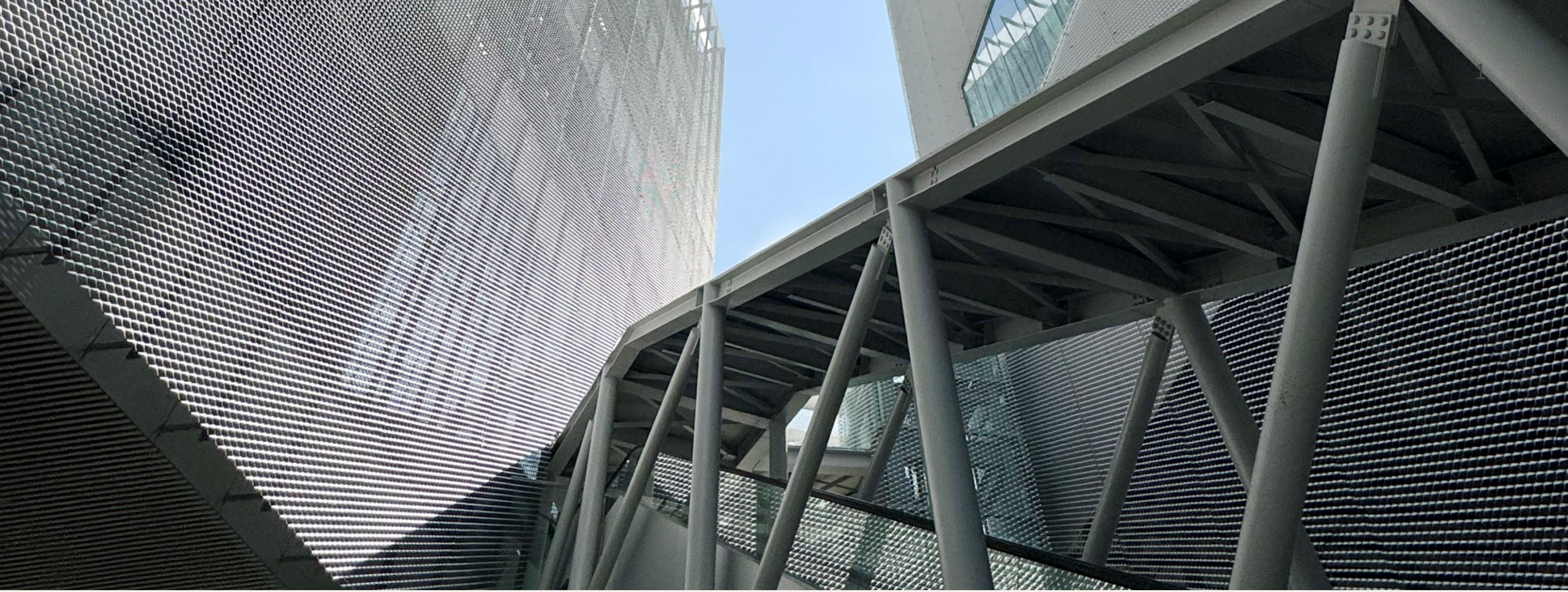


上鎧鋼鐵
SHANG KAI STEEL

NAAMM EMMA / ASTM GUIDE

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01 COMPANY INTRODUCTION

02 PERFORATED METAL SPECIFICATIONS

03 CONTACT US





01 COMPANY INTRODUCTION

上鎧鋼鐵
SHANG KAI STEEL



ABOUT SHANG KAI STEEL

Founded in 1988, Shang Kai Steel has grown into Asia's leading expanded metal manufacturer. With more than 37 years of proven expertise in architectural and industrial applications, we proudly operate from Taiwan, serving clients worldwide.

Manufacturing Capabilities:

- Wide Range of Material Options: Steel, Stainless Steel, Aluminum, Copper, Titanium, Precious Metals etc.
- Thickness Range: 0.05mm to 8mm
- Coil Material: Width up to 1525mm, can be manufactured in lengths over 12 meters.
- Sheet Material: Width within 3050mm, length depends on mesh size limitations.
- Mesh Size: 0.05–700mm
- Custom Designs Available: with more than 3000 Style

COMPLIANCES

We are compliant with NAAMM EMMA,ASTM, BS, JIS, and AS/NZS standards, and certified under ISO 9001:2015, ISO 14064, and ISO 14064-1:2018. Our commitment to quality, innovation, and sustainability drives every aspect of our metal solutions.

Recognized for our contributions to low-carbon construction and energy efficiency, we use environmentally responsible materials that actively support green building initiatives.



LRQA

Current issue date: 29 November 2022
Expiry date: 28 November 2025
Certificate identity number: 10464750
Original approval(s): ISO 9001 - 29 November 2022

Certificate of Approval

This is to certify that the Management System of:

SHANG KAI STEEL CO., LTD.

No. 16 Juguang 2nd St. Daliao Dist., Kaohsiung City 831136, Taiwan

has been approved by LRQA to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 00038541

The scope of this approval is applicable to:

Manufacturing and sale of expanded metal and metal lath.

Luis Cunha

Area Operations Manager - North Asia & SAMEA

Issued by: LRQA Limited

IAF UKAS

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.
Issued by: LRQA Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

Page 1 of 1



Certificate

Inventory Standard	**ISO 14067:2018**
Certificate Registr. No.	**CO 50619859 0001**
Report No.	**48227369 001**

Certificate Holder:	**Shang Kai Steel Co. Ltd** No.16, Juguang 2nd St, Daliao Dist, Kaohsiung 831, Taiwan
Validation & Verification Site:	**Including the sites according to annex**
Validation & Verification Body:	**TÜV Rheinland Taiwan Ltd.**
Validation & Verification Standard:	ISO 14064-3:2019
Programme:	- Voluntary Carbon Footprint scheme
Level of Assurance:	- Reasonable
Consolidation methodology:	- Operational Control
Materiality:	- 5%
LCA software or database:	- SimaPro Ver. 9.5.0.0 / Ecoinvent 3.8, Taiwan MOENV Carbon Footprint Information Platform
Analysis method:	- IPCC 2021 GWP100 v1.02
Validation & Verification Scope:	Based on the information we have received and evaluated that: - Global warming potential (GWP): IPCC 2021, AR6 - Product category rules (PCR): N/A - Product: Expanded Metal Mesh (Steel) - Boundary: Cradle to Gate - Data period: 2022.01.01~2022.12.31 - Functional unit: one kg (including package) - Model no. / Carbon emissions: - N/A (Annual Average) / 2.488 kg CO_2e - Data and information - Historical in nature: raw materials / production - Historical in nature with scenario models: N/A
Validity:	This certificate is valid from 2024/03/11 until 2026/03/10 This certificate only verified the target product / service carbon footprint, this verification does not include review of external communication.

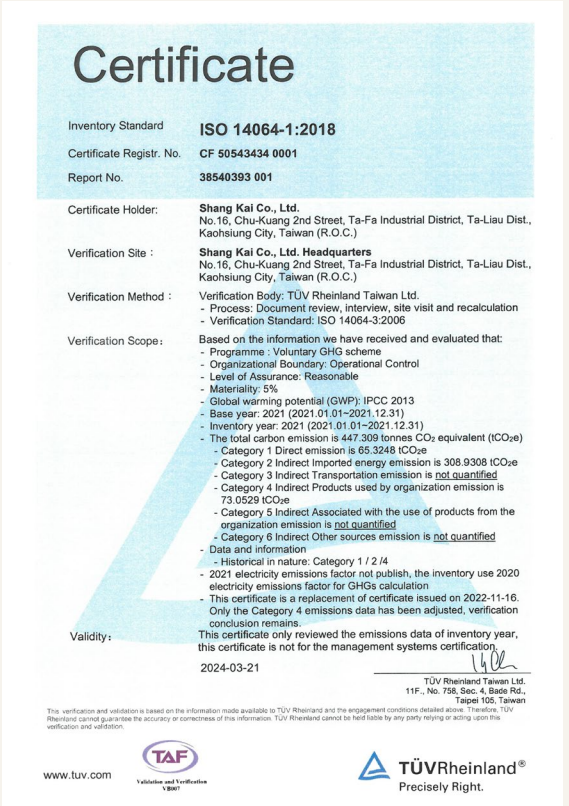
2024-03-11

TÜV Rheinland Taiwan Ltd.
11F., No. 758, Sec. 4, Bade Rd., Taipei 105, Taiwan

This verification and validation is based on the information made available to TÜV Rheinland and the engagement conditions detailed above. Therefore, TÜV Rheinland cannot guarantee the accuracy or correctness of this information. TÜV Rheinland cannot be held liable by any party relying or acting upon this verification and validation.

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Certificate

Inventory Standard	**ISO 14064-1:2018**
Certificate Registr. No.	**CF 50543434 0001**
Report No.	**38540393 001**

Certificate Holder:	**Shang Kai Co., Ltd.** No.16, Chu-Kuang 2nd Street, Ta-Fa Industrial District, Ta-Liau Dist., Kaohsiung City, Taiwan (R.O.C.)
Verification Site :	**Shang Kai Co., Ltd. Headquarters** No.16, Chu-Kuang 2nd Street, Ta-Fa Industrial District, Ta-Liau Dist., Kaohsiung City, Taiwan (R.O.C.)
Verification Method :	Verification Body: TÜV Rheinland Taiwan Ltd. - Process: Document review, interview, site visit and recalculation - Verification Standard: ISO 14064-3:2006
Verification Scope:	Based on the information we have received and evaluated that: - Programme : Voluntary GHG scheme - Organizational Boundary: Operational Control - Level of Assurance: Reasonable - Materiality: 5% - Global warming potential (GWP): IPCC 2013 - Base year: 2021 (2021.01.01~2021.12.31) - Inventory year: 2021 (2021.01.01~2021.12.31) - The total carbon emission is 447.309 tonnes CO_2 equivalent (tCO_2e) - Category 1 Direct emission is 65.3248 tCO_2e - Category 2 Indirect Imported energy emission is 308.9308 tCO_2e - Category 3 Indirect Transportation emission is not quantified - Category 4 Indirect Products used by organization emission is 73.0529 tCO_2e - Category 5 Indirect Associated with the use of products from the organization emission is not quantified - Category 6 Indirect Other sources emission is not quantified - Data and information - Historical in nature: Category 1 / 2 /4 - 2021 electricity emissions factor not publish, the inventory use 2020 electricity emissions factor for GHGs calculation - This certificate is a replacement of certificate issued on 2022-11-16. Only the Category 4 emissions data has been adjusted, verification conclusion remains.
Validity:	This certificate only reviewed the emissions data of inventory year, this certificate is not for the management systems certification.

2024-03-21

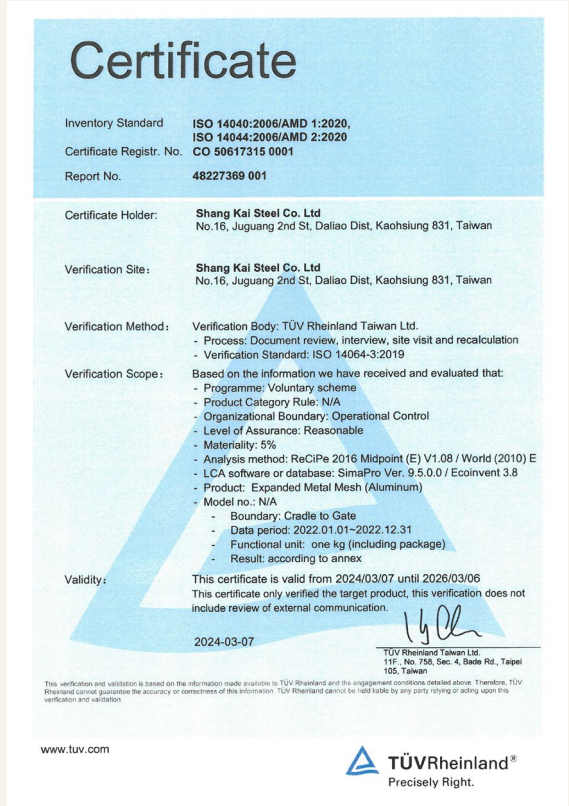
TÜV Rheinland Taiwan Ltd.
11F., No. 758, Sec. 4, Bade Rd., Taipei 105, Taiwan

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TAF Validation and Verification V.0007

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Certificate

Inventory Standard	**ISO 14040:2006/AMD 1:2020, ISO 14044:2006/AMD 2:2020**
Certificate Registr. No.	**CO 50617315 0001**
Report No.	**48227369 001**

Certificate Holder:	**Shang Kai Steel Co. Ltd** No.16, Juguang 2nd St, Daliao Dist, Kaohsiung 831, Taiwan
Verification Site:	**Shang Kai Steel Co. Ltd** No.16, Juguang 2nd St, Daliao Dist, Kaohsiung 831, Taiwan
Verification Method:	Verification Body: TÜV Rheinland Taiwan Ltd. - Process: Document review, interview, site visit and recalculation - Verification Standard: ISO 14064-3:2019
Verification Scope:	Based on the information we have received and evaluated that: - Programme: Voluntary scheme - Product Category Rule: N/A - Organizational Boundary: Operational Control - Level of Assurance: Reasonable - Materiality: 5% - Analysis method: ReCiPe 2016 Midpoint (E) V1.08 / World (2010) E - LCA software or database: SimaPro Ver. 9.5.0.0 / Ecoinvent 3.8 - Product: Expanded Metal Mesh (Aluminum) - Model no.: N/A - Boundary: Cradle to Gate - Data period: 2022.01.01~2022.12.31 - Functional unit: one kg (including package) - Result: according to annex
Validity:	This certificate is valid from 2024/03/07 until 2026/03/06 This certificate only verified the target product, this verification does not include review of external communication.

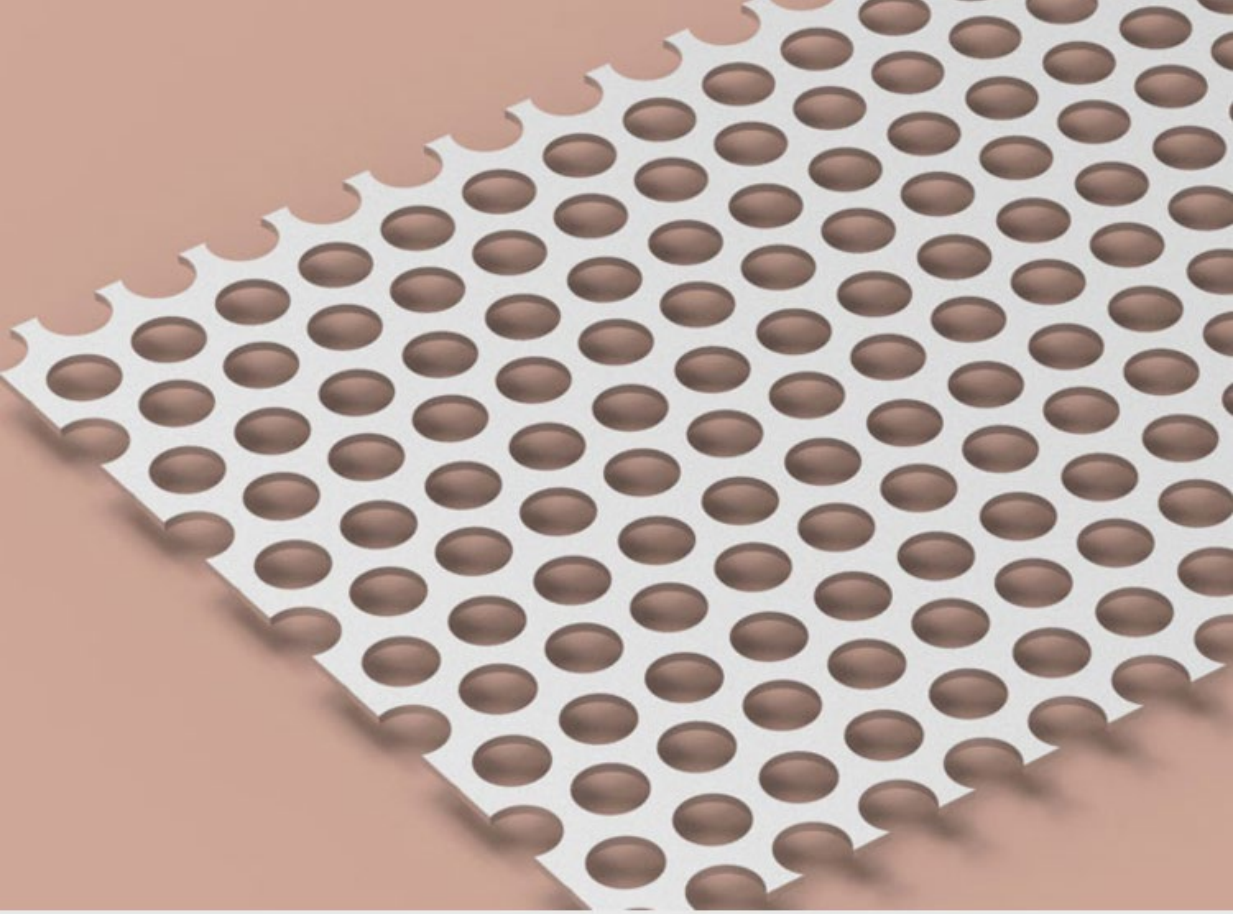
2024-03-07

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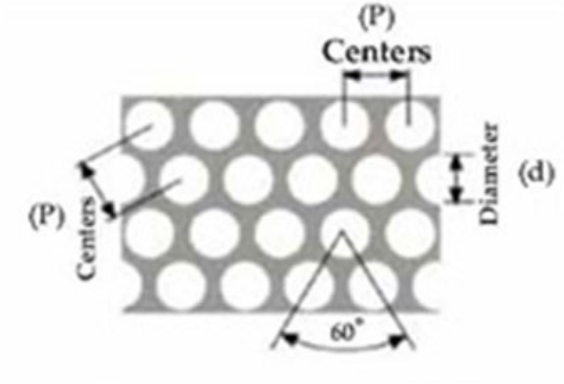
PERFORATED METAL

Perforated Metal is made by punching shapes through a sheet of metal. Circles, rectangles, and crosses are the most frequently used patterns and customized shapes can be created to suit different functions. Perforated metal is widely used in architecture for its aesthetic qualities. It also performs well as a filter and strainer. Shang Kai Steel's Perforated Metal can be trusted in a variety of tasks.

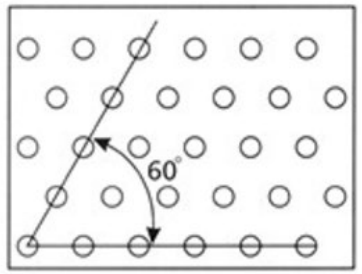
PERFORATED METAL STANDARD MESH

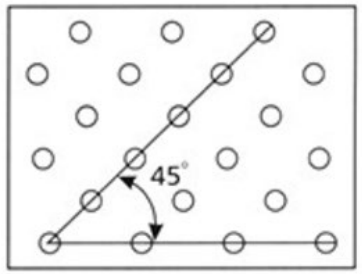
◎ Specification

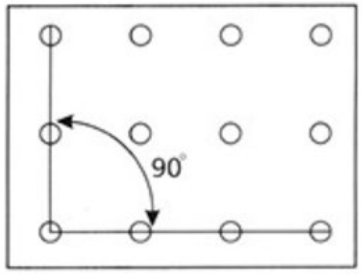
1.Material thickness
2.Sheet size
3.Hole / Dia.
4.Pitch/Centers
5.Bars
6.Degree



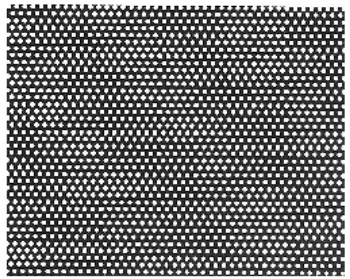
◎Degree



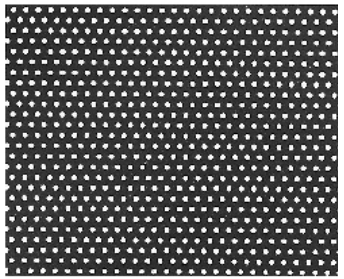




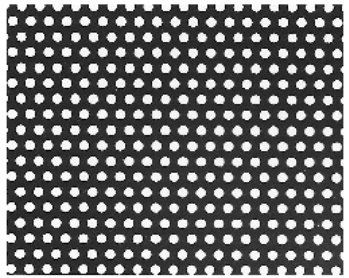
PERFORATED **METAL MESH**



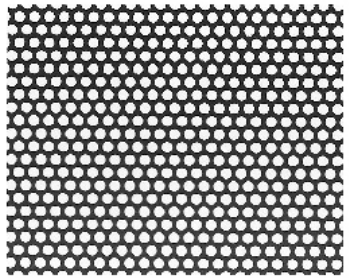
SKPM 01
0.6ø x 1.36P
17.6% open



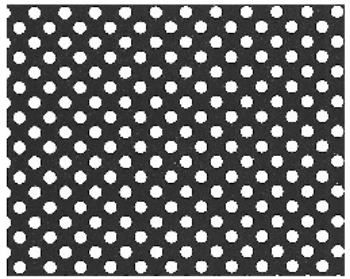
SKPM 02
0.8ø x 2P
14.5% open



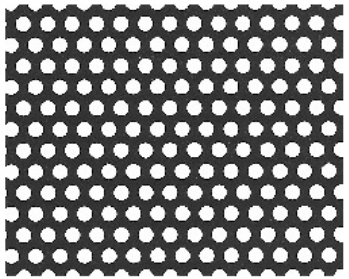
SKPM 07
1.5ø x 3P
22.6% open



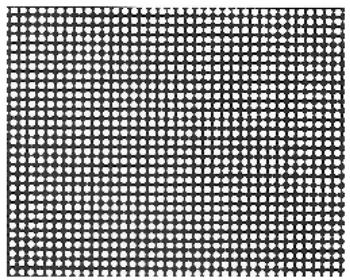
SKPM 08
1.6ø x 2.5P
37% open



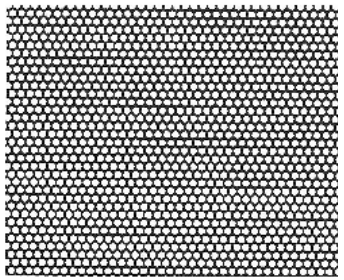
SKPM 13
2ø x 5P 45°
25.1% open



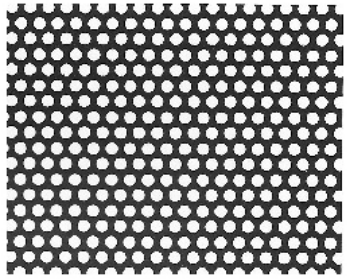
SKPM 14
2.5ø x 4P
35.3% open



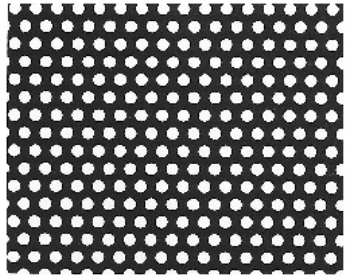
SKPM 03
1ø x 1.5P 90°
34.9% open



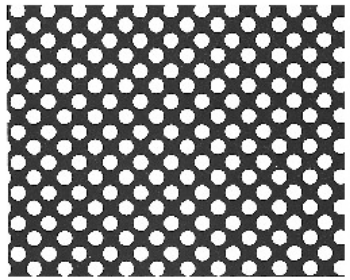
SKPM 04
1ø x 1.5P
40.2% open



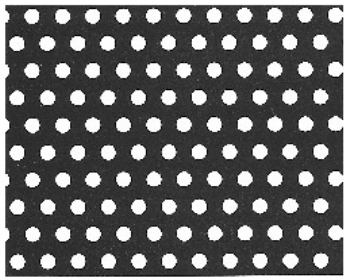
SKPM 09
2ø x 3P
40.2% open



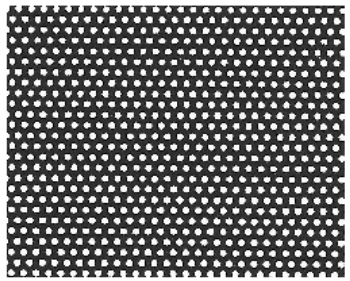
SKPM 10
2ø x 3.5P
29.6% open



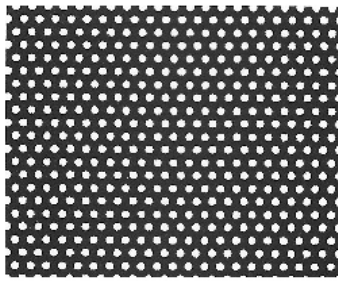
SKPM 15
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35.3% open



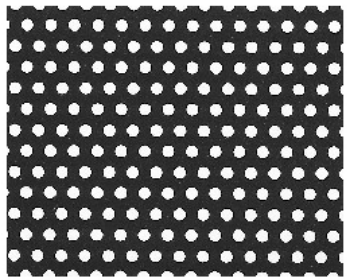
SKPM 16
2.5ø x 5P
22.6% open



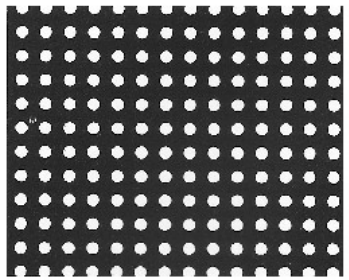
SKPM 05
1ø x 2P
22.6% open



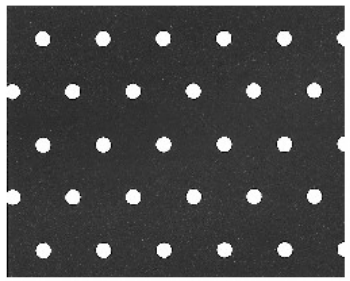
SKPM 06
1.2ø x 2.5P
20.8% open



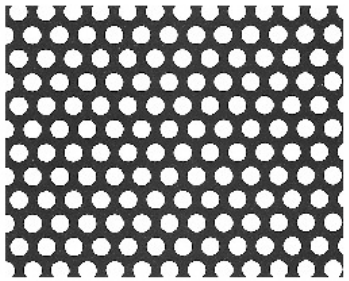
SKPM 11
2ø x 4P
22.6% open



SKPM 12
2ø x 4P 90°
19.6% open

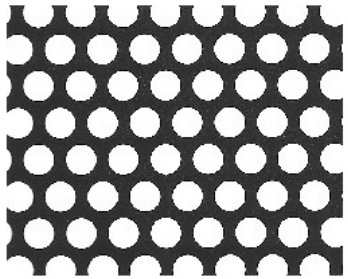


SKPM 17
2.5ø x 10P
5.6% open

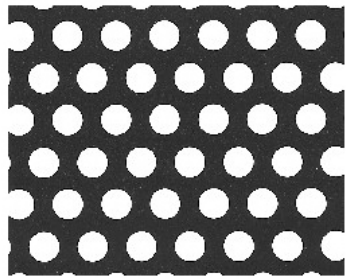


SKPM 18
3ø x 4.5P
40.2% open

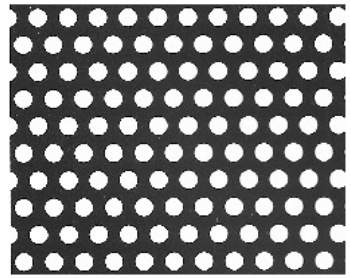
PERFORATED **METAL MESH**



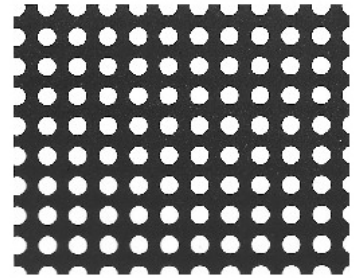
SKPM 31
5ø x 7P
46.2% open



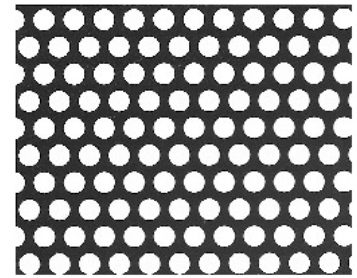
SKPM 32
5ø x 8P
35.3% open



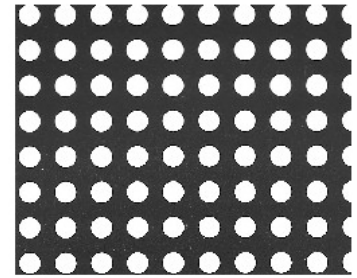
SKPM 19
3ø x 5P
32.5% open



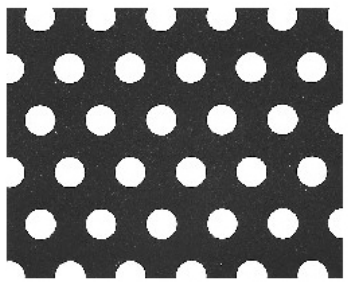
SKPM 20
3ø x 5P
28.2% open



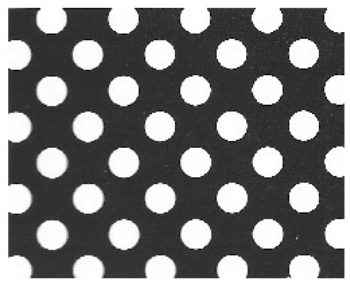
SKPM 25
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44.3% open



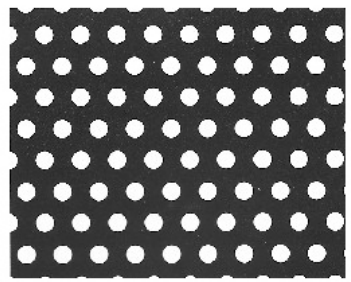
SKPM 26
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26.7% open



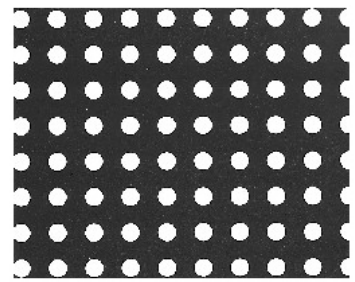
SKPM 33
5ø x 10P
22.6% open



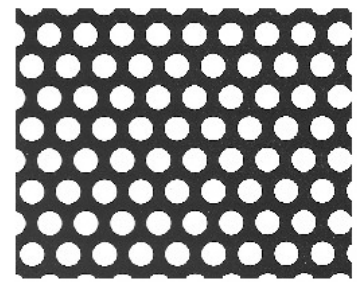
SKPM 34
5ø x 12P 45°
27.2% open



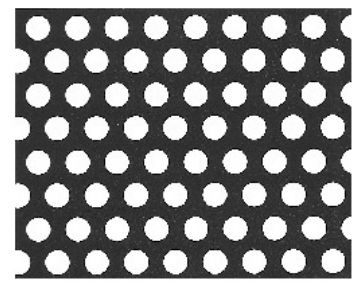
SKPM 21
3ø x 6P
22.6% open



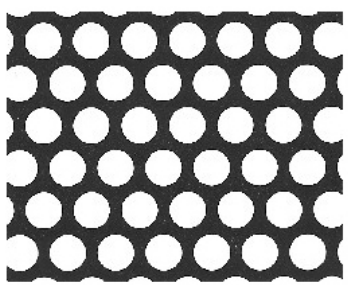
SKPM 22
3ø x 6P
19.6% open



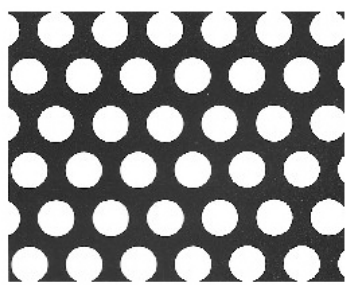
SKPM 27
4ø x 6P
40.2% open



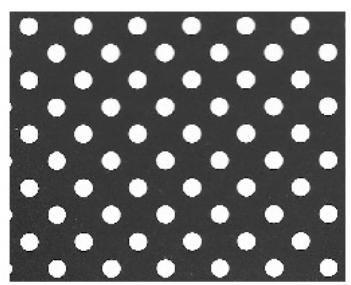
SKPM 28
4ø x 6.5P
46.2% open



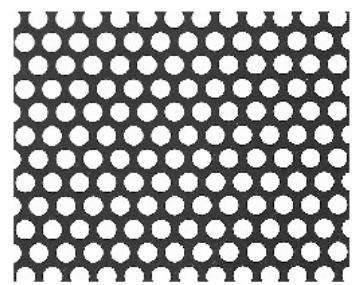
SKPM 35
6ø x 8P
50.9% open



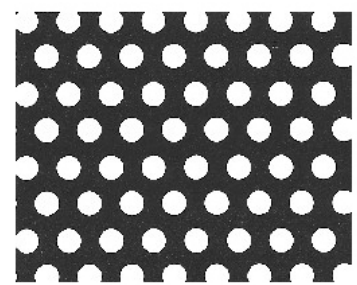
SKPM 36
6ø x 9P
40.2% open



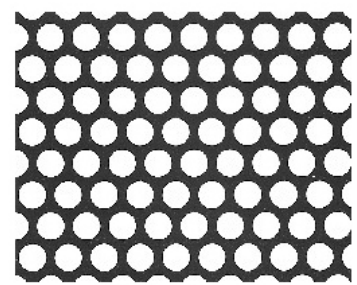
SKPM 23
3ø x 9P
17.4% open



SKPM 24
3.2ø x 4.5P
45.7% open

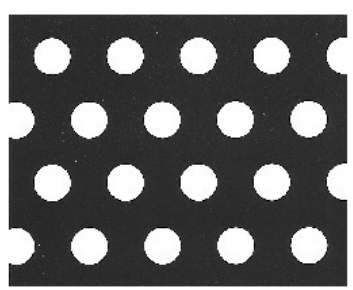


SKPM 29
4ø x 7P
29.5% open

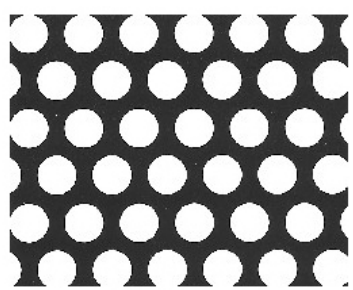


SKPM 30
4.5ø x 6P
50.9% open

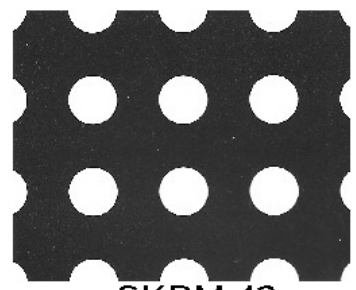
PERFORATED **METAL MESH**



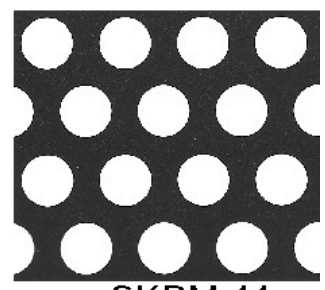
SKPM 37
6ø x 12P
22.6% open



SKPM 38
6.4ø x 9P
45.7% open



SKPM 43
8ø x 15P 90°
22.3% open



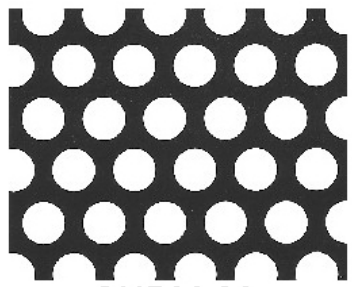
SKPM 44
8.5ø x 13P
38.7 open



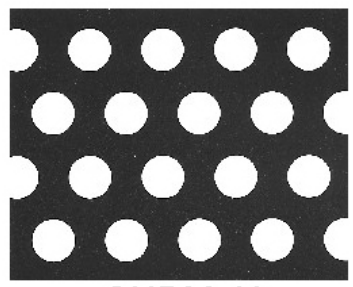
SKPM 49
12ø x 18P
40.2% open



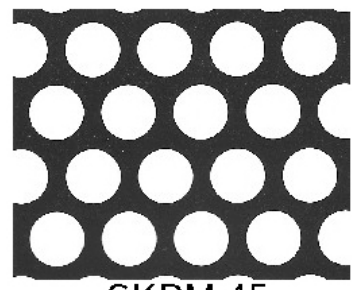
SKPM 50
15ø x 21P
46.2% open



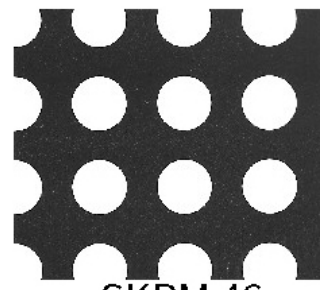
SKPM 39
7ø x 10P
44.3% open



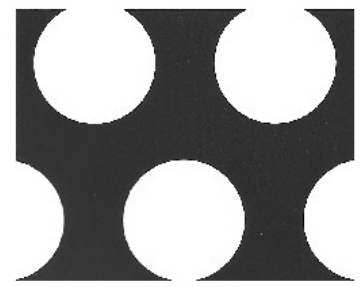
SKPM 40
7ø x 12P
30.8% open



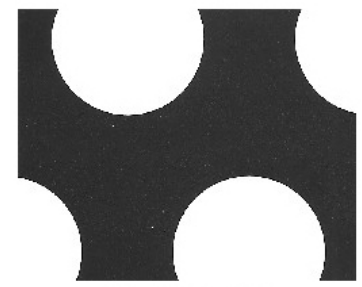
SKPM 45
9ø x 12P
50.9% open



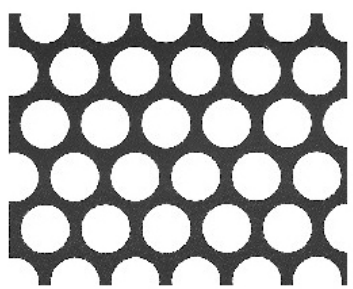
SKPM 46
9ø x 14P 90°
32.4% open



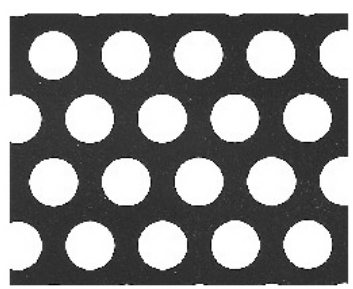
SKPM 51
20ø x 30P
40.2% open



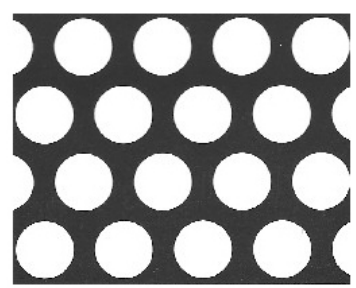
SKPM 52
25ø x 40P
35.3% open



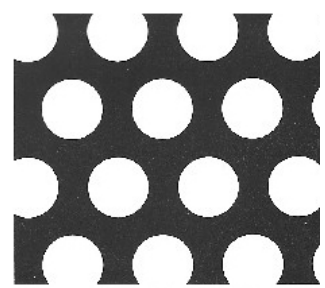
SKPM 41
8ø x 10P
57.9% open



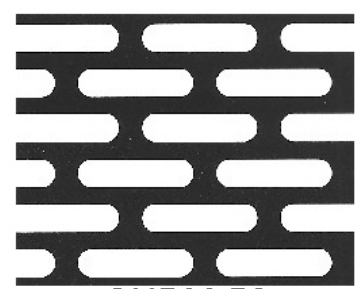
SKPM 42
8ø x 12P
40.2% open



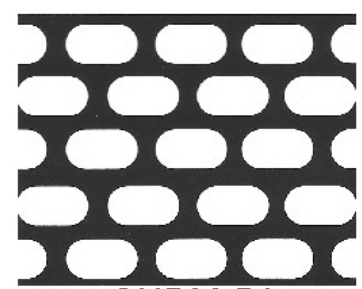
SKPM 47
9.5ø x 13P
48.3% open



SKPM 48
10ø x 15P
40.2% open

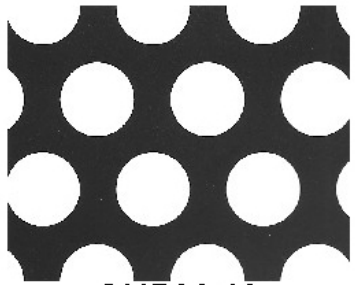


SKPM 53
5 x 20
.197” x.787-51.5% open

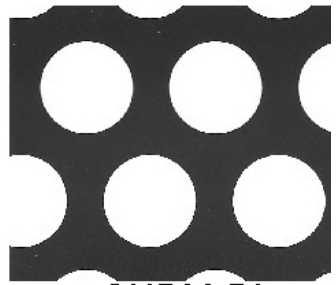


SKPM 54
6 x 11
.236” x .435” -51.5% open

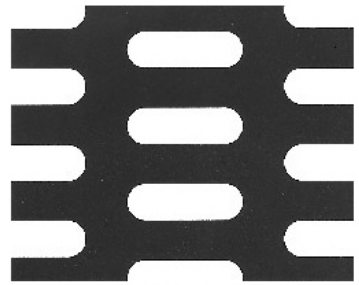
PERFORATED **METAL MESH**



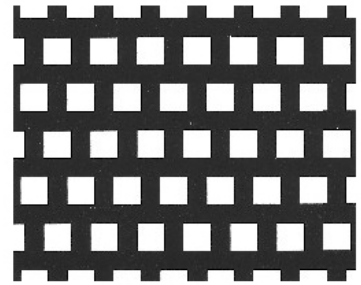
SKPM 49
12ø x 18P
40.2% open



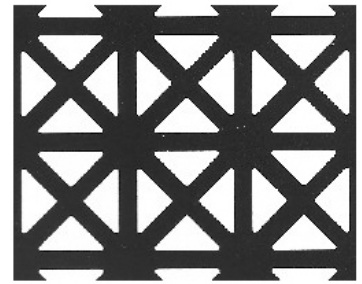
SKPM 50
15ø x 21P
46.2% open



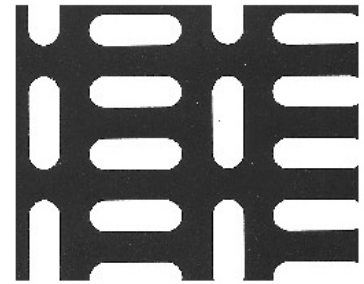
SKPM 55
6 x 20
059" x .787" -37.2% open



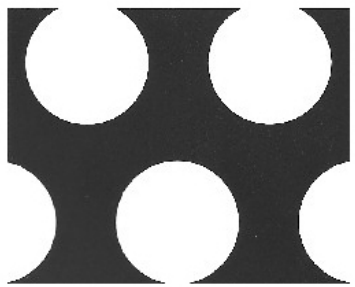
SKPM 56
4□ x 7P 32.7% open
.157" square .276" centers,



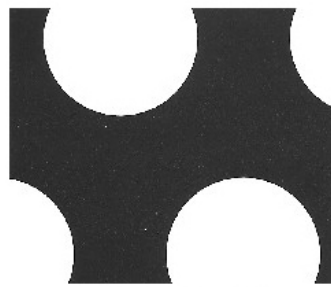
SKPM 61
16P x 19



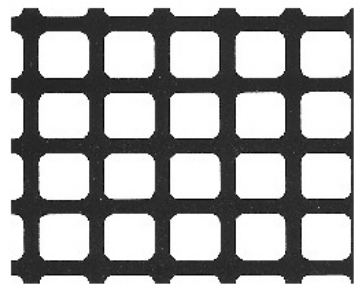
SKPM 62
10 x 30 x P60
比例 1:2



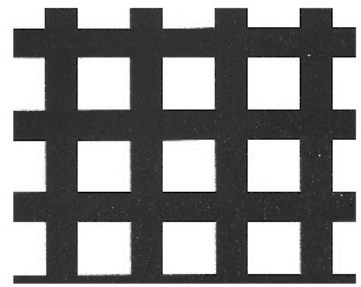
SKPM 51
20ø x 30P
40.2% open



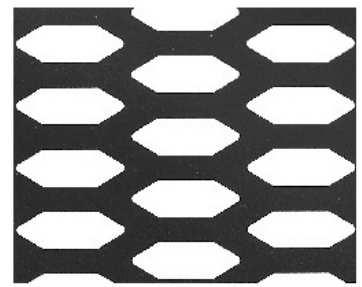
SKPM 52
25ø x 40P
35.3% open



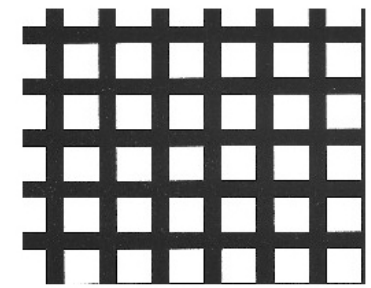
SKPM 57
7□ x 10P 49% open
.276" square .394" centers,



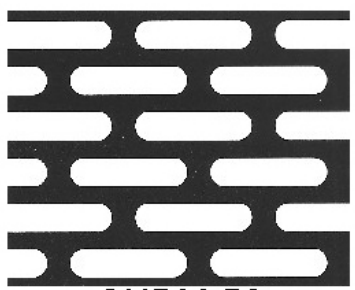
SKPM 58
8□ x 13P 37.9% open
.315" square .512" centers,



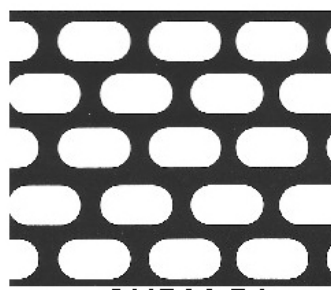
SKPM 63
12 x 30 x P75
比例 1:2



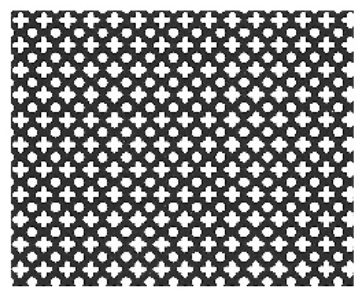
SKPM 64
5□ x 8P 39% open
.197" square .315" centers,



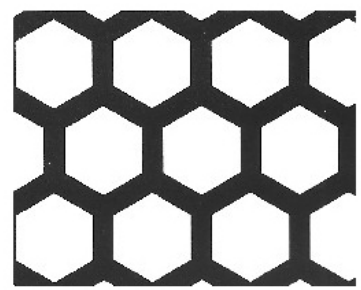
SKPM 53
5 x 20
.197" x.787-51.5% open



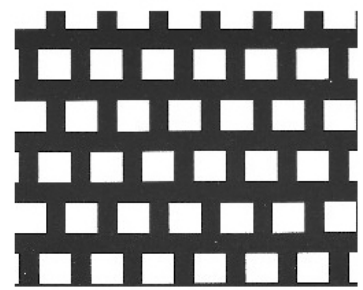
SKPM 54
6 x 11
.236" x .435" -51.5% open



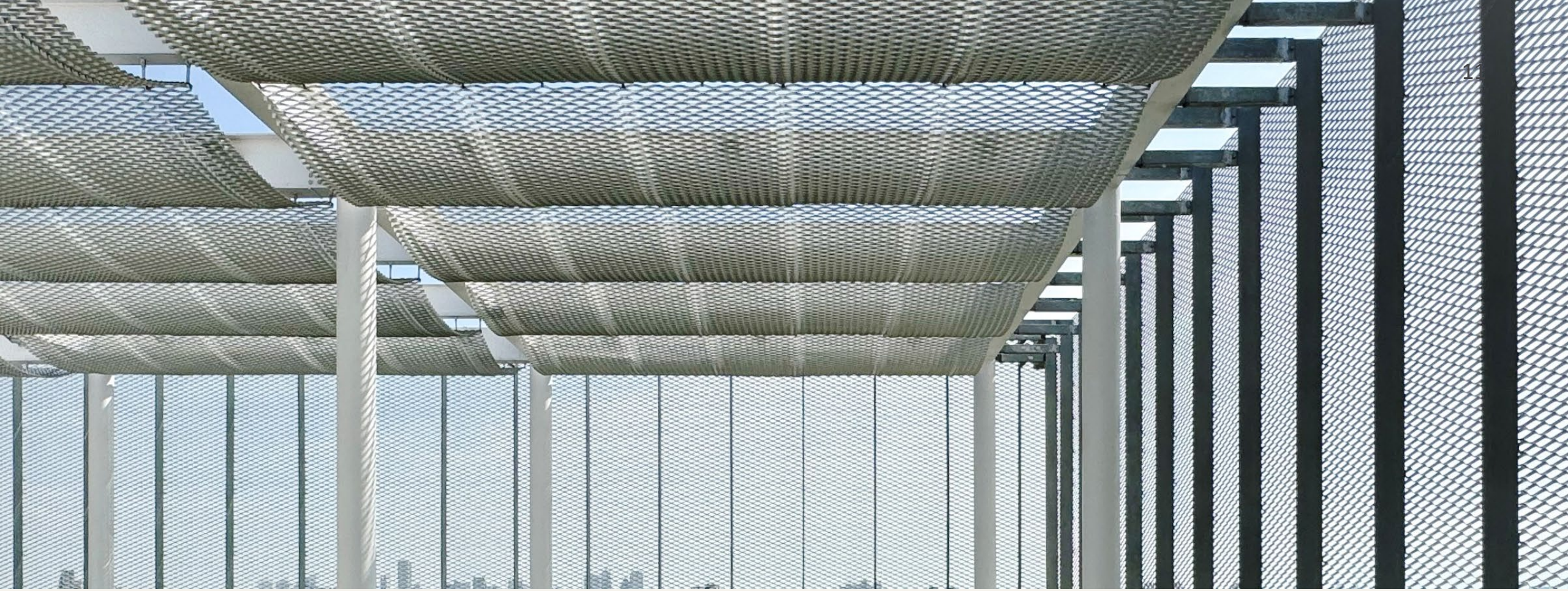
SKPM 59
.27P x 3.845°
50% open



SKPM 60
12.5 x 14.5 x P60



SKPM 65
5□ x 8P 39% open
.197" square .315" centers,



上鎧鋼鐵
SHANG KAI STEEL

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