



**RIDGEWAY**

Expanded Metal

For architectural cladding and façades



**ExMesh**<sup>™</sup>  
ARCHITECTURAL

Robust  
Balustrades  
Anodised Brass  
Bespoke Meshes  
Copper  
Ceilings  
Titanium  
Fully Recyclable  
Innovative Green Manufacturing  
Mild Steel  
Aluminium  
Cor-Ten  
Unique  
Rigid  
Platinum  
Gold  
Elegant  
Powder Coated  
Copper  
Expanded Metal  
Striking Acoustic Properties  
Quality Products  
ExMesh™  
ARCHITECTURAL  
Strong  
Brass  
Mild Steel  
Sun Shades  
Galvanised  
Versatile  
Contemporary  
Structural Support  
Durable  
Limitless Mesh Designs  
Gold  
Plastics  
Titanium  
Stainless Steel  
Mesh Facades

# What is expanded metal?

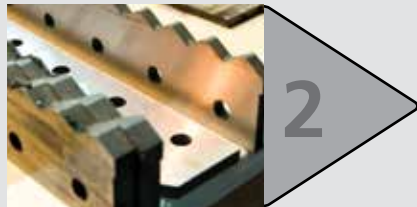
The process for expanding metal was first patented in Hartlepool, UK in the 1880's and despite the amount of time which has elapsed since then, the process remains true to the original idea. Most types of metal, including precious and specially produced metals, can be expanded. Other materials, such as some plastics or any other ductile material can also be expanded.

The 4 stage process is simple but incredibly effective...



1

Sheets or coils of metal are fed into the expanding machine.



2

Each machine is fitted with a unique "knife" dedicated to a particular pattern which simultaneously cuts (shears) and stretches the mesh to expand it.



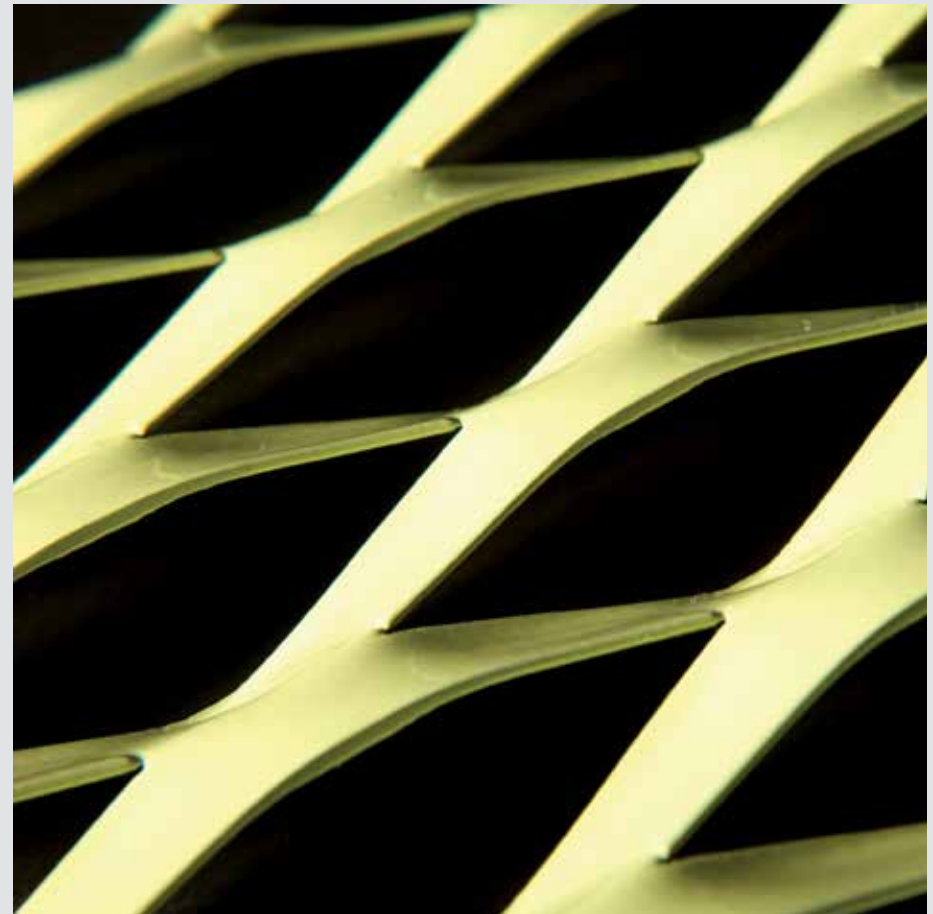
3

Using the unique shearing and stretching process means very little waste is created and a small piece of sheet metal can be significantly enlarged when turned into mesh.



4

The mesh is then either cut into sheets or wound onto coils ready for shipping or further processing.



# Green manufacturing



As energy efficiency remains a priority for society, expanded metal can help by reducing a buildings solar gain through blocking the sun's rays as it moves through the day. The expansion process creates, angled louvre like apertures within the material that act as multiple miniature shades. The apertures are created without any material being wasted.

The small amount of scrap that is created in our process is 100% recycled. Also, should the building be refurbished in the future all expanded metal recovered from the building is also 100% recyclable.



Des Moines Library, USA. Encapsulated expanded metal within glass to achieve this stunning Day/Night effect.

# Expanded cladding facades



*The Young Vic Theatre*

The Young Vic Theatre uses expanded metal to great effect during hours of darkness by backlighting the panels with coloured lighting, transforming its appearance to great effect.



*The Westfield Shopping Centre*

The Westfield Shopping Centre in East London have used cladding to create a striking and beautiful feature of the large yet simple structure of its multi-storey car park.

Expanded metal facades have become particularly popular over recent years and can be seen on buildings such as, The New Museum of Contemporary Art, New York, The Young Vic Theatre, London and The Stephen Lawrence Centre, London.



*The New Museum of Contemporary Art*

# Expanded metal and architecture



## Materials

Most malleable materials can be expanded with mild steel, aluminium and stainless steel being the most common. However, more fashionable, precious metals such as brass, copper, gold and even platinum or titanium can all be turned into expanded metal mesh.

Each material has its own 'special' characteristics; aluminium gives lightweight longevity, steel brings strength and copper ages beautifully, maturing over time. Versatility and flexibility are key features of expanded metal, providing a multi-faceted styling tool for architects and designers all over the world.

Creative minds have a vision and we must manufacture with an awareness of the integrity of the initial idea. Expanded meshes allow thoughtful, resolved, quality architecture. Elegant yet robust, the mesh enables variations of light to reflect according to the weather or time of day providing beautiful aesthetics.

**Barrakka Lift**  
Valetta, Malta  
James & Taylor

Aluminium mesh façade





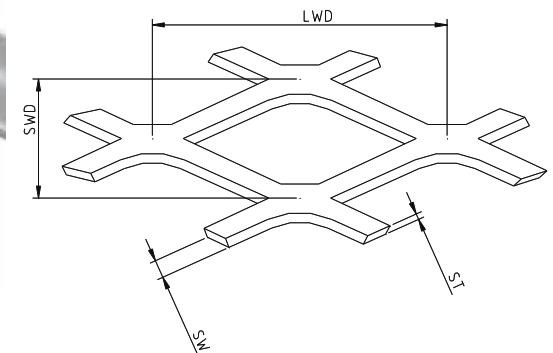
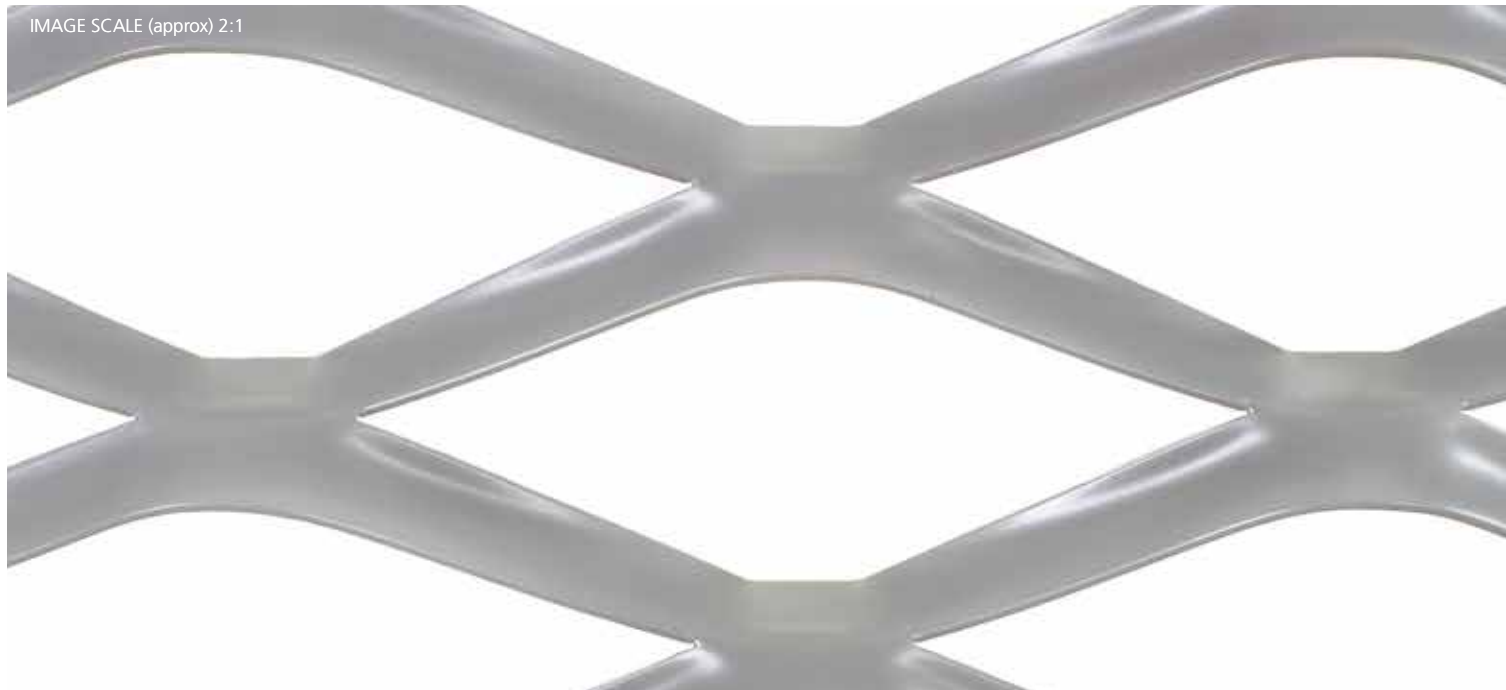




Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	300	120	30	2.03kg/m <sup>2</sup>	2.71kg/m <sup>2</sup>	4.07kg/m <sup>2</sup>	37	50 %
Steel	300	120	30	5.88kg/m <sup>2</sup>	7.84kg/m <sup>2</sup>	11.76kg/m <sup>2</sup>	37	50 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated



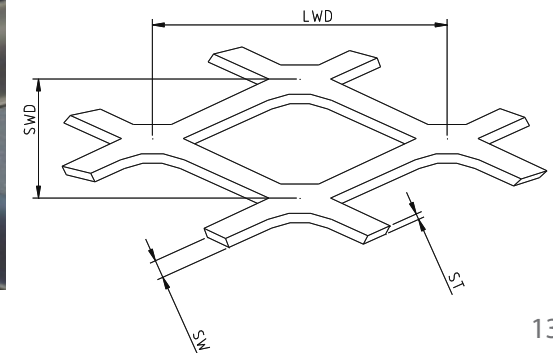
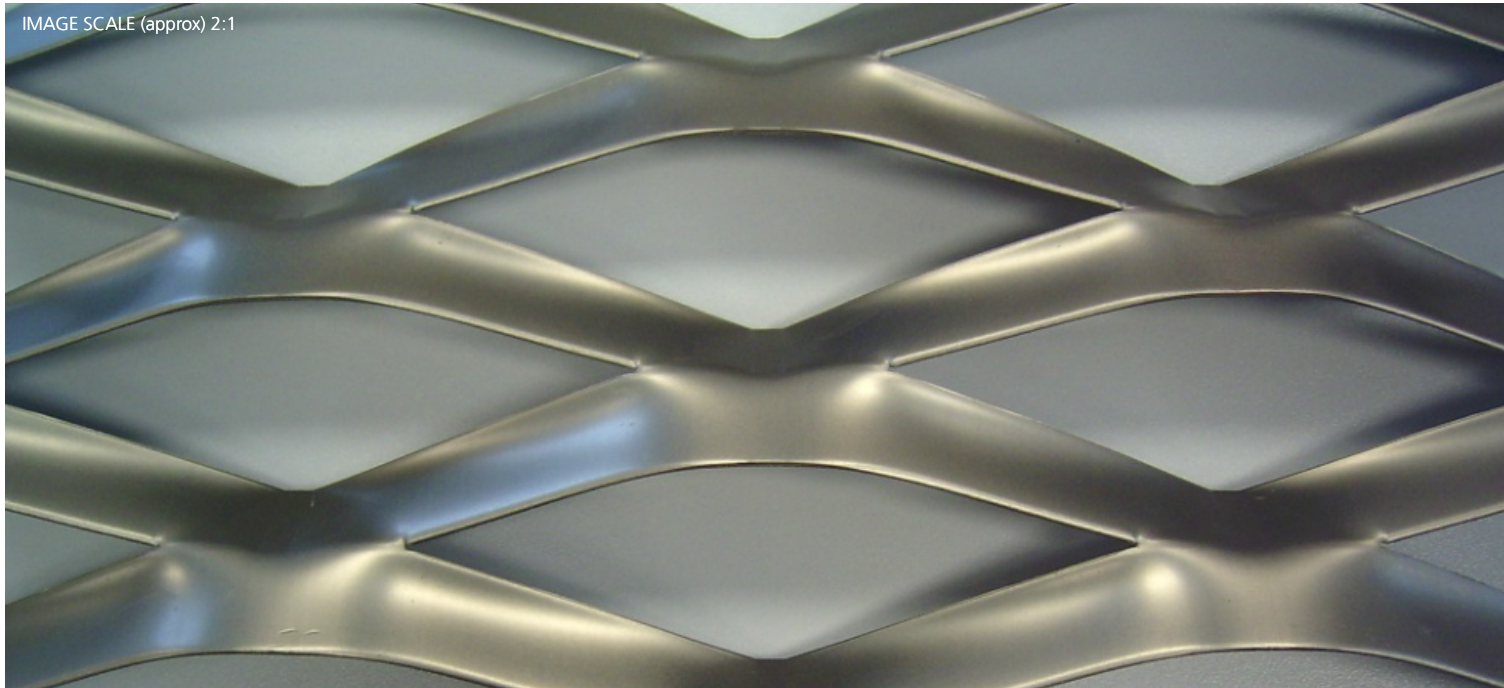


Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)		Overall thickness	Open area
				2mm	3mm		
Aluminium	250	102	30	3.19kg/m <sup>2</sup>	4.78kg/m <sup>2</sup>	45	41 %
Steel	250	102	30	9.19kg/m <sup>2</sup>	13.78kg/m <sup>2</sup>	45	41 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

IMAGE SCALE (approx) 2:1



Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
<b>Aluminium</b>	200	87	24	2.24kg/m <sup>2</sup>	2.99kg/m <sup>2</sup>	4.49kg/m <sup>2</sup>	35	45 %
<b>Steel</b>	200	87	24	6.49kg/m <sup>2</sup>	8.65kg/m <sup>2</sup>	12.98kg/m <sup>2</sup>	35	45 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

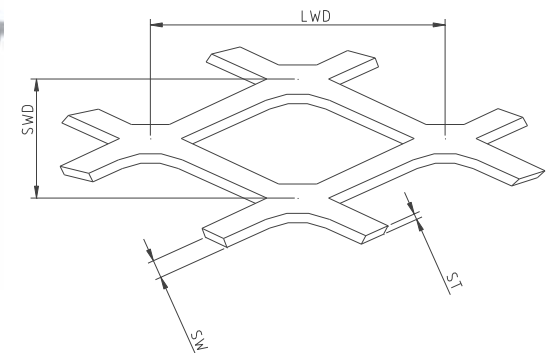
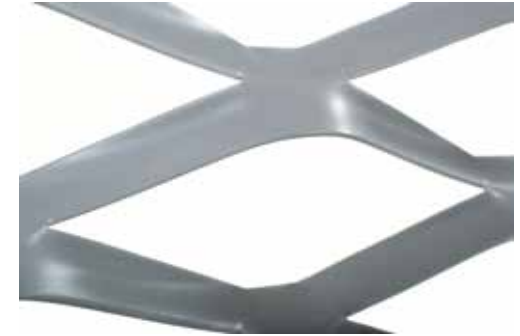
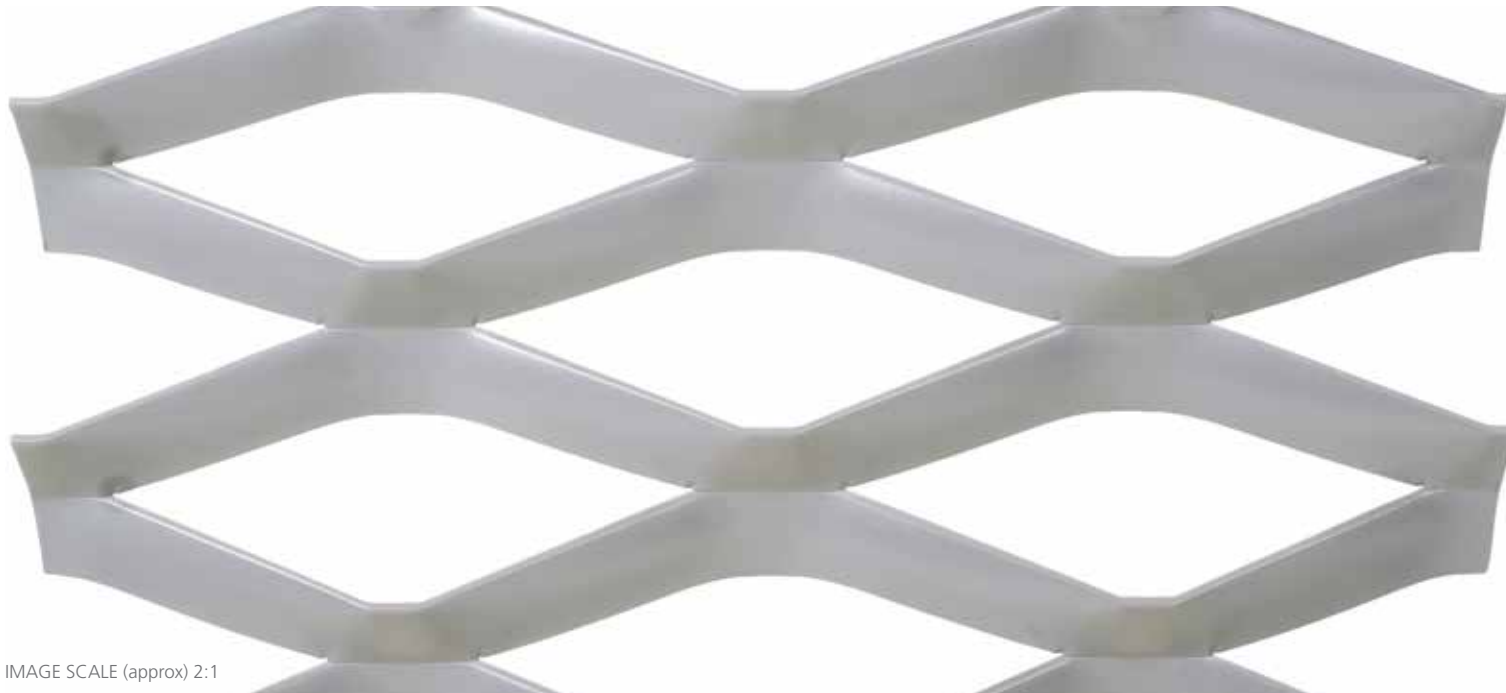


IMAGE SCALE (approx) 2:1



Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
<b>Aluminium</b>	150	52	20	3.13kg/m <sup>2</sup>	4.17kg/m <sup>2</sup>	6.25kg/m <sup>2</sup>	24	23 %
<b>Steel</b>	150	52	20	9.05kg/m <sup>2</sup>	12.06kg/m <sup>2</sup>	18.09kg/m <sup>2</sup>	24	23 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

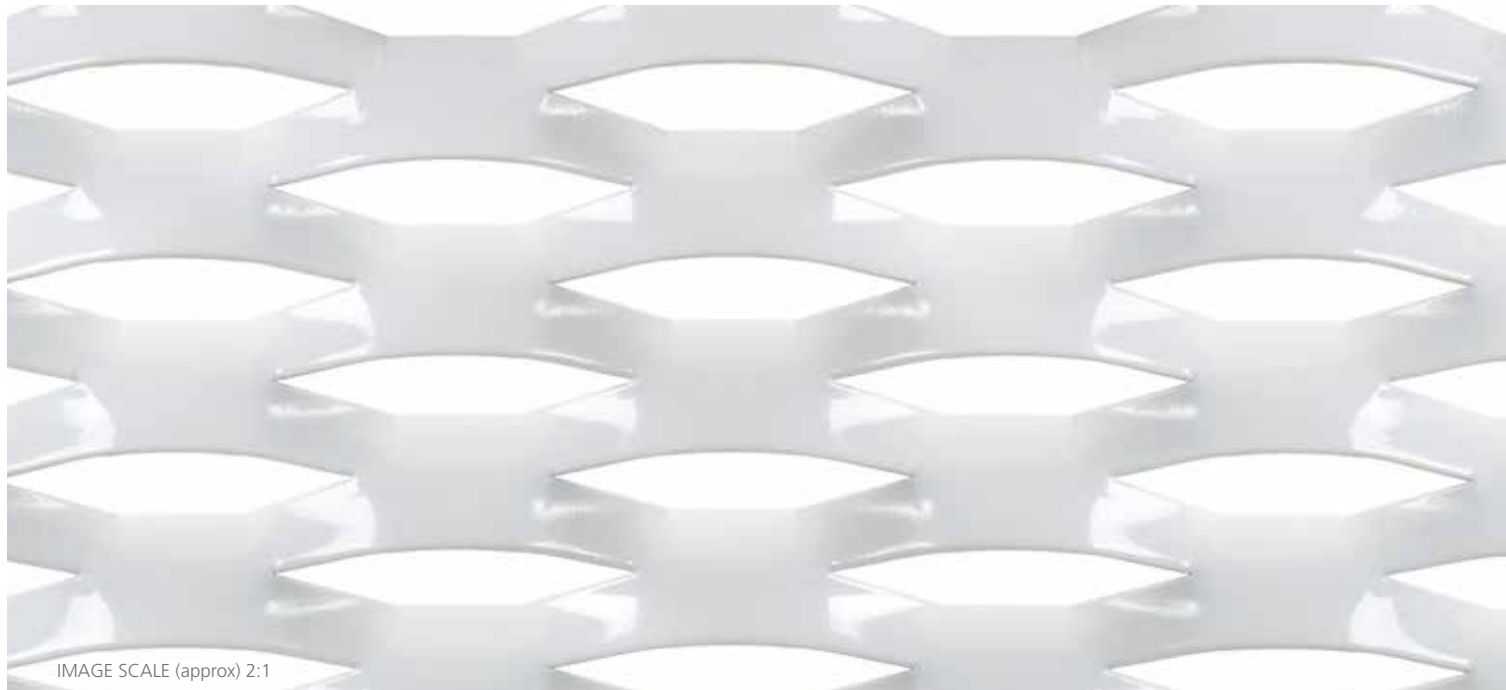
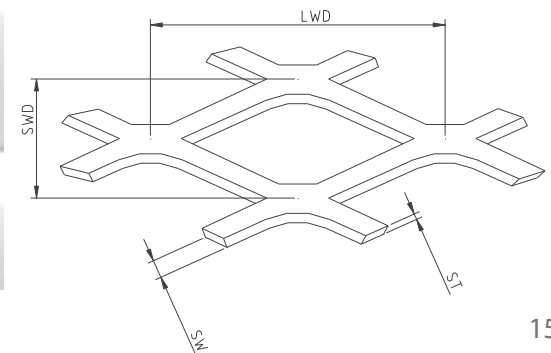


IMAGE SCALE (approx) 2:1



# Bilbao



# RIDGEWAY



Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	115	48	20	3.39kg/m <sup>2</sup>	4.52kg/m <sup>2</sup>	6.78kg/m <sup>2</sup>	21	17 %
Steel	115	48	20	9.8kg/m <sup>2</sup>	13.07kg/m <sup>2</sup>	19.6kg/m <sup>2</sup>	21	17 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

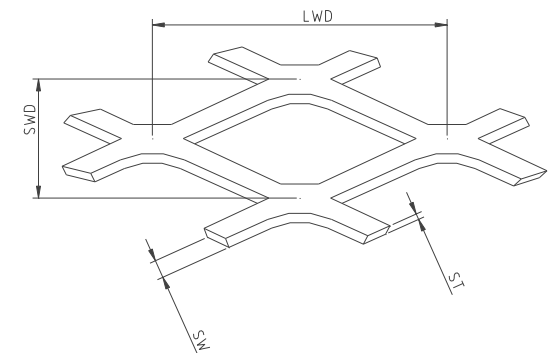
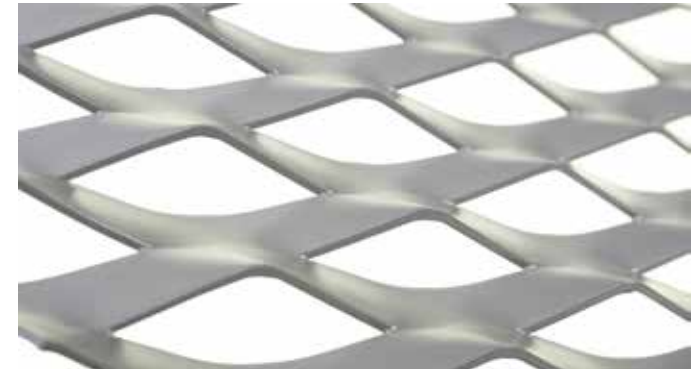
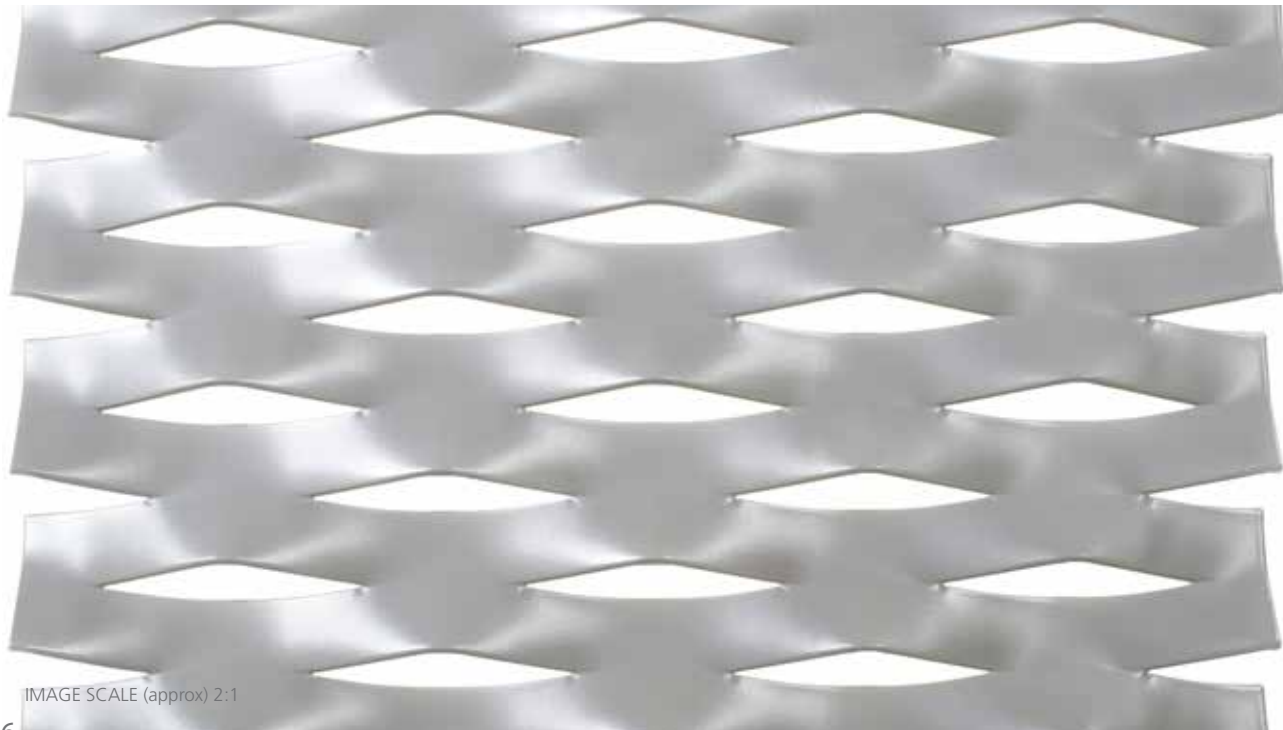


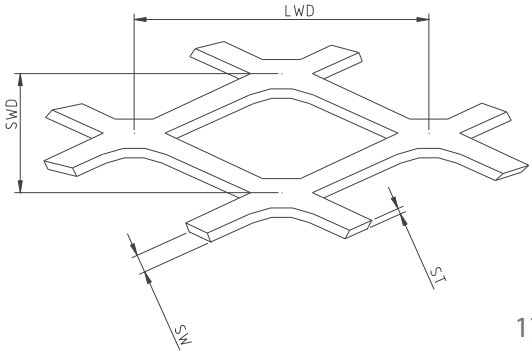
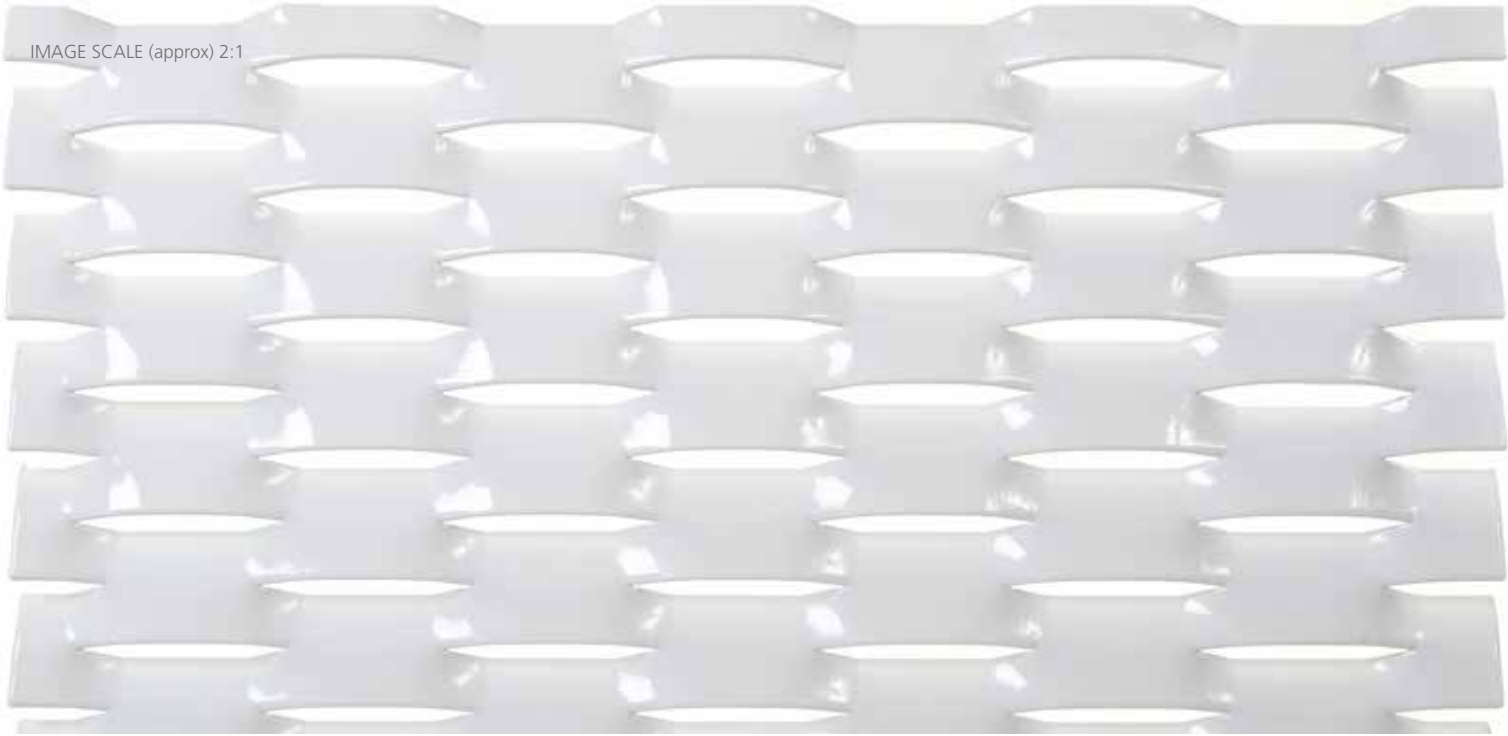
IMAGE SCALE (approx) 2:1



Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	100	34	15	3.59kg/m <sup>2</sup>	4.78kg/m <sup>2</sup>	7.17kg/m <sup>2</sup>	10	12 %
Steel	100	34	15	10.38kg/m <sup>2</sup>	13.84kg/m <sup>2</sup>	20.75kg/m <sup>2</sup>	10	12 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

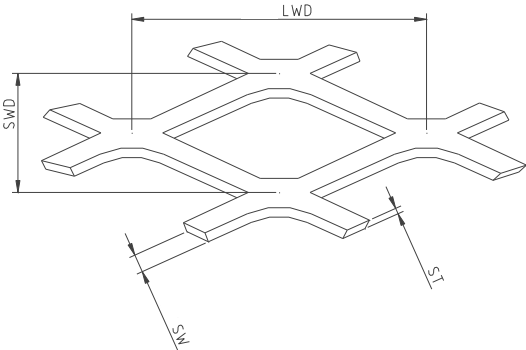
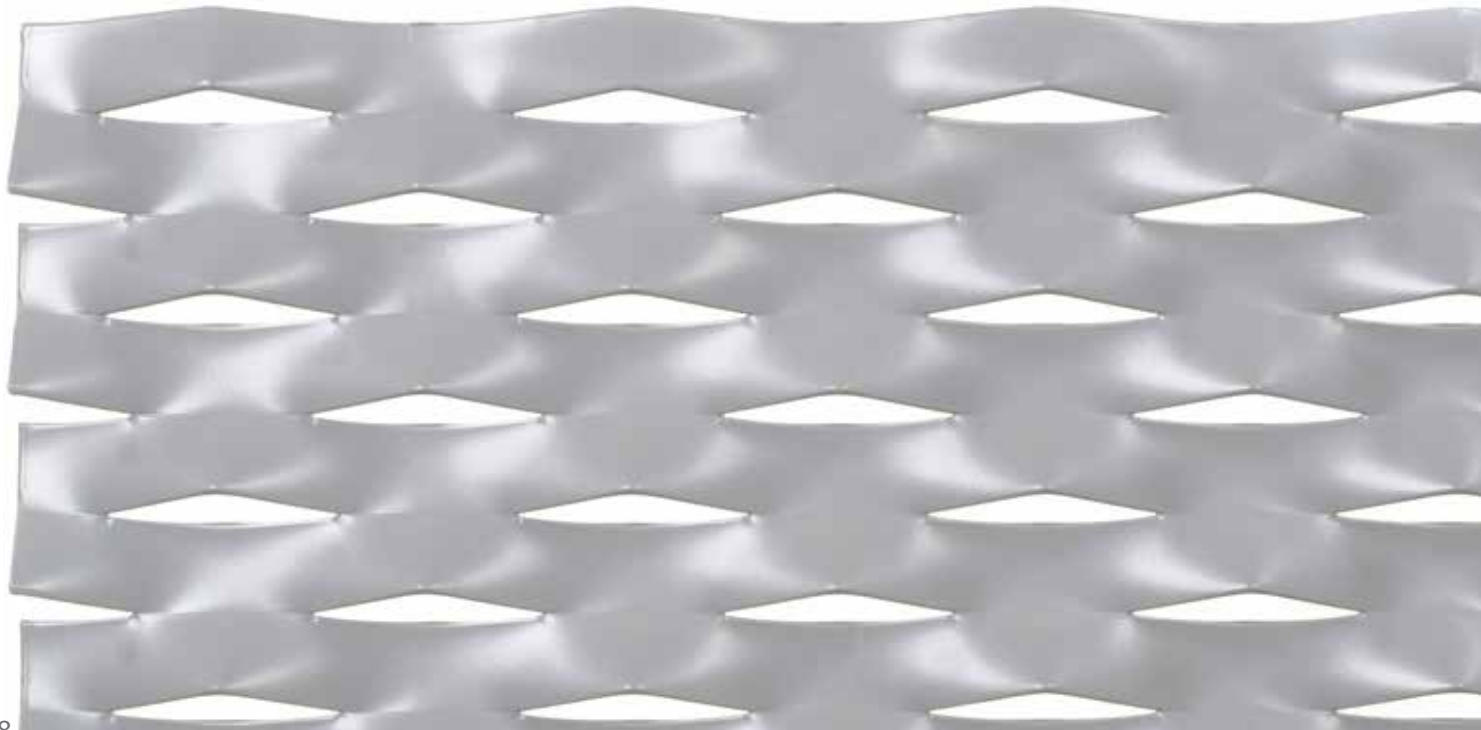




Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
<b>Aluminium</b>	110	52	24	3.75kg/m <sup>2</sup>	5kg/m <sup>2</sup>	7.5kg/m <sup>2</sup>	18	8 %
<b>Steel</b>	110	52	24	10.86kg/m <sup>2</sup>	14.47kg/m <sup>2</sup>	21.71kg/m <sup>2</sup>	18	8 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated





Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	76	31	11	2.88kg/m <sup>2</sup>	3.85kg/m <sup>2</sup>	5.77kg/m <sup>2</sup>	15	29 %
Steel	76	31	11	8.35kg/m <sup>2</sup>	11.13kg/m <sup>2</sup>	16.69kg/m <sup>2</sup>	15	29 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

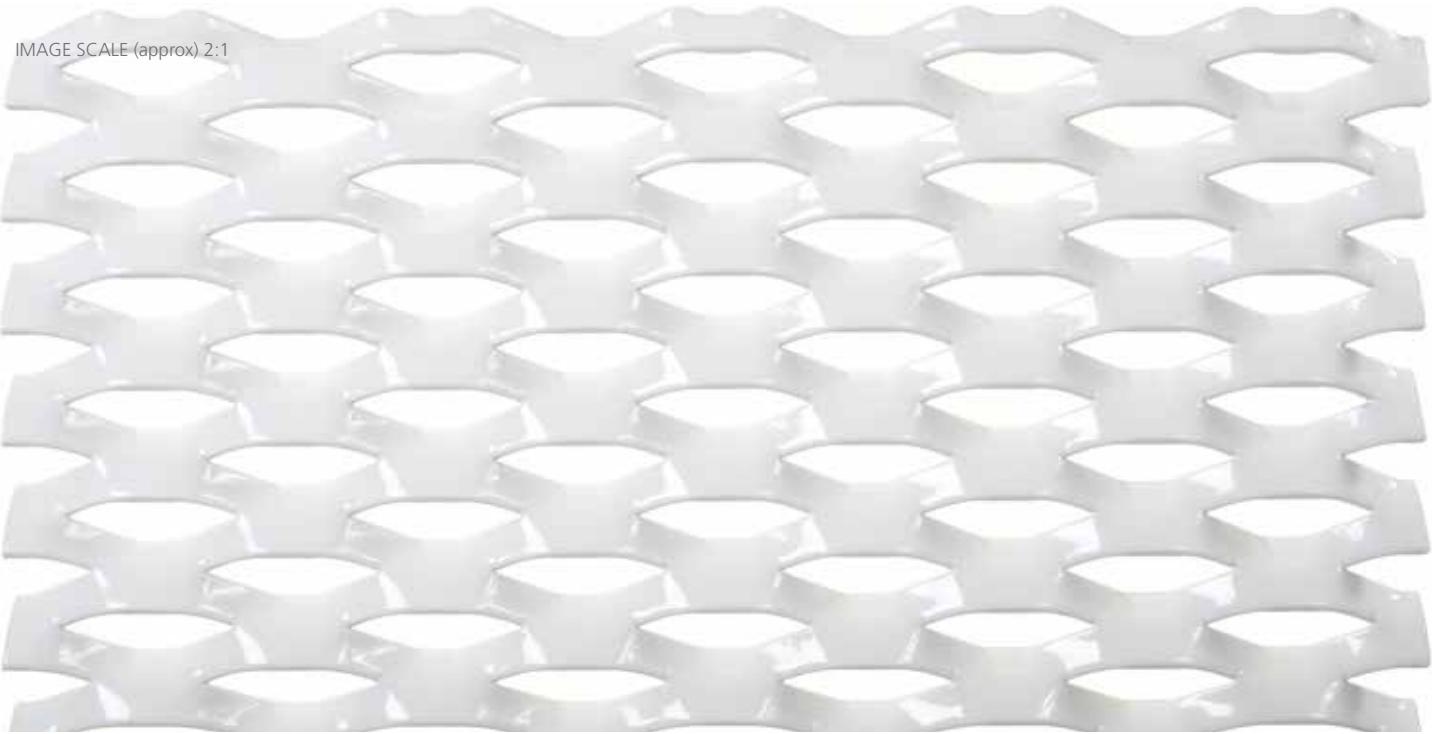
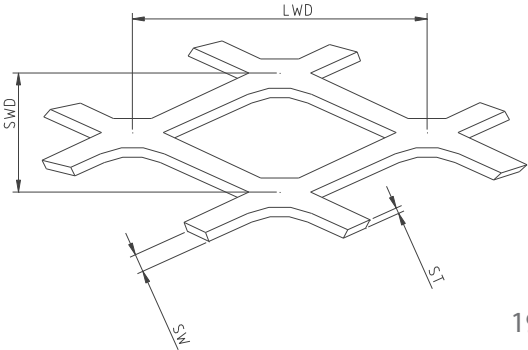


IMAGE SCALE (approx) 2:1







Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
<b>Aluminium</b>	62	23	7	2.47kg/m <sup>2</sup>	3.3kg/m <sup>2</sup>	4.95kg/m <sup>2</sup>	12	39 %
<b>Steel</b>	62	23	7	7.16kg/m <sup>2</sup>	9.54kg/m <sup>2</sup>	14.32kg/m <sup>2</sup>	12	39 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

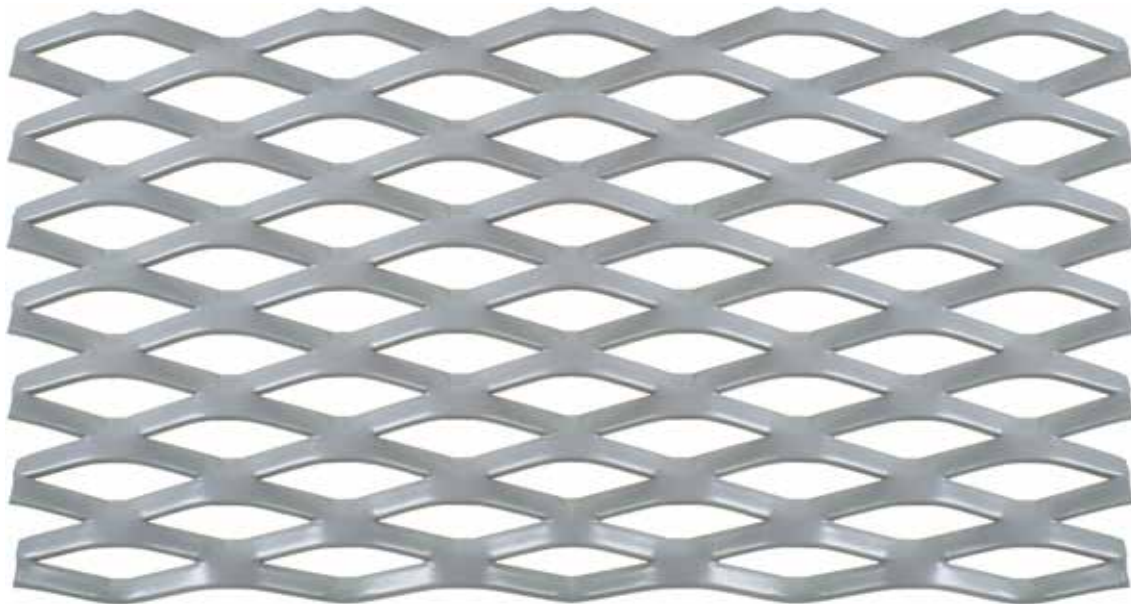
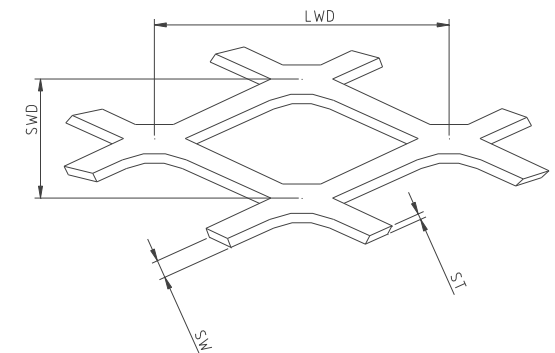


IMAGE SCALE (approx) 2:1





Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	42	16	6	3.05kg/m <sup>2</sup>	4.07kg/m <sup>2</sup>	6.1kg/m <sup>2</sup>	7	25 %
Steel	42	16	6	8.82kg/m <sup>2</sup>	11.76kg/m <sup>2</sup>	17.64kg/m <sup>2</sup>	7	25 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated

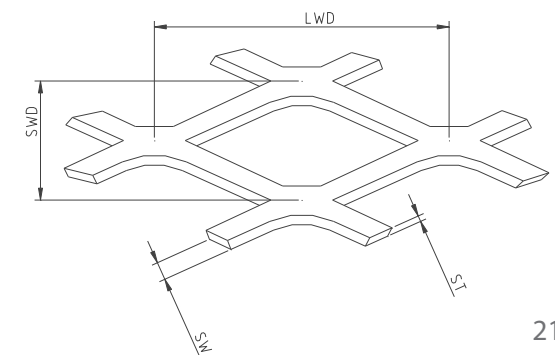
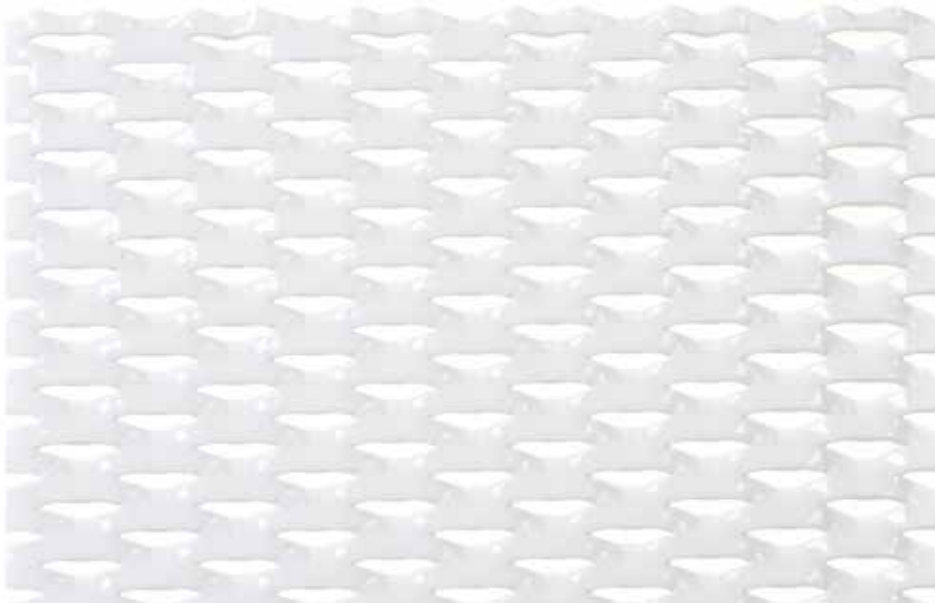


IMAGE SCALE (approx) 2:1



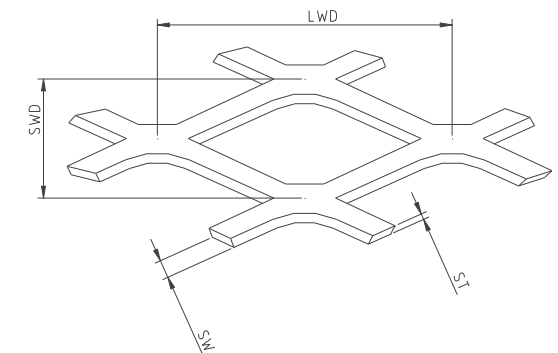
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	44	8.7	2.5	3.39kg/m <sup>2</sup>	4.52kg/m <sup>2</sup>	6.78kg/m <sup>2</sup>	6	43 %
Steel	44	8.7	2.5	9.8kg/m <sup>2</sup>	13.07kg/m <sup>2</sup>	19.6kg/m <sup>2</sup>	6	43 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated



IMAGE SCALE (approx) 2:1





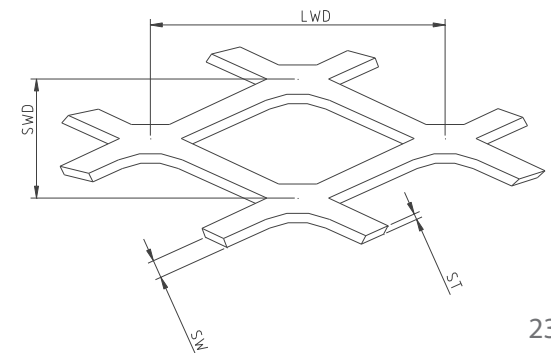
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	Strand Thickness (ST)			Overall thickness	Open area
				1.5mm	2mm	3mm		
Aluminium	44	12	5	3.39kg/m <sup>2</sup>	4.52kg/m <sup>2</sup>	6.78kg/m <sup>2</sup>	7	16 %
Steel	44	12	5	9.8kg/m <sup>2</sup>	13.07kg/m <sup>2</sup>	19.6kg/m <sup>2</sup>	7	16 %

Please ask our sales team about the various colour, protective coating and alternative material options available.

All units of measurement are mm unless otherwise stated



IMAGE SCALE (approx) 2:1





**Multi Level Car Park**  
Germany

Mesh Type: Athens



**The Young Vic Theatre**  
London, UK  
James & Taylor

Mesh Type: New York







**Theresienwiese**  
Munich, Germany

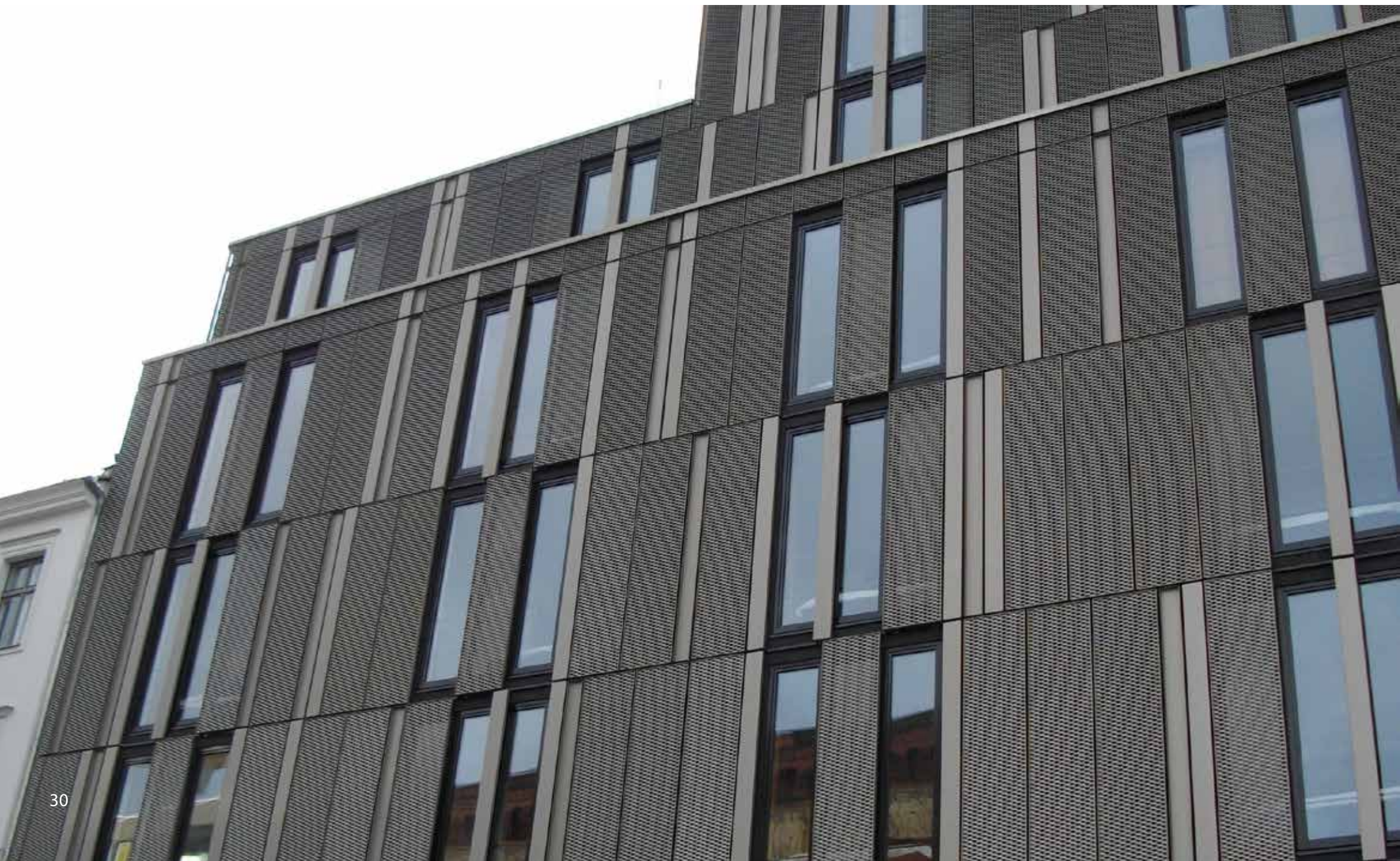
Mesh Type: Theresia



**Parkhaus Siemens**  
Zug, Switzerland

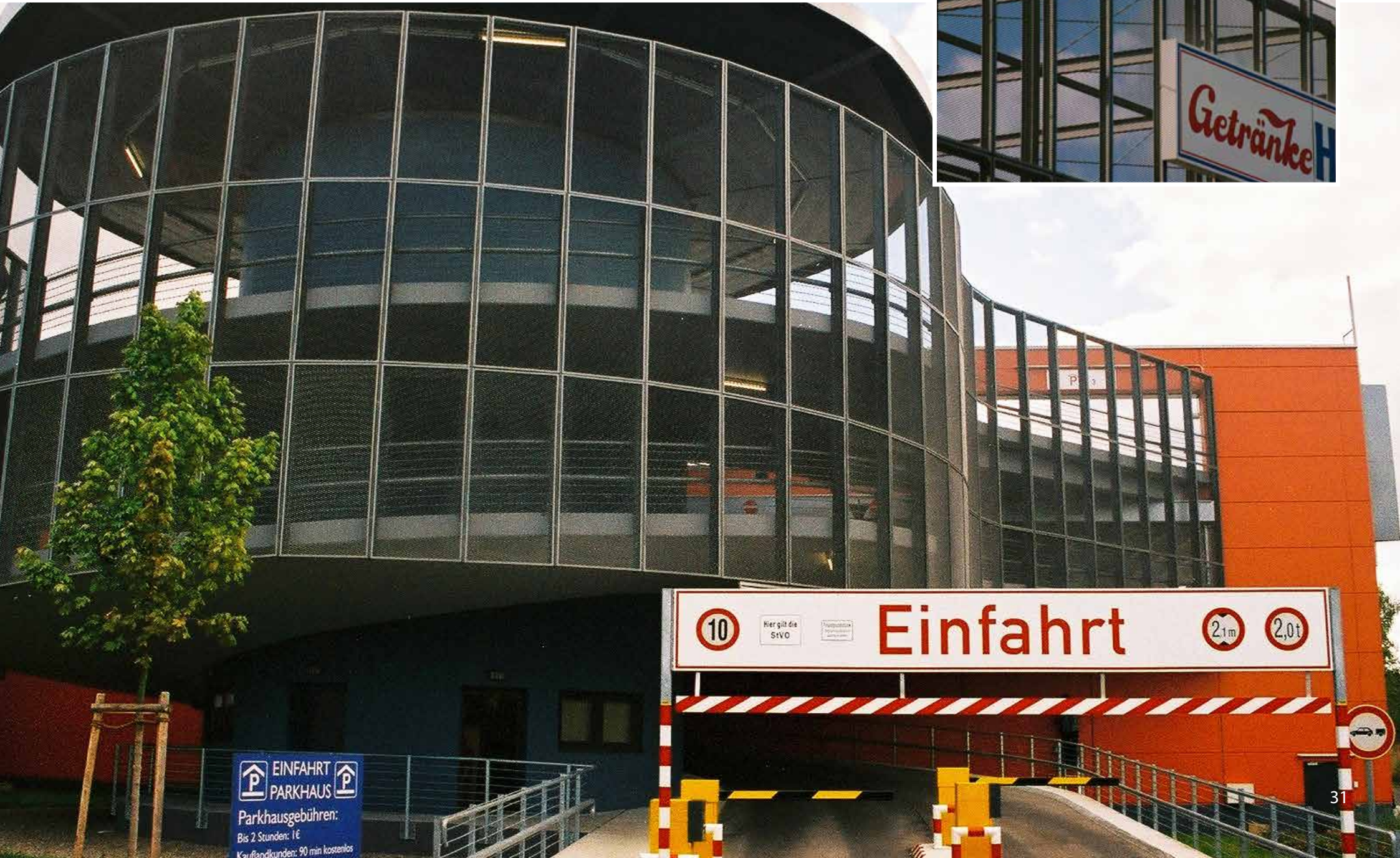
Mesh Type: Milan





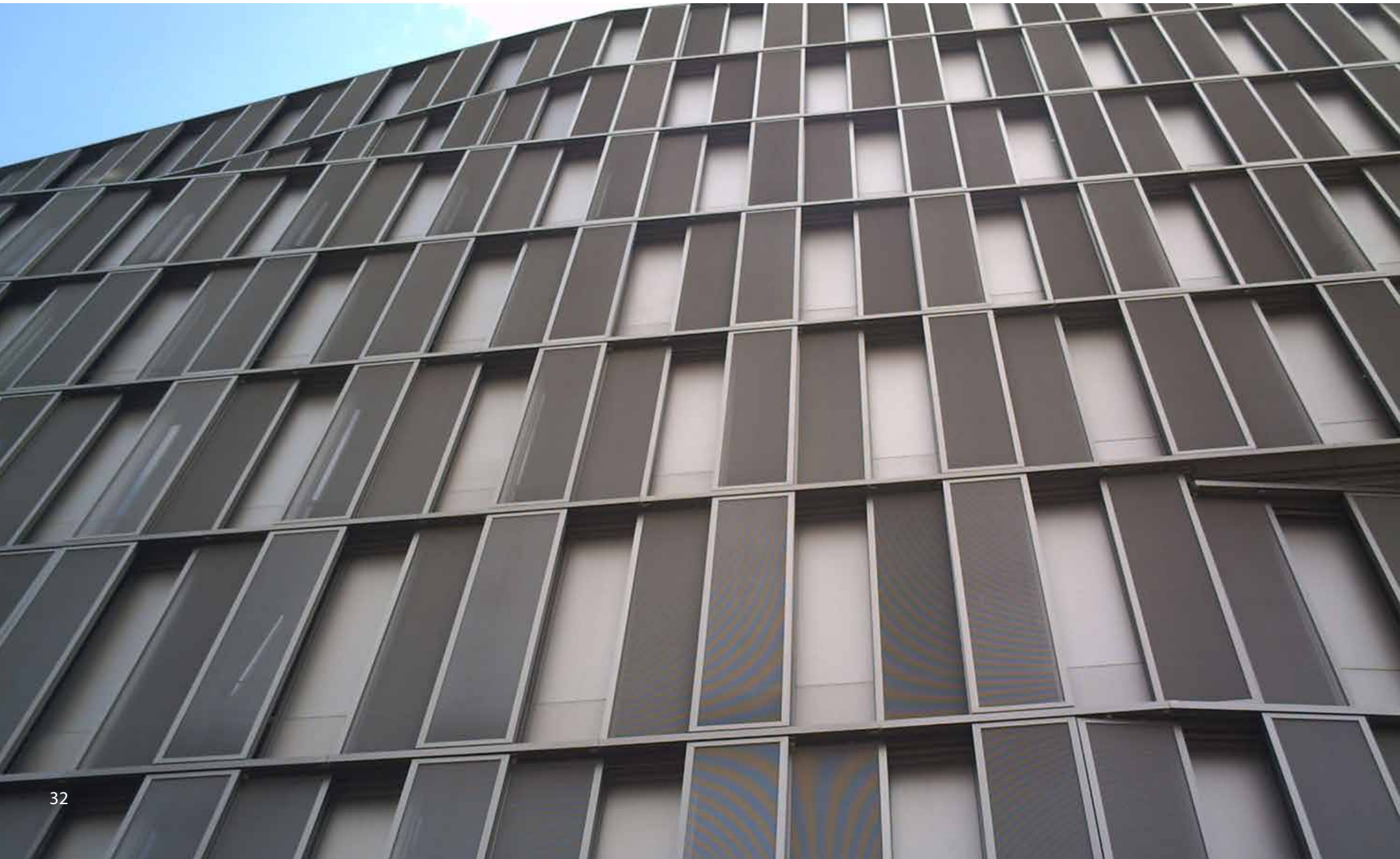
Multi Storey Car Park  
Germany

Mesh Type: Madrid



**Office Cladding**  
Various Locations

Mesh Type: Lisbon



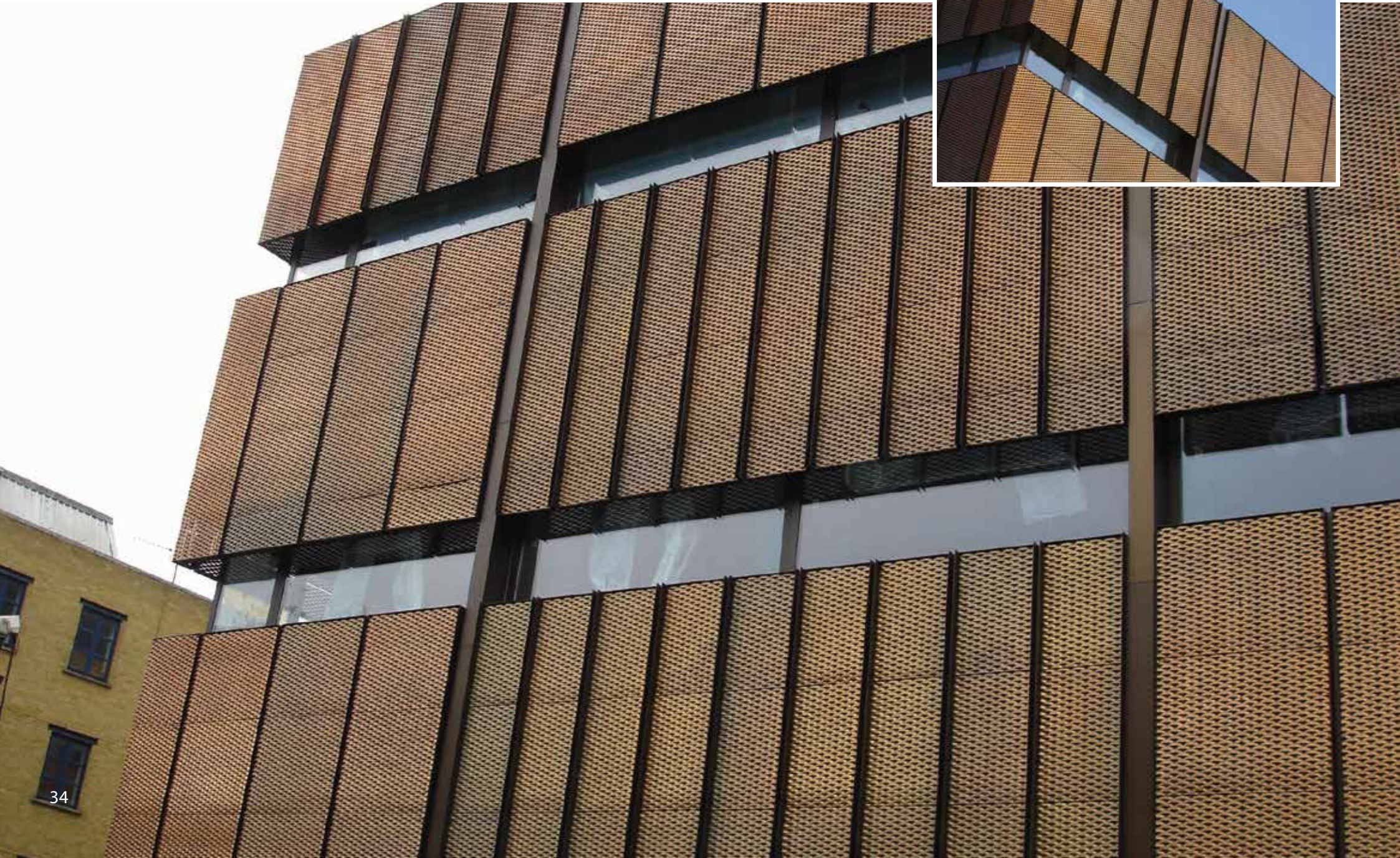
**Solar Screening**  
Various Locations

Mesh Type: Vienna



**Queen Mary Innovation Centre**  
London  
James & Taylor

Mesh Type: Berlin



# Mesh pattern arrangement guide

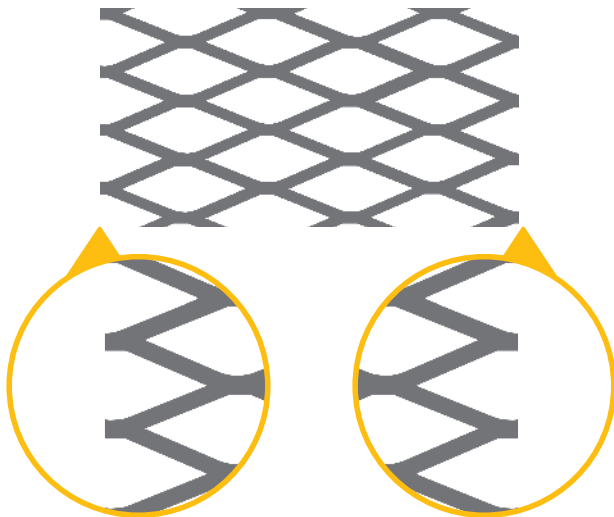
## Complete

When looking to initially design your façade, the arrangement of meshes within the expanded sheet should be considered as this can have a dramatic effect on the aesthetics of the design, functionality and handling of the finished product.

If possible, a 'complete mesh' would be the ideal mesh arrangement; this allows for symmetrical edges which appear seamless when installed and avoids overly sharp edges.

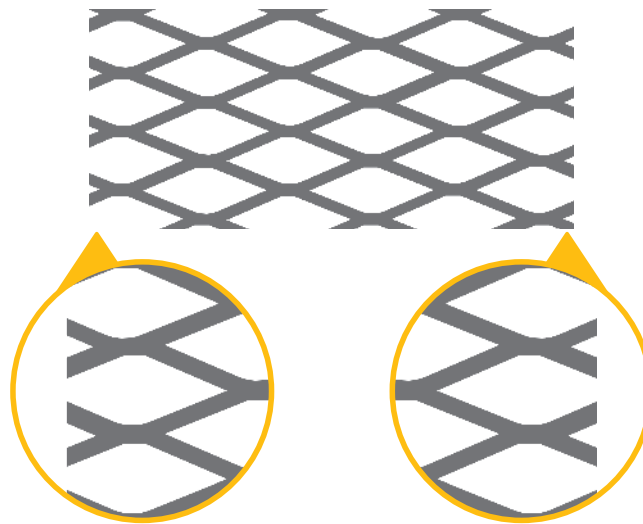
To achieve this arrangement, the sheet width and length should be round multiples of its respective diamond size.

Please see the diagram below which explains this arrangement.



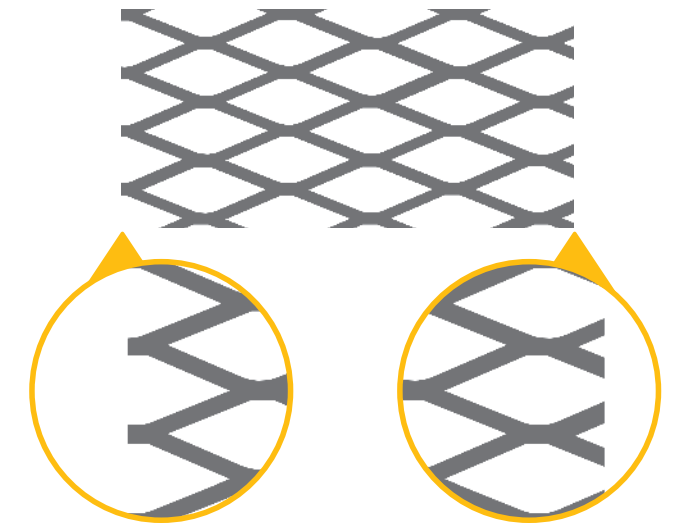
## Balanced

If it is not possible to achieve diamond multiples within the constraints of your required sheet size, the next option would be to produce your material in a 'balanced pattern', this would show an open edges on both sides of the mesh and is purposely manufactured symmetrical to give some uniformity.



## Asymmetrical

A worst case scenario would be the material showing 'stag ends' this is where there is an unbalanced pattern at both sides of the mesh, note the asymmetrical design which has sharp edges and lacks uniformly distributed edges.







Web: [www.ridgewayindustrial.com](http://www.ridgewayindustrial.com)

Email: [info@ridgeway-online.com](mailto:info@ridgeway-online.com)

UK:-  
103 Airport Road West  
Belfast  
BT3 9ED  
Tel: +44 (0) 28 9045 4599

Ireland:-  
Units 1&2 Greene Park  
Ratoath Road  
Ashbourne  
Co. Meath  
A84 XD98  
Tel: +353 (01) 802 7173