Expanded Metal

For architectural cladding and facades

THE **EXPANDED METAL** COMPANY


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

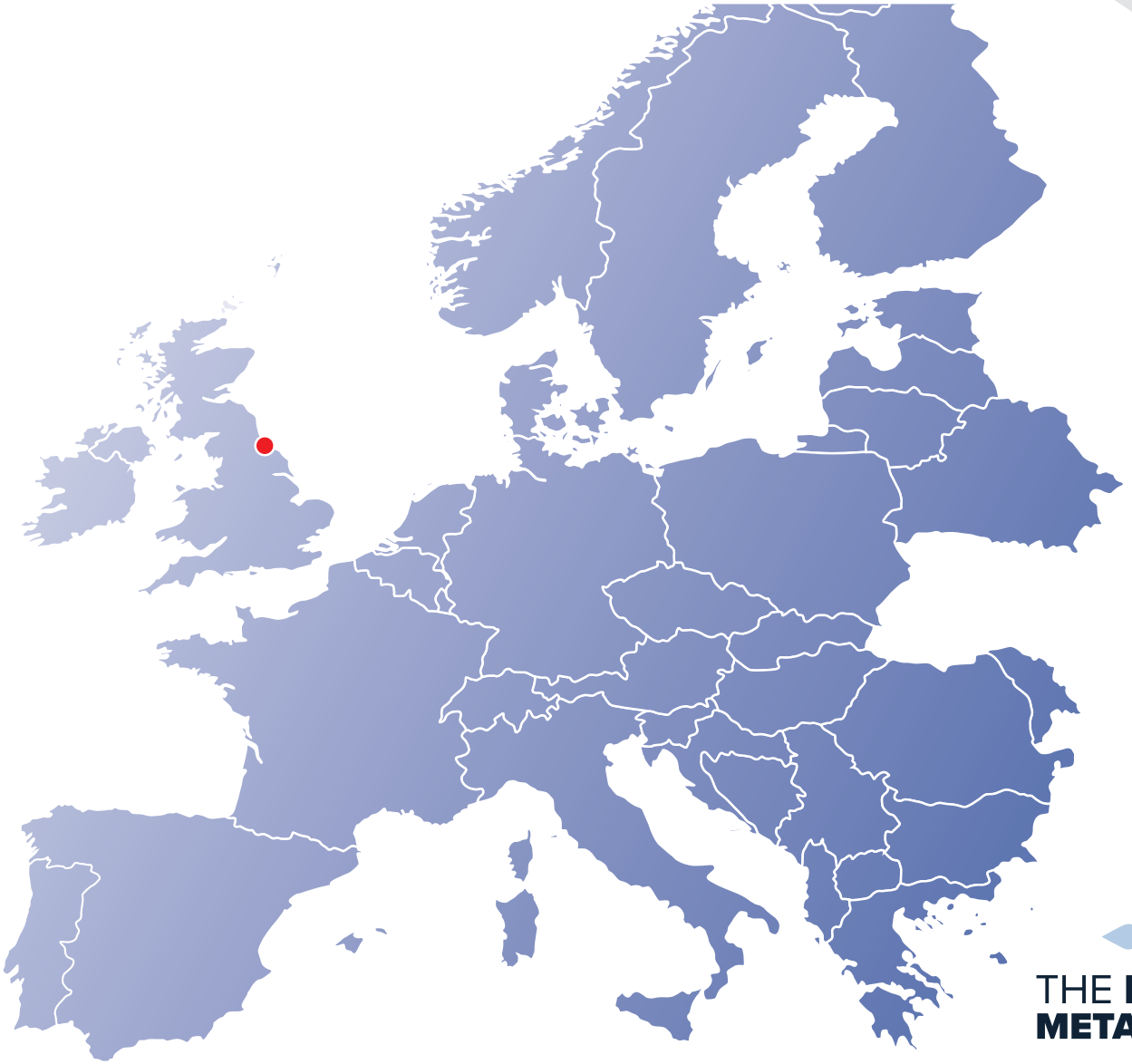
Content

THE **EXPANDED METAL** COMPANY

Who we are...

Established in 1889 and the pioneer of expanded metal production, The Expanded Metal Company enjoys unrivalled expertise and understanding of expanded metal production techniques, capabilities and applications.

Whether you come to us for an off-the-shelf solution, or something entirely unique, you can be confident we will work with you to deliver an excellent result – on time, to specification and on budget.

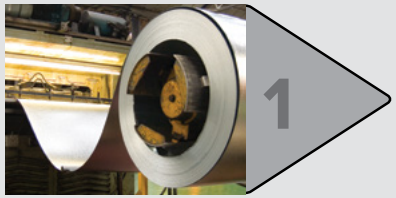


THE **EXPANDED METAL** COMPANY

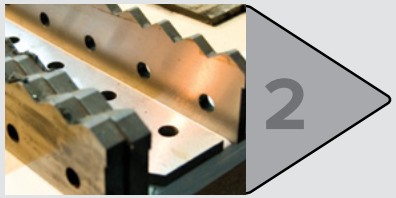
What is expanded metal?

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.

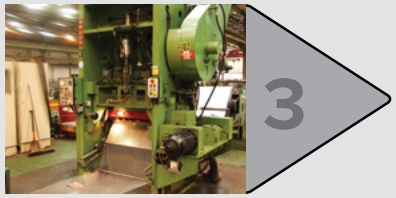
The 4 stage process is simple but incredibly effective...



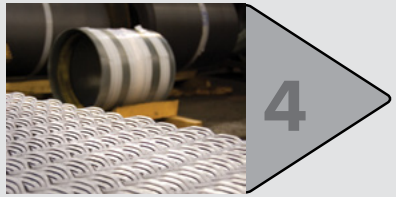
Sheets or coils of metal are fed into the expanding machine.



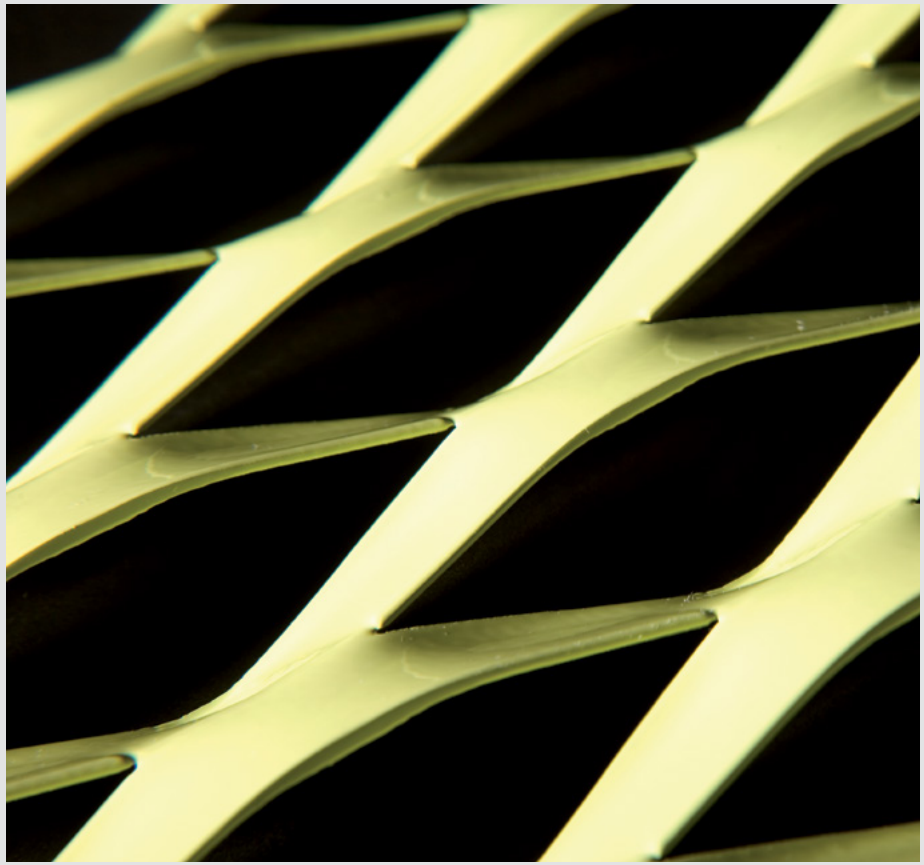
Each machine is fitted with a unique "knife" dedicated to a particular pattern which simultaneously cuts (shears) and stretches the mesh to expand it.



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.

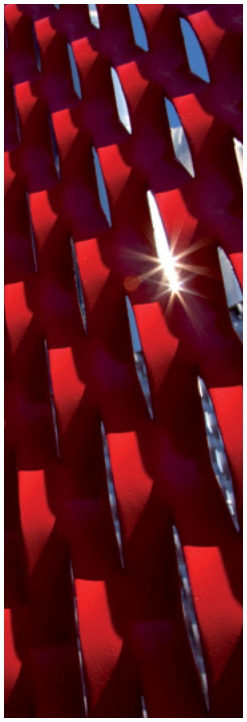


The mesh is then either cut into sheets or wound onto coils ready for shipping or further processing.



Green manufacturing

As energy efficiency remains a priority for society, expanded metal can help by reducing a building's 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.



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

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.

THE EXPANDED METAL COMPANY

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.

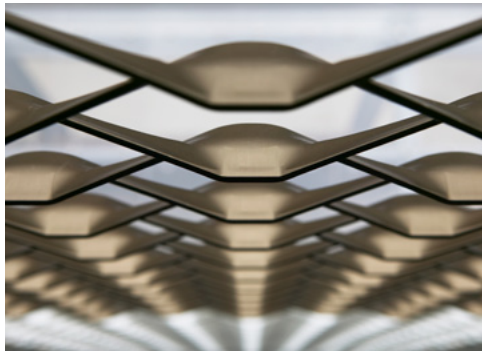
The Westfield Shopping Centre

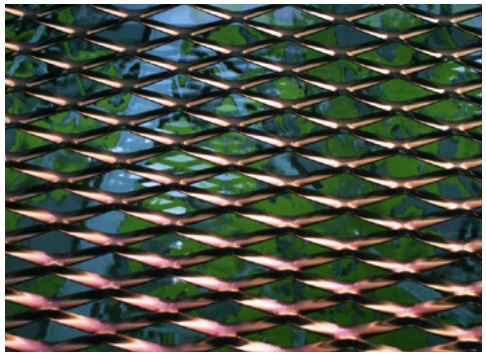
The Westfield Shopping Centre in East London have used cladding to create a striking and beautiful feature of the large yet simple structure of its multi-storey car park.

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.

THE **EXPANDED METAL** COMPANY

Barrakka Lift
Valetta, Malta

Aluminium mesh facade

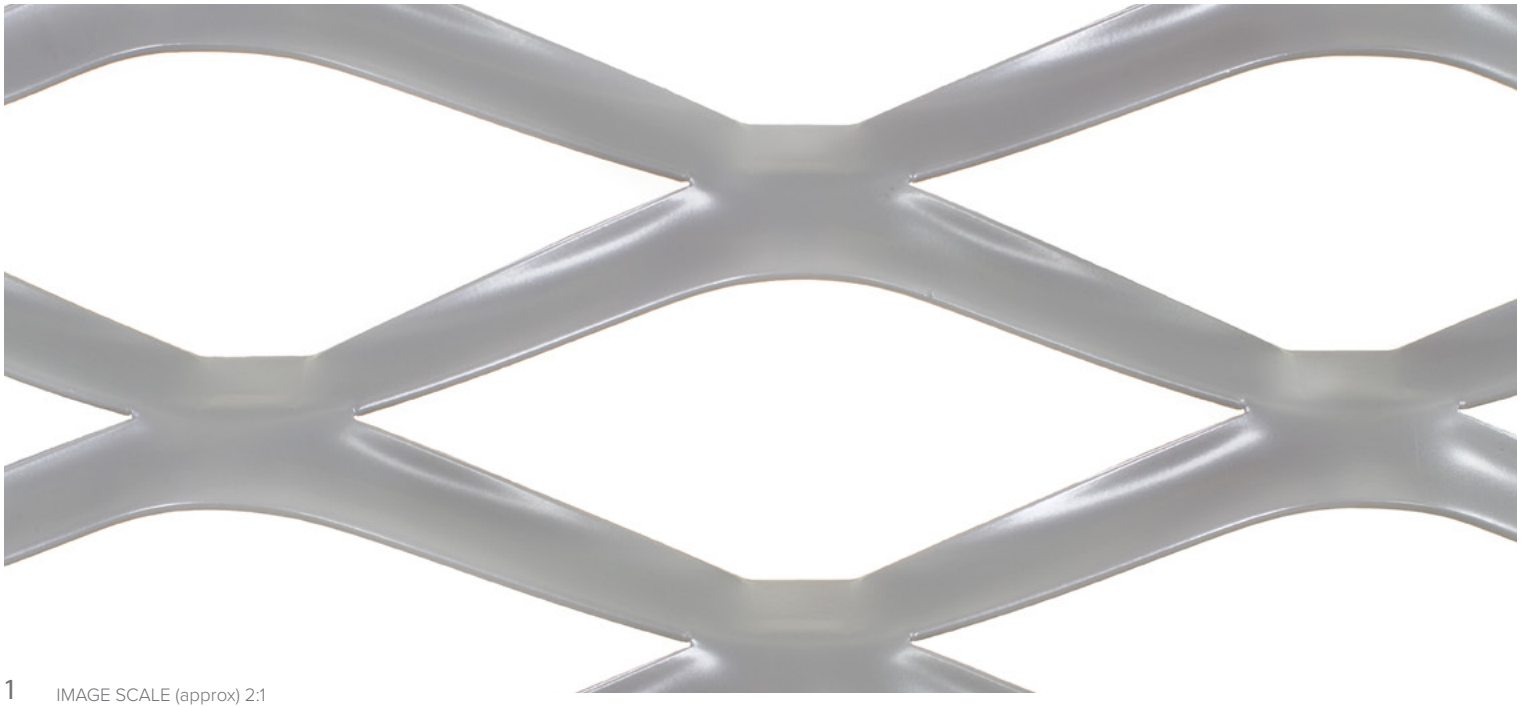
Westfield, London

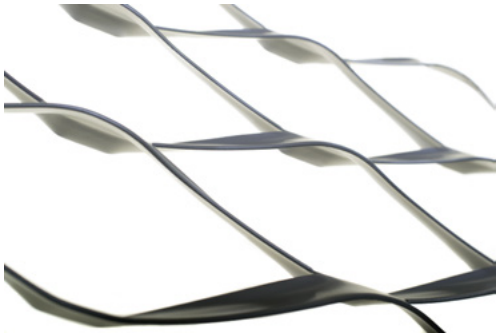
Prague

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	300	120	30	2.03kg/m²	2.71kg/m²	4.07kg/m²	37	50 %
Steel	300	120	30	5.88kg/m²	7.84kg/m²	11.76kg/m²	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.





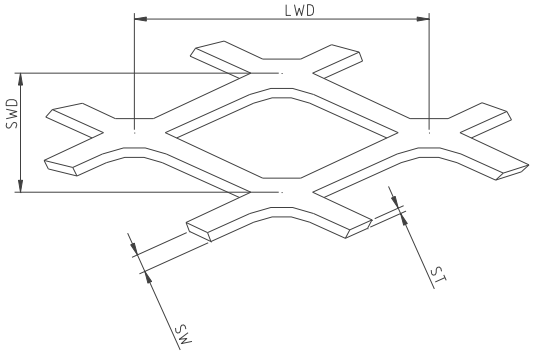


IMAGE SCALE (approx) 2:1

Aachen

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	250	92	30	2.65kg/m²	3.53kg/m²	5.3kg/m²	40	35 %
Steel	250	92	30	7.67kg/m²	10.23kg/m²	15.34kg/m²	40	35 %

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.

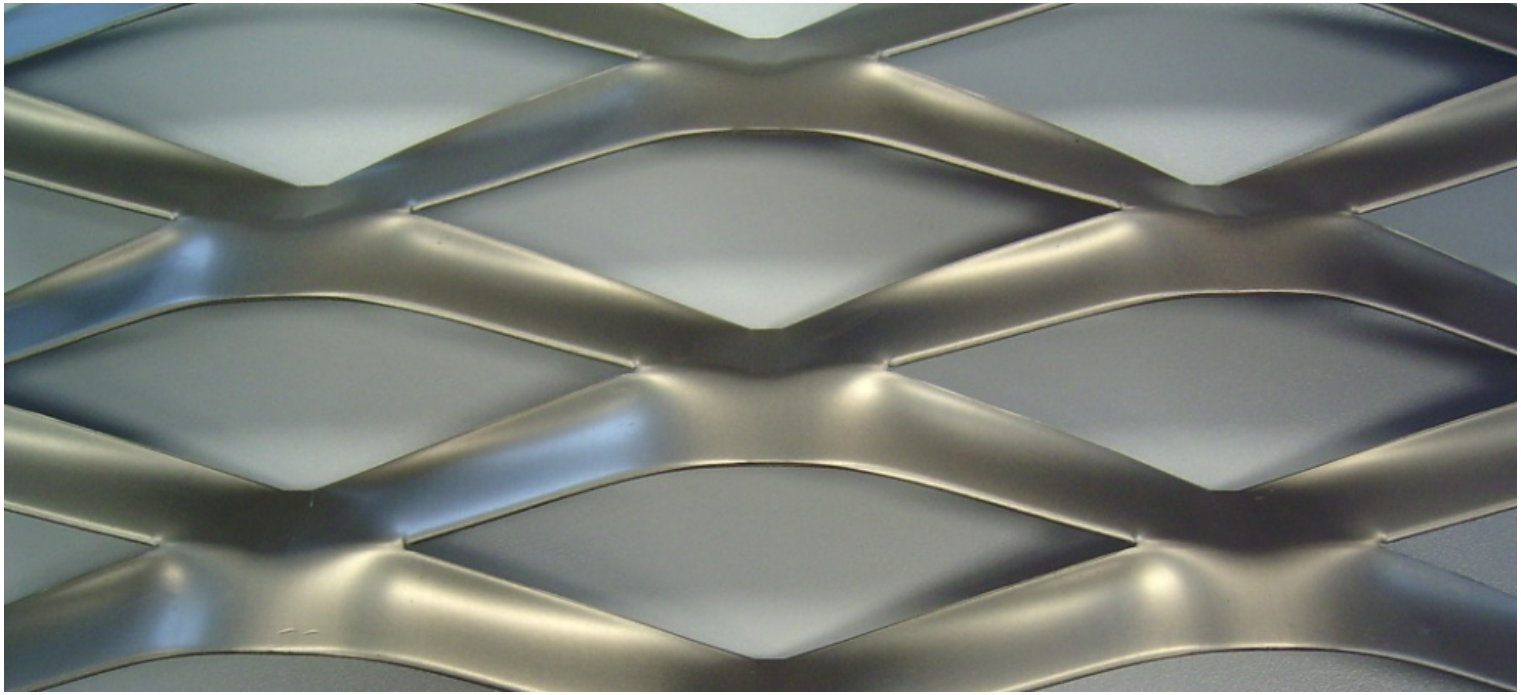
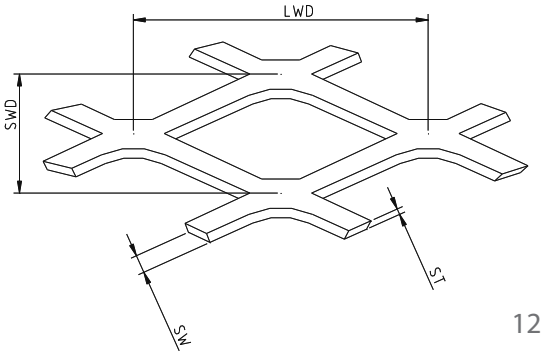


IMAGE SCALE (approx) 2:1

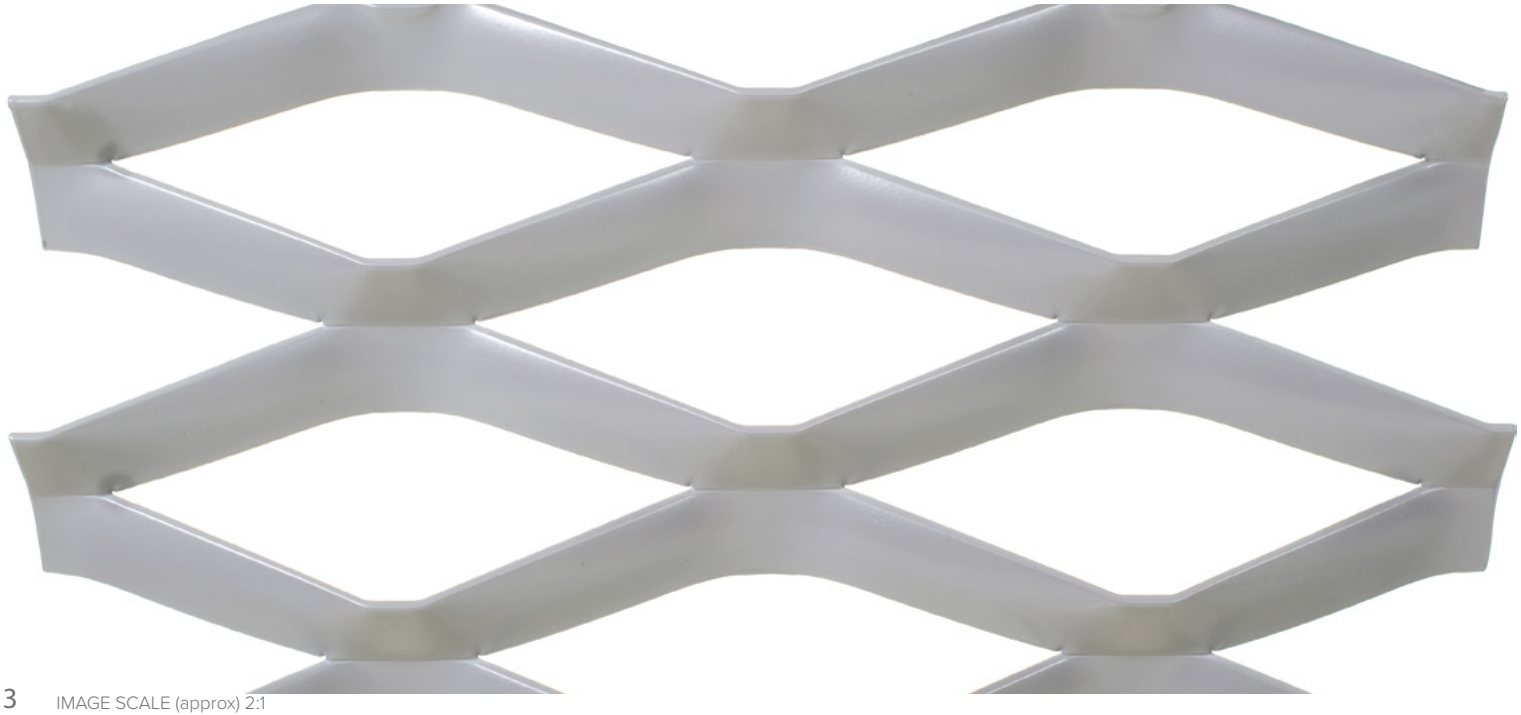


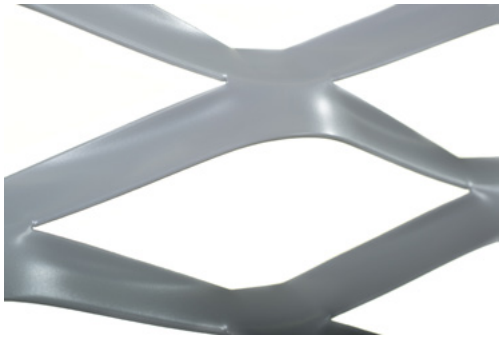
New York

THE EXPANDED METAL COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	199	87	24	2.24kg/m²	2.99kg/m²	4.49kg/m²	35	45 %
Steel	199	87	24	6.49kg/m²	8.65kg/m²	12.98kg/m²	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.





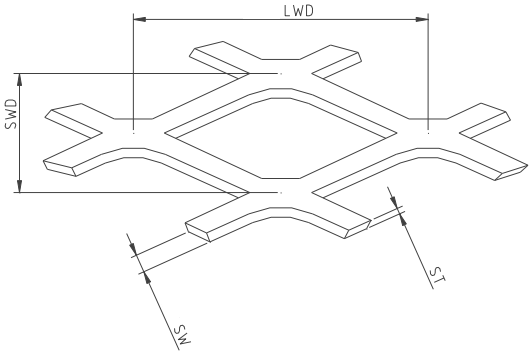


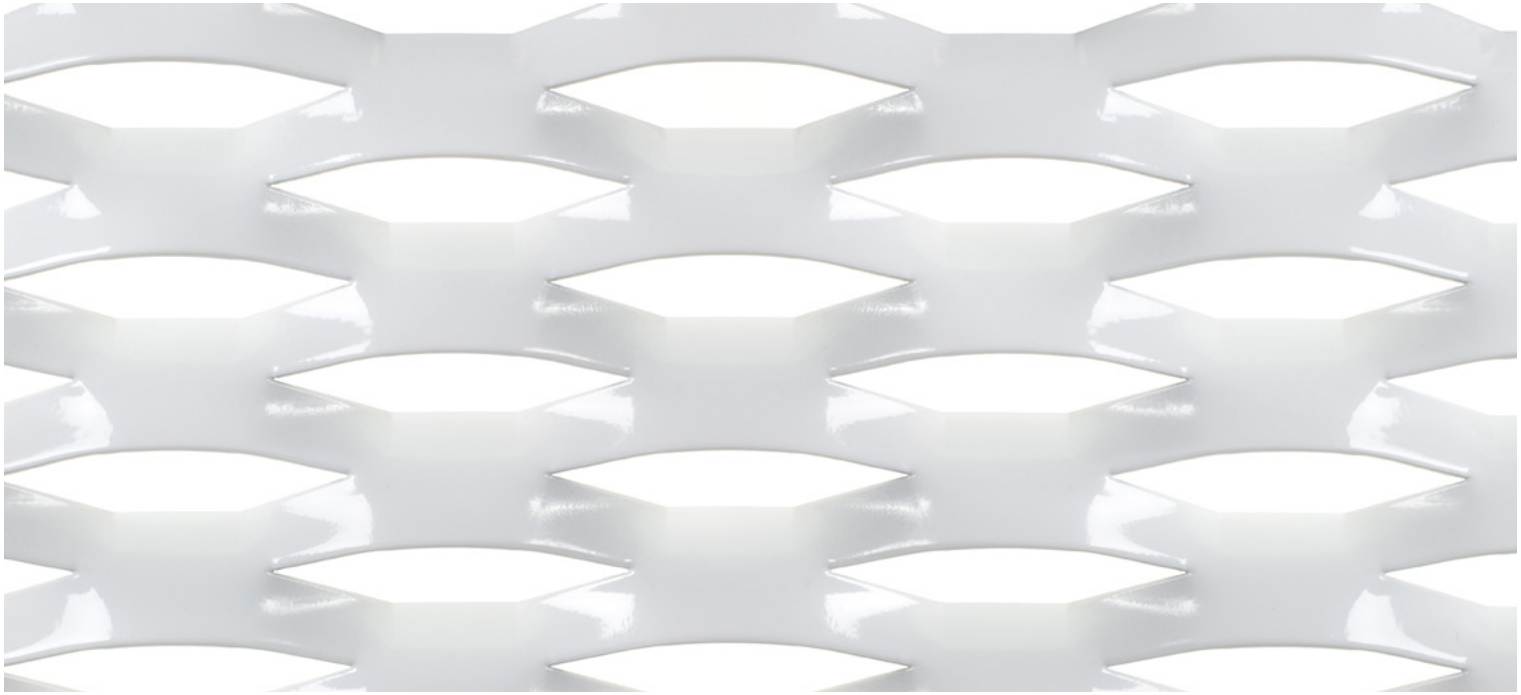
IMAGE SCALE (approx) 2:1

Athens

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	150	52	20	3.13kg/m²	4.17kg/m²	6.25kg/m²	24	23 %
Steel	150	52	20	9.05kg/m²	12.06kg/m²	18.09kg/m²	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.



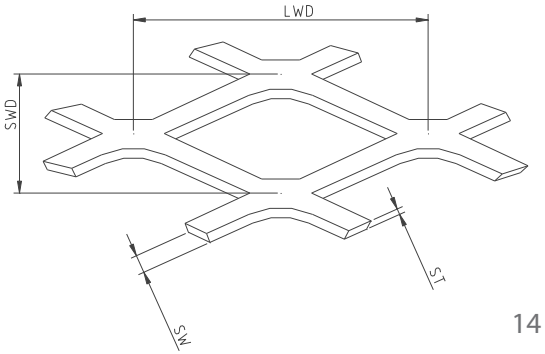


IMAGE SCALE (approx) 2:1

Bilbao

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	115	48	20	3.39kg/m²	4.52kg/m²	6.78kg/m²	13	17 %
Steel	115	48	20	9.8kg/m²	13.07kg/m²	19.6kg/m²	13	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.

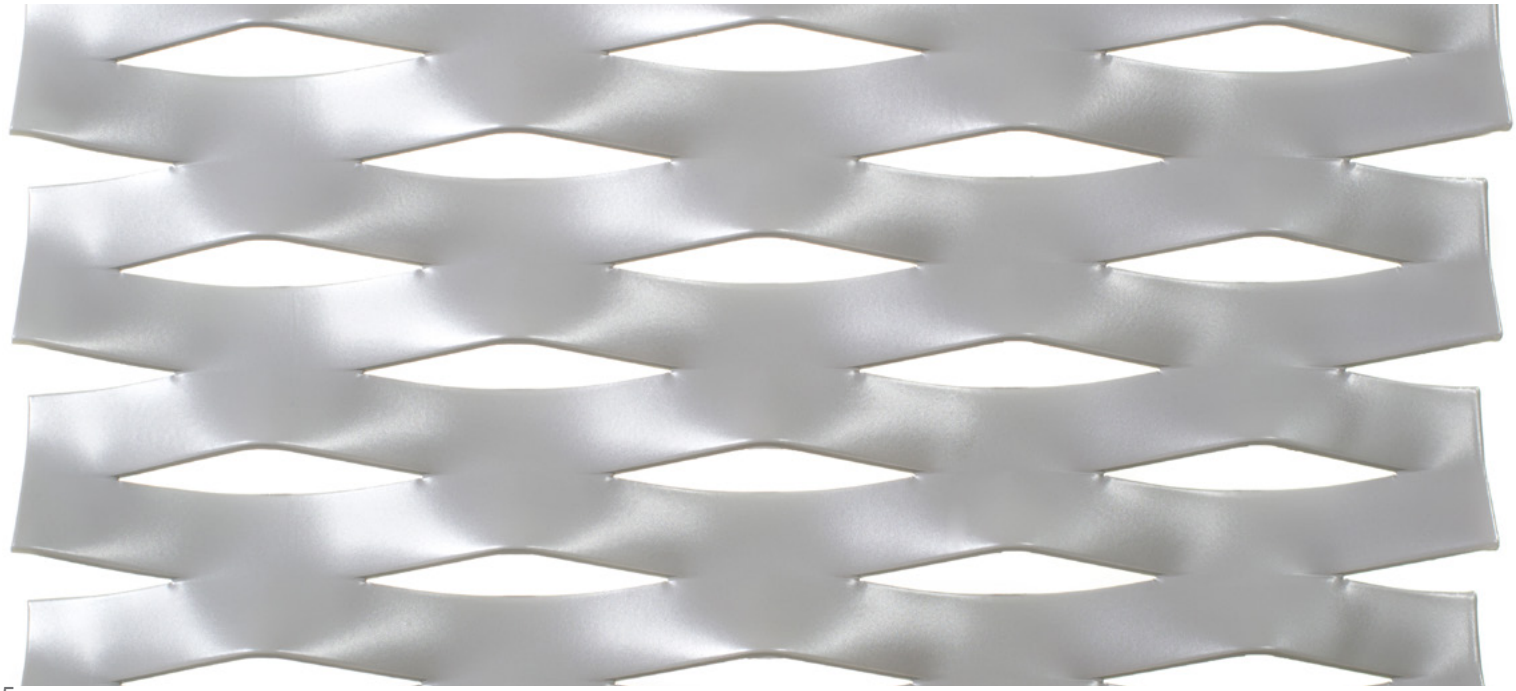
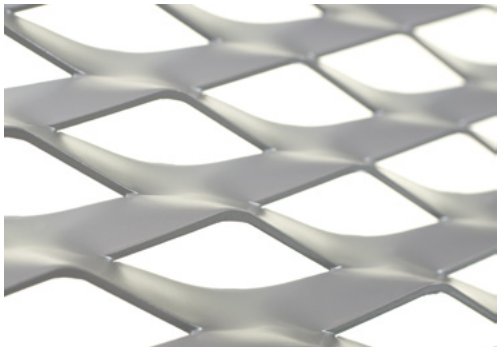
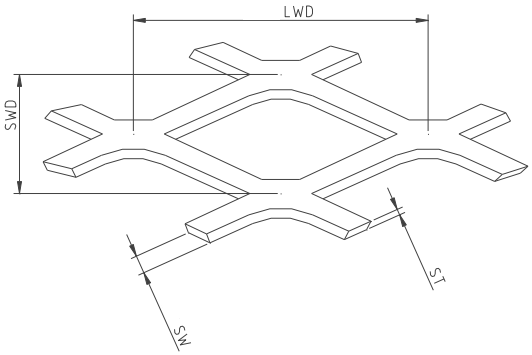


IMAGE SCALE (approx) 2:1





Dublin

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	100	34	15	3.59kg/m²	4.78kg/m²	7.17kg/m²	10	12 %
Steel	100	34	15	10.38kg/m²	13.84kg/m²	20.75kg/m²	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.

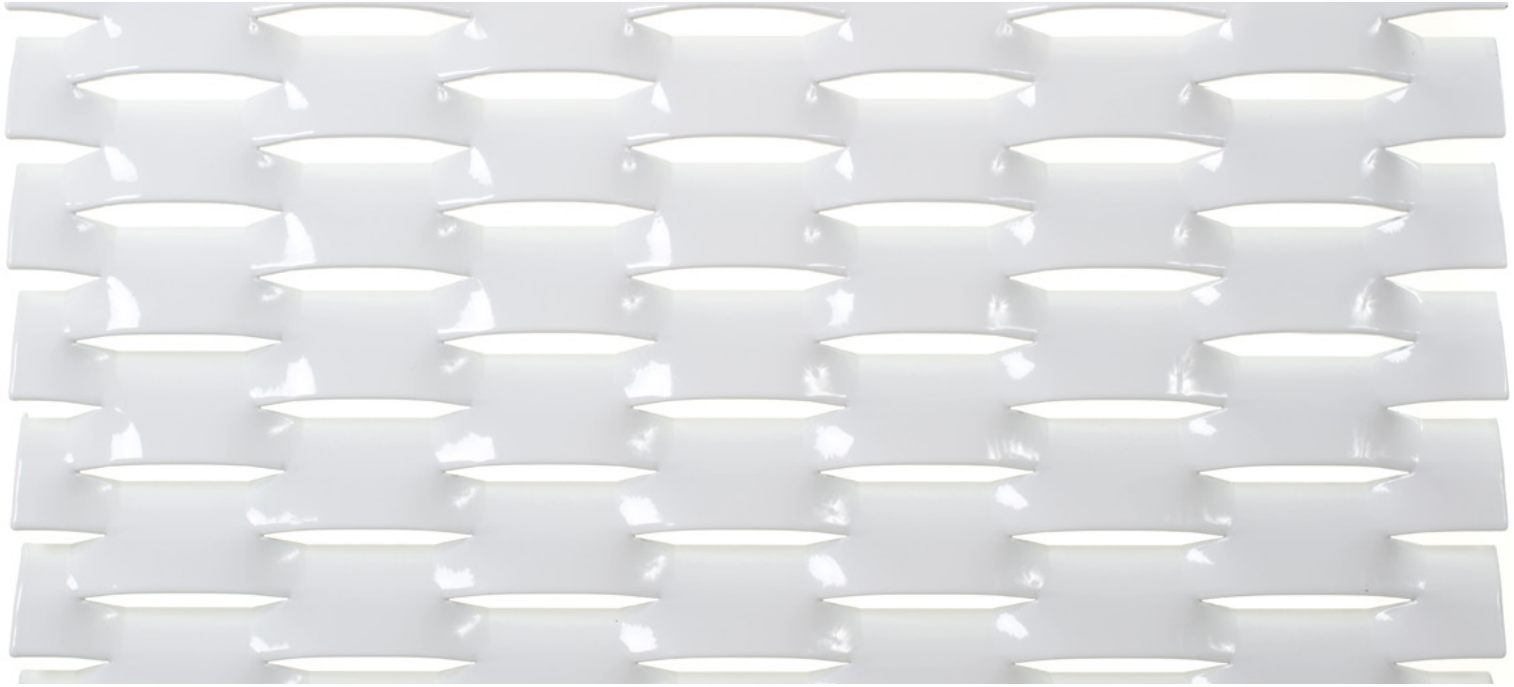
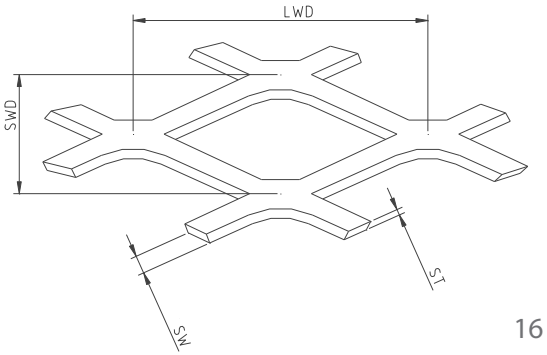


IMAGE SCALE (approx) 2:1



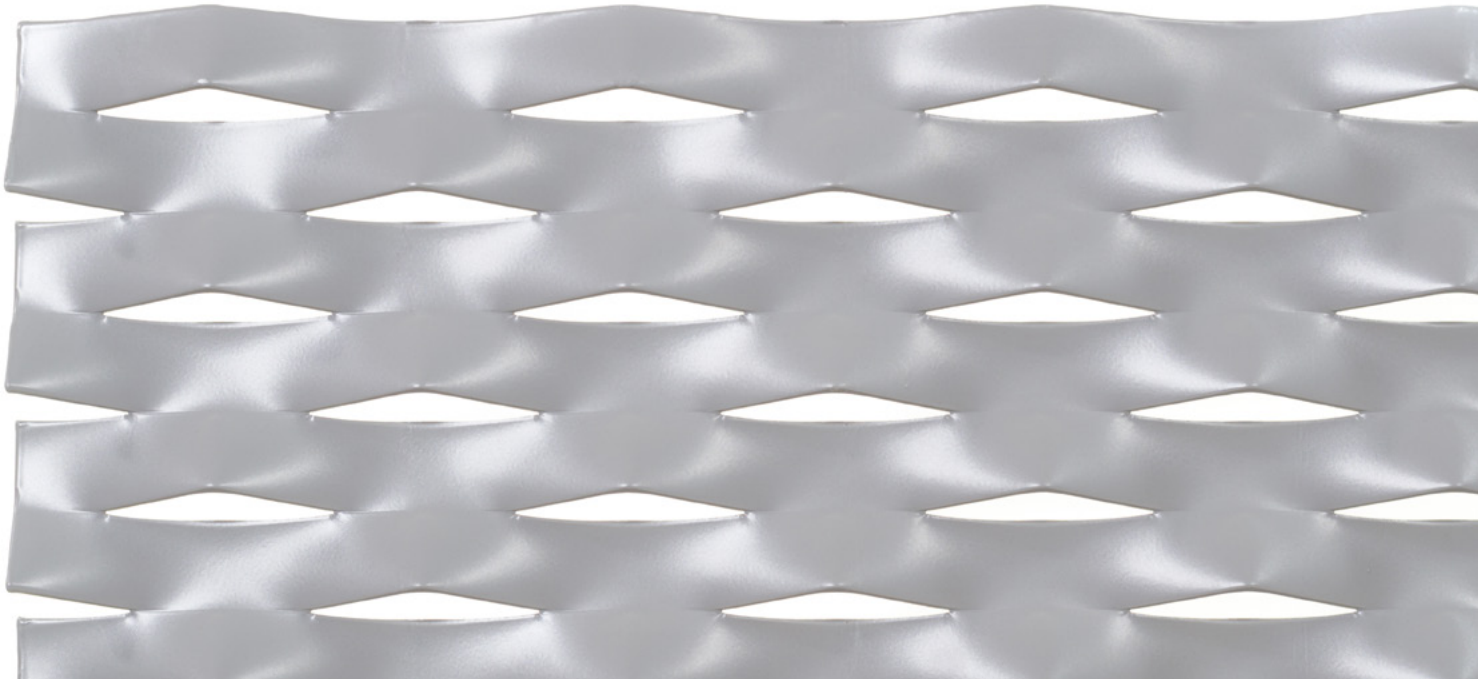
Theresia

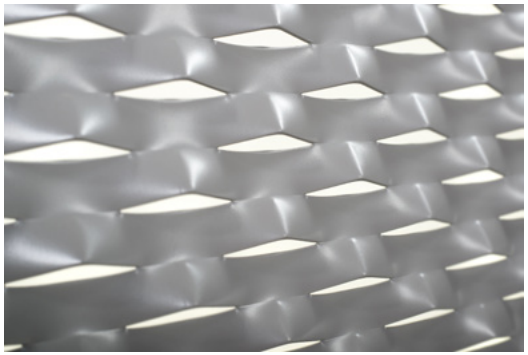
THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	110	52	24	3.75kg/m²	5kg/m²	7.5kg/m²	18	8 %
Steel	110	52	24	10.86kg/m²	14.47kg/m²	21.71kg/m²	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.





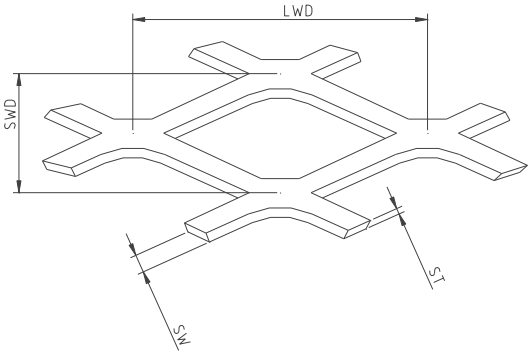


IMAGE SCALE (approx) 2:1

Moscow

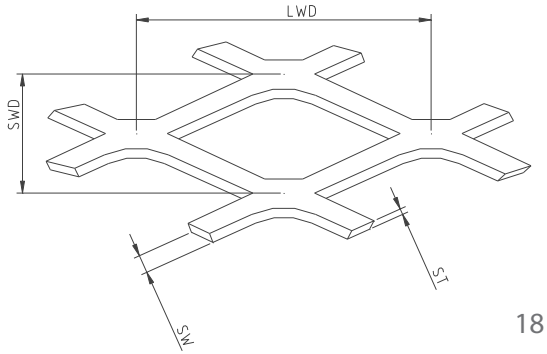
THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	76	31	11	2.88kg/m²	3.85kg/m²	5.77kg/m²	15	29 %
Steel	76	31	11	8.35kg/m²	11.13kg/m²	16.69kg/m²	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



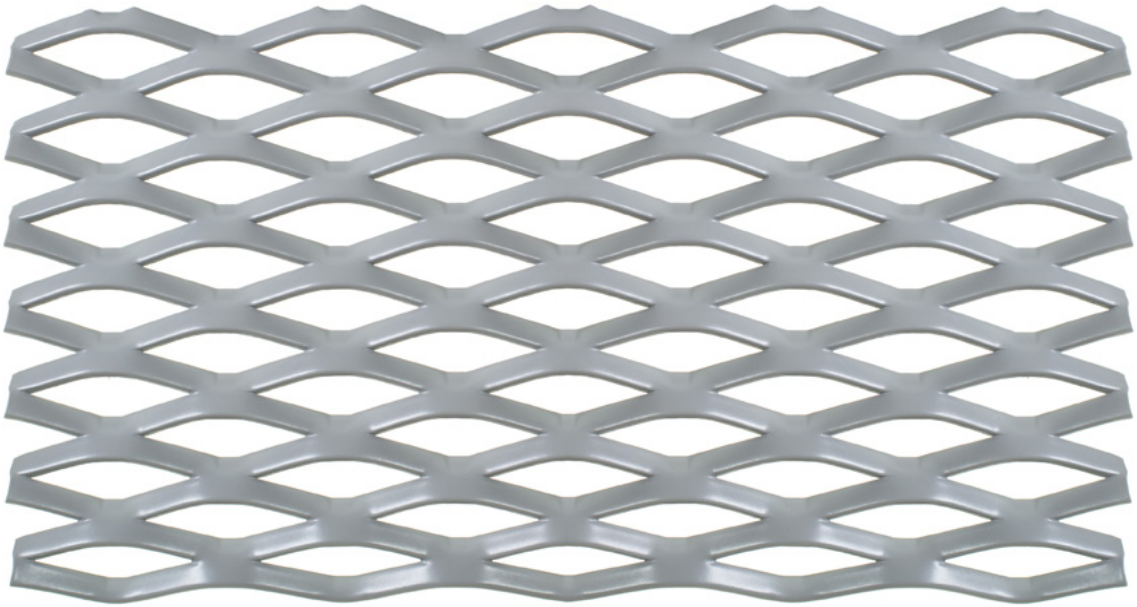
Madrid

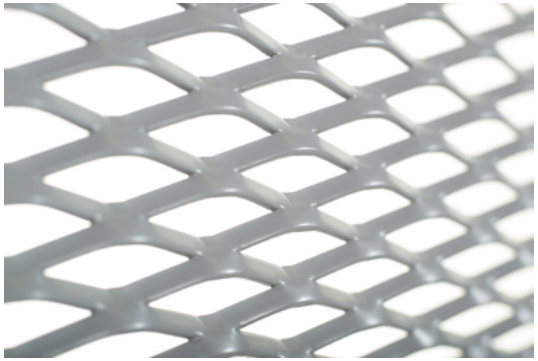
THE EXPANDED METAL COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	62	23	7	2.47kg/m²	3.3kg/m²	4.95kg/m²	12	39 %
Steel	62	23	7	7.16kg/m²	9.54kg/m²	14.32kg/m²	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.





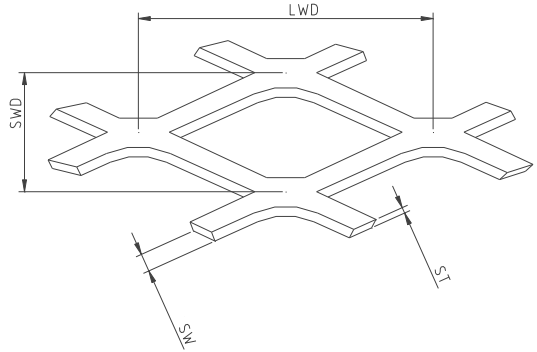


IMAGE SCALE (approx) 2:1

Berlin

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	42	16	6	3.05kg/m²	4.07kg/m²	6.1kg/m²	7	25 %
Steel	42	16	6	8.82kg/m²	11.76kg/m²	17.64kg/m²	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.

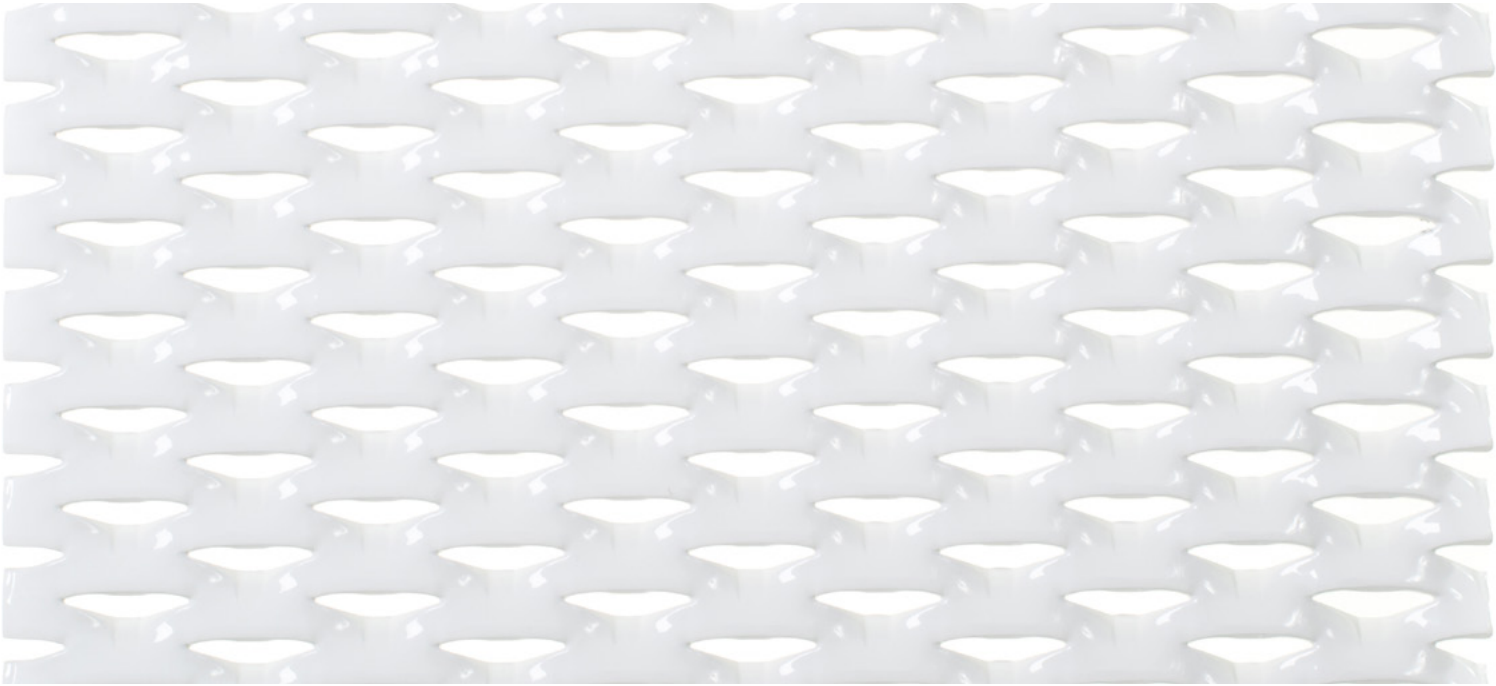
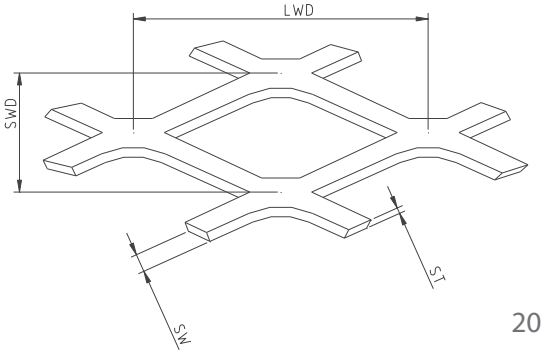


IMAGE SCALE (approx) 2:1



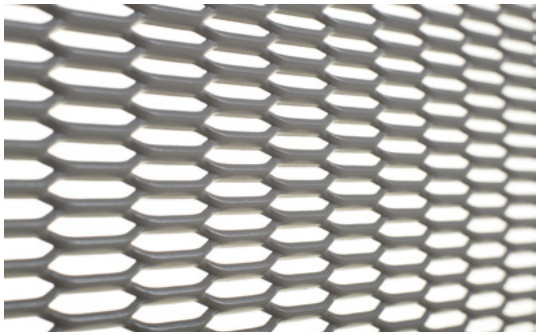
Vienna

THE **EXPANDED METAL** COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	44	8.7	2.5	3.39kg/m²	4.52kg/m²	6.78kg/m²	6	43 %
Steel	44	8.7	2.5	9.8kg/m²	13.07kg/m²	19.6kg/m²	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.



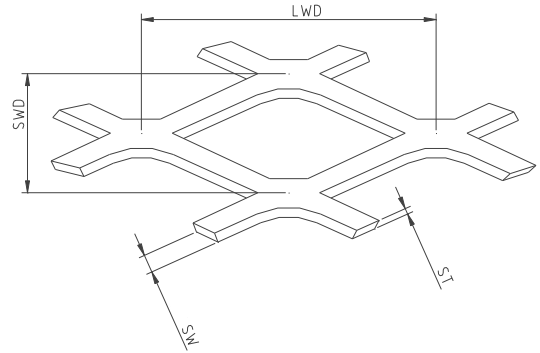


IMAGE SCALE (approx) 2:1

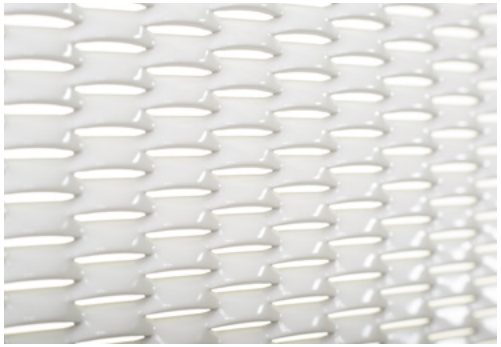
Paris

THE EXPANDED METAL COMPANY

				Strand Thickness (ST)				
Material	Long way (LWD)	Short way (SWD)	Strand width (SW)	1.5mm	2mm	3mm	Overall thickness	Open area
Aluminium	44	12	5	3.39kg/m²	4.52kg/m²	6.78kg/m²	7	16 %
Steel	44	12	5	9.8kg/m²	13.07kg/m²	19.6kg/m²	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.



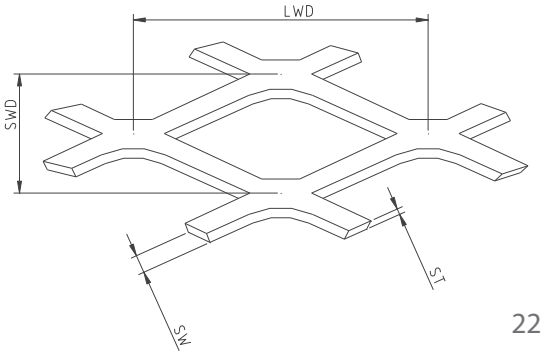


IMAGE SCALE (approx) 2:1

The Young Vic Theatre
London, UK

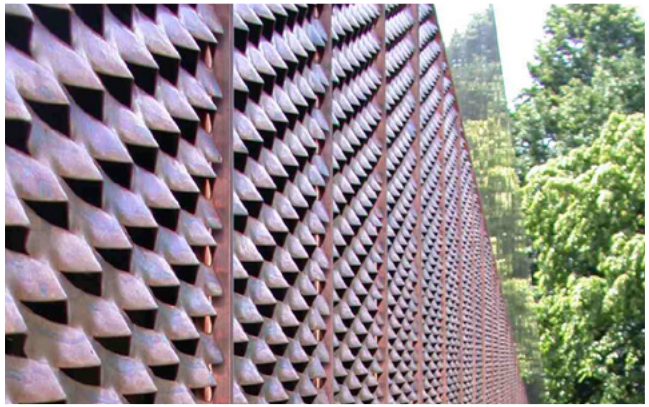
Mesh type: New York

The Stephen Lawrence Centre
London, UK

Mesh type: Bilbao

Theresienwiese
Munich, Germany

Mesh type: Theresia

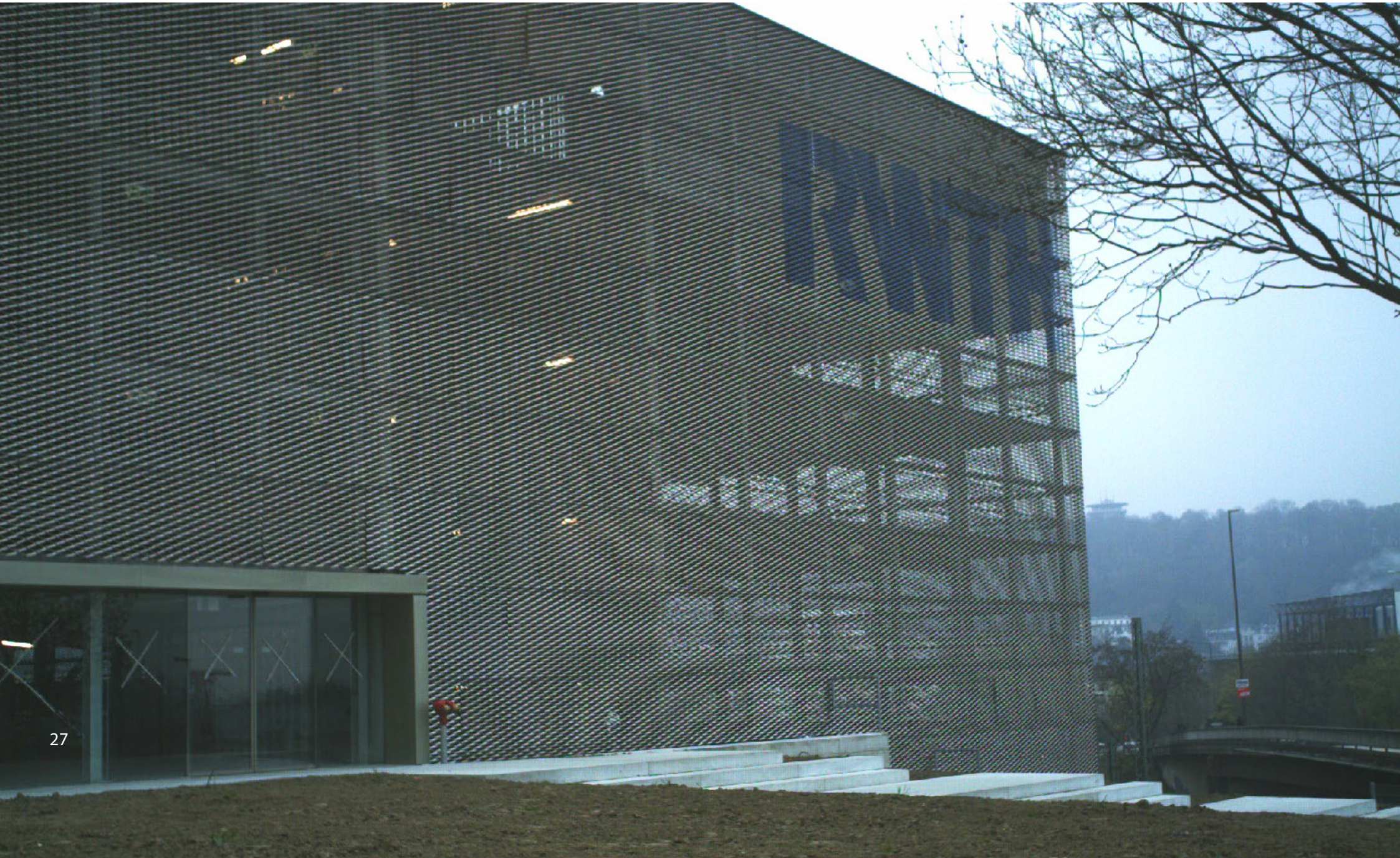


Multi storey car park
Germany

Mesh type: Madrid

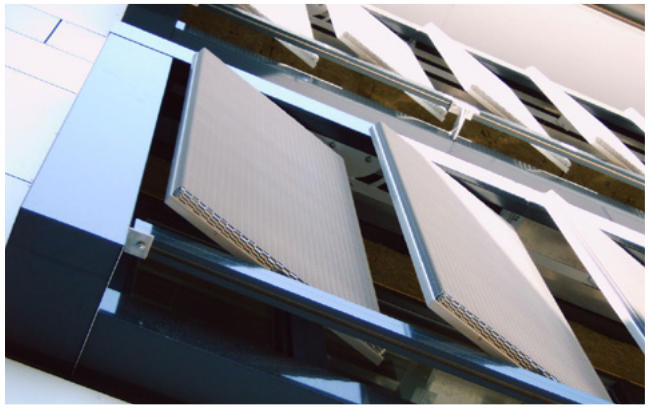
RWTH Aachen Central University
Aachen, Germany

Mesh type: Prague



Solar screening
Various locations

Mesh type: Vienna



Multi level car park
Germany

Mesh type: Athens

Mesh pattern arrangement guide

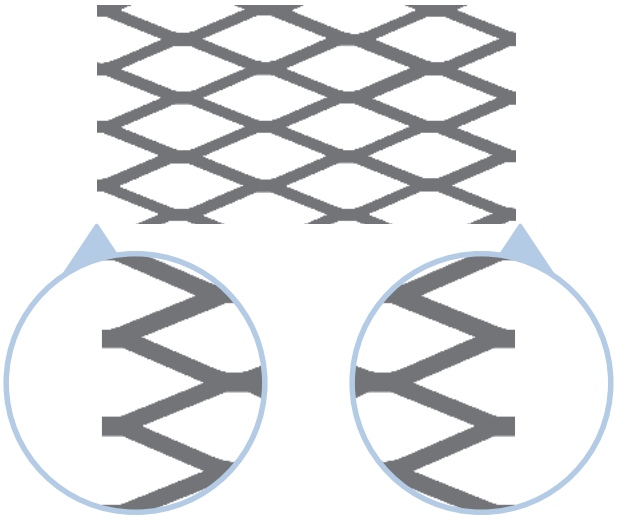
Complete

When looking to initially design your facade, 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.

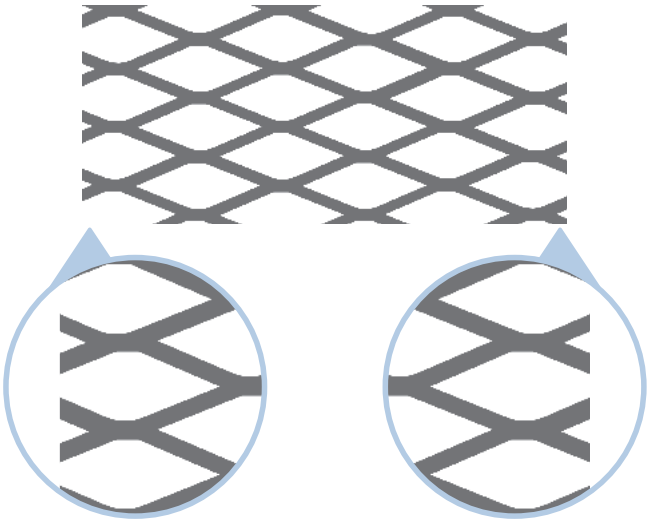
To achieve this arrangement, the sheet width and length should be round multiples of its respective diamond size.

Please see the diagram below which explains this arrangement.



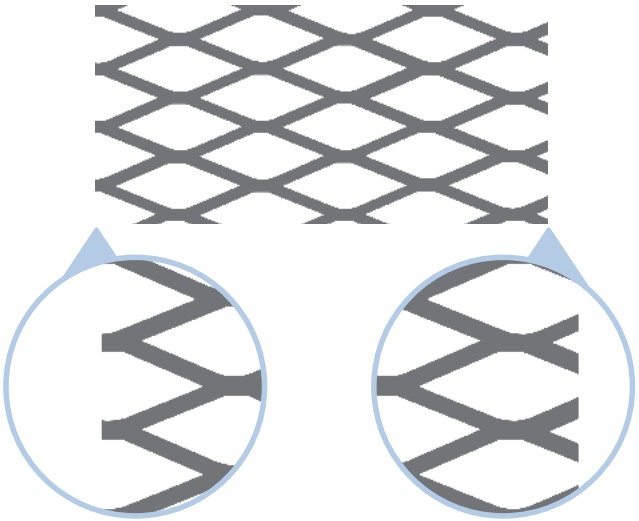
Balanced

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 open edges on both sides of the mesh and is purposely manufactured symmetrical to ensure 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 evenly distributed edges.



Version 11/24

THE **EXPANDED METAL** COMPANY

expandedmetalcompany.com