

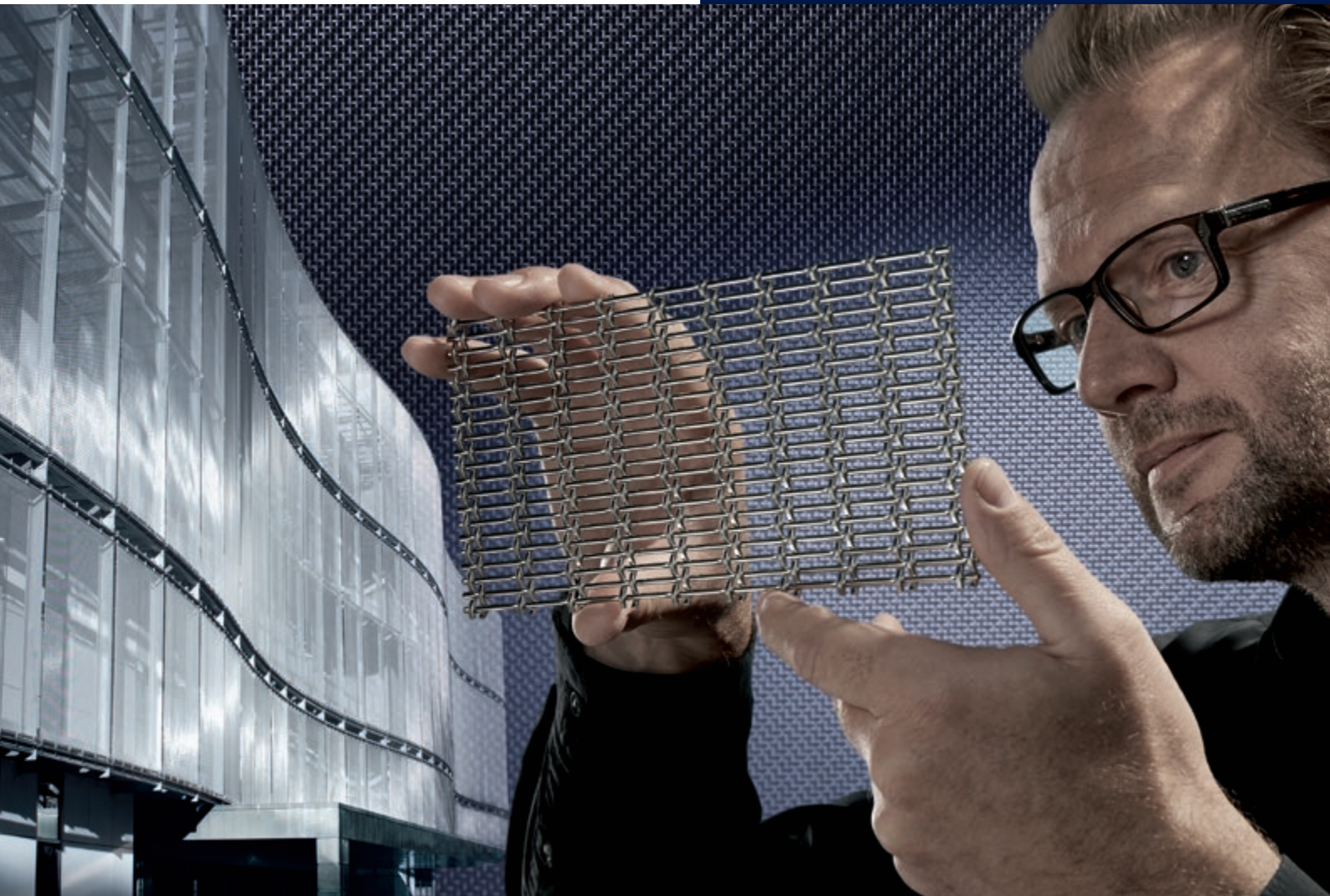
**HAYER & BOECKER**



**DIE DRAHTWEBER**

# ARCHITECTURAL WIRE MESH. WEAVING IDEAS.

Now with national technical approval (abZ). P. 41





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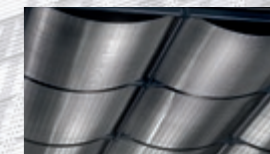
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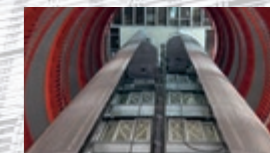
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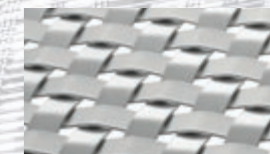
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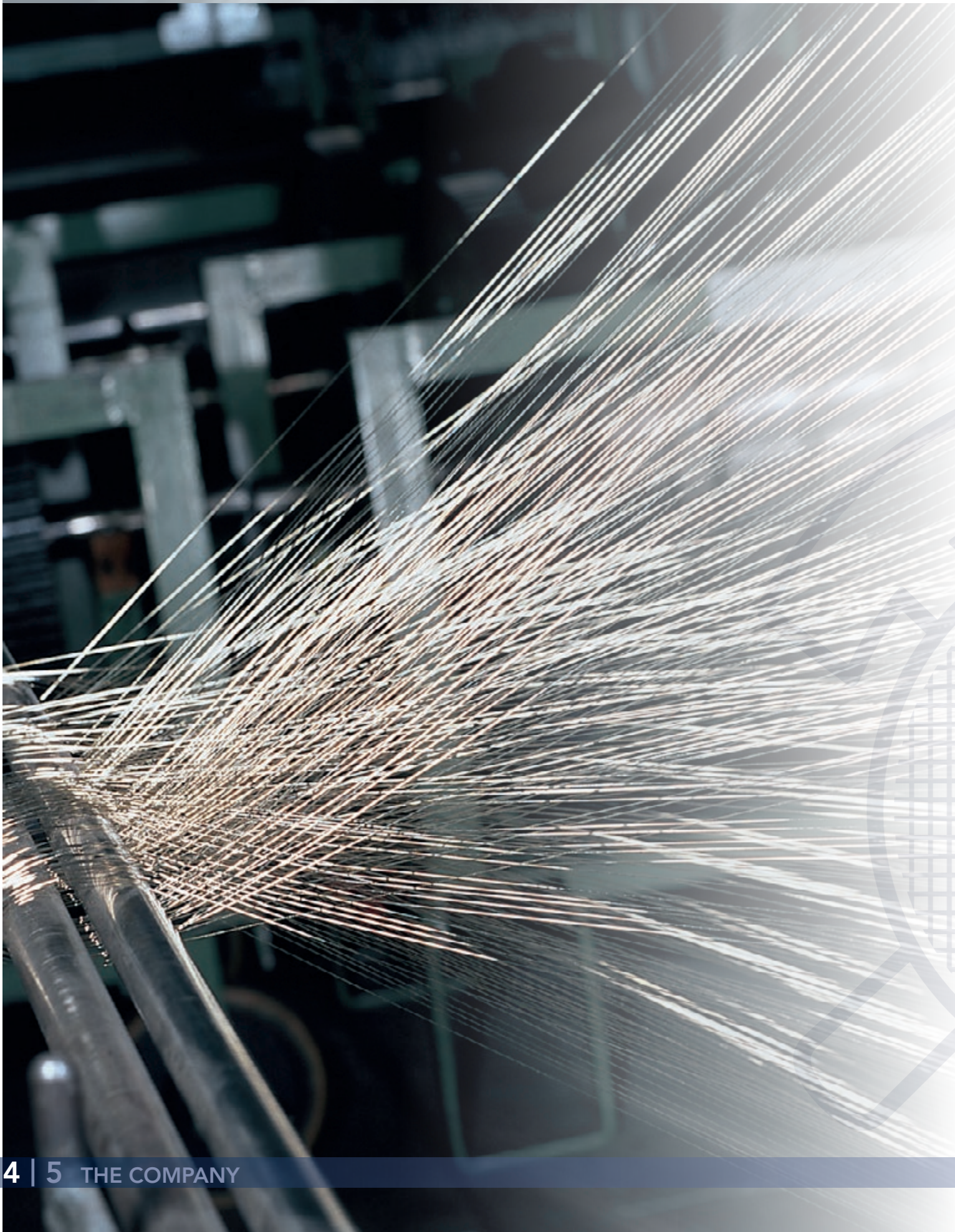
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HAYER Architectural Mesh combines outstanding functionality with high aesthetic appeal, opening new perspectives in creative design and enabling fascinating architectural solutions for both interior and exterior applications. Haver & Boecker provides you with versatile advice during every phase of the project - from specific planning, through implementation accurate in every detail, right up to on-time installation.

Clients from around the world rely on our proficiency, as demonstrated by creative collaboration with internationally renowned architects and the wide range of construction projects undertaken with our know-how and wire mesh.

These projects - along with in-house engineering and construction departments, many patents, registered designs and trademarks - provide first hand proof of our products and our unique way of weaving your ideas.

*Haver & Boecker began producing wire cloth in Hohenlimburg, Germany, in 1887. Today, we are one of the world's leading wire weaving companies with a global network of branches and manufacturing facilities.*

*Our work is based upon experience, continuous research and development of our products and manufacturing processes, along with the knowledge and ability of our staff. This combination of tradition and innovation allows us to meet and exceed the high expectations of our customers.*



# FACADE DESIGN.

## BRILLIANT IDEAS.

HAYER Architectural Mesh offers architects and planners a multitude of design options for exterior facades which combine sophisticated aesthetic features with a great many functions.

A wide range of different types of mesh can enhance the appearance of a building, giving it immense individual character. Depending on the lighting conditions and the viewing angle, the material can appear transparent or opaque. Light and shade, sunshine and cloud are reflected on the surface of the mesh, creating either a shimmering metallic effect or the impression that the building has a second skin.

Wire mesh constructions can also have a safety function, provide protection from the sun and absorb sound. Manufactured from high-quality stainless steel with molybdenum, our meshes offer good corrosion resistance requiring minimal maintenance. Tried-and-tested fastening systems enable mounting solutions to be customised, guaranteeing optimum safety in even the tallest of buildings and strong winds.



Excellent performance around the world. Facades with HAYER Architectural Mesh.

### Benefits at a glance:

#### Individual design

The diversity of mesh types, the widest range of colour options, and a wide selection of mounting solutions offer almost unlimited design possibilities.



#### Natural lighting and ventilation

The transparency of an architectural mesh allows natural lighting and ventilation. The open area of the mesh can be adjusted to meet particular aeration and ventilation requirements.



#### Sun protection and glare protection

Architectural wire mesh acts as effective sunlight protection and in reduces warming of the building. In addition, it can be used as a reliable glare protection against reflections from inside and outside.



#### Fall protection

Stainless-steel wire mesh can be used as fall protection, for example in multi-storey car parks or for cladding on external staircases and balconies.



#### Transparency and view protection

Thanks to its structure, wire mesh provides transparency from inside when viewed front on. At the same time, mesh facades can almost have an opaque effect depending on the angle of view and lighting conditions.



#### Long-life cycle and low maintenance

Architectural wire mesh stands out for extreme durability and is almost maintenance free due to the use of corrosion-resistant stainless steel and robust mounting technology.



#### Sustainability

Stainless steel products consist of more than 80% recycled stainless steel and can be recycled after many years of use. Mesh facades can also be used for vertical greening.



#### Building redevelopment

Architectural wire mesh is extremely suitable for renovating, upgrading or modernising existing buildings. It is a modern design element combining old and new.



## SIZE WITH FORMAT. FACADE SURFACES WITH A UNIFORM APPEARANCE.

In many cases, architectural wire mesh can be tensioned over the full height of a facade. To do this, solid substructures absorbing significant loads such as pre-tension, wind and ice are only required at the building's upper and lower attachment points. This ensures significantly lower costs for substructures and installation compared to facade cladding with framed solutions.

Depending on the size of the individual mesh elements, additional intermediate mountings fixed to each level of the building suffice. These reduce the maximum loads acting on the substructure as well as possible deflection of the mesh.



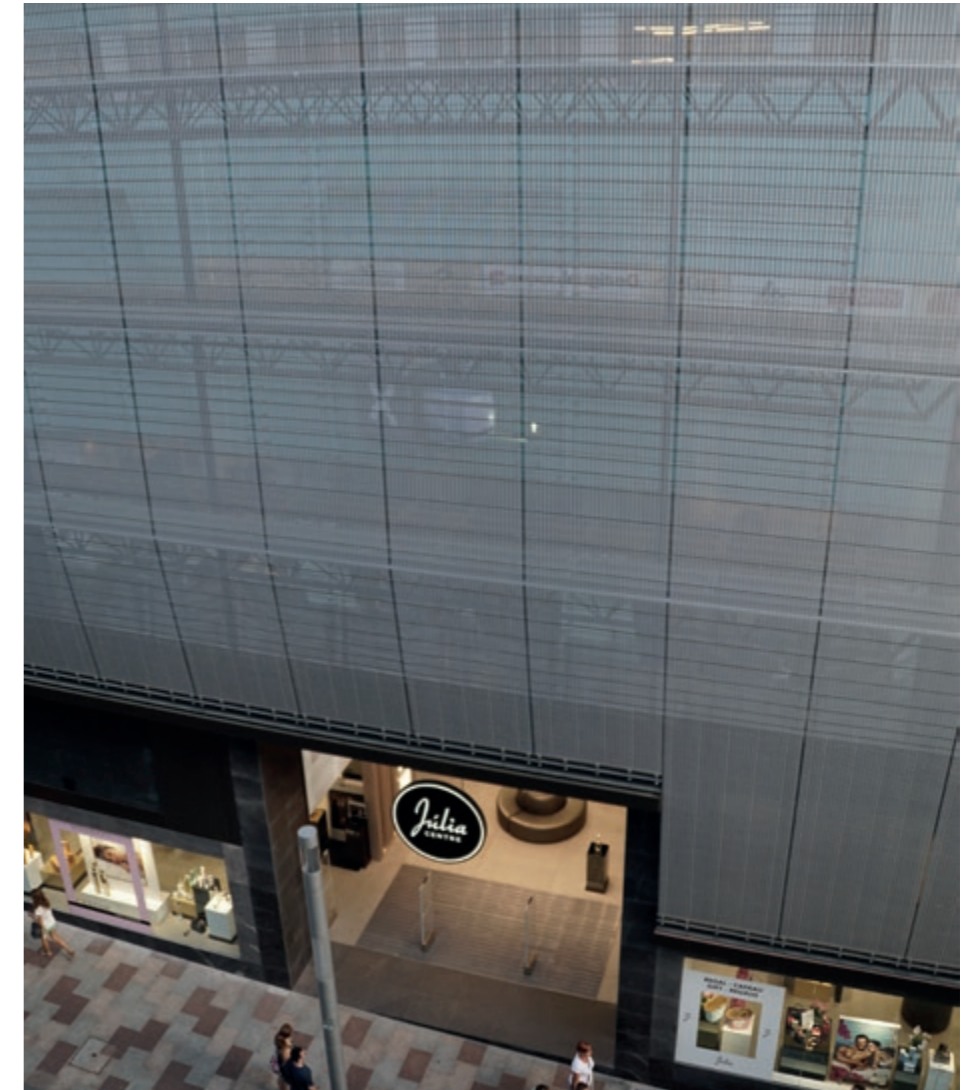
Architectural mesh can be tensioned vertically over several storeys. Load-bearing substructures are only required on the upper and lower face. Facade cladding DOGLA-TRIO 1032, Germany.



Large mesh elements are quick and easy to assemble. Once assembled, HAVER Architectural Mesh requires little to no maintenance.

While the maximum width of the wire mesh elements is limited by production methods, the length is restricted by handling and technical considerations. In most cases it is possible to clad facades of heights of 20 to 25 metres in single length elements. Subject to a detailed technical inspection, even longer elements can be manufactured.

During assembly, the wire mesh elements are installed with a defined pretension, however the maximum loads occurring due to wind and other factors may be considerably higher.



HAVER Architectural Mesh allows extensive facades to be clad with a uniform appearance. Facade cladding EGLA-DUO 4212, Anodrra la Vella, Andorra.



When interacting with sunlight, stainless-steel wire mesh gives facades an elegant, shimmering appearance. Car park cladding MULTI-BARRETTE 8301, Ohio, USA.

# EFFECTIVE SUN PROTECTION. TRANSPARENCY FOR THE BEST INDOOR CLIMATE.

Exterior sunlight protection with architectural mesh is significantly more effective compared to interior systems. In addition, the excellent protective effect is combined with a whole series of additional advantages and, not least, provides financial benefits by reducing energy costs for air conditioning.

Incident solar radiation is optimally filtered and the warming of the facade significantly reduced. The transparency of the mesh enhances the facade's optical effect, and at the same time maintains the look of the building from both inside and outside. Particularly with glass facades, this effect opens up many additional design possibilities.



Transparent architectural mesh elements effectively combine sun protection with superb design possibilities. Sun protection facade, Lisbon, Portugal, ECLA-MONO 4391.



The open geometry of the architectural wire mesh preserves the view on the outside world. Facade cladding MULTI-BARRETTE 8123, Brive-la-Gaillarde, France.



With puristic aesthetics, the shimmering metallic effect of the stainless-steel mesh LARGO-NOVA 2023 Vario in sunlight brings out the overall architectural concept.

## Benefits at a glance:

### Effective shading

The structure of the architectural wire mesh provides effective shading, particularly with a high angle of sunlight incidence in summer. Solar energy can be used to reduce heating costs in winter with a low angle of sunlight incidence.

### Natural ventilation

Due to its open area, stainless-steel mesh guarantees good air circulation and prevents warm air from accumulating in front of the facade. The corresponding distance between the mesh and the glass enhances this ventilation effect.

### Excellent view from inside

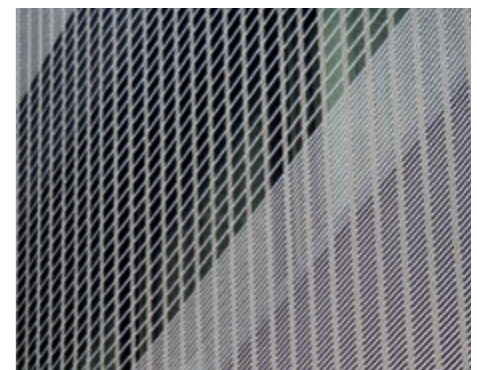
Depending on the selected mesh type, the facade appears to be extremely transparent from the inside mainly due to the viewing angle and the natural daylight.

### Fixed and removable solutions

Wire mesh is particularly suitable for permanent use as sun protection using large-scale tensioned elements. It can also be integrated in sliding or hinged frames for removable solutions.



The combination of transparency and sun protection is ideal for modern glass architecture. Friville-Escarbotin, France, ECLA-MONO 4391.



The precisely defined open area breaks up and filters sunlight creating a pleasantly cool and bright interior climate. LARGO-NOVA Vario.

ICONIC AWARDS 2021

INNOVATIVE MATERIAL

winner



Best values in sun protection: The sun protection mesh LARGO-TWIST 2045 has received the ICONIC AWARD 2021.

## BEST VALUE. DESIGN SHOWS IMPACT.

Appropriate key figures are used to objectively determine the effect of sunlight protection (including to determine additional air conditioning requirements). As such the g-value (total energy transmittance) refers to the proportion of solar energy that makes its way through a transparent component, for example a window. A g-value of 0.6 means that 60% of the solar energy reaches the interior, either as direct solar radiation or by heating the system and transmitting heat inside.

The interaction of the entire facade system needs to be borne in mind when using wire mesh as sun protection in combination with a glass facade. This includes the following factors:

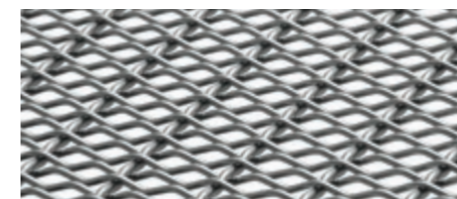
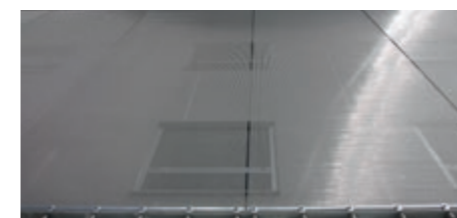
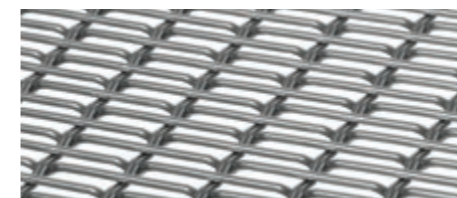
- Type of glazing
- Incidence angle of sunlight
- Distance of the wire mesh to the glass facade (ventilation)
- Gloss level of the wire mesh

The Bavarian Centre for Applied Energy Research e.V. (ZAE Bayern) has researched different glazing and incidence angle with good and poor ventilation, all with external shading by means of wire mesh. The effect of the wire mesh on reducing energy can be determined by comparing the g-value for the entire system (mesh and glass facade) to the g-value for the glass facade. This results in the energy reduction factor  $F_C$  for shade. A value of 0.4 means that the energy transmission for the entire system (mesh and glazing) is reduced to 40% due to the sun protection mesh used.

### Excellent shading effect

With a sunlight incidence angle of 60° and double glazing, most architectural mesh types achieve a reduction in transmitted solar energy of between 40% and 70%. In combination with corresponding sun protection glazing, they even achieve g-values of between 0.1 and 0.18 with the same incidence angle.

The mesh type LARGO-TWIST 2045 specifically designed for sunlight protection goes even further. At a 60° sunlight incidence angle, the energy transmission is reduced by more than 90%. This allows a g-value of 0.02 in combination with sun protection glazing.



LARGO-TWIST 2045				
Double glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.78	0.38	0.27	0.06
$F_C$ -factor	1.00	0.49	0.35	0.08

Sun protection glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.29	0.15	0.11	0.02
$F_C$ -factor	1.00	0.50	0.37	0.08

ECLA-TWIN 4253				
Double glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.78	0.45	0.43	0.27
$F_C$ -factor	1.00	0.58	0.55	0.34

Sun protection glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.29	0.18	0.17	0.11
$F_C$ -factor	1.00	0.59	0.56	0.36

DOKAWELL-MONO 3601				
Double glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.78	0.48	0.44	0.30
$F_C$ -factor	1.00	0.62	0.56	0.38

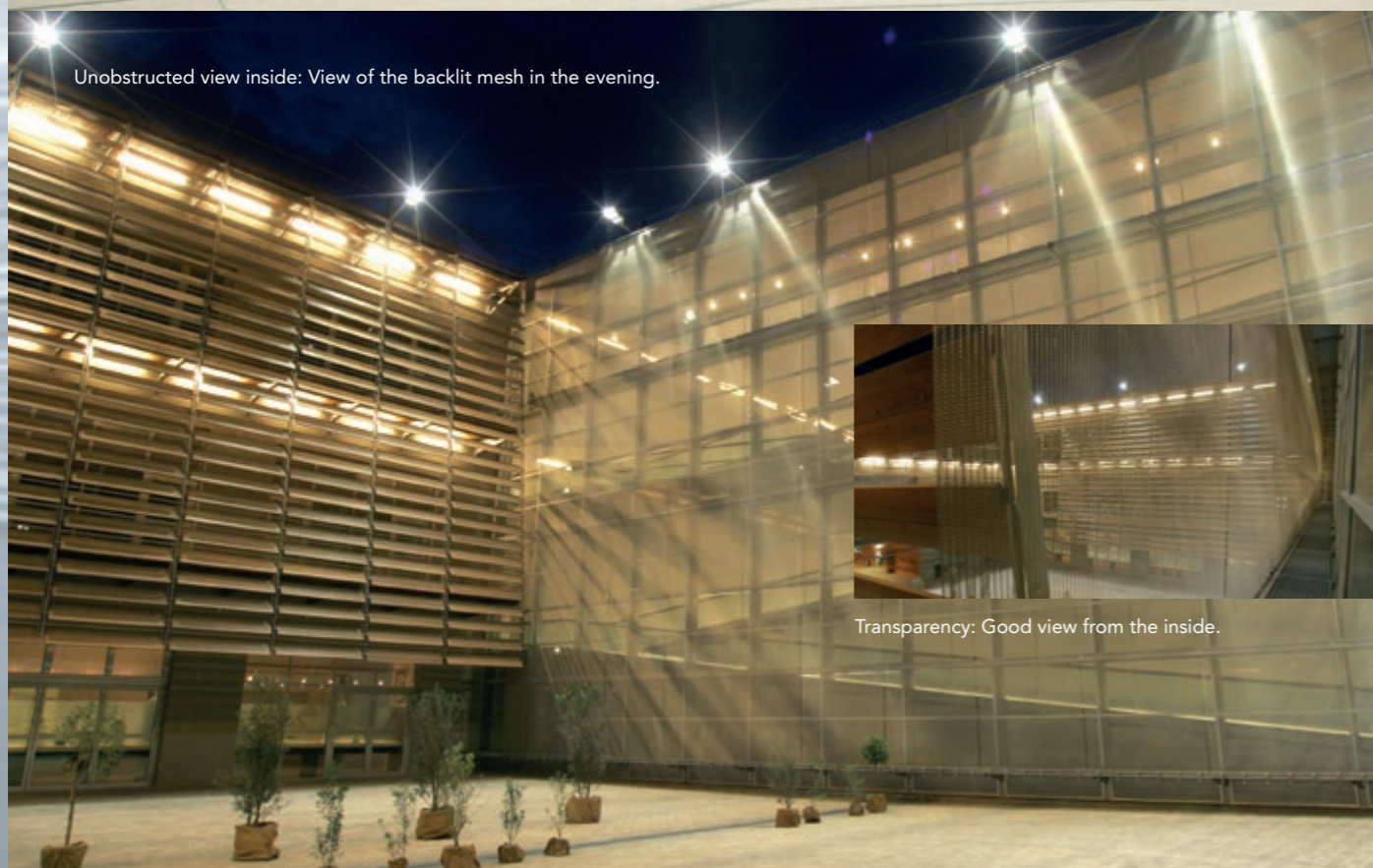
Sun protection glazing, good ventilation				
Incidence angle $\alpha$	glazing	0°	30°	60°
g-value	0.29	0.19	0.17	0.12
$F_C$ -factor	1.00	0.62	0.57	0.41

Values in accordance with DIN EN 13363-2

Privacy during the day. EGLA-TWIN 4253 mesh facade, Benaki Museum, Athens, Greece.



Unobstructed view inside: View of the backlit mesh in the evening.



Transparency: Good view from the inside.

## TRANSPARENCY AND PRIVACY. NEW INSIGHT INTO PERSPECTIVES.

Architectural wire mesh forms a shimmering shell for buildings with its own style and elegant sun protection at the same time. Depending on the mesh type, the viewing angle, and the lighting conditions, the optical effect of stainless-steel wire mesh claddings is always varied. On the one hand it allows an unobstructed view of the outside world from inside, and on the other offers excellent privacy.

Depending on the incidence of light, the material has a transparent effect and allows a view inside or blocks it. Light and shadows, sunshine and clouds are reflected on surface of the mesh, taking on the appearance of a second skin.



View during the day. Stainless steel mesh LARGO-PLENUS 2022, Car Park Chesapeake, Oklahoma, USA.



EGLA-TWIN 4313 wire mesh facade during the day. Eichsfeld Borderland Museum, Teistungen, Germany.



View at night.



Night-time view with backlit wire mesh.



View from the inside.



View from the inside.





Colourful facade cladding of architectural wire mesh. Shands Children's Hospital, Gainesville, Florida, USA, LARGO-PLONUS 2022.

## CREATIVE COLOUR. NEW ROOM FOR ARCHITECTURE TO PLAY.

Architectural wire mesh is frequently used for its elegant stainless-steel optics. However, colouring options that are as individual as they are extraordinary are also available. These techniques enable not only coloured surfaces but also complex designs to be applied directly to the surface of the mesh and set out across the entire surface.

Whether a logo or an image, for a theatre, shopping centre or company head office, colouring provides the opportunity to create buildings of unique character. The interaction between artificial light and natural daylight, transparency, luminance and colour allows the facade to constantly show itself in new, stylish colours.

### Benefits at a glance:

#### Painting of mesh elements (entire surface or partially)

Painting of mesh elements allows the durability of a stainless-steel wire mesh to be combined with the wide range of shades available. In this respect, there are numerous metallic-effect shades available together with the well-known RAL colours.

#### Application of logos

A partial painting allows corporate lettering or individual logos to be placed on the wire mesh facade and be visible from afar. Even large graphics can be set out on the facade.

#### Digital printing

Detailed images can be represented on architectural wire mesh using digital printing.

#### Non-ferrous metal mesh (copper, phosphor bronze, brass)

Depending on the installation conditions and required material properties, wire mesh made of non-ferrous metal such as copper, phosphor bronze or brass can also be used instead of stainless steel. As non-ferrous metal surfaces may change due to environmental conditions, a uniform appearance is not always guaranteed. A metallic coating offers an alternative in this case.



Partially painted mesh elements. Los Angeles Police Department, USA, EGLA-MONO 4832.



Metallic coating. Résidence Étudiante, Saint Denis, France, DOKA-MONO 1851.



Multicoloured corporate lettering, Technolit, Großenlüder, Germany, EGLA-TWIN 4253.



Painting DOKAWELL-MONO 3571, Gaz Electricité de Grenoble, France.



Logo painting. Cladding of a production building in Åhus, Sweden. DOGLA-TRIO 1032.



Painted with brown textured lacquer. Pedestrian bridge Lisieux, France, DOKA-MONO 1421.

## ILLUMINATION. LIMITLESS POSSIBILITIES.

Illuminated Architectural Mesh provides a beautiful transparent stainless steel facade by day and a vibrant veil of colour by night. During the day the reflective properties of architectural mesh are especially appealing. At night the illuminated wire mesh transforms as the colorful LED's bring the facade to life. In darkness a seemingly static mesh facade is transformed into a dynamic wall of light, which appears to move harmoniously with the position and movement of the viewer.

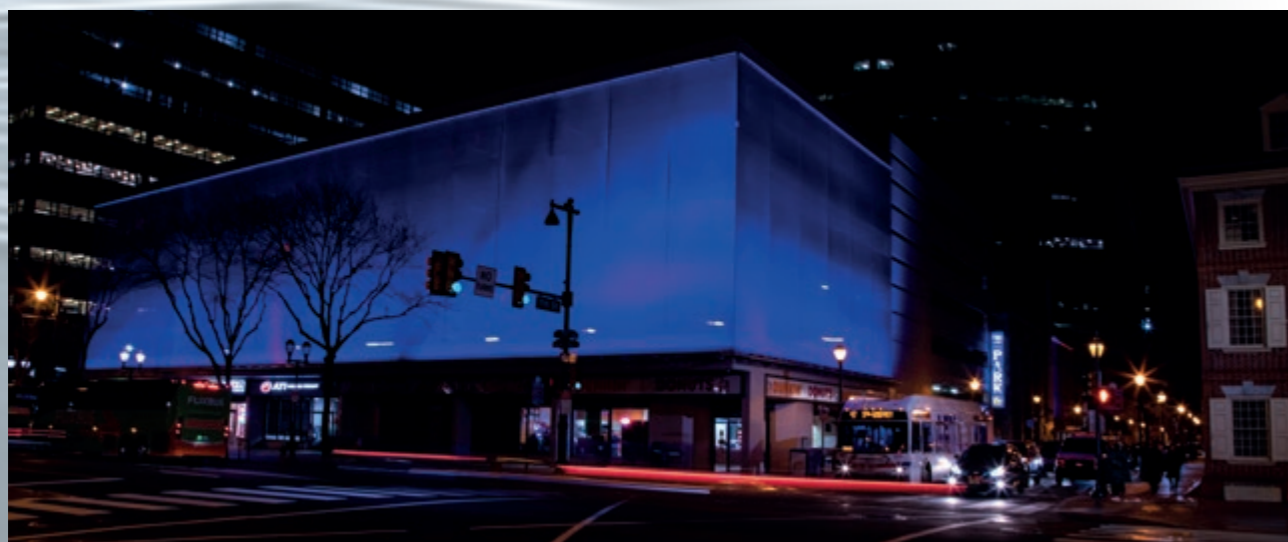


Illumination. Haver & Boecker, Oelde, Germany, DOGLA-TRIO 1030,

The LED spotlights are positioned at the bottom of the facade and can be installed partially or completely across the width. The presentation of vibrant color and lighting displays can be programmed individually. Virtually any colour can be created offering complete artistic freedom, whether it's completely submerging the facade in one single color or illuminating with individual lighting effects.



Illumination, Technolit, Großenlüder, Germany, ECLA-TWIN 4253.



Mesh illumination. 618 Market Street, Philadelphia, USA, ECLA-DUO 4222.

## INDIVIDUAL GEOMETRIES. PERFECT IN ANY SHAPE.

Architectural wire mesh can be adapted to geometrical shapes: The high degree of dimensional stability allows even larger areas and elements to be completed. From cubic to cylindrical forms, from orthogonal to freely designed elements, from straight edges to precisely defined radii - creativity knows no bounds.

This allows simple three-dimensional shapes by using individual elements arranged as polygons. The use of pre-formed elements is also possible for more complex shapes.

### Benefits at a glance:

#### Individual design

The individual mesh elements can be produced from different architectural mesh types specific to each project in various shapes and sizes.

#### Free configuration

The wide range of architectural mesh types and the possibility of a colourful design offer almost endless freedom to individually design projects.

#### Project-specific substructure

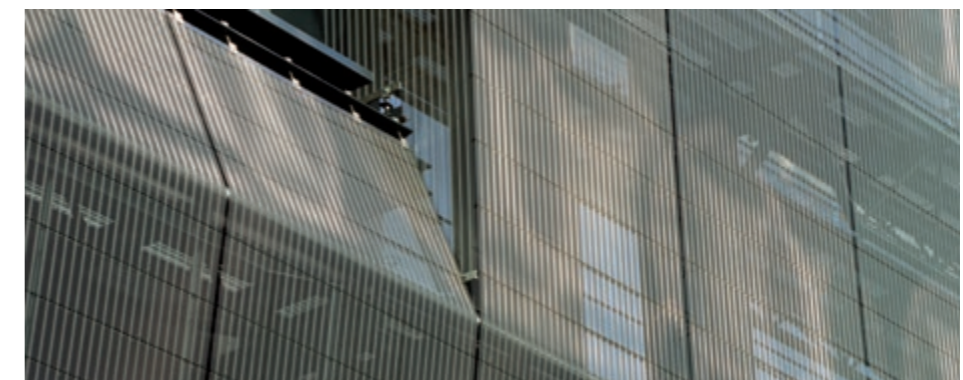
Depending on the construction project, the substructure can be laid out exclusively in a horizontal or vertical way.



Wave-shaped facade cladding: Holland Park School, London, Great Britain, ECLA-MONO.



Freely formed stainless-steel mesh. De Baljurk, The Hague, Netherlands, DOKA-MONO 1771.



Multidimensional facade with mesh elements deflected by 19°. Júlia Center, Andorra la Vella, Andorra, ECLA-DUO 4212.

# BUILDING REDEVELOPMENT. OLD AND NEW IN CREATIVE CONTRAST.

Architectural wire mesh is extremely suitable for renovating, upgrading or modernising existing buildings. As a modern design element, wire mesh acts to bring old and new together, whether as a second facade, as internal cladding, or as a decorative screen.



DOGLA-TRIO 1030 blends the newly added floor with the existing structure. Haver & Boecker, Oelde, Germany.

## Benefits at a glance:

### Visual improvement of existing facades

A metal mesh facade provides an existing building with a new and contemporary look with comparably simple resources. The original facade can be retained accordingly.

### Uniform enveloping for new and old structures

How do we manage to harmoniously combine new and old structures when refurbishing extending or adding another storey to an existing building? An additional wire mesh facade provides old and new

structures with a uniform appearance that brings the old and new together in a modern way with its semi-transparency.

### Cladding and protection

Historic structures worthy of conservation can be effectively protected using a wire mesh cladding from physical damage without obscuring the view of the facade. The protective impact can be perfectly adjusted to influencing factors by choosing a mesh type with appropriate openings and transparency.



Before and after cladding with HAVER Architectural Mesh DOKAWELL-MONO 3601 on the Baden-Baden Congress House, Germany.



Small wire mesh elements clad the old brick structure. Shands Children's Hospital, Florida, USA, LARGO-PLONUS 2022.



The semi-transparent stainless-steel mesh LARGO-NOVA 2017 encloses the existing building and ensures natural lighting. C&A Eco Store, Mainz, Germany.



Cladding of medieval structures. Burg Vlotho, Germany, ECLA-TWIN 4253.



Closed but still transparent parking garage facade cladding made of the stainless wire mesh LARGO-TWIST 2051. Regensburg, Germany.

## PERFECT FOR MULTI-STOREY CAR PARKS. FROM FUNCTIONAL BUILDING TO DESIGN OBJECT.

Wire mesh has also been contributing to multi-storey car park architecture for some time, transforming once dark and faceless functional buildings into well-lit architectural experiences. HAVER Architectural Mesh made from stainless-steel offers various options due to its functional and aesthetic properties.

Both inside and outside it stands out due to an elegant appearance, and in doing so meets the highest demands of safety, stability and weather resistance. HAVER Architectural Mesh ensures a bright atmosphere that brings together transparency and design in a unique way.

### Benefits at a glance:

#### Ventilation and lighting

The transparency of architectural mesh allows it to act as a natural ventilation system. Costly ventilation systems can be dispensed with due to the open area of the mesh - this reduces not only energy costs, but also has a positive impact on the environment. In addition, the open area of the mesh allows the car park's interior to be lit naturally. This means that during the day, artificial light sources can be dispensed with as far as possible.

#### Sun protection

Whether with cold and snow, desert heat or strong winds - stainless-steel mesh can be used in all climates. Due to its precisely co-ordinated open area, architectural mesh breaks down and filters sunlight, and as such contributes to a pleasantly cool, but bright interior climate. The structure of the mesh provides effective shading, particularly with a high angle of sunlight incidence in summer.

#### Safety

Stainless-steel architectural wire mesh is particularly robust, stable and durable. As facade cladding and parapet or balustrade infill it is capable of providing effective fall protection.

#### Anti-glare protection

Architectural mesh can be adapted so that mesh cladding provides reliable anti-glare protection against reflections from the outside and inside. Haver & Boecker works closely with ZAE Bayern (Bayerisches Zentrum für Angewandte Energieforschung e. V.), which prepares project-specific glare assessments.

#### Individuality

HAVER Architectural Mesh opens up many options for individual and functional facade cladding. With a wide range of different mesh types and the possibility of coating the stainless-steel mesh, images and logos, the creative design of mesh facades is limitless. Mesh illumination bathes multi-storey car park facades in dynamic, colourful

light and transforms them into places of modern communication.

#### Cost effective

Only a solid substructure is required for attaching the architectural wire mesh due to the upper and lower attachment points. Depending on the size of the mesh elements, this is enhanced by intermediate attachment points. The costs for the substructure and assembly are significantly lower than when cladding facades with framed solutions.

#### Low maintenance - easy installation

HAVER Architectural Mesh is delivered ready to install and includes mounting equipment and assembly instructions. Once installed, stainless-steel wire mesh facade cladding requires little to no maintenance.

#### Sustainability

The environment also benefits as stainless steel has an average recyclable proportion of at least 80%, and when finished with it is fully recyclable. This not only creates a friendly and individual car park, but the building's sustainability is also increased.



Sun protection with a good view from inside. Car park, Chesapeake, Oklahoma, USA, LARGO-PLONUS 2022.

# CEILING DESIGN.

## REACHING NEW HEIGHTS OF DESIGN.

HAYER Architectural Mesh allows prestigious and at the same time functional ceiling designs that can creatively be designed due to the structure, type of installation and illumination - from shimmering, via translucent to opaque, from cool and elegant to warm and discreet.

Whether convex, concave or tensioned, in panels or cassettes – architectural wire mesh is suitable for both large and small areas. It improves a space's acoustics, and elegantly hides installations and integrated lighting.

Even the strictest fire regulations are complied with and, at the same time, the smooth operation of ventilation, air conditioning or sprinkler systems is guaranteed. Selected stainless-steel qualities make the mesh extremely durable and maintenance-friendly.

Suspended ceiling cladding with architectural mesh - concave, convex or flat tension.

### Benefits at a glance:

#### Brilliant protection of technical systems

Wire mesh is superbly suited to cladding technical systems. It protects equipment installed above the ceiling from physical effects and has the effect when viewed from the side of being almost hidden from view.

#### Optimum function of ventilation or sprinkler systems

The open area of the mesh guarantees the smooth operation of technical systems. The apertures of the mesh can be adjusted accordingly to the project's requirements.

#### Individual mounting solutions

Architectural mesh ceilings may be divided into flat or wave-shaped, tensioned or adjustable elements. As such, the mounting can be individually adapted to suit specific project requirements.

#### Use in acoustic ceilings

The structure of wire mesh disperses sound in all directions and also acts as a high-quality support for acoustic materials.

#### Large mesh panels

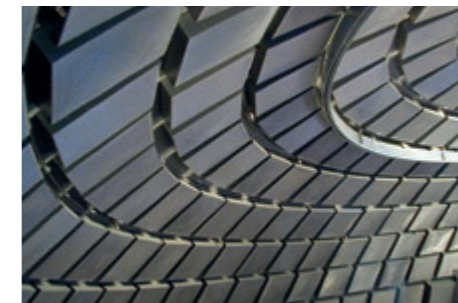
In connection with a corresponding substructure, large ceiling elements can also be designed with tensioned panels of architectural mesh.

#### Fire resistance

Stainless-steel architectural mesh is non-flammable and as such meets the strictest fire safety requirements.



Curved ceilings. Bielefeld Town Theatre, Germany, MULTI-BARRETTE 8123.



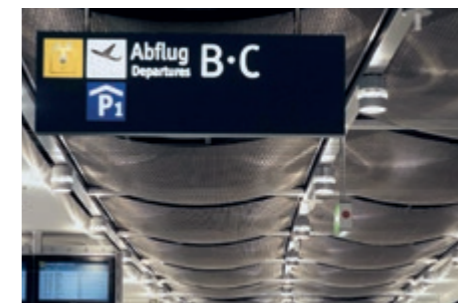
Cassette elements with acoustic fleece. Print Media Academy, Heidelberg, Germany, DETENTION.



Ceiling made from framed mesh elements. Krasnodar, Stadium, Russia, EGLA-MONO 5031.



Wire mesh as sun protection. Herne Bus Station, Germany, DOKAWELL-MONO 8967.



Ceiling elements with sag. Terminal B, Düsseldorf Airport, Germany, DOKAWELL-MONO 8965.



Functional ceiling cladding. Roissy Charles de Gaulle Airport, Paris, France, DOGLA-TRIO 1010.



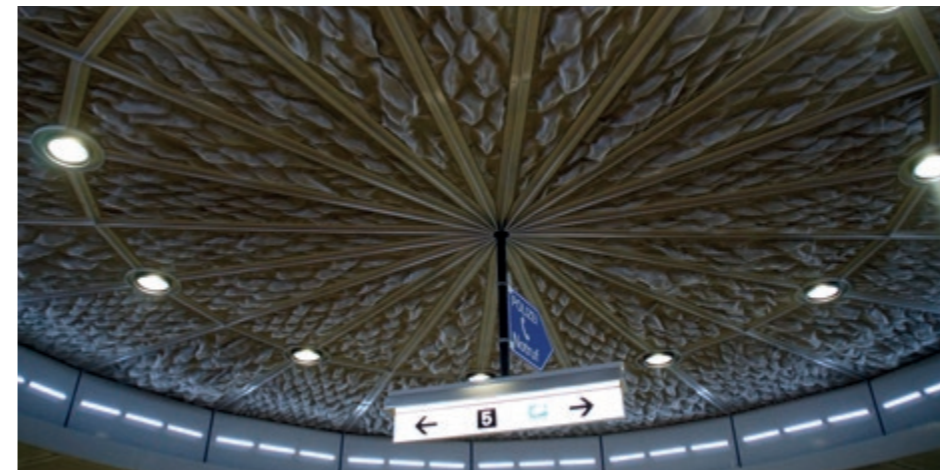
Architectural wire mesh guarantees the optimum operation of ventilation or sprinkler systems. Terminal S3, Roissy Charles de Gaulle Airport, Paris, France, DOGLA-TRIO 1010.



Modern acoustic fleece behind an elegant stainless-steel veil. Plenary Hall of the Reichstag building, Berlin, Germany, DOKA-MONO 1601.



HAVER Architectural Mesh for designing concert halls. Mount Royal University – Bella Concert Hall, Calgary, Canada, EGLA-LARGO 4337.



Three-dimensional stainless-steel mesh for improving the space's acoustics. Cologne light railway, Germany, MONTANA.



Ceiling elements DOKAWELL-MONO 3021, Stratford Station, London, Great Britain.

## AESTHETICS AND ATMOSPHERE. NEW FORMS OF EXCLUSIVE SPACE DESIGN.

Haver & Boecker woven mesh does not only improve spaces visually, but also creates a stylish and prestigious atmosphere due to its high-quality material and perfect workmanship. It fits into the architecture of any space and adds an expressive character with timeless elegance.

A comprehensive range of coarse and fine mesh, flexible and rigid mesh types as well as a wide range of different mounting possibilities offer new options for individual plans and exclusive design concepts. Self-supporting, space-defining designs are just as possible with stainless-steel wire mesh as with large structures on the walls and below the ceilings.

Wall design with HAVER Architectural Mesh DETENTION at the University for Economics, Vienna, Austria.

# WALL DESIGN

## NEW SIDES TO INTERIOR ARCHITECTURE.

Versatility, stability and an exclusive look make architectural wire mesh the ideal material for designing indoor walls. The interaction between surface structures, light reflections and colour effects offers planners and architects many options for combining the design of space with reliable functionality. At the same time the high-quality material meets all requirements of longevity and safety as apply specifically for public areas.

TEXTURA fine mesh partition wall, Amro Bank, Sydney, Australia.

### Benefits at a glance:

#### High-quality appearance

Architectural wire mesh offers a timeless elegance, is extremely durable and, in combination with appropriate lighting, a highlight for any interior design.

#### Protection of technical systems

Woven wire mesh is superbly suited to cladding technical systems. It provides a visually enhanced surface that is robust enough to protect sensitive equipment from physical influences.

#### Ideal for ventilation systems

The permeability of architectural mesh guarantees the smooth operation of ventilation systems. Depending on the requirements, the size of the aperture of the stainless-steel mesh can be adjusted accordingly.

#### Large mesh panels

As with facades, architectural wire mesh can also be tensioned over wide areas on walls. This provides uniform cladding and, at the same time, reduces outlay for the substructure.

#### Improved acoustics

Architectural wire mesh disperses sound in all directions due to its structure. At the same time, the mesh acts as elegant cladding with effective acoustic insulation materials.

#### Fire resistance

Stainless-steel architectural mesh is non-flammable and as such meets the strictest fire safety requirements.



Architectural mesh MINIFLEX 8135 makes the walls of the proscenium at Luxembourg's Théâtre Municipal shine.



Cladding of technical systems. Terminal 2, Cologne-Bonn Airport, Germany, MULTI-BARRETTE 8123.



Wire mesh cassettes made of architectural mesh MULTI-BARRETTE 8123. Qatar National Convention Centre, Doha, Qatar.

## EXTRA SPACE. DESIGNING AND REFINING CONCEPTS.

HAYER Architectural Mesh is the ideal material for cladding interior surfaces. As such, its modern, stylish look combines convincing functionality with stability and durability. With corresponding illumination by artificial light or daylight, the shiny surface creates interesting structures and reflections: An ideal solution, not only in prestigious areas such as operas or congress centres, but also in functional buildings as wall or staircase coverings.



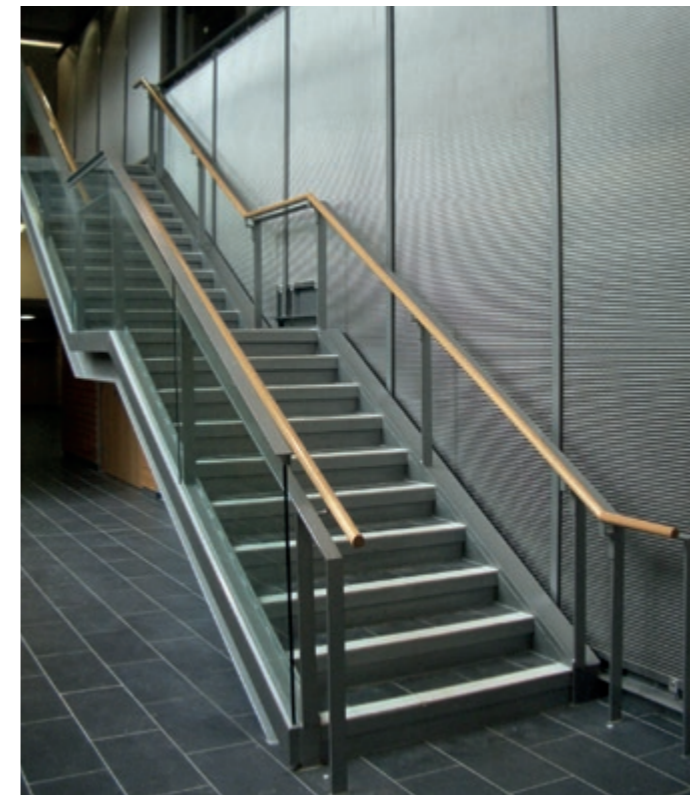
Modern interior design with painted stainless-steel mesh. Shiki Restaurant, Vienna, Austria, LARGO-PLENUS 2027.



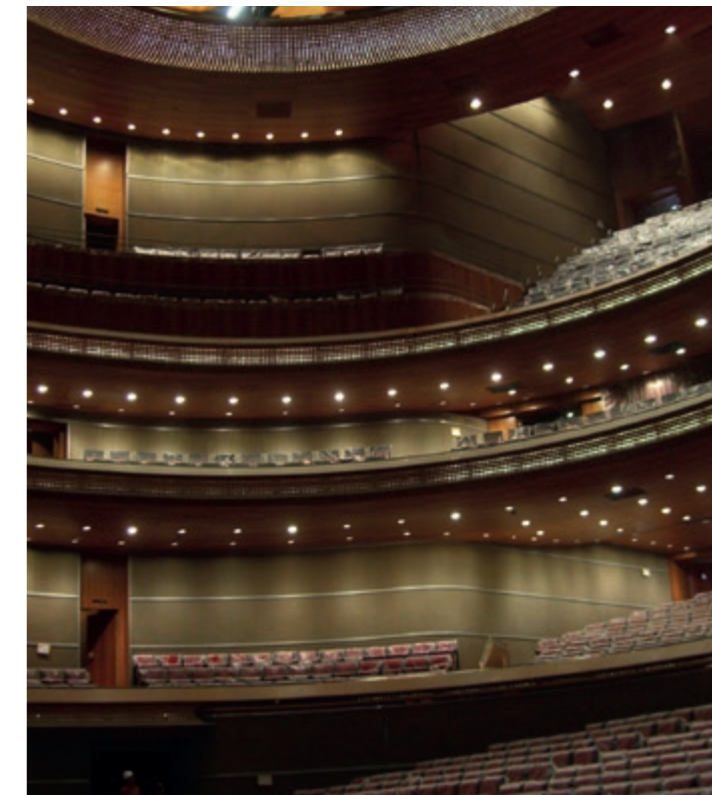
The mesh element's specific colouring underlines the exclusivity of the room. QNCC, Doha, Qatar, MULTI-BARRETTE 8123.



Exclusive wall covering made of DOKAWELL-MONO 3001 at Custo Barcelona, Spain.



Staircase wall covering. ECLA-TWIN 4223, Lamton Hall, Guelph, Ontario, Canada.



Golden mesh wall covering made of wire mesh MONO-BARRETTE 8147 at the National Grand Theatre Beijing, China.





Lightness and the elegance of textile due to HAVER Architectural Mesh MULTI-BARRETTE 8301 and DOGLA-TRIO 1032. Bridge cladding Getingmidjan, Stockholm, Sweden.

# BALUSTRADE.

## SAFETY WITH ELEGANCE.

As fall protection and balustrade infill, HAVER Architectural Mesh provides an elegant look and meets the highest requirements for safety and stability. The semi-transparent stainless-steel mesh creates either transparency or privacy. Depending on the purpose, different weave types and alloys that are particularly resistant to the weather and physical effects are available.



High-quality look with stainless-steel mesh. Private residence, Toronto, Canada.



Wire mesh as stylish balustrade infill. St. Michael's Hospital, Toronto, Canada, EGLA-TWIN 4223.



Robust safety. Pfaffenthal lift connection, Luxembourg., MULTI-BARRETTE 8123.

### Benefits at a glance:

#### High quality appearance

Despite its stability, architectural wire mesh adds lightness and the elegance of textile to any balustrade. Thanks to its transparency and the reflective stainless-steel surface, captivating light effects can be created in combination with the appropriate back-lighting.

#### Semi-transparency

When viewed from the side, architectural mesh appears to be closed, but open when viewed straight on. This allows, for example from a balcony, a good

view of the outside world, while the view in from the street is severely restricted.

#### Stability

Architectural mesh consists of high-tensile wires and guarantees a high degree of safety in combination with a special attachment technique.

#### Longevity

Architectural mesh has an extremely long service life. The use of corrosion-resistant stainless-steel makes architectural mesh balustrades a timeless highlight in terms of technology as well.



Shimmering light reflections of the Bru Bridge over the River Kvina, Norway. DOKAWELL-MONO.



Semi-transparent railing infill made of EGLA-DUO 4222. Railroad station Agen, France.



Stairwell cladding using two layers of architectural mesh to create the moiré effect. McGill University, Montreal, Canada.

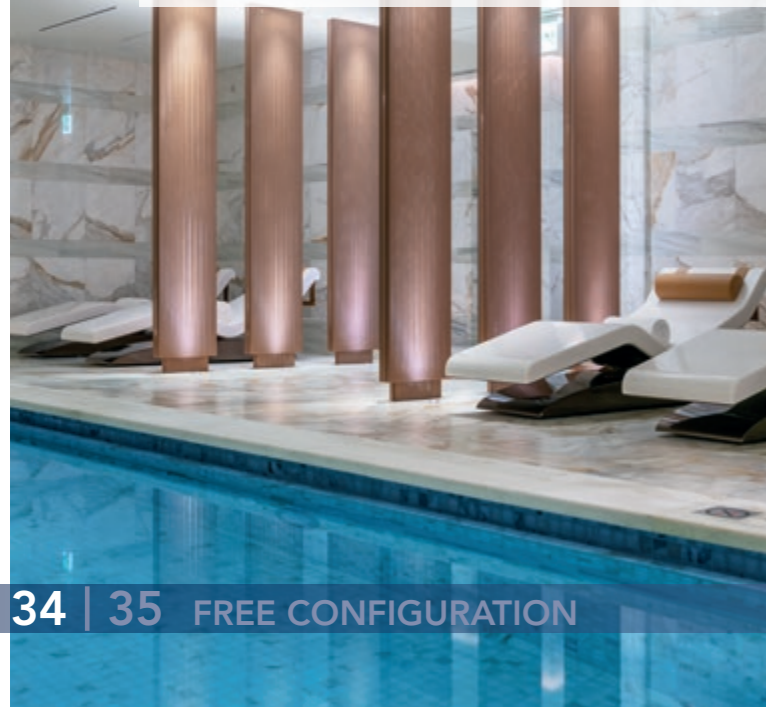
Stainless-steel mesh's varied properties open up an almost endless range of possibilities.



# FREE CONFIGURATION.

## CREATIVITY IN ITS MOST BEAUTIFUL FORM.

Versatility and robustness, stability and an exclusive look make HAVER Architectural Mesh the ideal material for designing spaces and areas as well as functional and design elements both inside and outside. Our stainless-steel mesh allows you to undertake challenging projects of the highest quality.



### Benefits at a glance:

#### Wind protection and privacy elements

The selection of an appropriately dense weave type also allows wire mesh to be used as efficient wind protection and privacy. Varying angles of view and lighting situations constantly ensure new effects due to the structure of the mesh.

#### Exhibition and retail construction

Architectural mesh creates different zones without them being completely separated visually. At the same time it is ideally suited for covering floors and walls, or as a ceiling canvas. The light reflected by stainless-steel mesh also allows targeted light control.

#### Aviaries

Transparency and robustness make woven wire mesh an ideal material for housing aviaries. Mounting solutions can be adapted to accommodate the shape of the aviary. The transparent effect of the wire mesh can be further enhanced by coating it black.

### Design objects

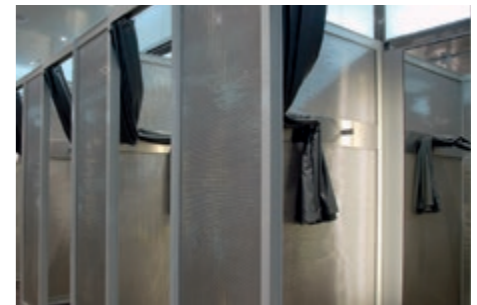
The varied properties of woven wire mesh opens up an almost endless range of possibilities for designers. This allows wire mesh to be worked into unique sculptures or used as the surface for an item of daily use. There are different metal meshes in various weave types and mesh counts available for this.



Mesh with varying aperture widths. Mediathèque Chateaugiron, France.



Design object. DOKAWELL-MONO 3001, Flora 2006, Montreal, Canada.



Changing room featuring wire mesh. Mode-Boutique, London, Great Britain, LARGO-PLenus 2027.



Lift shaft cladding with architectural mesh, Ulm Town Library, Germany, ECLA-TWIN 4243.



Wire mesh as enclosure fencing. Parc Zoologique, Thoiry, France, DOKAWELL-MONO 3291.



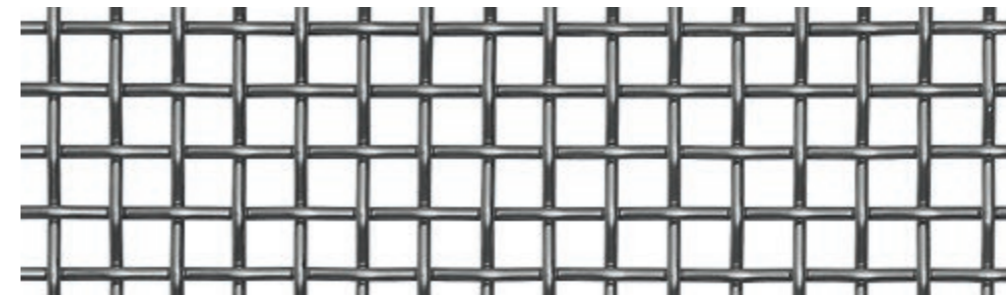
Shop design with architectural wire mesh DOKA-BARRETTE 8914. Paris, France.

# ARCHITECTURAL MESH TYPES.

## PATTERNS OF DIVERSITY.

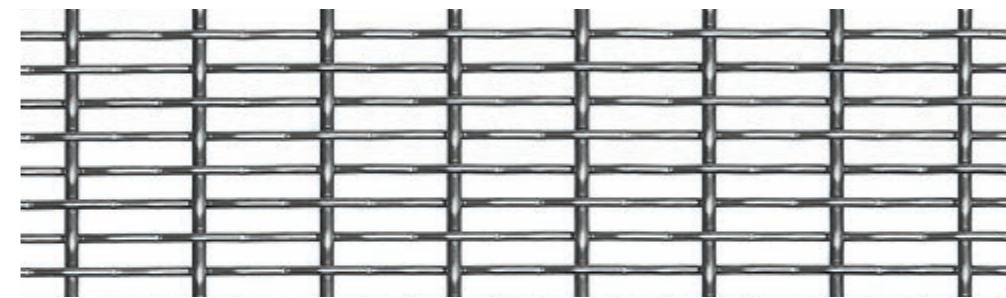
The weaves and mesh types manufactured by Haver & Boecker for architectural applications are as diverse as the architecture itself. The choice of weft and warp, as well as the weave type, result in the widest range of mesh patterns, each with a specific look and light effect. The use of various materials as well as glossy, silk matte or coloured mesh surfaces also allows the design spectrum to be expanded.

On a scale of 1:1 the following examples are a representative selection of the main types from our comprehensive range of wire meshes. Of course, we can also develop entirely individual weave types for specific requirements. Please visit our website at [www.weavingarchitecture.com](http://www.weavingarchitecture.com) where you will find more information and images of HAVER Architectural Mesh.



DOKA-MONO 1851

$G^1$ (kg/m <sup>2</sup> )	$A_o^2$ %
6,1	58



DOKAWELL-MONO 3571

$G^1$ (kg/m <sup>2</sup> )	$A_o^2$ %
4,5	60



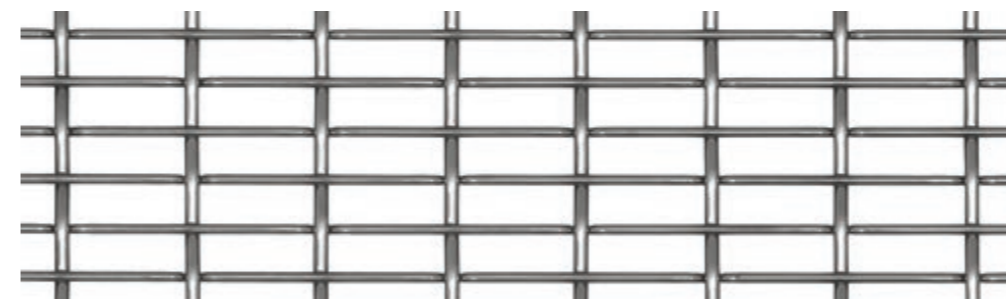
DOKAWELL-MONO 3691

$G^1$ (kg/m <sup>2</sup> )	$A_o^2$ %
4,2	70



EGLA-MONO 4881

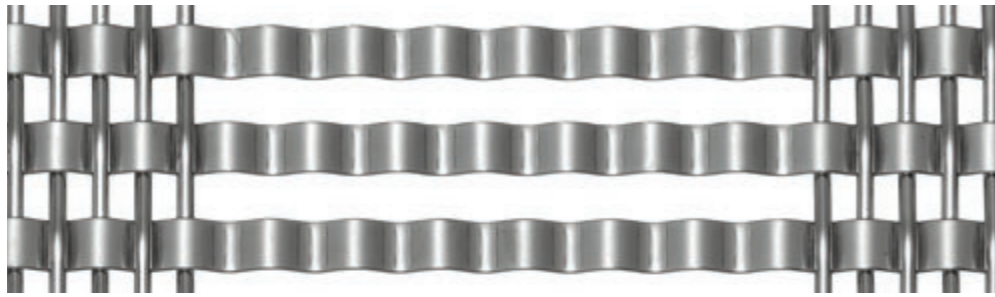
$G^1$ (kg/m <sup>2</sup> )	$A_o^2$ %
5,2	52



EGLA-MONO 4832

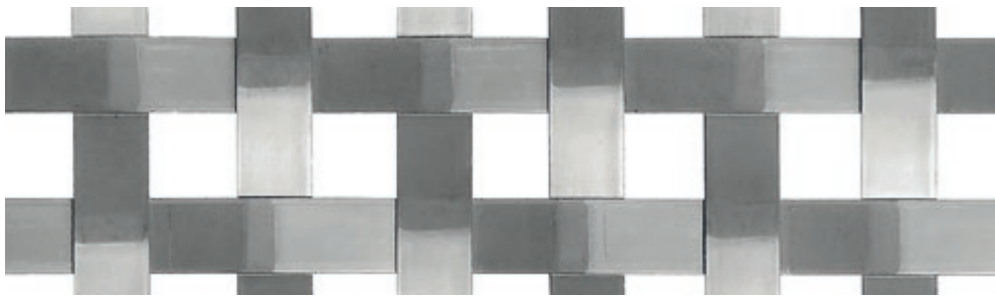
$G^1$ (kg/m <sup>2</sup> )	$A_o^2$ %
3,4	69

<sup>1)</sup> G=Weight, <sup>2)</sup> A<sub>o</sub>= Open Area



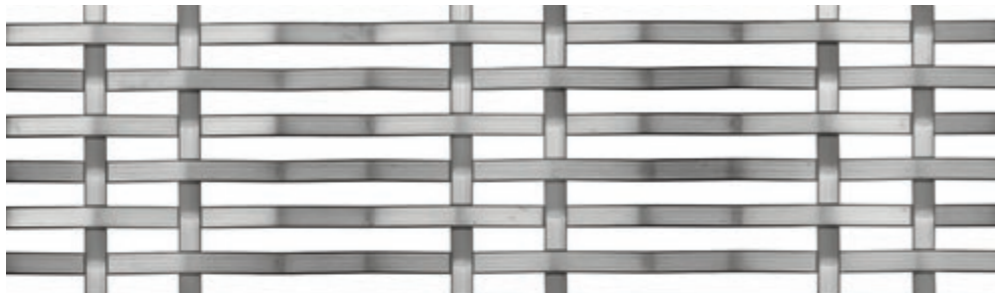
LARGO-NOVA 2032

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
6,6	40



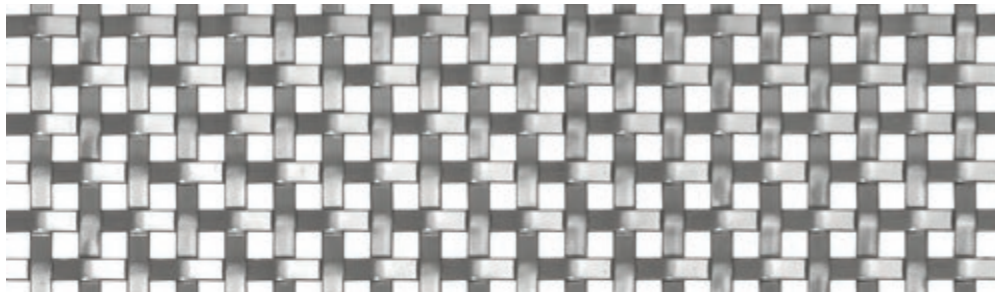
LARGO-PLENUS 2022

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
8,1	25



LARGO-PLENUS 2047

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
5,1	43



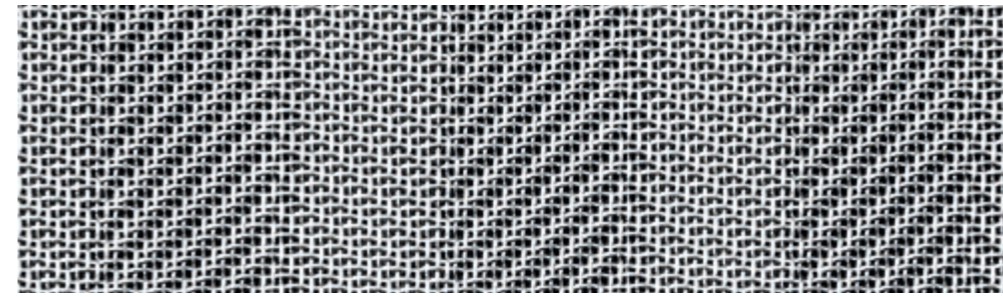
LARGO-PLENUS 2127

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
7,45	28



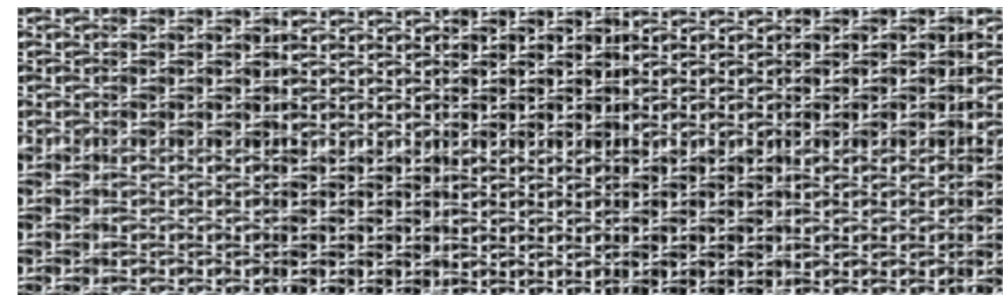
LARGO-TWIST 2045

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
5,5	38



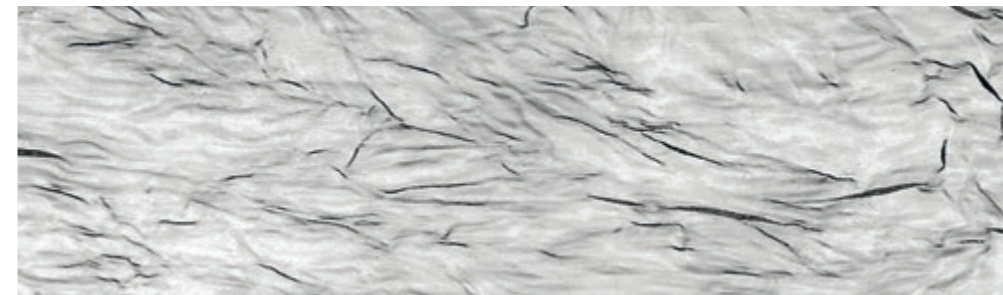
ALTERNA 6012

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
3,0	34



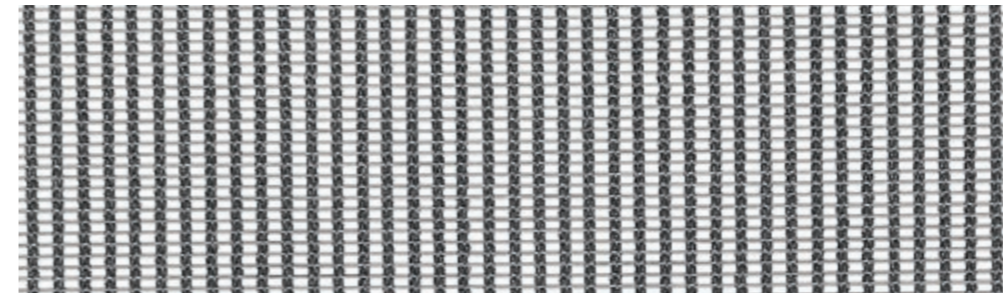
CHESS 6013

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
3,2	31



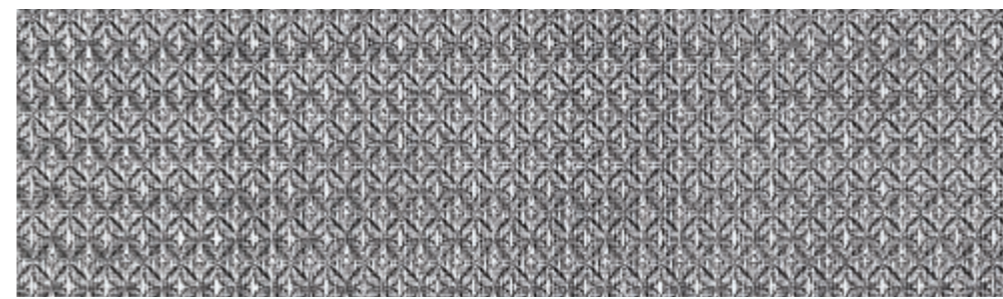
TEXTURA 1991

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
0,3	41



MINIFLEX 8135

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
2,1	39



STRUCTURA 6501

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
1,1	22

<sup>1)</sup> G=Weight, <sup>2)</sup> A<sub>o</sub>= Open Area



abZ

MULTI-BARRETTE 8123

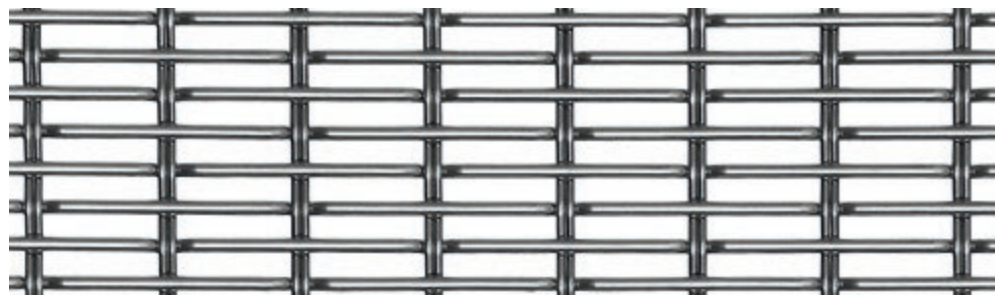
$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
6,6	64



abZ

DOGLA-TRIO 1033

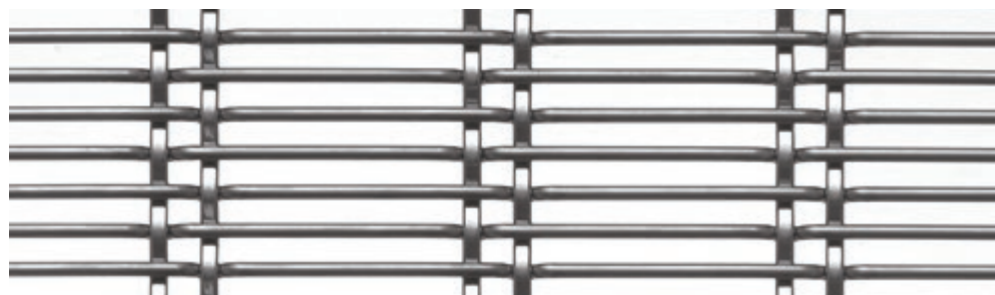
$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
6,5	67



abZ

EGLA-TWIN 4253

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
6,0	51



abZ

EGLA-DUO 4262

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
6,6	52



abZ

DOKAWELL-MONO 3601

$G^{1)}$ (kg/m <sup>2</sup> )	$A_o^{2)}$ %
5,3	52

<sup>1)</sup> G=Weight, <sup>2)</sup> A<sub>o</sub>= Open Area

## NATIONAL TECHNICAL APPROVAL (abZ). ON THE SAFE SIDE RIGHT FROM THE START.

Facade claddings made of wire mesh from Haver & Boecker have been tested by the German Institute for Construction Technology (DIBt) and are now granted with the certified general building approval (abZ). Woven wire mesh facades made of HAVER Architectural Mesh therefore meet the requirements regarding standard-compliant building products for facades in line with the German Model Building Regulation (MBO). Five of the most frequently used mesh types, including the corresponding mounting solutions, are now certified building products and can be used throughout Germany in accordance with state building regulations. In addition to facade cladding made of stainless steel mesh, the abZ Z-14.7-923 also includes wall and ceiling claddings, as well as parapets and fall protections made of stainless steel wire mesh.

### The abZ applies for the following wire mesh types\*:

- Cable mesh: MULTI-BARRETTE 8123
- Rigid mesh: DOGLA-TRIO 1033, EGLA-TWIN 4253, EGLA-DUO 4262, DOKAWELL-MONO 3601

\*After testing: Other wire mesh types are also possible.

### Advantages at a glance:

#### Time and cost savings

Save time and money - Case-by-case approvals are therefore no longer necessary in the private and commercial sectors.

#### Binding values

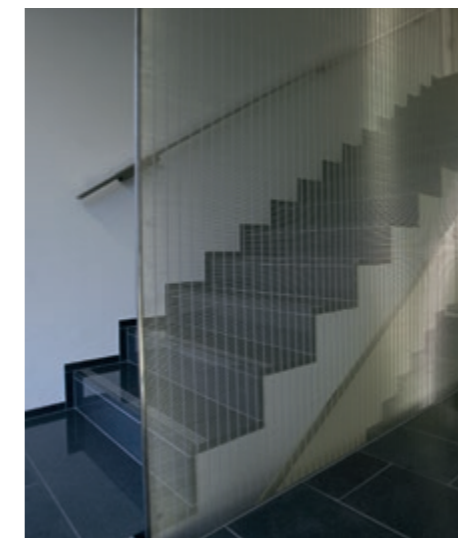
Benefit from the tested and binding performance values collected by the German Institute for Construction Technology (DIBt).

#### Legal compliance

Profit from the legal compliance of the accepted and approved standard-compliant building products HAVER Architectural Mesh.



Facade cladding of a parking garage with the HAVER Architectural Mesh DOGLA-TRIO.



Fall protection on the stairwell with wire mesh cladding made of MULTI-BARRETTE.



Bridge cladding at a train station made of stainless steel wire mesh EGLA-DUO.

# MOUNTING.

## SECURE SOLUTIONS FOR INSPIRATIONAL INSTALLATIONS.

Various edgings and tensioning systems are available which are capable of integrating both the technical and visual aspects of architectural wire mesh into the ceiling and facade design. They ensure easy and safe installation as well as the optimum durability of the entire construction.

The following pages show a selection of the main options.  
Please visit our website at [www.weavingarchitecture.com](http://www.weavingarchitecture.com) where you will find further information about Haver & Boecker mounting solutions.

**Facade mounting - wire mesh**  
Mesh elements can be tensioned over several storeys using flat tension profiles, clevis screws and pressure springs. A solid substructure for absorbing the resulting loads is required at the upper and lower face. Intermediate mounting is provided at each floor level by means of a round tube and wire connectors running behind the mesh.



Top mounting: flat tension profile and clevis screws.



Intermediate mounting: round tube and wire connectors.



Bottom mounting: flat tension profile, clevis screws and pressure springs.



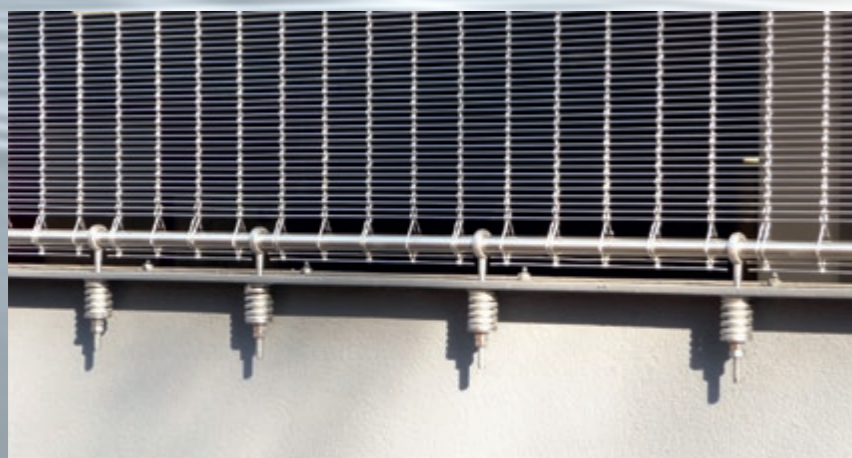
Mounting solution for wire mesh facades.



Top mounting: round bar with eyebolts.



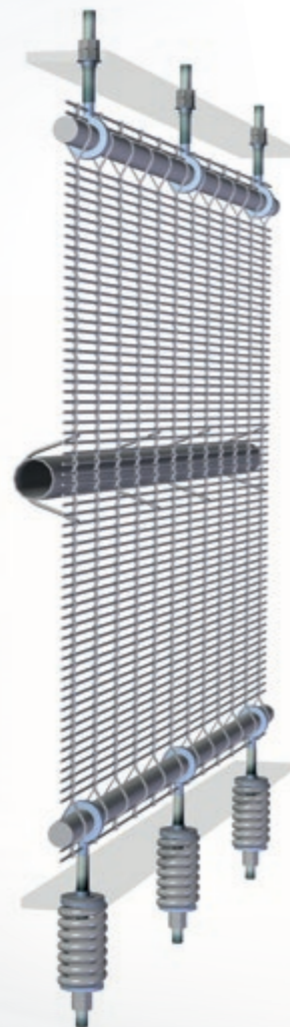
Intermediate mounting: round tube and wire connectors.



Bottom mounting: round bar with eyebolts and pressure springs.

### Facade mounting - cable mesh

Cable mesh can also be tensioned over large areas using round bars and eyebolts. For intermediate mountings, round bars and pendular clips or alternatively round tubes and wire connectors can be used.



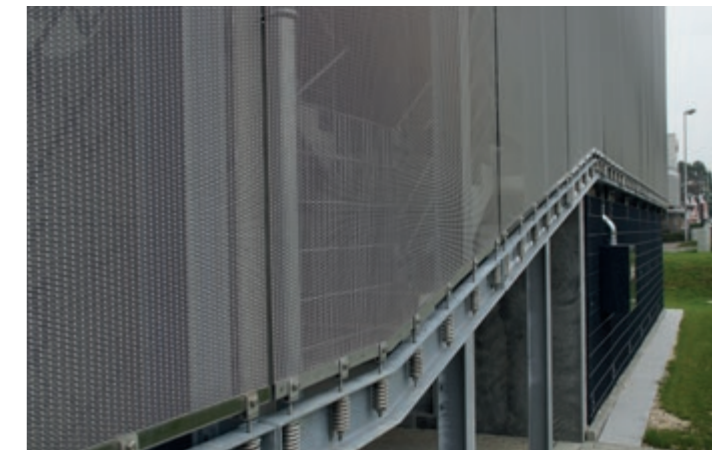
Mounting solution for cable mesh facades.

### Facade mounting - special shapes

Each project has its own specific requirements. Whether curves, angled edges or cut-outs: Special solutions are individually determined and implemented with planners and contractors.



Angled elevation.



Pre-curved elements.



Rounded edges.



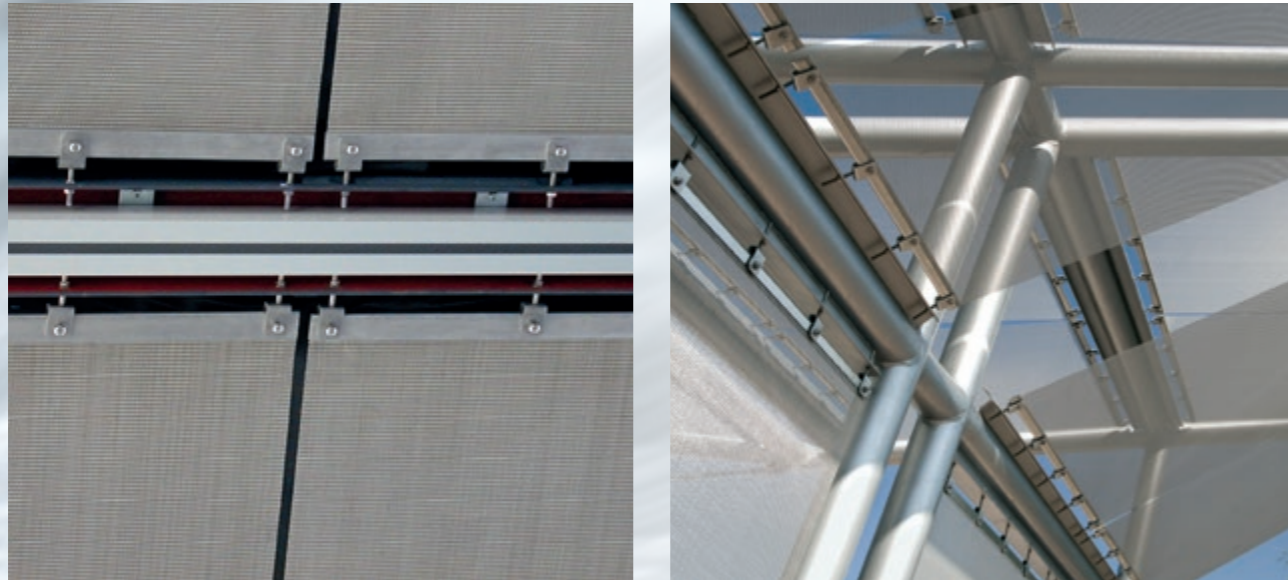
Cut-outs in mesh elements.



Mesh with edge protection profiles.

### Mounting solutions for ceilings

Tensioned across a wide area or in removable elements HAVER Architectural Mesh ceiling elements are able to meet a project's visual and technical requirements.



Fixed mounting system for ceiling with flat tension profiles and clevis screws.

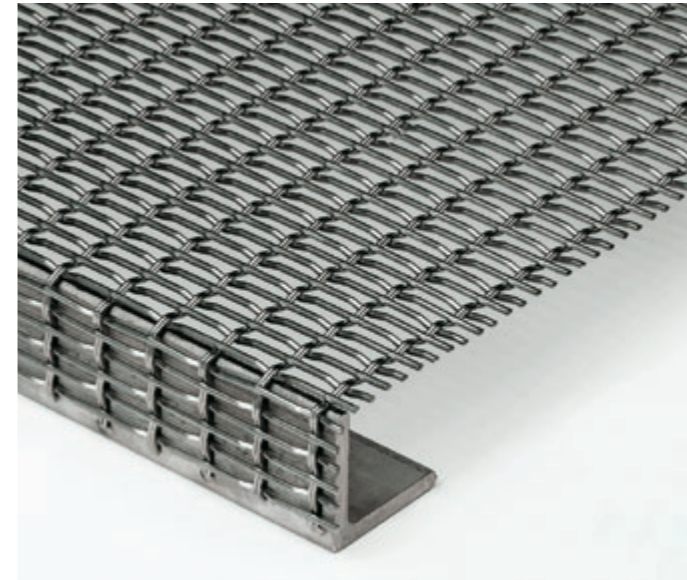


Adjustable mounting system for ceilings with sag.

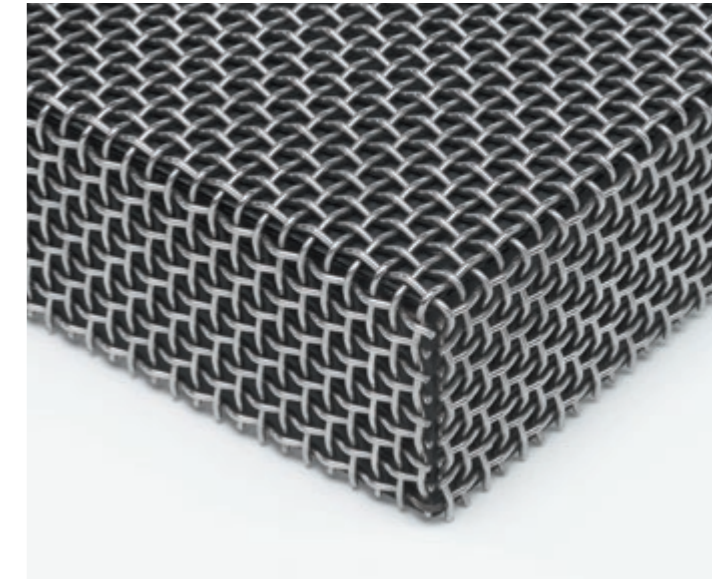
Removable mounting system for ceilings without sag and with framed elements.

### Frame options

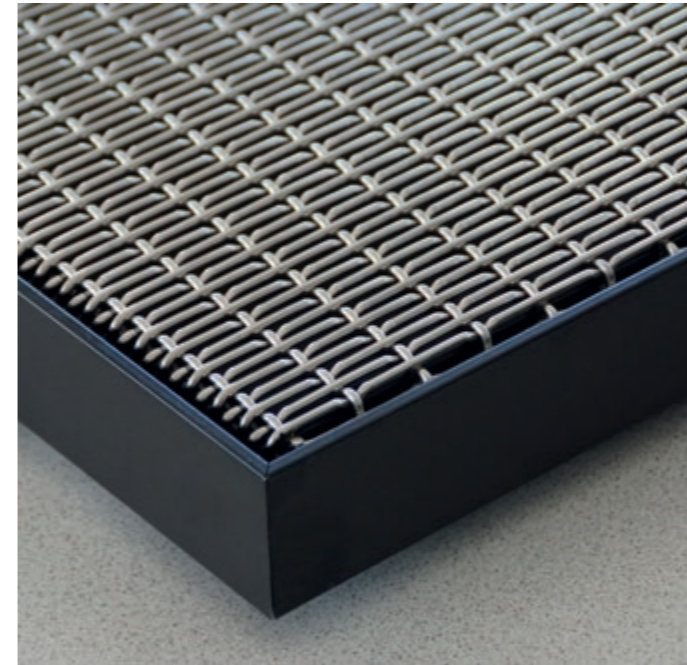
There are various design options available to select from for suitable frame solutions:



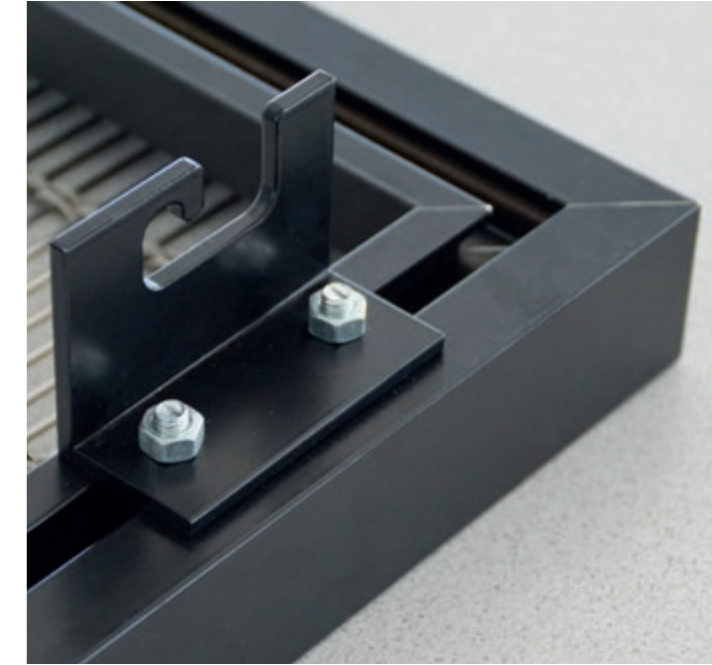
Mesh with edges folded at 90°, welded to L-profile.



Mesh folded at 90° on all sides and fixed to a frame.



Special version: Mesh integrated into special aluminium frames.



Special version: Hanging options for framed elements.



HAVER & BOECKER OHG

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