FREEDOM OF DESIGN FREEDOM OF IMAGINATION FREEDOM OF FORM

Engineered Architectural Metals









Freedom Of Design

Architecture can be both functional and beautiful. Freedom of design, freedom of movement, freedom of imagination and freedom of form all result in the freedom to build a unique architectural expression.

We are the global solution provider for freeform architectural shapes with a variety of standing seam roofing panels. Tapered, curved, serpentine, convex, concave all designed and custom manufactured to follow and enhance the contours of almost any structure. To achieve total freedom of design, we pioneered contoured metal panels with our BEMO-Mobile Factory Mills™, BEMO-Monro™ mills and now, BEMO-Lightspan™ extends even further the edge of creativity with advanced ETFE architectural systems. Engineered metal panels in virtually any shape combined with the flexibility of ETFE foil is the zenith of the architectural building envelope.

Meeting the Demands Of Architectural Excellence

Industry pioneers for more than 30 years, our engineers and project managers are experts in architectural metals. Our standing seam metal roof panels have covered buildings large and small for decades. We have developed proprietary and totally self-contained mobile mills for panel manufacturing on-site, anywhere in the world. BEMO-Flex™ can transform the shape of a faceted structure to flowing curved lines. High wind load or low slope, our engineers have tested and certified panels and attachments for extreme environments and long seamless roof lines.

When the project calls for solar panels and safety systems, we have engineered and tested penetration-free solutions. BEMO-Akkord™ rails provide an attachment platform for photovoltaic solar panels. Worker safety systems are integral to a finished project. Bemo, in conjunction with global fall safety manufacturers, has developed a comprehensive set of attachments, cables, and rails.



Rendering showing a BEMO 65/400 Roof Panel using BEMO Hook Clips to secure panels to structure.



Cost Efficiency

With BEMO, you can have the best of both worlds: highly attractive roof and wall solutions that are very cost-effective. Our 3D surveys of the as-built structure create a precise digital model, paving the way for a more simple, safer and accurate installation.

Thanks to our mobile production factories, we can manufacture systems directly at your construction site, minimizing shipping costs, therefore, reducing the carbon footprint of the overall project. When it comes to materials, we consider all key criteria, including quality, durability, and ease of maintenance. We use finishes that require less frequent cleaning. All this ensures cost-effective planning, construction, and maintenance.



Sustainability We put a great deal of energy into ensuring that buildings require as little energy as possible – by designing and deploying innovative systems and solutions. The

state-of-the-art BEMO halter, made of fiber-glass reinforced material, prevents thermal transfer between roof and building. Our specially designed rails create continuous surfaces that are ideal for the rapid and reliable installation of photovoltaic and solar thermal systems. We use aluminum, the ultimate eco-friendly material that's 100% recyclable.



Bemo USA Is a Full Metal Systems Company

We are the leading developer of high-performance metal roof and wall systems for the entire building envelope. With unparalleled experience using stainless steel, zinc, copper, aluminum, steel and titanium, Bemo USA provides superior building solutions and field-proven technical advisors. The BEMO-Roof panel system provides the most advanced and versatile structural standing seam roofing system available in today's architecturally demanding market. These systems offer the highest wind uplift ratings with the greatest flexibility of any structural standing seam panel in the world. With its bold lines and its ability to be smoothly convex, concave or serpentine curved, this roof panel system offers years of low-maintenance service combined with high visual-impact applications.

Our exclusive BEMO-Mobile Factory Mills provide the highest-quality panel sheet shapes, smooth curves and true tapered panels available anywhere in the world. Bemo USA also offers custom-width panels in continuous rolled-formed shapes and has the industry's first multiple-axis panel with the BEMO-Monro system providing continuous single-pass panels rolled into 3D shapes.



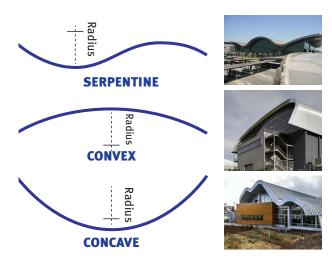




Extreme Flexibility

Convex, concave or even "S" curves can be easily and efficiently accommodated by the BEMO-Roof system. The BEMO-Roof panels can be curved by means of our specially developed mill that can curve the BEMO panels smoothly to a radius as tight as 10' (3.01 m) or less, depending on the profile and material used.

BEMO-Roof panels can be manufactured using many different metal substrates. The most common is PVDF-coated or mill-finished aluminum. Bemo USA offers many standard PVDF finishes, represented in our BEMO color collection brochure, which can easily be applied to aluminum, G-90 galvanized, Galvalume and Zincalume.



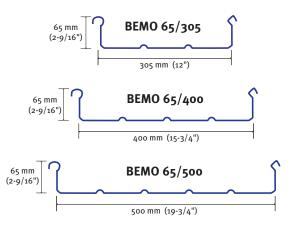




Tapered And Custom-Width Panels

Tapered (pie-shaped) and custom-width panels are efficiently and economically manufactured with one of the world's first mobile tapered roll-forming mills for structural standing seam panels. This technology can provide tapered and custom-width roll-formed panels in continuous uninterrupted lengths of hundreds of feet.





Metal panel profiles available in 3 standard widths using stainless steel, zinc, copper, aluminum, steel and titanium. Custom widths are also available.

Engineered Components

A high-performance system is only as good as its details and parts. Bemo USA designs, engineers and tests each detail treatment and component that go into every system to ensure exceptional performance. From the industries' only zero-wear hook-clip system to the BEMO high-temperature self-adhering 40 mil (1.0 mm) underlayment, Bemo USA does not compromise or take shortcuts on any aspect of a roof assembly. Low-maintenance detail treatments provide owners with years of low life cycle cost roof installations.





BEMO Hook Clip to accommodate metal panels as long as 328' (100 m). BEMO Long-slide Hook Clip with 7.5" (190 mm) of travel to accommodate metal panels as long as 400' (122 m).

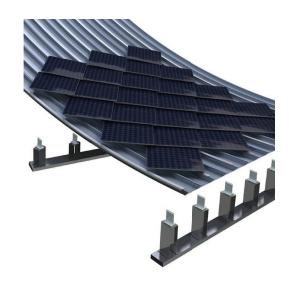
BEMO Hook Clips Engineered For High-Wind Environments

Typhoons and hurricanes are no match for BEMO Hook Clips. Surviving two super typhoons and over 27 named hurricanes without a single panel being blown off a BEMO Roof system, BEMO Hook Clips firmly secure BEMO panels to the structure. They are engineered to accommodate the expansion and contraction of various lengths of the roof panel and the industry's only zero-wear system in a 100,000 cycle test. BEMO Hook Clips are also available in several different corrosion-resistant alloys.

BEMO-Flex™ Provides Multi-Axis Attachment Points To Control Height, Angle and Pitch

BEMO-Flex allows precise, high-quality and affordable application of complicated roof and wall systems. Developed specifically for BEMO standing seam metal roof panels and wall systems, BEMO-Flex assemblies provide the solution achieving smooth surface lines.

The BEMO-Flex system for BEMO standing seam metal roofs has the ability to provide multi-axis attachment points controlling height, angle and pitch of each clip attachment point, a segmented or "out of plane" deck all while reducing labor costs and increasing construction efficiencies.





BEMO WALL/FAÇADE SYSTEMS and BEMO-INVISIO™

Bemo Versatility – For Unbeatable Flexibility In Wall/Façade Design

Design freedom is not just for the roof. Bemo USA extends freedom of architectural expression to the wall/facade as well. We produce a wide variety of wall and soffit systems from shop mitered corners, custom curved bullnose cornices and perforated roll-formed panels that allow the

> sun to show through - creating a custom solution for the metal envelope.

Panels can have smooth or micro-ribbed surfaces with optional shadow gaps with concealed mounts and be installed at almost any angle.

Panels are available in a choice of widths and lengths.

Sheets and panels are available in all BEMO materials, with many different finishes and colors.

We are the leader in providing innovative wall systems that are environmentally responsible. Using low emissivity finishes, high-recycled and 100% recycled content materials we can help architects and owners with energy efficiency and credit towards LEEDs certifications.







Perforated panels add life to a project. Outdoor environments can be created using perforated panels to manage the sun/shade of the exterior space that extends the use and enjoyment of any project. Bemo USA custom roll-formed perforated panels can easily create useful outdoor space.

> From the roof system to the entire architectural envelope, Bemo USA custom manufactures the metal envelope. Transition from roof to exterior walls is critical, Bemo USA can design and fabricate custom soffits and bullnose to very precise specifications.







BEMO-Invisio™ Invisible Joinery Wall Panel Systems

BEMO-Invisio is the perfect fastening system for composite and solid aluminum panels. Invisible, aesthetic and cost-effective, the system provides fast and efficient installation allowing fine adjustments to be made during final assembly.

The system offers architects and designers the possibility of using very large panel sizes up to 236" x 78" (6000 mm x 2000 mm) with near-invisible seams. Rear reinforcing of the panels is not necessary adding to the cost efficiency.

The linear expansion of panels is compensated via sliding fastenings to substructure rails. Edges running around the perimeter of the panels can have the same color to create durable. secure seams. BEMO-Invisio is also available in curved panels with large radii.

High-quality, perforated panels and closed cutting edges as well as perfect corner and jamb lipping round off the high-quality appearance of BEMO-Invisio facades.



















BEMO-FLEX™ and BEMO-SOLAR ATTACHMENT SYSTEMS



Freeform Architecture Parametric Design For Smooth Flowing Graceful Lines

Bemo USA, the pioneer of architectural metal envelopes, has shaped the skylines of major airports, sports complexes, arts centers, and distinct corporate structures for decades. Historically, buildings have been designed as either having straight or segmented steel or wooden structures which yield straight and/or segmented exterior lines.

The usual approach has been to utilize curved steel and curved deck sections to yield flowing lines, but it is done so at an exponentially higher cost.



BEMO-Flex Provides Multi-Axis Attachment Points To Control Height, Angle and Pitch

With the BEMO-Flex system architects and owners can achieve the graceful lines and parametric design they desire much more economically. The BEMO-Flex system for BEMO standing seam metal roofs has the ability to provide multi-axis attachment points controlling height, angle and pitch of each clip.

controlling height, angle and pitch of each clip attachment point, off of a segmented or "out of plane" deck all while reducing labor costs and increasing construction efficiencies.

This allows precise, high-quality and affordable application of complicated roof and wall systems. Developed specifically for BEMO standing seam metal roof panels and wall systems, the BEMO-Flex rail modules provide the solution of achieving smooth surface lines.

Through a combined use of project surface and deck models, 3-D and Total Station scan, proprietary software and the latest generation manufacturing processes, Bemo USA offers this mass-customized system that meets even the most aggressive construction schedules. The typical lead time from scan to products ready to ship is only a few weeks.

The BEMO-Flex system can also be applied to retrofit applications where an existing structure needs a new weather surface, an air-space for additional insulation or a desire to increase roof slope to change the final visual lines.

With the combination of BEMO-Flex, BEMO-Mobile Factory and BEMO-Monro, we take freeform architectural roof/wall systems to a finished project. From imagination to reality, Bemo USA has the solution.



Bemo Solutions For Rooftop Energy Attachment: Sustainable, Cost-Effective and Safe

BEMO-Akkord[™] rails is a highly cost-effective solar-thermal collector attachment system that is integrated into the building's roof.

BEMO-Akkord rails are specially designed to create continuous attachment points that are ideal for the rapid and reliable installation of photovoltaic and solar thermal systems. For the ultimate eco-friendly solar collection and material, we use aluminum that's 100% recyclable.

With the use of BEMO-Akkord profiles, energy and heat generation systems can be installed without penetrating the roof panels.

The BEMO standing seam panels' effective width can be varied, allowing you to choose rooftop solar modules of practically any size.









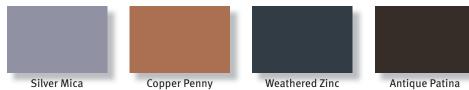
BEMO ARCHITECTURAL COATINGS Engineered Architectural Metals www.bemousa.com



Creativity Without Constraints With Exceptional Durability

Standard Colors* – Custom Colors Available





Bare Metals, Patterns and Textures¹









Zinc



Bemo USA's coating products are available in an unparalleled range of colors and in any finish from matte to high gloss.

BEMO-Colors are exceptionally high-quality coatings ideal for out-of-the-ordinary walls, low-pitch roofs and harsh climatic conditions. PVDF is available as a 2-coat, 3-coat and 4-coat system. It is highly resistant to UV light and chemicals.

BEMO-FLON, an FEVE Resin coating, is ideal for low slope and harsh environmental conditions. It is highly resistant to UV light, can be field applied to welded conditions and is available in all finishes, from matte to high gloss.

BEMO-EcoClean™ is a hydrophilic, durable and self-cleaning coating. When exposed to natural elements, it actively neutralizes nitrogen oxides in the atmosphere.

BEMO-Color coatings offer finish warranties of up to 30 years.







These are standard colors and textures. Please consult your Bemo representative for other standard and custom colors.

*All color samples are approximate only and are not necessarily accurate due to printing process and viewing conditions. Please consult your Bemo representative for actual color samples.



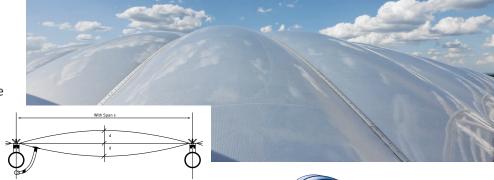
BEMO LIGHTSPAN™, PERFORATED METALS and SAFETY SYSTEMS



Bemo USA – Merging Metal and ETFE As Architectural Elements

Bemo USA Corporation, the leader in freeform architectural metals, is now a leading engineering and installation components company for ETFE foil construction. Bemo USA expertise includes architectural metals and ETFE foil. We give the most forward-thinking architects the potential to imagine and design monumental building envelopes never seen before.

ethylene tetra flouro ethylene (ethe) was developed by Dupont in the 1970s as an insulation material for the aerospace industry. Ethe was discovered as a new building material for its strength, weight and translucent light transmission. Ethe foil is used as a far lighter alternative to glass with 10% of the weight while providing high natural light transmission that eliminates harmful UV rays. Beyond the robust properties of Ethe, structures with foil can be transformed nightly with a variety of lighting options that create stunning visual effects.



Bemo USA's world-class capabilities for forming metal panels for the entire building envelope and the additional integration of ETFE foil to a light-weight space frame structure can create signature projects that are only limited by imagination.

We have a combined experience designing, engineering, and consulting for architects and general contractors to manufacture and install ETFE foil around the world. Beyond providing services to ETFE film projects, we have a proven line of installation components developed specifically to attach ETFE foil pillows to a structure and the infrastructure to keep it inflated. To keep each pillow properly inflated, we have engineered air-handling equipment, tubing, and connector nozzles that provide steady air pressure for a long-lasting eye-catching structure.



Custom Ceiling Options and Screen Walls

The almost unlimited variety of patterns, material, and colors give your project a custom appearance at commodity pricing. In addition, a made-to-order ceiling system using standard ceiling grid components eliminates the need for special installation instructions creating a fast, cost-effective one-of-a-kind project.

Nearly any corporate identity, logo, mascot, or unique pattern can be incorporated into a ceiling system, interior environment, or screen wall. Unique patterns can be on a single tile or across multi-grid tiles – the applications are endless.

Fits in standard ceiling grid system:

- Ceiling grid tee width (9/16" or 15/16")
- Tegular and flat lay-in
- Acoustic barrier lay-in fiber insulation type and thickness depends on desired STC and/or NRC sound rating





BEMO



We partner with the world's leading global fall safety manufacturers. Our engineers and safety partners design, engineer, and test their OSHA Compliant HLL safety cable and guardrail systems.

Roof maintenance can be hazardous, but Bemo and our industry partner's family of worker safety systems can significantly reduce the danger of working at heights. The comprehensive range of fall arrest and fall protection systems offers fully compliant, practical solutions for roofing configurations of all types. Our standing seam attachment safety components are engineered specifically for BEMO 305 (12"), 400 (15 3/4"), and 500 (19 3/4") panels – and are always penetration-free.

Our safety systems are designed to absorb the energy generated using force management anchors and cable systems in case of a fall. The stainless-steel cable makes comprehensive fall protection affordable and can mitigate workplace risk and height safety when appropriately installed and maintained. With up to 40' spans between intermediate supports, the system is both economical and highly configurable.



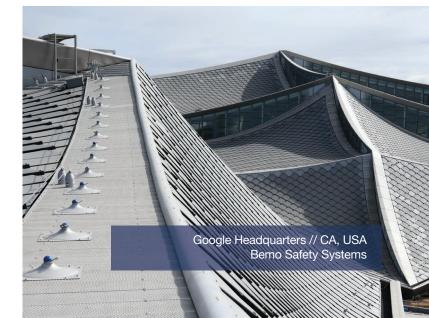
Our safety systems are a modular design allowing them to be customized to BEMO-Roof panel configurations. Stand-alone anchor points are multi-directional and can activate and absorb energy from wherever the load is applied.

All of our modular safety systems clamp directly to the Bemo USA standing seam panels and never penetrate the roof system. The safety system is ideal for maintaining solar panel installations, skylights, and gutters on Bemo USA installed roofs.









Applications:

- Designer Ceiling Tiles
- Custom Crown Molding
- Custom Perforated Designs
- Corporate logo, mascot, unique patterns
- Exterior and Interior Screen Walls

Perforation Patterns:

- Round (various size)
- Square (various size)Weave
- Custom Pattern



Innovative Design Should Not Only Be Highly Attractive, It Should Also Be Sustainable

We understand that every project has its own specific requirements when it comes to aesthetics and cost. This is why Bemo USA offers a broad portfolio of materials, coating systems and finishes.

When selecting materials, quality is our utmost imperative – but suitability for a particular building and climate is also vital. We consider a material cost-effective and appropriate for a project only if it can retain its function and appearance in the face of environmental influences for decades to come. Long intervals between cleaning and ease of maintenance are further considerations.

Our primary materials are high-quality aluminum alloys. They are 100% recyclable, highly malleable and resistant to corrosion.

With its high strength and low thermal expansion coefficient, steel is a cost-effective alternative that can be combined with all BEMO coating systems. Stainless steel is the answer for aggressive ambient air environments, for example in industrial facilities, or for air with high chlorine or salt content. Copper, a durable and recyclable material, develops an attractive patina as it ages – creating a fascinating visual effect. Titanium zinc can be supplied with a variety of textures, making it perfect for pairing with other materials. This alloy develops a patina with time, which acts as a self-healing layer. When exposed to the elements, A606 rusting steel develops a very thick protective layer, preventing corrosion. Distinctive patina adds a unique design element to the wall.







Stainless Steel Copper





Titanium Zinc



Independently Tested and Certified Systems and Components

The ongoing research and development of Bemo USA continues to challenge the architectural metal industry. Our panels have achieved some of the highest ratings for Factory Mutual, Underwriter's Laboratories, Dade County and ASTM.

Bemo USA has been designed and tested to meet the toughest environmental conditions a roof can be subjected to. These unique systems offer the flexibility of allowing unrestricted thermal expansion and contraction via our exclusive attachment design.















Bemo USA has obtained some of the metal roofing industry's highest values in accordance with UL, FM and ASTM standards:

Factory Mutual Research Standard 4471: Class 1-90, 1-105, 1-120 and 1-180.

Metro DADE County NOA 17-0606.10 Product Approval including Hurricane Winds, Missile Impact and Full Submersion.

100,000 Cycle Clip Testing — Bemo USA's sliding hook clips are the ONLY structural standing seam clips in the world that have passed the 100,000 cycle clip test with absolutely ZERO wear on the panel-to-clip connection.

AAMA 501.1 Dynamic Pressure.

Underwriters Laboratory UL580-UL90.

UL Fire Rating "P" Classifications – over 35 assemblies listed.

ASTM E 1592 "Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference."

ASTM E 1680-95 "Standard Test Method for Air Leakage Through Metal Roof Systems by Uniform Static Air Pressure Difference."

ASTM E 1646-95 "Standard Test Method for Water Penetration of Metal Roof Systems by Uniform Static Air Pressure Difference."

ASTM E84-18a "Standard Test Method for Surface Burning Characteristics of Building Materials."

STC Rated Assemblies for Sound Transmission Control.

While BEMO actively tests to the highest industry standard requirements, we also offer special applications and performance testing as needed for individual projects. Please call for specific designs.



BEMO MOBILITY and INSTALLATION TRAINING/CERTIFICATION



Field Forming and Delivery Systems

Bemo USA is one of the only manufacturers in the world that brings true factory quality mills right to the project site. BEMO Mobile Factory Mills are based in 40' ocean-going containers that provide a solid platform with unmatched capabilities. These Mobile Factory Mills have their own power, coil tippers, decoilers, in-line cooling, post roll-form profile shears, in-line slitters (tapering and MONRO Mills) and sealant injection systems. Providing factory quality panels in lengths that can exceed 500' (152 m) allows virtually any facility to be covered without using leak-prone end-laps. All of the BEMO roll forming, tapering, BEMO-MONRO and curving mills are operated exclusively by BEMO's own highly trained technicians.

Providing invaluable, timely and cost-efficient design solutions is another service that sets Bemo USA apart. Bemo engineers working all over the globe help designers, engineers and installers with the latest and most innovative high-performance solutions for the most demanding installations. Electronic file sharing provides a smooth and efficient working relationship with anyone, anywhere.









Successful Training Creates Outstanding Results

High-performance roof and wall systems require high-quality installers. Bemo USA trains and certifies every installer, for every project, no matter the size. Field training technicians have decades of practical field experience and convey their best means and methods for installation of panels, detail treatments and field efficiencies. These trainers also provide a dual purpose as the final warranty inspectors for all Bemo USA backed weather-tightness warranties. This ensures that all installers know what is expected of them to get a BEMO Certified Roof Installation.







BEMO HT is a 40 mil (1.0 mm) thick, self-adhering membrane composed of elastomeric bitumen and a woven polyethylene complex. This nonslip, flexible, self-sealing membrane can be used in outdoor temperatures ranging from 0° F to 250° F (-17° C to 121° C). It has an easy to remove silicone treated release sheet (split back) on the self-adhesive side.

- 40 mil (1.0 mm) thick tri-laminate
- White cover sheet more energy efficient
- Self-sealing
- Anti-slip cover sheet
- Clean, fast and easy installation
- UV-resistant, allowing up to 90 day exposure time
- High-tensile strength
- Approximately 4 times the adhesive strength of other underlayments



BEMO FLEXIBILITY and INNOVATION

BEMO-MONRO™: The Highest Standards Of Design and Quality

BEMO-MONRO clads buildings of all shapes and sizes with flexibility and precision.

Bemo employs state-of-the-art 3D design technology and proprietary file-to-factory software to determine the shape of each BEMO-MONRO panel. For highly demanding projects, it is possible to custom-manufacture every single panel to ensure precise alignment with the building contours.

The BEMO-MONRO system includes BEMO-DOME, a modular substructure that can be adjusted in three dimensions. The substructure precisely follows the building's contours and accommodates tolerance in the as-built load-bearing structure. It enables exact positioning of the halters and can be installed quickly and efficiently.

The panels are cut to size and rolled in a single operation. The rollers are mounted on individually controlled stations, allowing the creation of free-form panels with concave and convex segments with extremely large and extremely small radii and widths between 3.93" (100 mm) and 39.37" (1,000 mm). It is also possible to produce panels in lengths over 393' (100 m).

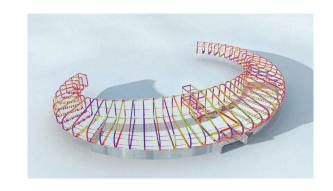
The number and direction of the central ribs can be varied in line with your project needs – ensuring clean lines no matter the building shape. Once the panels have been rolled, they can be curved to create concave and convex forms. Our specialized equipment is capable of curving very small radii. Our exclusive BEMO Mobile Factory Mills can be shipped anywhere in the world.

This makes it possible to create roofs and walls with an exceptionally attractive appearance – without additional material stress.

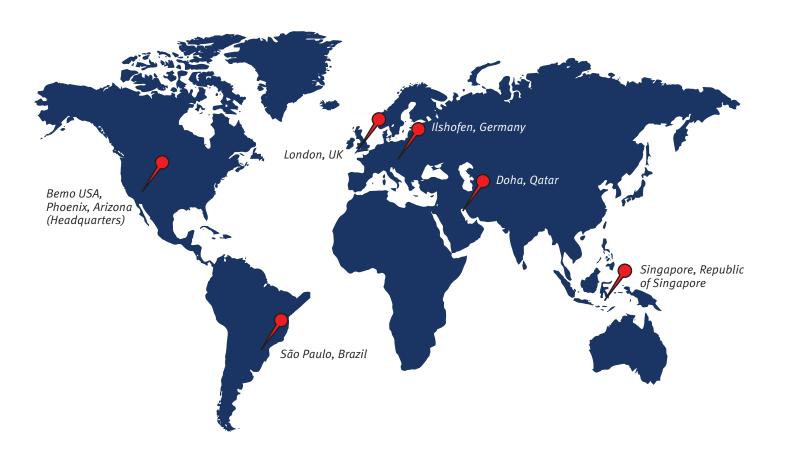
The precise position and height of the halters are determined using a 3D survey of the as-built structure. The coordinates of the halters are projected onto the building and clearly marked. The contractor also receives a model depicting the positions of the halters and all information necessary for easy installation. No special tools are required.











Engineered Architectural Metals

Global Success

BEMO is a worldwide organization with fully staffed offices in North America, the Middle East, Europe, the Far East and Central and South America. Each office has BEMO professionals ready to provide sales, marketing and technical support. BEMO's extensive installation services offer owners, architects and general contractors a very high level of confidence that each building envelope is correctly designed and professionally installed.



















Architectural Integrity

Featuring the Hamad International Airport with over 3 million sf (300,000 m²) of stainless steel.

Custom Shapes and Curves

Smooth curving and tapered panel technologies in natural metals or with high-performance coatings.

Bemo Custom Walls and Soffits Unique wall panel applications for every design.

Environmentally Responsive

High recycled content metals, low emissivity coatings and on-site manufacturing all provide for a more environmentally responsible system.

Economical, Flexible, Weather-tight Natural, non-coated metal systems offer long-term low life-cycle cost roofing solutions.

Quality From Start To Finish BEMO Mobile Factory Mills,

field technical services, engineering assistance.

Components and Custom Applications

High-performance clips, underlayments, detail treatments and fabrications.

Bemo Flexibility and Performance

Factory Mutual, Metro Dade County Approval, UL Listings, ASTM Performance, acoustic applications, fire ratings.



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