

**MODULAR**<sup>®</sup>  
Innovative Hall Systems



**MODULAR  
BUILDING  
SOLUTIONS**

**IMPRESSIVE QUALITY**



# MODULAR ESSENTIAL MATERIALS

Hot-dip galvanizing is a high-quality protection method against corrosion. Components are protected in a sustainable and durable manner.

For salt storage halls, fertilizers or high levels of corrosion and rates of corrosion in industrial and coastal areas, etc., MODULAR offers a specially developed and verifiable two-layer membrane structure. We would be happy to inform you about this during a personal consultation.

MODULAR supplies the constructions hot-dip galvanized according to DIN EN ISO 1461. The hot-dip galvanized steel construction framework underscores the high-quality provided by MODULAR and clearly distinguishes us from the competition.

# STEEL + GALVANIZING



## ALLOY

Galvanizing according to DIN EN ISO 1461. Maximum protection > 30 years

High mechanical strength. Compared to the average colour coating:

- 20 times harder
- 10 times more abrasion-resistant
- 8 times more stone impact resistance
- Up to 4 times more adhesive

Perfect rust protection all around, also in cavities, as well as the interior and on the edges

No thinning at the edges; the edges are also protected. This gives you 20 times better protection than colour coating.

A cathodic protective effect means that the surrounding zinc „sacrifices“ itself at a damaged point on a galvanized component and protects the steel - in practice up to a width of approx. 2mm.

Chemical and thermal resistance. Hot-dip galvanized steel constructions, such as those on the heads of trains or ski lifts, have proven themselves for decades.

Sustainable and resource-efficient as well as a way of cutting CO2-emissions.

No damage to the coating during transport and assembly.

Thanks to the treated surface, the areas where the membrane rests are not damaged by the hot-dip galvanizing process.



## PAINT

Colour coating - Example with surface treatment SA 2.5 (sandblasting) and an 80 µm powder coating

Just a simple priming coat, lower mechanical strength

Colour coating on the outside only, no interior protection in terms of condensation in the pipe or cavities.

Thinning at the edges; at the edges there is a much thinner layer

No cathodic protective effect

Compared to hot-dip galvanizing, the colour coating specified above requires a priming and top coat layer in the duplex process with regard to chemical and thermal resistance. This is accompanied by additional costs, not included in the standard.

Only sustainable in a higher class (primer coat + top coat layers) compared to hot-dip galvanizing.

The simple 80 µm coating can be damaged during transport and assembly and must be treated again.

## PROTECTION AGAINST CORROSION, SELECTING THE RIGHT SYSTEM:

WHERE IS THE BUILDING THAT IS TO BE PROTECTED?

WHAT LOADS IS THE BUILDING TO BE PROTECTED EXPOSED TO?

WHAT IS THE BUILDING'S INTENDED SERVICE LIFE?

WHAT SHOULD THE BUILDING LOOK LIKE?

The environmental conditions are defined in DIN EN ISO 12944-2 in the form of categories of corrosion.

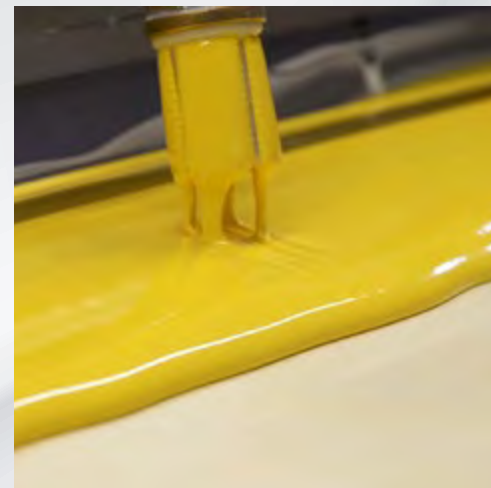
A hot-dip galvanized steel frame according to DIN EN ISO 1461 extends the service life of steel many times over and makes hot-dip galvanizing the first choice for corrosion protection for steel.





## BIERI AND HEYTEX TWO OF MODULAR'S EXCLUSIVE PARTNERS MADE IN GERMANY

The Modular company has been working with Bieri for over 15 years. Over the years of cooperation, we have achieved the best solutions for the needs of our customers. The Modular company relies on long-term partnerships.



### Bieri

For more than half a century, Bieri has been making tailor-made products from tarpaulins in their production facility. They have well-founded know-how in the processing of coated fabrics and technical textiles. This is the only way customer requests can be implemented efficiently and with high quality and that the requirements can be met.

### HEYtex®

Heytex is a global leader in the development and production of high-quality, functional, technical textiles and sets high standards through innovative products and processes with the aim of maximizing the benefits for our customers and society.

# PVC TARPAULIN MEMBRANE

The high-quality polyester fabric, coated on both sides with flame-retardant PVC, is one of the highest quality and, with a base weight of 950 g/m<sup>2</sup>, also one of the heaviest on the market.

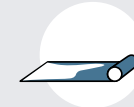
The registered building product was developed exclusively by HEYTEX, BIERI, and MODULAR for stationary membrane structures.

## THE ADVANTAGES AND TECHNICAL DATA OF OUR MEMBRANES

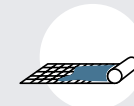


#### Base weight of 950 g/m<sup>2</sup>

The longevity of the tarpaulins of > 30 years is significantly influenced by their base weight. For this purpose, Modular exclusively developed one of the heaviest surface fabrics on the market together with the company HEYTEX.

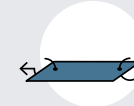


PVC flame-retardant coated polyester fabric with high-quality finish and **maximum fungicidal finish** to prevent mold growth



#### LOW WICK Fabric treatment

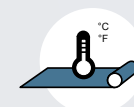
The high-performance polyester yarns are equipped with an anti-capillary effect. The ingress of moisture along the welding seams is clearly limited.



Maximum tensile strength according to DIN EN ISO 1421-1  $\geq 4000/4000$  N/5 cm



Tear propagation according to DIN 533 63  $\geq 500/500$  N



Temperature resistant according to DIN EN 1876-1 -30°C to +70°C

0286  
white  
RAL9016

Bicolor 791  
gray  
RAL7040

Bicolor 796  
slate-gray  
RAL7015

Bicolor 690  
green  
RAL6005

Bicolor 590  
blue  
RAL5000



Based on RAL colours



FULL SERVICE

## PROJECT PLANNING AND IMPLEMENTATION

# YOUR PATH TO A MODULAR HALL



**Experience, planning and advice are at the forefront of successful and innovative construction projects.**

The variety of textile structures and appearances in connection with the underlying steel construction requires in-house planning with experience and competence in building law, respective national standards and fire safety standards through to the ventilation of the hall systems.

MODULAR hall systems are certified according to EN 1090-1&2 in EXC 2 and EN ISO 3734-2.

All systems and components are calculated according to the currently valid standards and can only be validated by civil engineers. (Static calculation according to ÖNORM and EUROCODE).

The planning team from MODULAR supports you with know-how and experience up to the

static calculation and building permit of your project. This is essential for the future use of your building.

MODULAR halls are statically calculated by civil technicians, civil engineers and engineering consultants.

What is special about the status of civil engineers is their function as “authenticators”. This means they are allowed to issue public documents. In a way, they take on the function of a “technical notary”. As an external sign of their state authority, they carry a seal with the federal coat of arms of the Republic of Austria.

**The result is structurally verifiable structures based on the latest technology.**

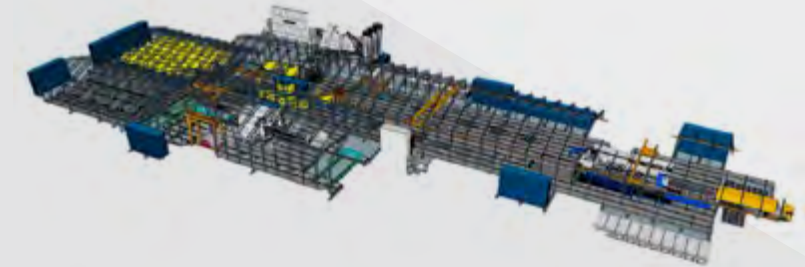
### The principle of success in the realization – project implementation and project management

Due to the in-house planning, production and assembly, essential competencies are available at MODULAR.

The individual and needs-oriented project planning and project execution ensure a sustainable and financially viable realization on site.

Needs-oriented solutions are worked out in cooperation with architects and planning offices. This results in financially and ecologically sound buildings, tailored to the needs of the customer and the project.

MODULAR’s many years of experience in the field of textile structures in connection with steel frameworks thus ensure the success of the construction project.





## KNOW-HOW & COMPETENCE OUR OWN PRODUCTION COMBINES EXPERIENCE WITH QUALITY



**Due to the in-house production of the MODULAR hall systems, continuous quality management is ensured**

Innovative materials and efficient support structures are trademarks of MODULAR hall systems. The hot-dip galvanized steel framework enables the use and variety of textile structures. The prerequisite for this is competence in steel construction.

As early as 2006, MODULAR Hallensysteme GmbH invested in its own production facility, MODULAR S.R.O. in Slovakia, in Presov near Kosice. Kosice is the second largest industrial centre in Slovakia. Mechanical engineering, industrial plant construction and a steelworks underline this competence in steel construction.

MODULAR hall systems are certified according to EN 1090-1&2 in EXC 2 and EN ISO 3834-2.

A tube laser machine was put into operation in production in the last few weeks. With a length of around 25 m, we have the option of loading tubes with a length of up to 12 m, the maximum unloading length is 8 m. The 3D laser with a power of 4 kW enabled us to make the processing steps much more efficient.



Tube laser machine



## FULL SERVICE PRODUCTION AND ASSEMBLY



**Complete assembly, project & site management as well as construction supervisor for EXW projects**

„Steel construction“ can connect many, textile structures with the underlying steel structure and create a distinctive membrane structure.

In hardly any other type of construction are the optics and the construction so inextricably linked as in the area of textile architecture and membrane construction.

Our own fitters with many years of experience in the field of steel and membrane construction enable free forms, impressive constructions, and span lengths.

In coordination with the project management, jointly defined project goals are guaranteed in terms of quality and time.

For EXW projects, Modular also offers the use of construction supervisors.





TECHNICAL DETAILS

# ANCHORING — INNOVATION AND SECURITY IN THE AREA OF FOUNDATIONS

The company Modular offers several options for fixing the hall to a foundation. A MODULAR hall can be fastened on concrete, asphalt, or even to a gravel surface. Decisive for a certain type of anchoring is not only the type of later use of the hall, but of course also the existing conditions.

There are, basically, two options for anchoring to concrete: anchoring using adhesive anchors or using inserts that are concreted into the foundation.

Anchoring on an asphalt surface: U-profiles are laid along the longer sides of the hall, which are anchored with statically calculated steel nails.

If the soil conditions are unfavourable, our halls are anchored using micro-piles/injection anchors. In Germany, only this type of anchoring is permitted for asphalt, as it is statically testable.



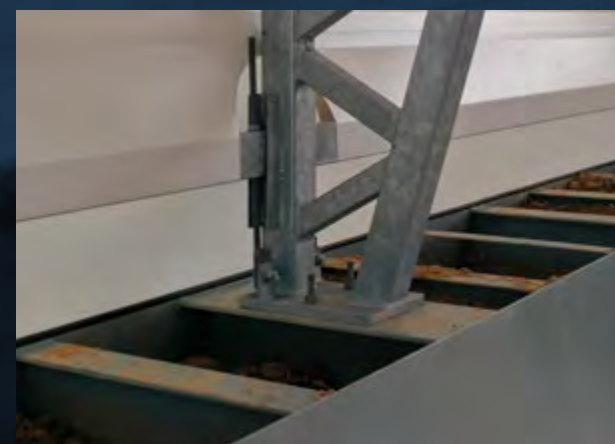
*Anchoring on asphalt (injection anchor)*



*Anchoring on Lürä partition walls*



*Anchoring on concrete*



*Anchoring on asphalt (nails)*





## TECHNICAL DETAILS

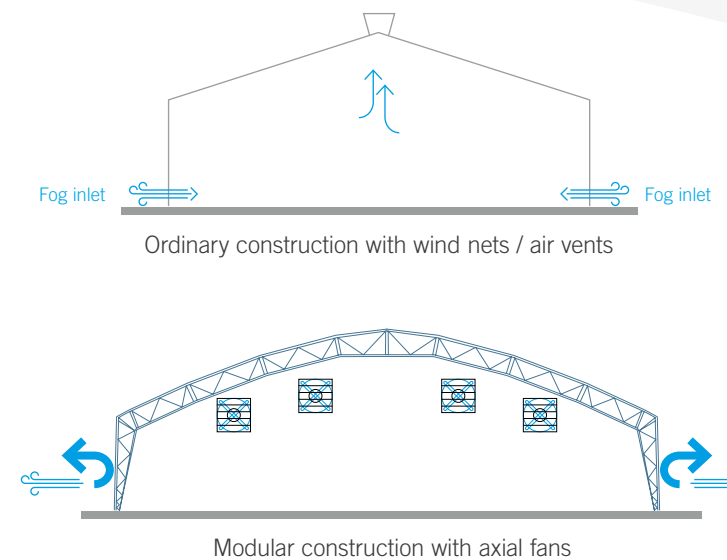
# VENTILATION

MODULAR halls are equipped with an electrical ventilation system tailored to your application, and thus ensure optimal conditions inside the hall. Axial fans with a theoretical air exchange rate of at least 1/h are implemented as standard.

Modular halls are not only equipped with simple wind nets or air openings on the longer sides, as this can lead to uncontrolled air supply (fog inlet, moisture, etc.). Modular uses electric ventilation flaps that are controlled with the ventilation system. A self-sufficient, indoor climate without an unregulated moist air supply, for example when there is fog outside, can therefore be achieved.

Our standard control unit is connected between the fan and the ventilation grille. During automatic operation, the ventilation grilles remain closed up to a certain level of humidity. A manual operation of the fans or a constant flow is still given. The humidity is measured by humidity sensors outside and inside.

Alternatively, the hall can be equipped with a control that only allows ventilation when the relative humidity outside is lower than inside.



### Axial fans

- » Automatically controlled ventilation with a humidity sensor
- » A self-sufficient indoor climate is made possible
- » prevents unregulated inlet of fog
- » Air exchange rate of 1/h



## TECHNICAL DETAILS OTHER EQUIPMENT

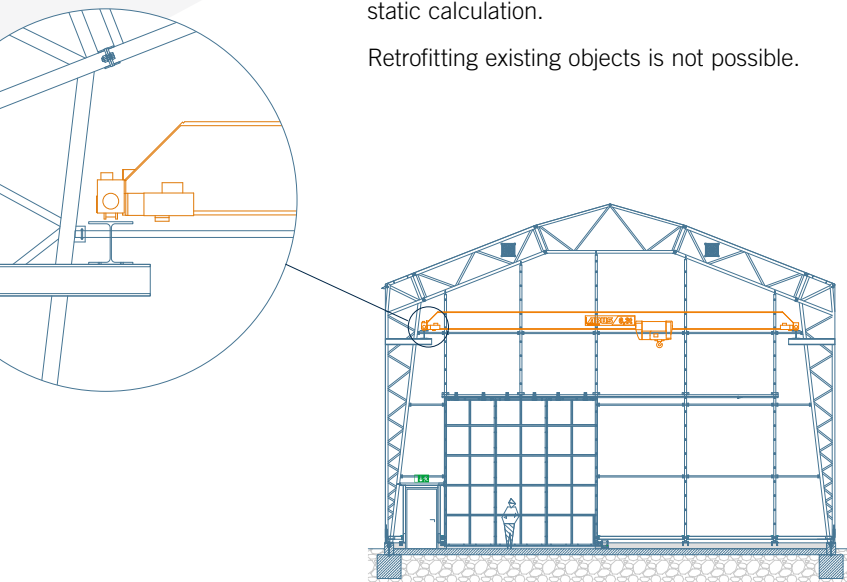


### CRANE SUPPORT

An integration of the crane support in the foundation, and thus a fixed part of the hall was often realized in one project.

Due to the lightweight construction of the overall structure, however, object-related planning parameters must be agreed in advance for the static calculation.

Retrofitting existing objects is not possible.

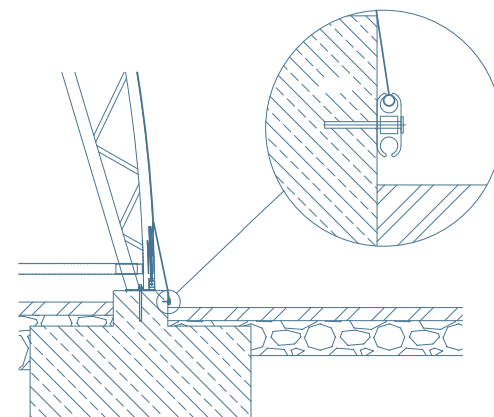


### FILM END PIPE ON CONCRETE

A seamless transition of the membrane into the formation of a foundation is the calling card of a textile object.

The MODULAR closing detail is installed on the concrete surface during pre-tension using special aluminium profiles.

This enables a crease-free, homogeneous transition of the membrane and thus a perfect hall enclosure.

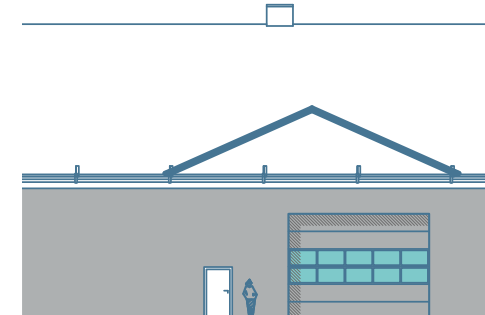


### SNOW DEFLECTOR

For gates or exits on the longer sides of the hall, we recommend using the MODULAR snow deflector to protect the affected area.

This was developed by MODULAR to protect the areas from sliding snow or ice masses by redirecting them directly to the roof skin.

Due to a special construction above and below the roof, snow or ice masses that slide off are deflected to the side.

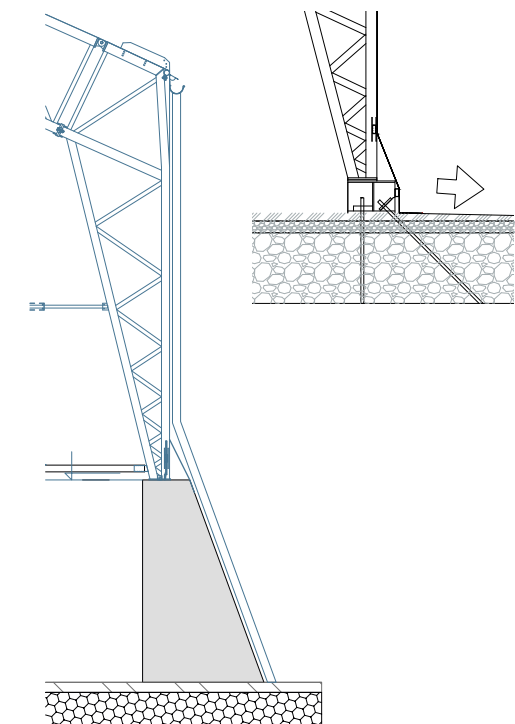


### GUTTER

Controlled drainage of hall objects has gained enormously in importance, especially in recent years.

Our standard drainage variant is seepage into the ground on the longer sides of the hall. Drainage through a gutter is a viable alternative.

Depending on the size of the hall or roof, the drainage is dimensioned according to the respective specifications and standards.





## TECHNICAL DETAILS DOORS AND GATES

A wide variety of door variants, or just simple entrance openings, are possible: Manual sliding gates from our own production, sliding, sectional or roller gate systems, swing gates and personnel doors.



Swing gates and personnel door



Sliding gate and personnel door



Sectional gates and personnel door



Hörmann rolling doors



EFAFLEX high-speed door



Personnel door

# TYP B

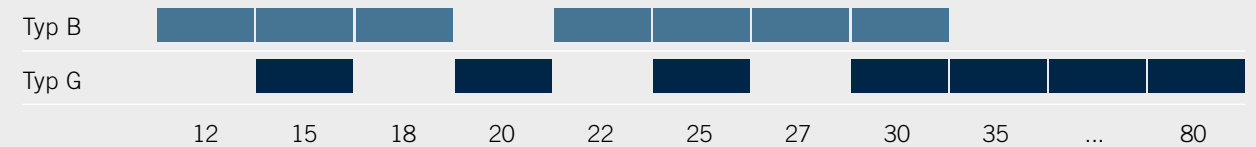


## TYPE B (ARCHED HALL) THE CLASSIC – UNSURPASSED IN ITS FINANCIAL VIABILITY AND USEFULNESS

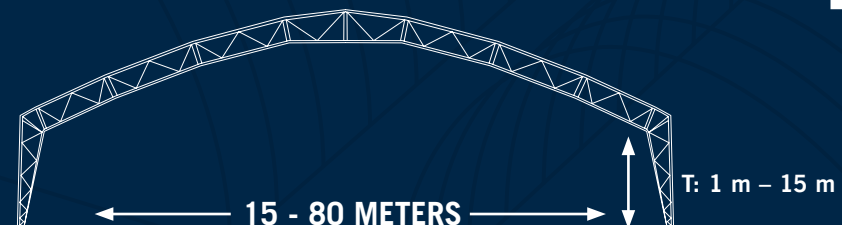
The arched hall series (B series) is available with span lengths from 12 m to 30 m and in any length. The arched shape of the steel construction makes this hall cost-effective, the modular design brings flexibility - e.g. extensions, divisions or

changing the location of the hall is possible without great effort. By choosing lighter film colours, no energy expenditure is required for the lighting during the day. This in turn saves energy costs.

### Span length comparison (in m)



# TYP G



## TYPE G (GABLE HALL) – FOR THE REALLY BIG PLANS!

The gabled hall series (G series) from MODULAR is available in span lengths from 15m to 80m and enables very large areas to be spanned - without any intermediate supports. Through the vertical supports on the longer sides

and the associated gain in space, MODULAR gable halls are well suited for large-volume storage rooms, e.g. for pallets or containers, or as a parking garage roof and even as an aircraft hangar.



**WE ARE LOOKING  
FORWARD TO  
YOUR REQUEST.**



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