

MANUFACTURER OF STEEL STRUCTURES



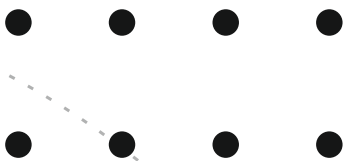
 **MABO** 1967

The power of tradition

www.mabo.pl



MABO
The power of innovation



MABO has been in existence for more than half a century and thanks to this long experience, we are a leader in the metal industry and a reliable and strong partner among manufacturers of steel and aluminium structures. Our product range includes steel structures for railway, tramway and road infrastructure, water and earth playgrounds as well as solutions for industry and construction.

Every day, we support our clients at every stage of their projects, from the selection of the best solutions to the complete realisation of their undertaking, offering full commitment to the task and the support of our specialised staff.

MABO The power of tradition



We have a well-established brand name in the industry thanks to the high quality and innovation of our metal products and structures for rail and road but also urban infrastructure, in Poland and abroad. We have been, are and will continue to be there for our clients, sharing with them the knowledge and experience we have gained over the years. We are a customer-oriented but also employee-oriented company. In what we do, we value who we are and what we create.

We are guided in our actions by the thought of our founder, Mr Adolf Bogacki:


“... Metal is the best material - it's graceful, malleable and durable and if you know how to approach it and what you want to achieve you can do anything.”

LOOKING FOR A CUSTOMISED SOLUTION?

We specialise in the comprehensive manufacture of steel structures. The products we manufacture are characterised not only by their high quality but also by their aesthetic qualities. We take care of the smallest details ensuring exceptional precision and careful workmanship. Our many years of experience, state-of-the-art software and machinery availability, as well as our qualified staff, enable us to meet the high expectations of our customers and partners.


By working with us, you will receive reliable support and technical advice. If we see an opportunity to make cost-optimising improvements for the client or to avoid design errors, we always suggest appropriate changes to the design. We carry out all orders based on designs and documentation provided by the customer, and our design team coordinates and adjusts their correctness for production. We also provide expert preparation of working drawings.

MABO is:



ROAD INFRASTRUCTURE

- Lighting columns and masts
- Support structures for traffic signals
- Special poles and masts
- Barriers




RAIL AND TRAM INFRASTRUCTURE

- Traction tensioning devices TUN
- Suspension system



STEEL STRUCTURES

- Industry
- Construction
- Accessible balconies
- Playgrounds - aquatic and terrestrial



TREAT CNC

- CNC laser cutting - 2D, 3D
- Machining
- Large-scale CNC machining
- Bending



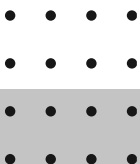
SERIAL MANUFACTURING

- Production of metal



CORROSION PROTECTION

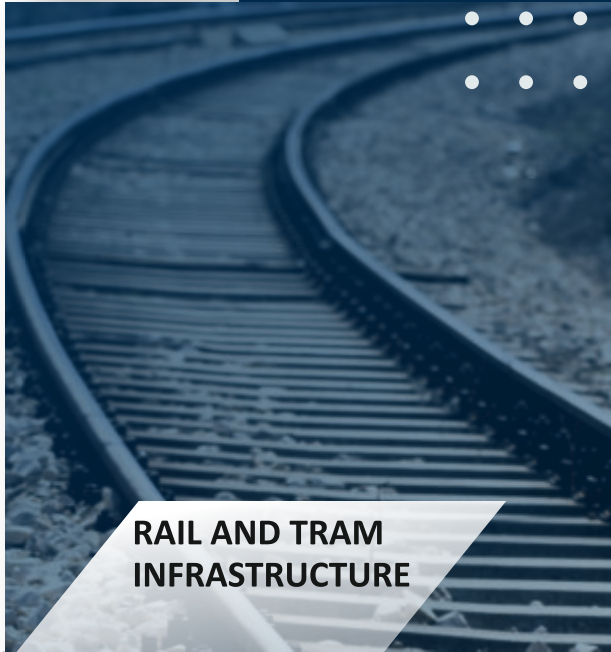
- HOT DIP GALVANISING PLANT
- Powder-coating system
- Hydrodynamic paint shop



MABO The power of production



**ROAD
INFRASTRUCTURE**



**RAIL AND TRAM
INFRASTRUCTURE**



**STEEL
STRUCTURES**



CNC machining

ROAD INFRASTRUCTURE

OUR SOLUTIONS:

→ LIGHTING POLES AND MASTS

→ SUPPORT STRUCTURES FOR
TRAFFIC SIGNALS

→ SPECIAL POLES AND MASTS

→ TRACTION AND
LIGHTING POLES

→ BARRIERS

OUR TEAM

14

OF TECHNOLOGIST

10

PROJECT
MANAGERS

9

QUALITY
CONTROLLERS

Reliable design

For years, our steel structures for road infrastructure have been used in the most diverse areas of our country and Europe. The scope of application of these products includes wind zones I, II, III according to EN 1991-1-4.

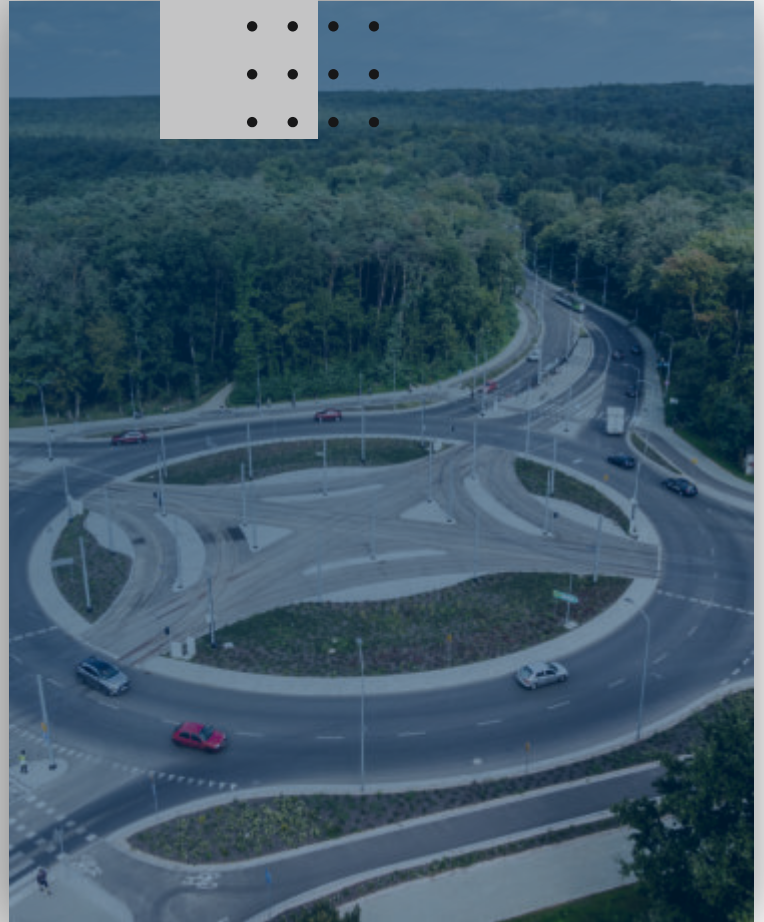
Corrosion protection

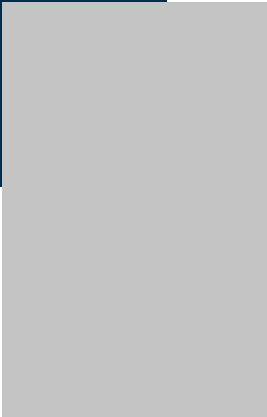
The corrosion protection is a zinc coating applied by immersion to the external and internal surfaces of the column in accordance with EN ISO 1461. The durability of this coating depends on the aggressiveness of the environment in which the product will be placed and ranges from a few to even several decades.

We have a qualified team of specialists who have comprehensively supported the implementation of our clients' projects over the past years.

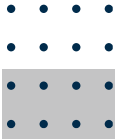
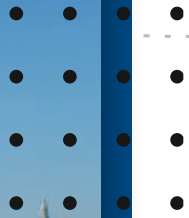
Our support structures are distinguished by:

- High resistance to static and dynamic loads
- Good vibration dampend to reduce the failure rate of light sources
- Easy to transport and assemble. thanks to compact dimensions and weight
- Corrosion-protected products
- Aesthetic appearance
- Savings in operating costs
- Quality confirmed by numerous certificates
- Possibility to adapt to individual customer requirements





MABO The power of product



RAIL AND TRAMWAY INFRASTRUCTURE

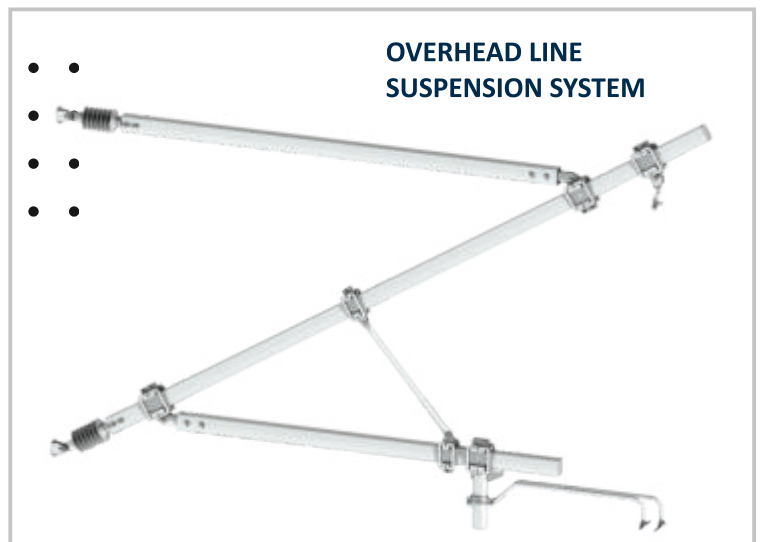
MABO is a company oriented towards innovative technical solutions, which is why our specialists have developed state-of-the-art equipment for the overhead catenary, both rail and tramway. This is the Traction Tensioning Device (TUN) and also the New Generation Aluminium Suspension System.

The TUN Traction Tensioning Device is designed for catenary anchoring and its operation is based on the weightless forcing of the tension force, by using a special spring system in combination with a tension force transmission and control system. This device provides a constant tension force over the entire length of compensation required for the type of overhead line. Thus, compensation for variations in contact wire and suspension cable length due to temperature changes is ensured. This is a series of weightless tensioners that are a replacement for traditional heavy-duty catenary tensioners.

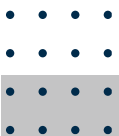
Overhead contact line suspension system, is constructed of aluminium and stainless steel components for suspension of contact wires and catenary wires. The system, through its design and materials, is 50% lighter than the solutions used to date, as well as ensuring quick and easy installation and very high corrosion resistance, with a service life of more than 40 years. This solution is designed for use on all types of overhead line support structures. The basic structural element is a specially developed profile, made of high-strength aluminium alloy, joined by stainless steel elements. The electrical insulation of the suspension is provided by composite insulators with an epoxy-glass rod sheathed in silicone.

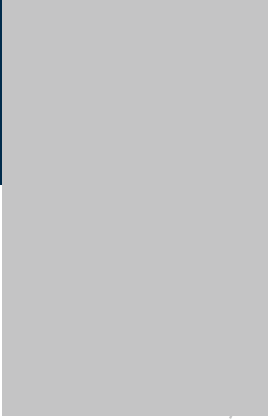


**TRACTION TENSIONING
DEVICES-TUN**

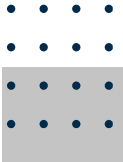


**OVERHEAD LINE
SUSPENSION SYSTEM**





MABO The power of ideas



STEEL STRUCTURES

We specialise in the comprehensive production of steel structures in accordance with European standards and certificates. Our cooperation starts with an enquiry. On the basis of the technical drawings provided, we, the team, consisting of project managers, quality control specialists, designers and managers, analyse the possibilities and then make any changes to select the appropriate solutions and technologies. We present all the information and the created calculation to the client in our quotation. We embark on the production process, i.e. implementing the technology, completing the materials and realising the project, which we closely monitor at every stage.

We guarantee reliable support and technical advice.

By working closely with the customer, at every stage of the project, and our rapid response to any changes or unexpected circumstances, we are able to design and manufacture our own tooling | streamlining production, quickly retooling machines, creating patterns in the prototyping room and making design changes on the fly. We are able to carry out the most complex task using our extensive production capabilities.



PROJECT IMPLEMENTATION PROCESS

1

Request for
quotation

4

Manufacturing
- assembly

2

Opportunity
analysis - calculation
- quotation

5

Packing -
loading - transport

3

Order with technical
documentation

6

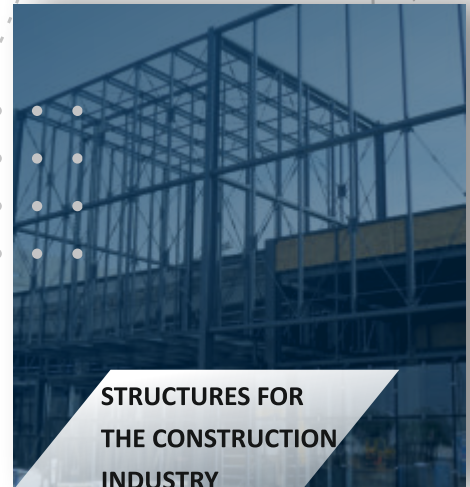
Delivery

MABO The power of production



**STRUCTURES FOR
INDUSTRY**

Production of steel components/structures for various industries from: Wind, Mechanical Engineering, Marine Energy, Rail, Agriculture, Renewable Energy, Offshore, Transport.



**STRUCTURES FOR
THE CONSTRUCTION
INDUSTRY**

Manufacture of various steel structures for industrial and general construction. Structures are made in accordance with the Energy, Railway, Agriculture, RES, Offshore, Transport standard. EN 1090 in classes EXC 1, EXC 2 and EXC 3. We specialise in the production of load-bearing structures as well as all kinds of galleries, walkways, staircases, etc.



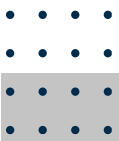
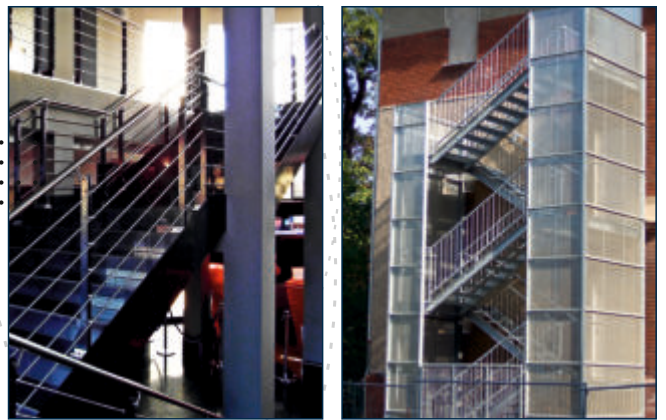
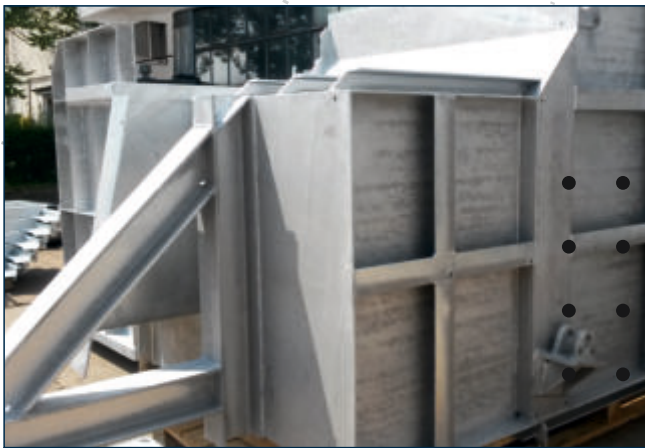
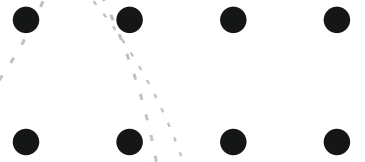
**ADDITIONAL
BALCONIES**

The main products are balcony balustrades, interior balustrades and all kinds of handrails - balcony platforms, steel constructions of balcony towers, made of steel or aluminium, according to customer demand.



**PLAYGROUND
STRUCTURES**

Support structures for amusement parks, water and ground parks and playgrounds, according to the client's own documentation.





PRODUCTION RANGE

MABO The power of quality



State-of-the-art machinery

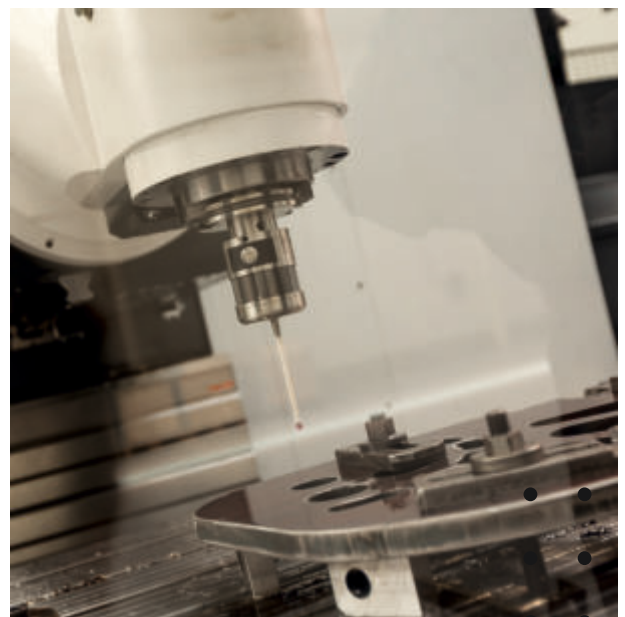
We currently have production halls with a total area of more than 50,500 m² and 6 departments, where we are able to carry out orders comprehensively and to the highest quality, including packaging, transport organisation and dispatch, according to customer requirements.

The production and technical facilities primarily consist of a modern and well-developed machine park and a qualified team. On the other hand, an important part of our business is the production of steel components in small, medium and large production runs - from a few dozen pieces to several thousand series products. We specialise in the manufacture of components whose production consists of laser cutting, bending, welding and corrosion protection processes.

Comprehensive production

In our work we use, among other things:

- Professional CNC machines (machine tools, cutting machines, bending machines)
- Professional welding stations
- CNC controlled hydraulic press brake
- Modern laser cutting machine (2D, 3D laser)
- Fully automatic powder coating line
- Hot dip galvanizing line
- Professional machining machines



MABO The power of production

2D laser cutting

We perform our laser cutting service on Trumpf machines, which have an international reputation. They are characterised by high productivity and quality of the cut edge, enabling 100% accuracy in the case of reproducibility of cut parts to meet the EN ISO 9013 standard.

Oxygen cutting for so-called "black" sheets with a carbon content of up to 0.25% is carried out using an Eckert Jantar II machine, which provides:

- working area 6000mm x 3000mm
- large cutting material thickness range up to 100 mm
- ability to cut with 2 torches simultaneously

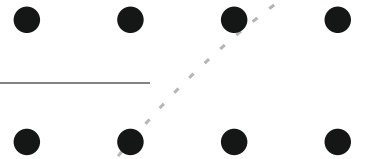
TRUMPF TruLaser 3060 L81 Fiber 6000W Cutting Machine

- working area 6000mm x 2500mm
- 25mm structural steel
- stainless steel 25mm
- aluminium alloys 25
- miedz 10mm

Cutting machine TRUMPF Tru Laser 3040 Co2

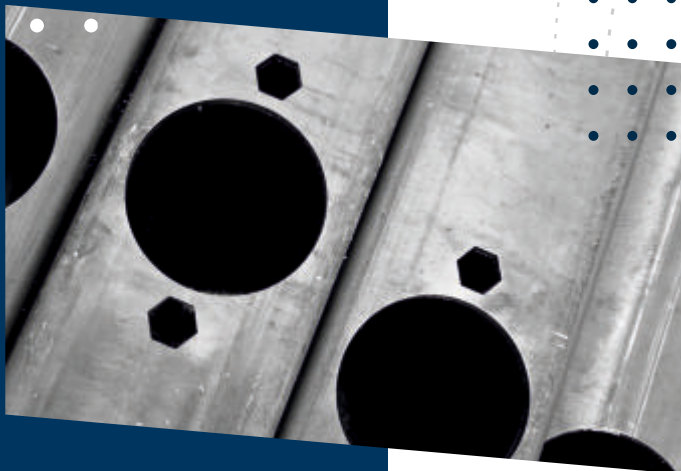
- working area 4000mm x 2000mm
- 20 mm structural steel
- 15 mm stainless steel
- 10 mm aluminium alloys
- 10 mm stopy aluminium





3D laser cutting

We carry out professional laser cutting of tubes, hollow sections, channels and angles. Our machine cuts in stainless steel and carbon steel. For this purpose, we use a 3D laser from MAZAK, whose cutting head operates in five axes, which allows 100% cutting of even very complex shapes and gives us the ability to process tubes and profiles with high accuracy and precision. This maintains the guarantee of smooth edges and a clean surface without scratches or chipping. The unit is also equipped with a touch probe to measure the workpiece, giving very precise shapes and dimensions.



Laser - Mazak 3D Fabri GEAR150

Material length - 8000 mm

Max. material weight - 42 kg/m.

Material dimensions: pipe from Fi 20 to Fi 150, profile 150x150

CNC edge machine - Bending

We have 6 press brakes with press forces from 600kN to 5000kN and machine working lengths from 800mm to 5000mm.

Our latest acquisition is the edgebandera **LVDPEB-5 400/40**

- thrust force - 4000kN

- working length of the bend - 4000mm

- working height - 970mm

- working speed - 11mm/s

- the thickness of bent plates depends on the length of the component and the type of die.



Machining

We provide professional metal machining services on CNC as well as conventional machines.

We process metal components, both in unit and series production, from our own or supplied material.

Turning is one of the most well-known and widespread methods of mechanical machining, i.e. machining. They are mainly used to obtain cylindrical, conical or spherical surfaces..

Our lathes:

DMG MORI ECOLINE ecoTurn 510

DMG MORI CLX 450

Milling is used to machine flat and shaped surfaces. This type of machining is used for: machine and equipment parts, complex-shaped workpieces, tooling, jigs, automotive parts.

Our milling machines:

DMG MORI ECOLINE ecoMill

NICOLAS CORREAXPERTA 35

You will also find a CNC gantry milling machine here **MULTINORMA Gantry type milling machine** for large-scale machining.

Technical capabilities:

X-axis travel:	9940 millimeters
Y-axis travel:	3180 millimeters
Z-axis passage:	1050 millimeters
Work table dimensions:	9.000x2.800 mm



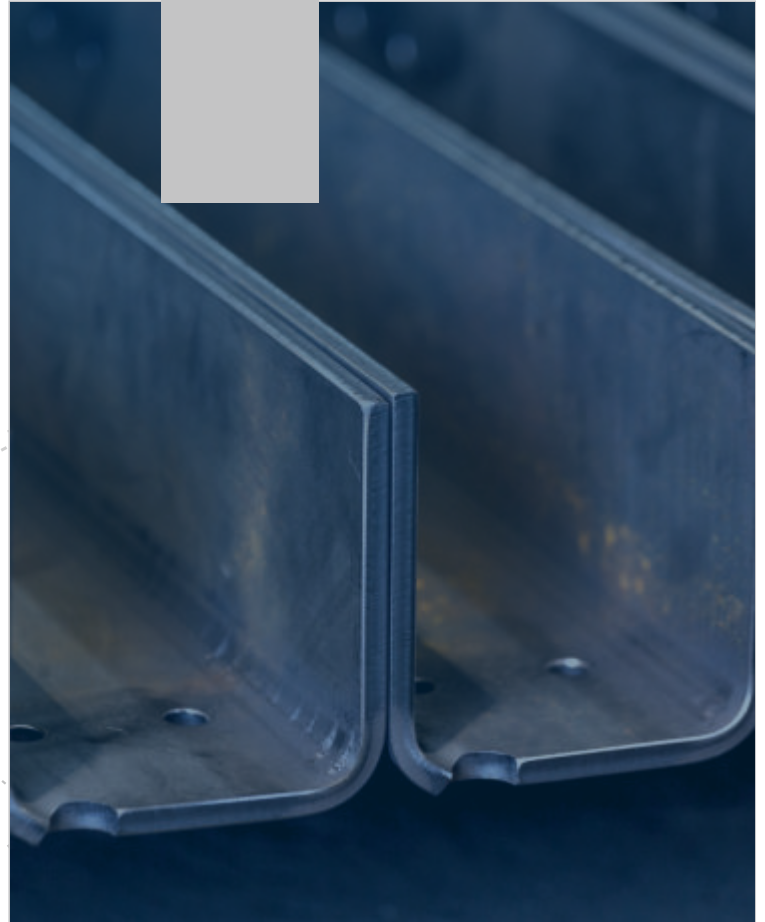
CORROSION PROTECTION

Corrosion prevention – Anti-corrosion techniques

In the case of metals, corrosion is most often accompanied by rust, which is a reddish tarnish that can turn to powder over time. It is formed by the oxidation process of iron and its alloys, such as steel. Today, corrosion of metals is recognised as one of the most damaging factors for structural materials. Our own hot-dip galvanising plant or paint shop are assets that allow us to offer a comprehensive service with full supervision of each stage of the production process, optimising costs and lead times.

The best way to prevent corrosion of metals is through various types of industrial anti-corrosion techniques, namely the use of coatings such as:

- > HOT DIP GALVANIZING
- > POWDER COATING
- > WET PAINTING



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METAL SURFACE PREPARATION PROCESS

Metal blasting / shot blasting

Metal blasting is a process also known as sandblasting. It is performed to remove rust and mill scale from the surface of the metal and to obtain a suitable surface roughness. Shotblasting prepares surfaces for painting, galvanising or other processes, thus ensuring the durability of subsequent processes.



HOT DIP GALVANIZING

Hot-dip galvanisation gives valuable, long-lasting and robust protection against corrosion. This method is recognised worldwide as the cheapest, most effective and most popular way to combat corrosion without altering the properties of the steel. We galvanise according to EN ISO 1461.

Our furnace can galvanise components with a maximum size of 6.0 m x 2.0 m x 1.25 m and a component weight of no more than 800 kg.



POWDER COATING

Powder coating and the coating achieved by this method of painting provide a guarantee of high aesthetics, mechanical strength, and resistance to solar UV radiation and atmospheric conditions. The effectiveness of this form of painting has been confirmed by tests in accordance with DIN 50021.



HYDRODYNAMIC PAINTING (Wet)

This type of painting of steel surfaces produces a perfectly smooth texture and guarantees a high quality finish. The greatest advantage of this method is the high painting efficiency, it also saves on painting materials, it produces a proper coating of painting materials and there is considerably less dust and solvent vapour concentration.



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