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# The METALUSA Group

The **METALUSA Group** is one of the major manufacturers of equipment for Construction, Refurbishment and Infrastructures, Industry and Energy, Events and Shows.

It is focused on designing and engineering products and solutions that improve the safety and productivity of its business partners.

Its spacious manufacturing plants are furnished with the most up-to-date technology to produce the full range of equipment of the highest quality.

Its Headquarters and main production plant, with an area covering over 40,000 m<sup>2</sup>, is located in Albergaria-a-Velha, in Portugal.

For sales, rental, post-sale service and customer support, the **METALUSA Group** has Branches in: Portugal, Spain, France, UK, Chile, Morocco, Ivory Coast, Angola and Mozambique.

The **METALUSA Group** possesses cutting-edge technology in the production of scaffolding, formwork, shoring towers, work and safety platforms, façade stabilisers, engineering structures and highly specialised technical support.





Message from the CEO

# MOVING FORWARDS!



The history of the **METALUSA Group** reflects the effort and dedication of its human resources that has resulted in the growth of its companies and enabled us to become a leading player in our sector both at home and abroad.

METALUSA is among the market leaders in the production, sale and renting of scaffolding, formwork and other equipment, putting its engineering capacity at the service of projects in the construction and refurbishment sectors, energy and industry, events and shows, infrastructures and the provision of services of the highest quality.

Our extensive network of branches and commercial offices allow us to be near our customers and offer them a high-quality service.

We strive to carry out our projects and supply our products and services with the utmost responsibility and professionalism, backed up by our vast experience and the quality certification of the companies in our group and products we manufacture.

Every day we seek to carry out projects abiding by the most rigorous safety standards and committed to providing the most advanced technological solutions, aware of the high level of responsibility in the strategic partnerships that we establish.

**We are moving forwards together. With greater safety and higher productivity.**



# ORGANISATION

METALUSA's management is organised into a Management Committee and an Executive Board.



Alberto Cravo . Manuel Coelho . Paulo Cruz . José Amorim

## Management Committee

The Management Committee is the body responsible for the strategic management of the respective business units, as well as the operational management.



José Amorim . Paulo Cruz

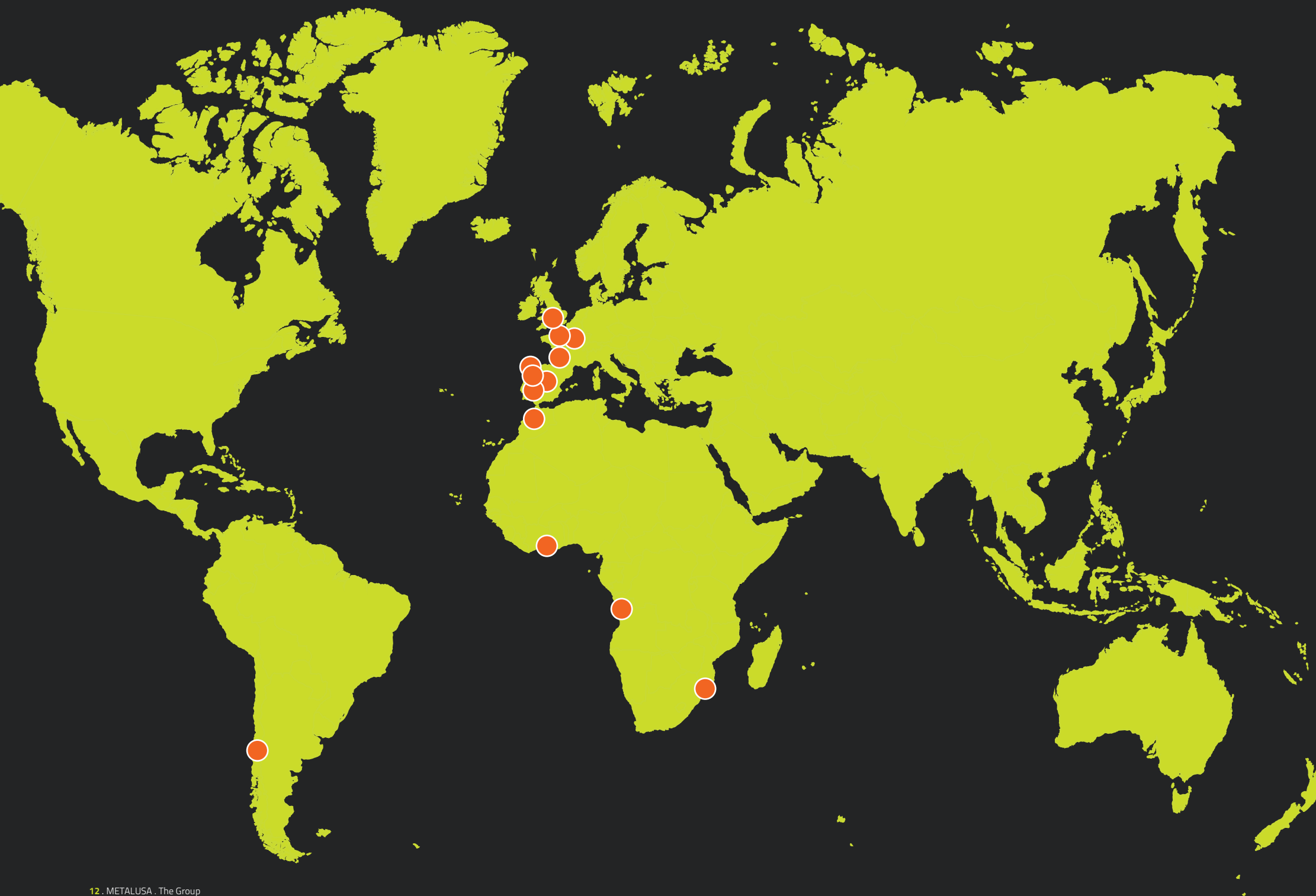
## Executive Board

The Executive Board works on the instructions coming from the Management Committee. It implements the strategy and respective directives so that the targets set by the Management Committee will be achieved. It is the body responsible for the entire operational execution.



# METALUSA

## in the World



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## Production Processes with **CUTTING-EDGE TECHNOLOGY**

The **METALUSA Group** constantly invests in cutting-edge, automated and robotic production equipment, which along with our highly qualified team of engineering professions and innovative manufacturing processes, enables the group to put products of the highest quality on the market at extremely competitive prices.

Cooperation protocols signed with national and international Universities, Institutes and Laboratories enable us to supply the advanced technology, appropriate solutions and services needed for projects that use systems of scaffolding, formwork, shoring and special engineering structures.





# QUALITY

The focus on Quality is essential as a tool of continuous improvement for the organisation, in terms of customer satisfaction, efficacy and efficiency of processes. Our Quality Management System has been certified by the **ISO 9001** standard since the year 2000, and is currently on the IQNET network, reaching a high level of management maturity for sustainable success, in accordance with the guidelines of the following standards: Eurocodes; **NP 4457**, **NP EN ISO 9004** and **NP EN ISO 10014**.



## PRODUCT RATIFICATION AND CERTIFICATION

- EN 12810 and EN 12811 – NOR48 Facade Scaffolding and ADAPT Multidirectional Scaffolding – AENOR;
- NF EN 12810 and NF EN 12811 – ADAPT Multidirectional Scaffolding – AFNOR;
- EN 12813 – TOWROK Shoring Towers;
- UNE 180201 and DIN 18202 – Formwork;
- NF P 93 351 – SAFTEC Safety Platforms;
- EN 13331-1 – TIVATEC Propping systems;
- EN ISO 13786 – MODIKO System Profile;
- UNE-EN 12524 – MODIKO System Profile
- EN 13200-5 and EN 13200-6 – Spectator Stands
- NF P93-522 – Industrial Entrance Porticos
- NF P93-523 - Public Entrance Porticos
- NF P93-521 - Industrial Entrance Towers ROSTEP;

The MODIKO modular construction system follows the procedures established in the ETAG 025 "Guidelines for European technical approval of metal frame building kits" issued by EOTA (European Organisation for Technical Approvals).





# PROJECTS





Construction & Refurbishment

## OFFICE/RESIDENTIAL BUILDING IN SWITZERLAND

### CHALLENGE

- The ADAPT structure had to adapt to the shape of the building and be assembled at heights of up to 48 metres.

### SOLUTION

#### ADAPT® Multidirectional Scaffolding

This complex comprised two residential buildings containing offices and shops, with 13 and 15 floors, located in Lancy in Switzerland.

The nearby railway line increases the challenging demands of this work, making a meticulous structural calculation essential.

The **ADAPT®** structures had to be adapted to the shape of the building and assembled at a height of 48m.

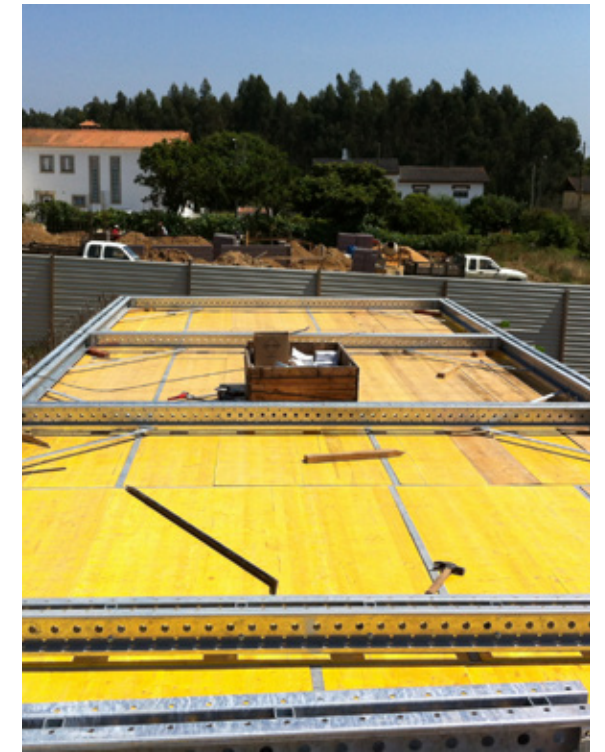
### Project Information

**Project:**  
Office/Residential Building

**Location**  
Lancy, Switzerland

**Year**  
2018

**Systems**  
ADAPT® Multidirectional Scaffolding



Construction & Refurbishment

## CONCRETE SLAB CONSTRUCTION IN A SHOPPING CENTRE

### CHALLENGE

- Adaptation of the structure to the shape of the building;
- The numerous pillars made it necessary for the COFIBER system to adjust and adapt to the geometry of the structure.

### SOLUTION

#### COFIBER® light formwork

**COFIBER®** light formwork is the practical and rational solution for quick formwork of flat concrete slabs with the highest productivity indices.

The assembly process starts with the placement of the primary beams, with the aid of the pillars and the support of the metallic props.

### Project Information

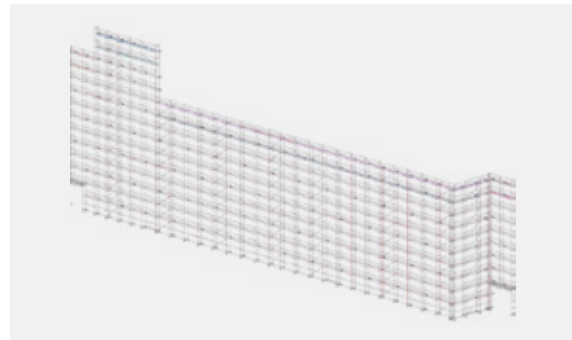
**Project:**  
Concrete Slabs in Shopping Centre

**Location**  
Montemor-o-Novo - Portugal

**Year**  
2020

**Systems**  
COFIBER®





Construction & Refurbishment

## OFFICE BUILDING

### CHALLENGE

- **Adaptation of the structure to the shape of the building;**
- **The continued use of the building during the construction work resulted in the need to create passageway entrances, using load beams.**

### SOLUTION

#### NOR48® European Façade Scaffolding

Near Brussels in Belgium, an office building measuring 800m<sup>2</sup> was completely refurbished, removing asbestos and installing a new roof, as well as the insulation and finish of the façade of the building, and new façades were also installed.

METALUSA **NOR48®** Façade Scaffolding was used to carry out the work at height in this building. Load beams had to be used in all the main entrances

of the building, to keep them clear and allow the normal circulation of people and goods in and out of the building.

### Project Information

**Project:**  
Office Building

**Location**  
Brussels, Belgium

**Year**  
2020

**Systems**  
NOR48®



Construction & Refurbishment

## REFURBISHMENT OF THE LAW FACULTY OF COIMBRA UNIVERSITY

### CHALLENGE

- **The main challenge involved the steeply sloping roof tiles and the need to adjust the scaffolding system to make it compatible with the details of the façades. Another challenge was the need to use lifting equipment with high reach and capacity, as the zone allowed limited preassembly of the roof and positioning of the respective lifting equipment;**
- **This refurbishment project required meticulous structural calculation as it was carried out in centuries-old buildings of high cultural value.**

### SOLUTION

#### ADAPT® Scaffolding and ADAPT® Roofing

Construction of provisional roofing at different gradients, namely 25° and 10°, depending on the roofs to be refurbished. The scaffolding solution

served for the refurbishment of the façades and also to support the provisional roofs.

### Project Information

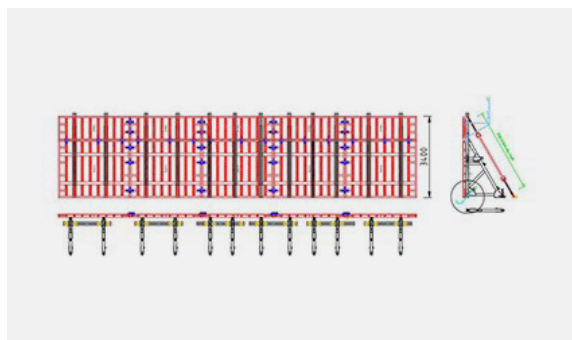
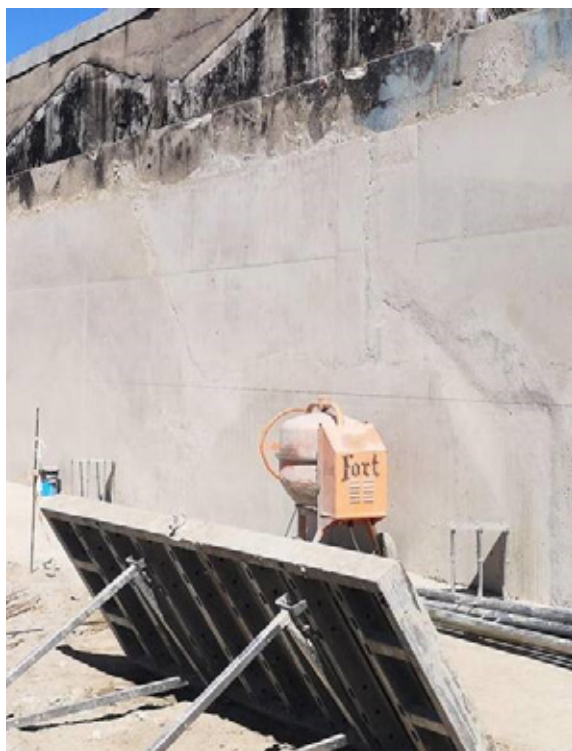
**Project:**  
Law Faculty of Coimbra University

**Location**  
Coimbra – Portugal

**Year**  
2021/2022

**Systems**  
ADAPT® Scaffolding and ADAPT® Roofing





Construction & Refurbishment

## FORMWORK FOR ONE SIDE OF A WALL (BUTTRESSES)

### CHALLENGE

- **Dimensioning the buttress structure to lend the project stability.**

### SOLUTION

The **BLOCTEK®** buttress system allows the safe absorption of concreting forces, through slanting anchorages, to enable the work to be carried out when it is impossible to anchor the vertical formwork panels directly to the concrete.

The **BLOCTEK®** system allows concreting of one surface up to 7.0m high for loads of up to 60 kN/m<sup>2</sup>.

**BLOCTEK®** is a versatile system that enables the undertaking of highly complex work, complying with the most stringent requirements for work that uses buttressing.

### Project Information

**Project:**  
Formwork on one side of a wall (buttresses)

**Location**  
Vila Nova de Famalicão – Portugal

**Year**  
2020

**Systems**  
BLOCTEK®



Construction & Refurbishment

## CONCRETE SLAB CONSTRUCTION – MIRAMAR TOWER

### CHALLENGE

- **Construction of a concrete slab.**

### SOLUTION

**UPFORM® horizontal formwork tables**

This new METALUSA horizontal formwork system leads to greater productivity in constructing concrete slabs.

The **UPFORM®** tables have 4 standard dimensions, although the size and configuration can be tailored to the particular solution. It can be moved without disassembling it. The system has swivel heads that allow the props to be withdrawn for easy movement of the table.

Multiple shoring possibilities: standard metallic props, aluminium props, shoring towers or centring falsework.

The peripheral tables can receive safety guardrails to prevent falls, guaranteeing the safety of the project from start to finish.

### Project Information

**Project:**  
Concrete Slab Construction – Miramar Tower

**Location**  
V. N. Gaia

**Year**  
2022

**Systems**  
UPFORM®



Construction & Refurbishment

## RESIDENTIAL BUILDING IN LISBON

### PROJECT

Special modular solution for provisional containment of façades.

### CHALLENGE

- **Maintain the façade while the rest of the building is demolished and newly built.**

### SOLUTION

Façade containment works are among the most challenging tasks in construction. It is often required in very old buildings that are to be demolished when only the façade will be kept. The remaining façades are subject to winds without the support of any other surface.

**SHORFLEX HD** towers allow this support to be provided safely.

In this residential building in Lisbon, the walls of the main façades had to be maintained, and so a provisional metallic structure was erected to contain the walls. The building was being demolished owing to its state of disrepair and to comply with regulations.

To contain the walls of the main façades, **SHORFLEX HD**, a metallic portico-type support structure was used, which was fixed to the foundations using reinforced concrete.



### Project Information

**Project:**  
Residential Building

**Location**  
Lisbon - Portugal

**Year**  
2020

**Systems**  
SHORFLEX HD



Construction & Refurbishment

## LIGHTHOUSE REFURBISHMENT

### PROJECT

The refurbishment of this lighthouse façade was a challenging project, involving the restoration and conservation of a historic and symbolic structure, while having to guarantee the safety of the lighthouse users.

### CHALLENGE

- **Install a structure adapted to the shape of the Lighthouse.**

### SOLUTION

Assembling a multidirectional scaffolding system for a lighthouse is a task that requires meticulous care and planning to guarantee the safety of the workers and preservation of the historical structure.

The **ADAPT®** multidirectional system was chosen for this project owing to its adaptability.

After assessing the structure, a scaffolding assembly plan was carefully drawn up, detailing the size and type of scaffolding, the support position, the access points and the safety of the workers.

### Project Information

**Project:**  
Cr  ac'h Lighthouse

**Location**  
France

**Year**  
2023

**Systems**  
ADAPT®





Construction & Refurbishment

## RECUPERATION OF A RESIDENTIAL BUILDING FAÇADE AND ROOF

### PROJECT

Refurbishment of façades and roof.

### CHALLENGE

- Protect the building and create accesses for the refurbishment of the façades and roof.

### SOLUTION

**ADAPT® Scaffolding and ADAPT® Roofing**

Construction of a provisional roof using **ADAPT® Roofing** to protect the rooftop during the work.

The **ADAPT®** scaffolding solution was installed to refurbish the façades and also to provide support for the provisional roof.

After assessing the structure, a scaffolding assembly plan was carefully drawn up, detailing the support position, the access points and the safety of the workers.

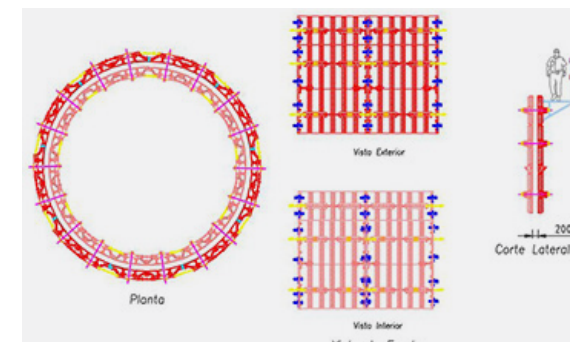
### Project Information

**Project:**  
Residential Building

**Location**  
Mantes la Jolie, France

**Year**  
2023

**Systems**  
ADAPT® Scaffolding + ADAPT® Roofing



Energy & Industry

## WATER TANK IN CINFÃES

### CHALLENGE

- Adapt the curvature of the panels to the diameter of the structure.

### SOLUTION

**ROFLEX®**

The **ROFLEX®** Circular Formwork System of walls was designed to respond to a type of construction that involves different curvatures, such as silos, wastewater treatment plants, entrance ramps to car parks and other circular structures.

When building the new Cinfães water tank, **ROFLEX®** faced the challenge of providing a curvature radius for its panels tailored to the project and its respective specificities.

The **ROFLEX®** system allowed the work to be carried out with maximum productivity, as it contains few components that are all reusable and compatible with other vertical wall formwork systems, such as **FORTEKO®**.

This project was carried out by a partner that used **METALUSA** equipment.

### Project Information

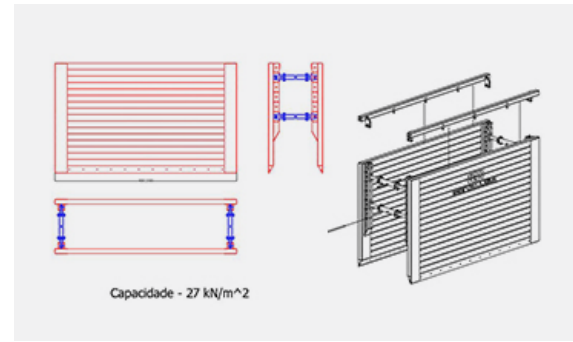
**Project:**  
Water Tank

**Location**  
Cinfães - Portugal

**Year**  
2016

**Systems**  
ROFLEX®





Energy & Industry

## PROPPING OF TRENCHES

### CHALLENGE

- Study to calculate the lateral loads of the soil;
- Reinforcement of the structure for wide bays.

### SOLUTION

#### TIVATEC®

The **TIVATEC®** system allows simple and effective propping of trenches to eliminate the risk of burial.

The modularity of the system allows different height and length combinations, making it an extremely versatile system for propping work.

Before starting the task, it was necessary to carry out an in-depth study to calculate the lateral loads of the soil, making it necessary to reinforce the structure of the wider trenches.

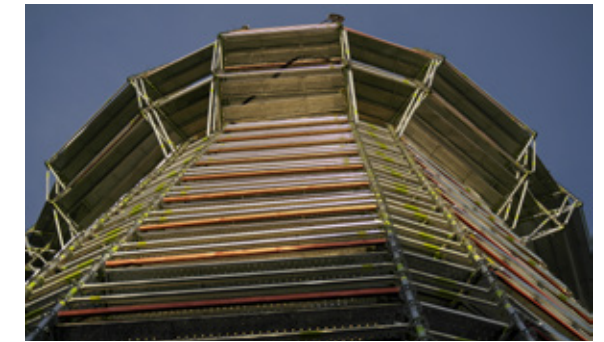
### Project Information

**Project:**  
Propping of Trenches

**Location**  
Portugal

**Year**  
2020

**Systems**  
TIVATEC®



Energy & Industry

## CHÂTEAU D'EAU

### CHALLENGE

- To tailor the **ADAPT®** Multidirectional System to the building;
- Reinforcement of the support points of the Multidirectional structure.

### SOLUTION

#### ADAPT® Multidirectional Scaffolding

The Peruwelz water reservoir in Belgium is located on the border with France and has a capacity for 400m³ of water. It is an important source of water supply for the local residences. To carry out the restoration work on it, **ADAPT®** Multidirectional Scaffolding was used.

As a modular system that is quick and easy to assemble, the Engineering Department of the METALUSA Group adapted the structure to the configuration of the original building, in line with the calculations, reinforcing the support points

of the structure to guarantee total safety against the action of the winds, which are always of considerable strength in this region.

This complex operation allowed the execution of the project, achieving its goal.

### Project Information

**Project:**  
Château D'Eau

**Location**  
Péruwelz - Belgium

**Year**  
2018

**Systems**  
ADAPT®





## Energy & Industry

# OULJET ESSOLTANE DAM

### CHALLENGE

- **Assembly of FORTEKO® panels with highly resistant props to withstand the high concreting pressures.**

### SOLUTION

#### FORTEKO®

The Ouljet Essoltane dam is part of the Sebou basin, in Morocco. With a maximum height of 99m and a crown length of 383m, the reservoir holds 510 million m<sup>3</sup> of water, with capacity for an extra 73 million m<sup>3</sup>/year from the basin.

The dam has 3m-high steps and a free ground-level 120m-wide discharger. Approximately one million m<sup>3</sup> of concrete was used to build it. This dam was constructed with the goals of improving the protection of the Gharb plain against floods and boosting the supply of drinking water to the city of Meknes and the neighbouring regions.

A highly resistant **FORTEKO®** vertical formwork system was used to build it. With a concreting capacity of 90 kN, highly resistant pull and push props were needed to enable the concreting process to be carried out faster, while ensuring that the structure of the panels remained stable throughout.

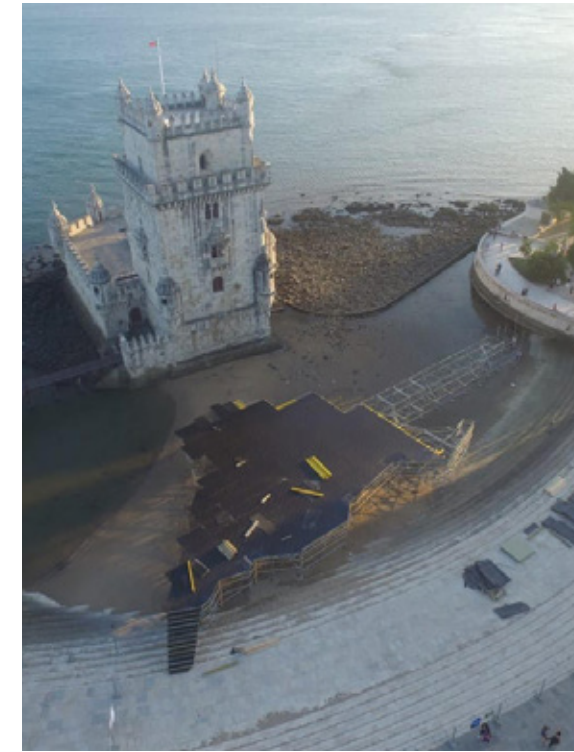
### Project Information

**Project:**  
Ouljet Essoltane Dam

**Year**  
2017

**Location**  
Morocco

**Systems**  
FORTEKO®



## Events & Shows

# ROCK IN RIO STAGE

### CHALLENGE

- **With a complex geometric shape, the stage would be based on a surface that was partly on land but also reached into the River Tagus;**
- **The ADAPT® system was used to reproduce the outline of a Guitar, which is the logo of the show organiser.**

### SOLUTION

#### ADAPT® Scaffolding

With Belém Tower in the background, the stage for the show that commemorated 15 years of Rock in Rio in Portugal had to be something daring and out-of-the-ordinary, worthy of such a momentous event.

By sketching the outline of a guitar (representing the Rock in Rio logo), all the multifunctional capacities of the **ADAPT®** system were tested to the limit.

The stage measuring 534m<sup>2</sup> and weighing 20 tonnes was based on a surface that was on land but also reached into the River Tagus estuary, making it an enormous challenge from the structural point of view.

### Project Information

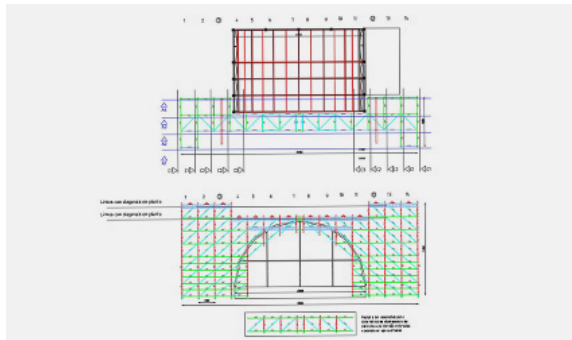
**Project:**  
15-year commemoration

**Location**  
Lisbon

**Year**  
2019

**Systems**  
ADAPT®





Events & Shows

## RFM SOMNII FESTIVAL STAGE

### CHALLENGE

- Located on the beach in front of the sea and with a complex setup, the dimensions had to be meticulously calculated because of the winds;
- The base of the structure was placed on the sand which necessitated load distribution systems;
- The structure had to be reinforced to support the loads of the light and sound equipment.

### SOLUTION

#### ADAPT® Scaffolding

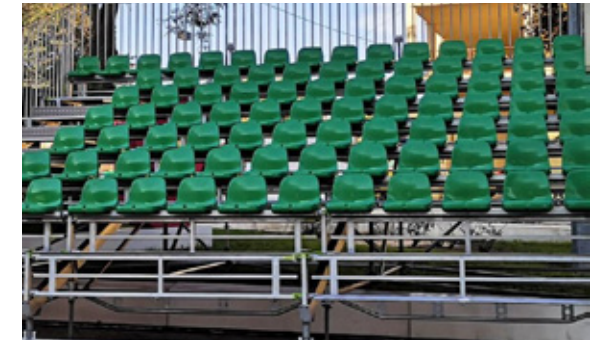
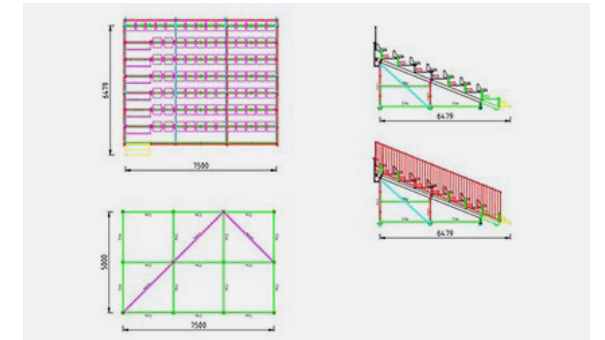
Founded in 2012, the RFM SOMNII Festival is a music festival organised by the radio station RFM, and is today considered the Biggest Sunset of electronic music in the world. The RFM SOMNII has been held at the Relógio beach in Figueira da Foz since 2013.

The **ADAPT®** system was chosen for the stage owing to its modular nature. The stage is modern and interactive, with lots of light and LED screens. As such, the stage had to be reinforced to withstand the loads of the light and sound equipment.

The base of the stage is placed on the sand, necessitating the implementation of load distribution systems. Relógio beach in Figueira da Foz is known as a windy location, which meant that the dimensions of the structure had to be meticulously calculated.

#### Project Information

<b>Project:</b>	<b>Year</b>
RFM SOMNII Festival Stage	2019
<b>Location</b>	<b>Systems</b>
Figueira da Foz	ADAPT®



Events & Shows

## LOURES CARNIVAL SPECTATOR STANDS

### CHALLENGE

- The structure had to meet requirements regarding entrances and capacity in a limited space;
- The land where it would be based was uneven in two directions, increasing the difficulty in assembling the structure.

### SOLUTION

#### ADAPT® Spectator Stands

Loures Carnival officially began in 1934, and is one of the largest carnivals in the Lisbon region. In 2020, it included stands erected using the **ADAPT®** Spectator Stands system.

The land where it would be based was uneven in two directions, making the installation of the stands more complex and necessitating the Technical Department of the METALUSA Group

to structurally dimension a stand to offset the different levels.

Furthermore, the limited space available owing to the nearby road, and the requirements regarding the capacity and number of entrances, tested the versatility of the **ADAPT®** Spectator Stands system to the limit. The solution achieved the goals of the project, enabling all the spectators to watch the carnival in comfort and safety.

#### Project Information

<b>Project:</b>	<b>Year</b>
Carnival Spectator Stand	2020
<b>Location</b>	<b>Systems</b>
Loures	ADAPT® Spectator Stands





Infrastructures

## TORDESILHAS BRIDGE

### CHALLENGE

- This project required scaffolding that provided the workers with access to all areas of the bridge, namely the lower arches of the bridge bays, its buttresses and side walls.
- The scaffolding structure had to enable the alternate circulation of traffic on the bridge, ensuring one road lane remained usable with a minimum width of 3.5m and headroom of 5m.

### SOLUTION

#### ADAPT®

Using the **ADAPT®** Multidirectional System, the structure was assembled using sections, with a maximum of 3 sections, including suspended beams, and lower working platforms in the arches of the bridge.

The base of the structure was initially assembled in the lateral zones of the bridge, first on the

sides upstream and downstream, and then by suspended and inverted segments up to the height of the continuous lower platform. The width of the platform was less than 9m (Trellised Beams of 2.5m + 4m + 2.5m).

The forecast time for the completion of the job was from 9 to 12 months, starting in December 2019, which is a critical period owing to the high flow at that time of the year. The job was finished in August 2020, and another challenge was successfully completed by the METALUSA Group.

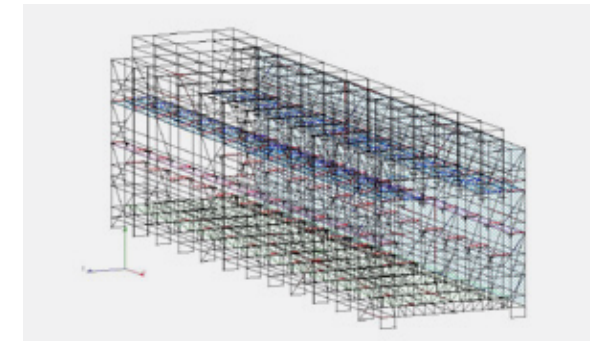
### Project Information

**Project:**  
Tordesilhas Bridge

**Year**  
2019

**Location**  
Spain

**Systems**  
ADAPT®



Infrastructures

## SILVEIRAS BRIDGE: RESTORATION OF THE BEIRA RAILWAY LINE

### CHALLENGE

- A suspended **ADAPT®** Multidirectional Scaffolding structure was assembled to enable restoration work to be carried out on the bridge;
- Reinforcement of the support points of the multidirectional structure;
- The **ADAPT®** Multidirectional System had to be made compatible with the metal structure of the bridge.

### SOLUTION

#### ADAPT®

Restoring Silveiras Bridge, in the Beira Baixa region, was a challenge for the Engineering Department of the METALUSA Group.

With its iron structure, the **ADAPT®** Multidirectional System was the best solution as it enabled the scaffolding to be tailored to the structure of the bridge.

Support points to attach the scaffolding to the bridge structure were predefined, and the entire scaffold was constructed in suspension. The experience and knowhow of the Engineering Department of the METALUSA Group were critical factors in successfully completing the job.

### Project Information

#### Project:

Silveiras Bridge – Restoration of the Beira Railway line. Covilhã – Guarda stretch

**Location**  
Beira Baixa - Portugal

**Year**  
2019

**Systems**  
ADAPT®





Infrastructures

## CAMPANHÃ INTERMODAL TRANSPORT TERMINAL

### CHALLENGE

- **Compatibility and suitability of the systems for the project;**
- **Dimension of the design and completion of the work within the forecast deadline.**

### SOLUTION

**TOWROK®, FORTEKO® and ADAPT®**

TIC is an innovative transport and mobility project in the city of Porto, and a huge architecture and engineering enterprise. Covering 24,000 square metres of gross construction area, it is also a revolutionary project as regards environmental sustainability, as it will become the largest carbon absorption zone in the city. Its completely green roof and gardened surroundings cover 46,000 square metres of greenery. The project implemented several systems of the METALUSA Group, namely

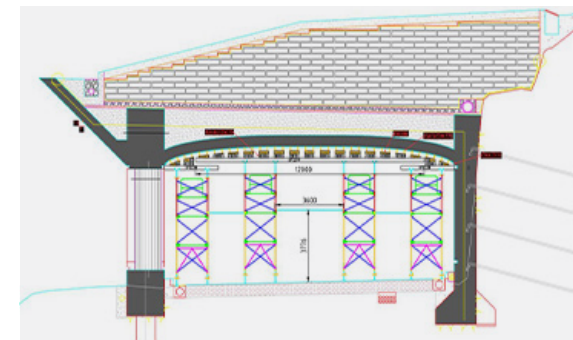
the **ADAPT®** Multidirectional System, the **FORTEKO®** Vertical Formwork System for walls and the **TOWROK®** Shoring System. The versatility of the systems of the METALUSA Group is one of their huge benefits. The possibility of combining the different components and the speed of assembly and disassembly are extremely important factors in highly demanding projects with strict completion deadlines.

### Project Information

#### Project:

Campanhã Intermodal Transport Terminal

Location	Year	Systems
Porto - Portugal	2020	TOWROK®, FORTEKO® and ADAPT®



Infrastructures

## JOÃO ABEL DE FREITAS OPEN-AIR ROAD TUNNEL

### CHALLENGE

- **Dimensioning the shoring structure for high loads in accordance with the stabilising project;**
- **Need to create a road lane inside the centring falsework for the passage of vehicles working on the construction, throughout the whole period of the project.**

### SOLUTION

**TOWROK®**

The João Abel de Freitas Tunnel, which is an open-air road tunnel, was constructed using **TOWROK®** shoring towers.

The **TOWROK®** towers consist of components that after being assembled form an extremely safe and robust structure with a load capacity of at least 100 kN per element, or 200 kN per tower.

The building of the tunnel threw up an extra challenge for the **TOWROK®** structure: the need to create a road inside the centring falsework for vehicles working on the construction, throughout the whole project. The Engineering Department of the METALUSA Group closely collaborated in the project, providing all the support needed for the correct use of their equipment. The outcome was the achievement of all the goals set. The success of the METALUSA Group partners is a number one priority.

### Project Information

#### Project:

Open-air road tunnel

#### Location

Madeira Island - Portugal

#### Year

2019

#### Systems

TOWROK®



The background of the image is a dense, close-up shot of numerous grey metal brackets. These brackets are U-shaped with a flat base and a vertical flange, and many have a small circular hole. They are piled together, creating a complex, textured surface. On the left side, there is a large, bright yellow graphic element consisting of a rounded rectangle with a semi-circular cutout on its right side. The word "PRODUCTS" is written in a bold, white, sans-serif font across the middle of the image, positioned over the metal brackets and partially overlapping the yellow graphic.

**PRODUCTS**





## Multidirectional Scaffolding

The **ADAPT**® Multidirectional System Can be used as scaffolding, suspended scaffolding, interior or exterior access towers, a shoring system or façade stabilisers, benefiting from limitless versatility.

The **ADAPT**® system, thanks to its multidirectional feature and versatility, is a structural solution that goes beyond normal scaffolding for construction and industry.

Based on the **ADAPT**® system, it is possible to produce stages for shows, spectator stands, centring falsework, special shoring, façade containment, access towers, public and industrial passageways and roofs.

When used in façades, the **ADAPT**® system can be tailored for all possible configurations, making the work carried out more effective, especially in buildings with complex shapes.

As a modular system, **ADAPT**® uses items with high load capacity and excellent stability, making the system extremely stable and safe.

The **ADAPT**® Multidirectional System is certified by AFNOR and AENOR, complying with the EN 12810 and EN 12811 European Standards.



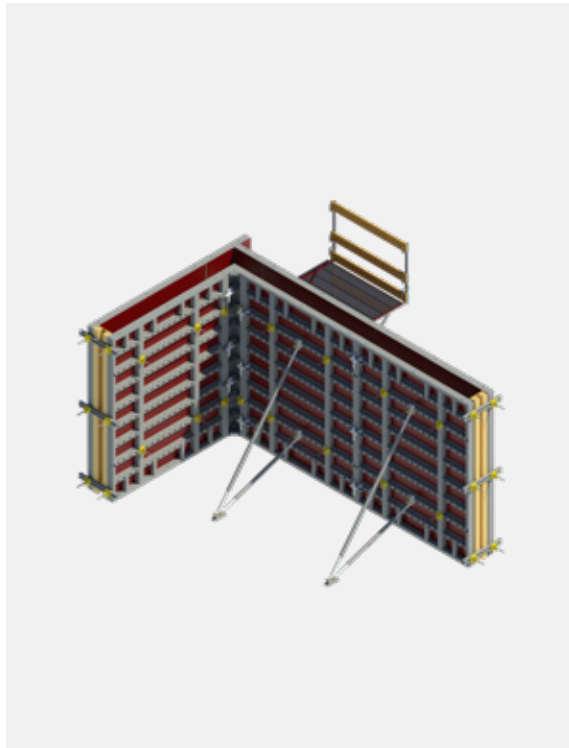
## Façade Scaffolding

The **Nor48**® system allows the installation of stable and maximum safety façade scaffolding structures, using a low number of components for quick and easy assembly and disassembly.

The benefits are immediate: we are talking about an economic solution that allows lower operating costs thanks to the low amount of labour.

The **Nor48**® system is a product certified by AENOR, complying with the requirements of the EN 12810 and EN 12811 European standards. The METALUSA Group has produced a product that can be assembled quickly and is safe and cheap.





# FORTEKO®

## Vertical Formwork

The **FORTEKO®** Vertical Formwork System is extremely versatile. It is a system that is appropriate for all kinds of work, such as the walls of elevator shafts, beams and pillars. All the panels can be combined in vertical and horizontal positions, without any limitation.

The system was designed to support concreting pressures of up to 90 kN/m<sup>2</sup>, and is therefore one of the most resistant systems in its class. All the panels are hot-dip galvanised, making them highly resistant to corrosion and extremely durable.

**FORTEKO®** panels are available in two different heights; 1.0m and 3.0m and in 11 different widths (0.30m; 0.35m; 0.40m; 0.45m; 0.50m; 0.55m; 0.60m; 0.90m; 1.0m; 1.20m and 2.40m – normal

and 0.55m; 0.75m; 0.95m; 1.35m variable) which makes a variety of combinations possible.

**FORTEKO®** vertical panels for pillar formwork have a variety of measurements at increments of 5 cm with a maximum dimension of 1.20m x 1.20m (using only 1 panel). **FORTEKO®** vertical panels can also be used to form pillars with the aid of corner locks.

**FORTEKO®** formwork consists of a light metal frame made from special steel and a reinforcement structure to avoid bending of the panels. The formwork surface that fits into the frame is 18mm-thick plywood with the two surfaces coated with a 220g/m<sup>2</sup> phenolic veneer to ensure the good quality in the concrete finish and longer durability of the panels.



# FORTEKO®

## Pillar Formwork

The **FORTEKO®** Vertical Formwork System is designed for formwork for pillars and foundations without the need for extra components.

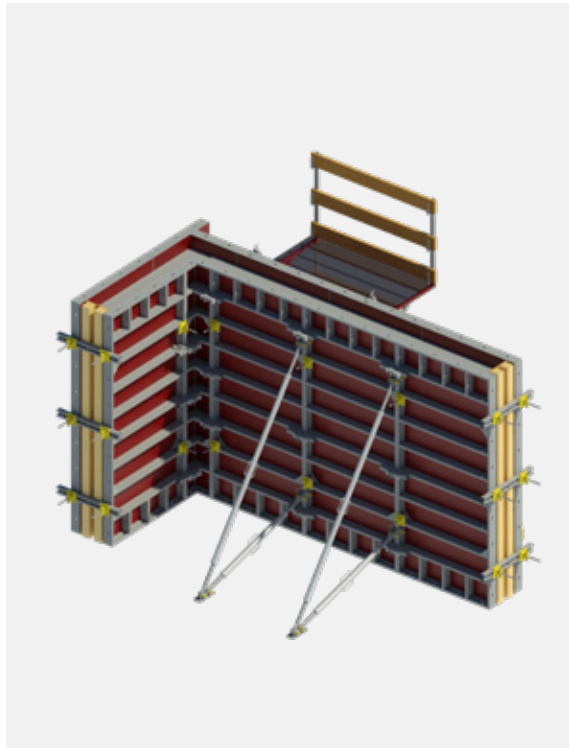
The versatile use of **FORTEKO®** panels increases the productivity of the formwork.

It allows rapid concreting with fresh concrete load capacity of 90 kN/m<sup>2</sup>. A variable alignment lock is used in the joins between the panels to allow adjustment of the expansion joints.

**FORTEKO®** pillar formwork is produced with the highest quality standards and using cutting-edge technology to guarantee the longevity of the system.

Safe concreting at height is ensured through the pre-assembled platform which is transported by a crane and positioned at the top of the pillar. The formwork surface ensures a perfect concrete finish will be obtained.





**MODUTEC®**

## Vertical Formwork

The **MODUTEC®** Vertical Formwork System consists of a profiled steel section reinforced with tubular bars to prevent the panels from bending.

The panels are 1.20 metres or 2.70 metres high, with widths varying from 0.30 to 1.20 metres. This system allows a concreting pressure of up to 60kN/m<sup>2</sup>.

The surface of the formwork is made from 15mm-thick marine plywood, with the two surfaces coated with 220 g/m<sup>2</sup> phenolic veneer. This not only guarantees a good quality concrete finish, but also longer durability of the formwork panels.

While the **MODUTEC®** Formwork System is highly resistant, it is a light system that can be assembled manually when no crane is available.

The **MODUTEC®** System is ideal for quick and economic construction of concrete structures.



**MODUTEC®**

## Pillar Formwork

**MODUTEC®** panels are assembled in the shape of a windmill, forming pillars of variable sizes at 5 cm increments up to a maximum of 80 x 80 cm. Furthermore, you can also use **MODUTEC®** vertical panels to form pillars with the aid of corner locks.

The **MODUTEC®** Pillar Formwork System is a modular system that is completely compatible with **MODUTEC®** vertical formwork. It requires few components, guaranteeing high productivity and complete safety at work.

The components of the **MODUTEC®** pillar formwork are hot-dip galvanised, endowing them with high longevity and a final outcome suited to the requirements of the business partners of the METALUSA Group.





## UPFORM

### Vertical Formwork

**UPFORM®** Variable Formwork Systems are the ideal solution for projects with special requirements for the finish in exposed concrete or concrete stereotomy, especially works of art, engineering works and infrastructures.

The **UPFORM®** Vertical Formwork System is a formwork system for large areas, preassembled based on specific projects and designed to carry out several kinds of tasks. The shape, size and surface of the components can be tailored to any requirement.

The System uses UPN 100 metal bands with perforations and specific accessories to fix the H20 wooden secondary beams, on top of which the plywood is applied.

The dimensions of the system are tailored to the shape and size of the item to be concreted.



## ROFLEX®

### Circular Formwork

The Circular Formwork System for walls produced by the METALUSA Group has been designed to meet the needs of a type of construction that uses different curvatures, such as silos, wastewater plants, entrance ramps to multistorey car parks and other circular structures.

These kinds of constructions are usually extremely complex and require a high amount of labour, considerably increasing the respective costs. The **ROFLEX®** Circular Formwork System increases productivity and reduces labour costs.

This System uses few components, which are all reusable, and is completely compatible with the **FORTEKO®** vertical formwork system for walls, allowing different combinations using **FORTEKO®** vertical panels.





# Round Pillar Formwork

Creating Circular Formwork from standard galvanised steel components is quick and easy with **PILCO®** Pillar Formwork.

The Engineering Department of the METALUSA Group has designed the system to enable other metal components to be incorporated using simple and quick connections for complex engineering projects.

The **PILCO®** Pillar Formwork System is prepared to withstand high concrete pressure loads.



## SIMPLE AND SAFE

**PILCO®** Round Pillars lead to high productivity levels in projects, thanks to their crane lifting system and a simple and user-friendly locking system.



## RESISTANT

**PILCO®** Round Pillars are produced from highly resistant galvanised steel, which endows them with greater durability and better onsite performance.



## VERSATILE

**PILCO®** Round Pillars are extremely versatile owing to their compatibility with the FORTEKO® Vertical Formwork System.



# Buttresses

The **BLOCTEK®** System is a quick and easy modular assembly system that comprises a small number of components.

The **BLOCTEK®** buttresses enable the concreting of vertical walls on one side when it is not possible to use transversal stabilisation with "dywidag" rods. The system consists of triangular components of different heights that are supported in anchors attached to the foundations of the concrete structure that is to be concreted.

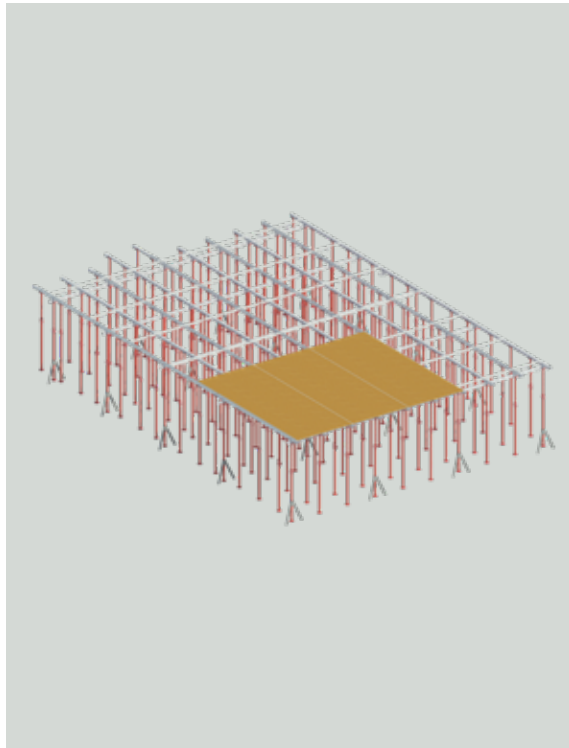
Each module can be worked on independently, which allows the system to be tailored to the requirements of the location/project. This system is frequently used in the construction of one-sided walls and pillars of bridges and viaducts.

- **Modular System;**
- **Low number of components;**
- **Safe absorption of the concreting forces;**
- **Safe distribution of the traction forces through the angled anchors;**
- **Compatibility with the vertical formwork systems of the METALUSA Group product range: FORTEKO® and MODUTEC®;**
- **Admissible concreting pressures of up to 60kN/m<sup>2</sup> with a height of up to 6.0m;**
- **Simple, safe and fast assembly and disassembly;**



- **Simplified system to keep additional components to a minimum;**
- **Material with galvanised finish to prevent corrosion;**
- **The structure is transported by crane, together with the panels for later use, allowing the assembled system to be transported (after the initial assembly of the formwork to the support structure);**
- **Flexible adaptation at height (easy and fast addition);**
- **Fast adaptation to uneven surfaces (enables levelling).**





## Light Flat Formwork

**COFIBER®** is a light Formwork System comprised by a low number of components.

The primary beams are called assembly beams and the secondary beams are called support beams. Added to these two metal components are the shoring ruler and the 27mm-thick three-layer panel, as the final component.

The System includes other secondary components to allow flat formwork for solid slabs, waffle slabs or moulded slabs. The components have been designed to obtain a highly productive light formwork that is easy to assemble and disassemble.

The **COFIBER®** Light Formwork System is a practical and rational solution for quick formwork for flat slabs with the highest productivity indices.

The benefits of **COFIBER®** Flat Formwork derive from the speed and simplicity of assembly and disassembly that lead to considerable productivity gains. It is a resistant and safe formwork structure.

The savings in labour, elimination of waste and immediate reutilisation of the components are all significant competitive advantages.



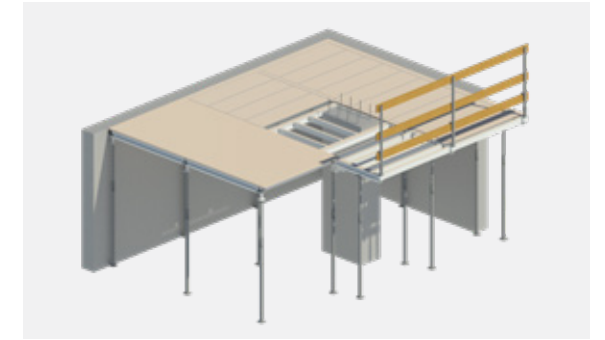
## Flat Formwork Tables

The **ALUFOX** System is a hybrid aluminium formwork system for the optimised construction of concrete slabs. It allows the use of 3 sub-systems:

- **Head + Primary Beam (PB) + Secondary Beam (SB) + Marine plywood or three-layer panel;**
- **Head + PB + ALUFOX Panel;**
- **Mixed solution, based on the above-mentioned two subsystems;**

The system allows savings in time and labour thanks to efficient reutilisation, as it enables the formwork of the slab through the heads. Hence, all the PB, SB and panels, or **ALUFOX** Panels are available for the next concreting cycle.

The system allows the concreting of solid slabs with a thickness of up to 45 cm (13.63 kN/m<sup>2</sup>) using **ALUFOX** Panels and a thickness of up to 100 cm (28 kN/m<sup>2</sup>) using secondary beams and marine plywood or three-layer panels.



Extremely easy to use, the **ALUFOX** System can be assembled and disassembled by a team of two operators without the need for any special tools. With all the assembly and disassembly carried out underneath this equipment, the system minimises the need to work at height, increasing safety.

Main features of the **ALUFOX** System:

- **Quick and easy assembly;**
- **Light and easy-to-install components;**
- **Increased safety for workers;**
- **Minimises labour need and costs;**
- **Less need to stock material;**
- **Longer durability;**
- **Quality finish of the slabs.**



# UPFORM

## Flat Formwork Tables

**UPFORM®** tables are easy to assemble and can be transported and adapted very quickly. The system allows projects involving large-scale slabs to be carried out economically and efficiently.

The System is based on PERFLEX "2C" configuration beams onto which the secondary H20 beams are clamped.

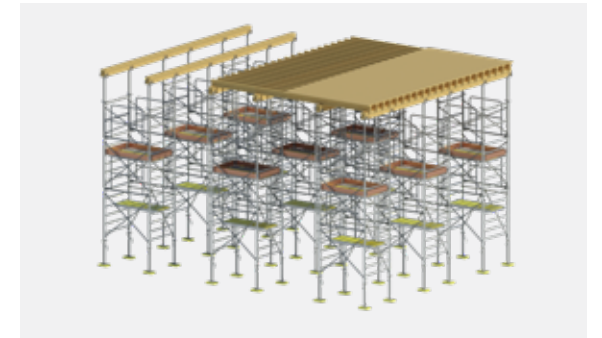
This new horizontal formwork system designed by the METALUSA Group leads to better productivity in the construction of concrete slabs.

- **The UPFORM® tables come in 4 standard dimensions, but their size and shape can be tailored to the particular requirements;**
- **Can be transported without disassembling;**
- **The system has swivel heads that allow the props to be withdrawn for easy movement of the table;**
- **Multiple shoring possibilities: standard metal props, aluminium props, shoring towers or centring falsework;**
- **Peripheral tables can be fitted with safety guardrails to prevent falls, ensuring safety from start to finish of the job.**



# TOWROK®

## Shoring Towers



The METALUSA Group has made innovation and safety mandatory requirements in the design of the **TOWROK®** Shoring Towers.

These two requirements have been achieved without compromising the functionality of the product, with the speed of assembly and disassembly and the durability of the system two of its strong points.

**TOWROK®** Shoring Towers are of the highest quality, in accordance with the EN 12813 standard, achieved through a high-technology production system. **TOWROK®** towers are manufactured using completely automated and robotic technology.

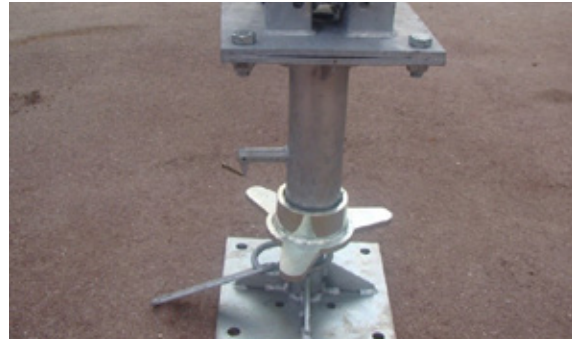
After being erected, the Shoring Towers have a sturdy frame with a high safety level.

The components of the **TOWROK®** System are produced to withstand loads of at least 50kN per foot, 100 kN per component or 200 kN per tower, making them the best choice for high shoring with heavy loads and stringent safety demands.

**TOWROK®** Shoring Towers enable high productivity:

- **Quick assembly;**
- **Easy assembly thanks to the connection system;**
- **The feet levellers and forks allow quick adjustment and levelling;**
- **The safety lock and clamping panel keep the structure tightly unified when it is moved from one position to another.**





## SHORFLEX<sup>HT</sup>

# High-Resistance Shoring

The **SHORFLEX HT**® Shoring System is the recommended system for working at great heights with heavy loads, performing very well in these conditions.

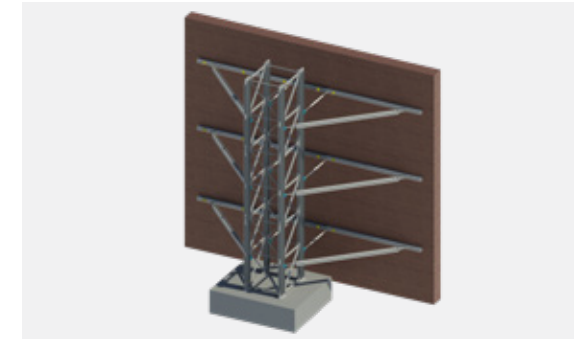
It allows the assembly of the shoring with wider spacing between the bays. The main components of the frame are PERFLEX® sections that form the vertical props.

The use of diagonals increases the load capacity and endows greater stability for the shoring structure. The foot levellers of the vertical props can be regulated to ensure the stability of the shoring structure.

The adjustable forks are applied on the top of the vertical props and can be combined with other

components to adjust the formwork surface to the needs accordingly. The structure can be separated into small sections to allow them to be moved more easily with the aid of a crane.

The fine adjustments made to the props of the shoring structure are carried out through highly resistant levellers with a load capacity of 250 kN per prop.



## SHORFLEX<sup>LT</sup>

# Façade Stabilisers

The **SHORFLEX LT**® façade stabilisation system has been designed specially for refurbishment when the intention is to preserve the façades and is geared towards supporting horizontal loads of great amplitude. The structural mesh resulting from the special connections made with bolts is resistant and safe.

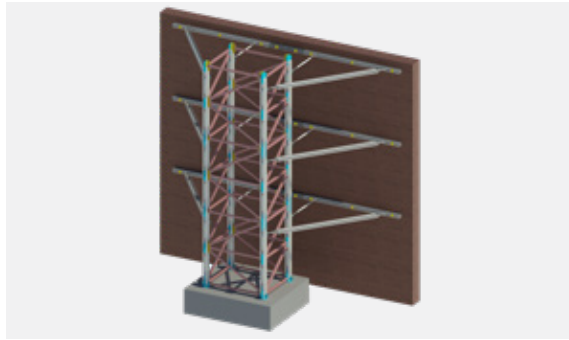
The **SHORFLEX LT**® façade stabilisation system allows the horizontal forces to be transmitted from a façade to the ground and prevents leaning or falling of the façade through the counterweight implemented by the system. It enables the passage and protection of pedestrians and vehicles during the work.

The **SHORFLEX LT**® stabilisation system has been designed by the Engineering Department in response to the demands of complex refurbishment

work, achieving high safety and quality levels. The **SHORFLEX LT**® system has abundant advantages:

- **System integrated in the assembly;**
- **Prevents leaning of the façades;**
- **Allows the passage of people and vehicles on public thoroughfares and covering to be put over the structure;**
- **High anti-corrosion protection through the hot-dip galvanisation of the components of the system;**
- **Can be preassembled on the ground;**
- **Ensures stabilisation of the façades at great heights.**





## SHORFLEX<sup>HD</sup>

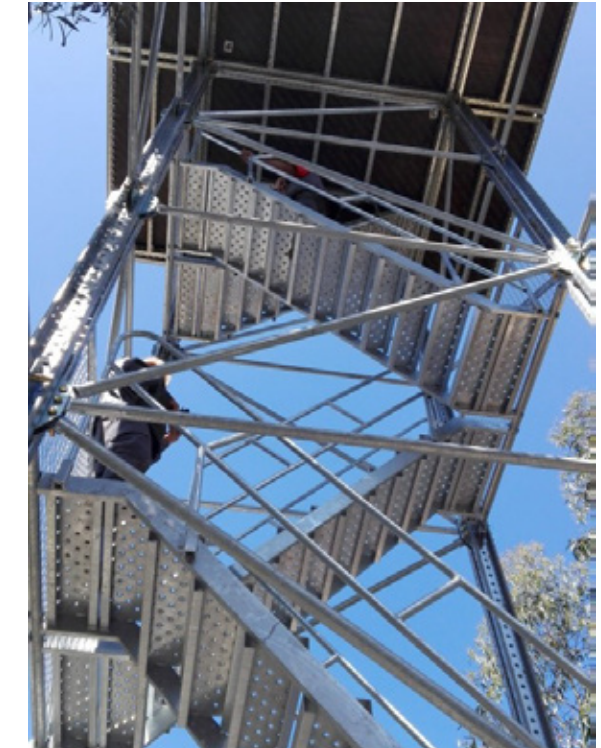
### Façade Stabilisers

The **SHORFLEX HD**® modular system is a range of products for a variety of applications. These applications can be façade containment systems, shoring systems or structures with special geometric shapes.

The main components of the frame are sections consisting of cold-formed S355 carbon steel which comprise the vertical props. The use of diagonal and horizontal bars increases the load capacity and ensures greater stability for the structure.

The **SHORFLEX HD**® system has several advantages when working at height with heavy loads:

- Low number of supports on the ground;
- Formation of structures with large clear bays;
- Quick and safe assembly and disassembly;
- Large sections can be moved without disassembly;
- System made up of modular components that can be easily adapted to different heights;
- Possibility of assembling the structures in a network or with independent structures with variable bays;
- Compatibility with the SHORFLEX LT® system;
- Higher load capacity than the SHORFLEX LT® system.



## SHORFLEX<sup>TV</sup>

### Surveillance Towers

The **SHORFLEX TV**® Surveillance Tower is more than a forestry protection surveillance facility against fires. The surveillance tower encapsulates the goals of the forest fire prevention directive, as a dissuader of crime, saving lives and public and private property and protecting forest resources of increasing economic and environmental importance.

The System can also be used to observe and study the fauna and flora, as a "viewing point" for tourism, for maritime surveillance, to control borders and property and to increase security.

The Surveillance Tower is available in the standard measurement of 2.5 × 4.2 × 10m (length x width x height of the platform), and the height and

dimensions can be customised depending on the functionality required. The main components that comprise the tower are as follows:

- Reinforced concrete foundation shoes;
- SHORFLEX® LT structure (pillars, bars and bolted and screwed diagonals);
- Access staircase;
- Surveillance platforms;
- Surveillance hut;
- Protective guardrails.





**TIVATEC®**



EN 13331

## Propping of trenches

Excavating trenches is a task that entails high risk, exposing workers and third parties involved in the construction site to hazards with potentially serious consequences.

Trenches are usually dug to implement network infrastructures such as water or sanitation piping, or electricity or telecommunication cables, among others.

The specific formwork for trenches, called Propping, consists of metal panels which are positioned to prevent collapse and consequent burial. It is mandatory to use propping when

digging trenches at a depth of 1.20m or more, to ensure safe conditions.

The **TIVATEC®** trench propping system allows the propping of trenches with terrain pressure of up to 27 kN/m<sup>2</sup> when the 4m-long version is used, and up to 55 kN/m<sup>2</sup> with the 3m-long version.

The **TIVATEC®** product was designed in accordance with the following standards:

- **EN 13331 – Trench Lining Systems;**
- **Eurocode 3 – Design of Steel Structures.**

**SAFTEC®**

## Work and Safety Platforms

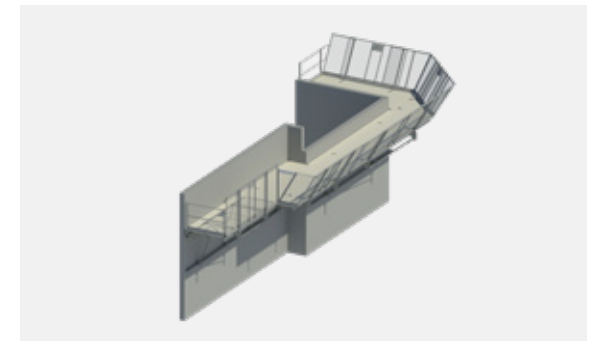
To address the safety requirements in the installation of formwork at height, METALUSA has designed the **SAFTEC®** extendable platform.

It is a multifunctional platform made with the most sophisticated production systems to ensure the utmost safety at work.

The small number of components of the **SAFTEC®** extendable platform makes it easy to use, transforming it into an economic solution to use as a working platform and for formwork of walls.

The monobloc structure of the **SAFTEC®** platform provides a working area of 1.75m to 2.5m in width and 4.0m to 6.5m in length.

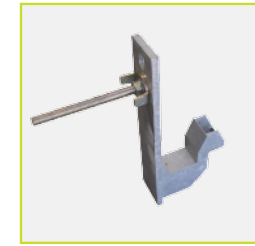
The suspension points are spaced 1.5m apart to simplify the planning and assembly.



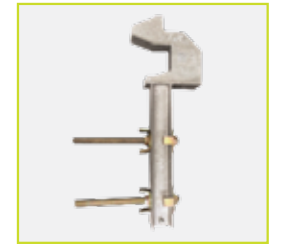
Conventional support and clamping of the SAFTEC® platform.



Support for clamping the SAFTEC® Platform by the top surface of the concrete slab (no wall).

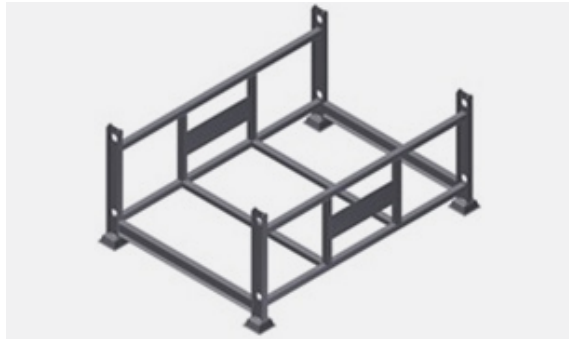


Support for clamping the platforms on the walls.



Support for clamping the SAFTEC® Platform by the underside of the concrete slabs.





## DUPAL

### Open Pallet

**DUPAL®** Open Pallets make storing large components easier. The open pallets of the METALUSA Group can be handled and stored safely.

They can be stored vertically, allowing the best use of the space on the construction site or equipment park.

The high quality of this equipment makes it extremely resistant and versatile, even in adverse weather conditions. These open pallets are ideal for storing large articles.

The open pallets are produced in two basic sizes:

- **1500 x 1100mm**
- **1200 x 800mm**
- **Height of 700mm**



## DUPAL

### Closed Pallet

Proper storage of equipment in a park or construction site is sometimes neglected. This is a mistake as correct storage is extremely important to increase the lifespan of the equipment.

These pallets are highly resistant and durable and have been designed to facilitate the transport of equipment and its organisation inside the warehouse.

These pallets allow the equipment to be transported in very safe conditions, both for the transporters and the equipment itself.

They can take maximum advantage of the space available by being stored vertically or horizontally, safely and quickly.

**DUPAL®** closed pallets enable equipment to be transported easily and quickly, increasing safety and the good organisation of the space in a park or construction site. These closed pallets are recommended for smaller parts. They are strong and able to be stacked on top of one another.

The closed pallets are produced in two basic sizes:

- **1500 x 1100mm**
- **1200 x 800mm**
- **Height of 700mm**





# DUPAL

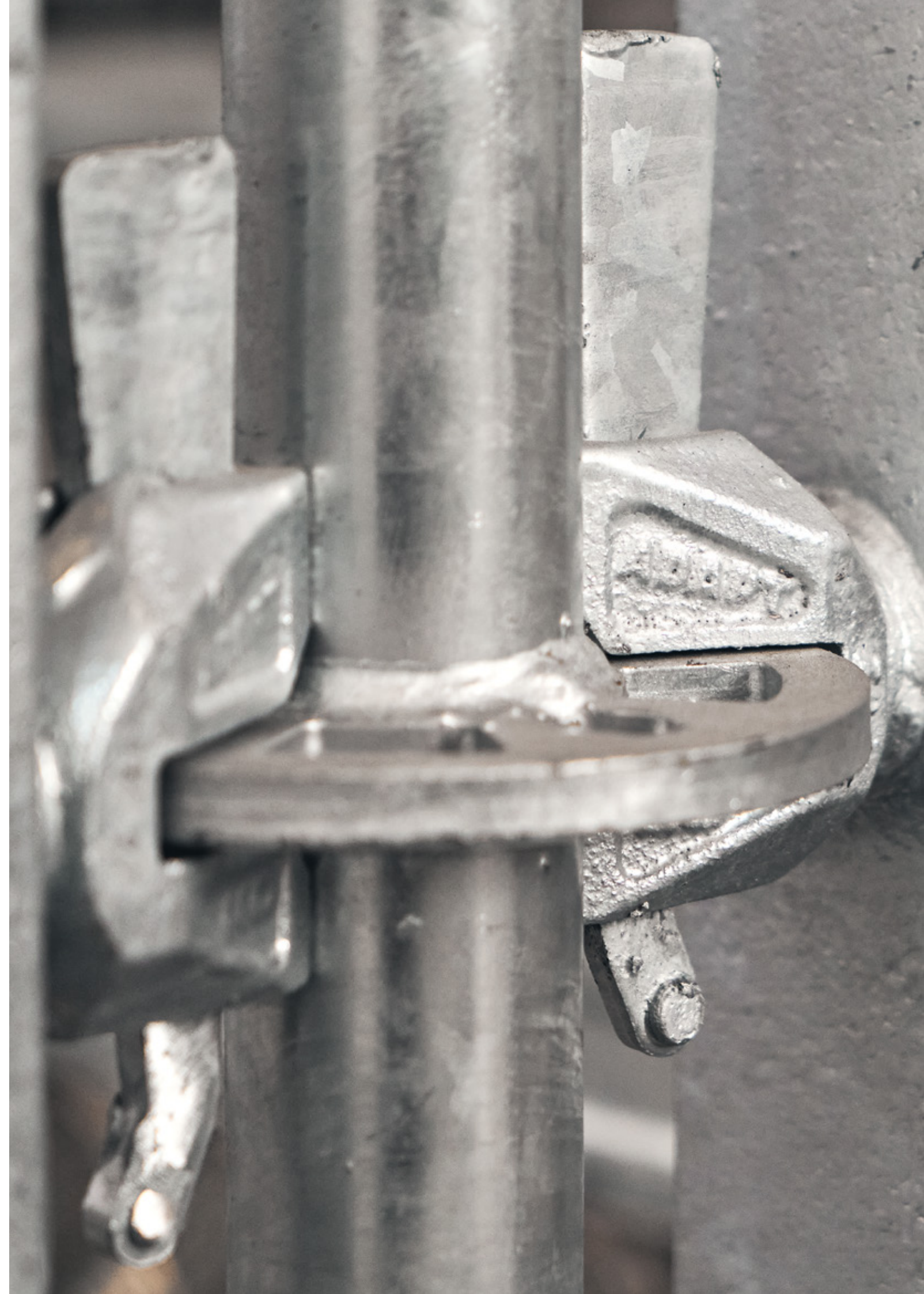
## Dismountable Pallet

The **DUPAL®** Dismountable Pallet was designed for ease of transport and optimised storage. Its design allows the assembly and disassembly of the support bars.

This pallet can be used as an open pallet (narrow but long bars), or a closed pallet (small components) by simply positioning the plywood panels on the base and side walls and fixing them with self-drilling screws.

The Pallets are produced from galvanised S235JR steel tubes.

The dismountable pallet is produced in the basic size of 1200 x 800mm and height of 1000mm.

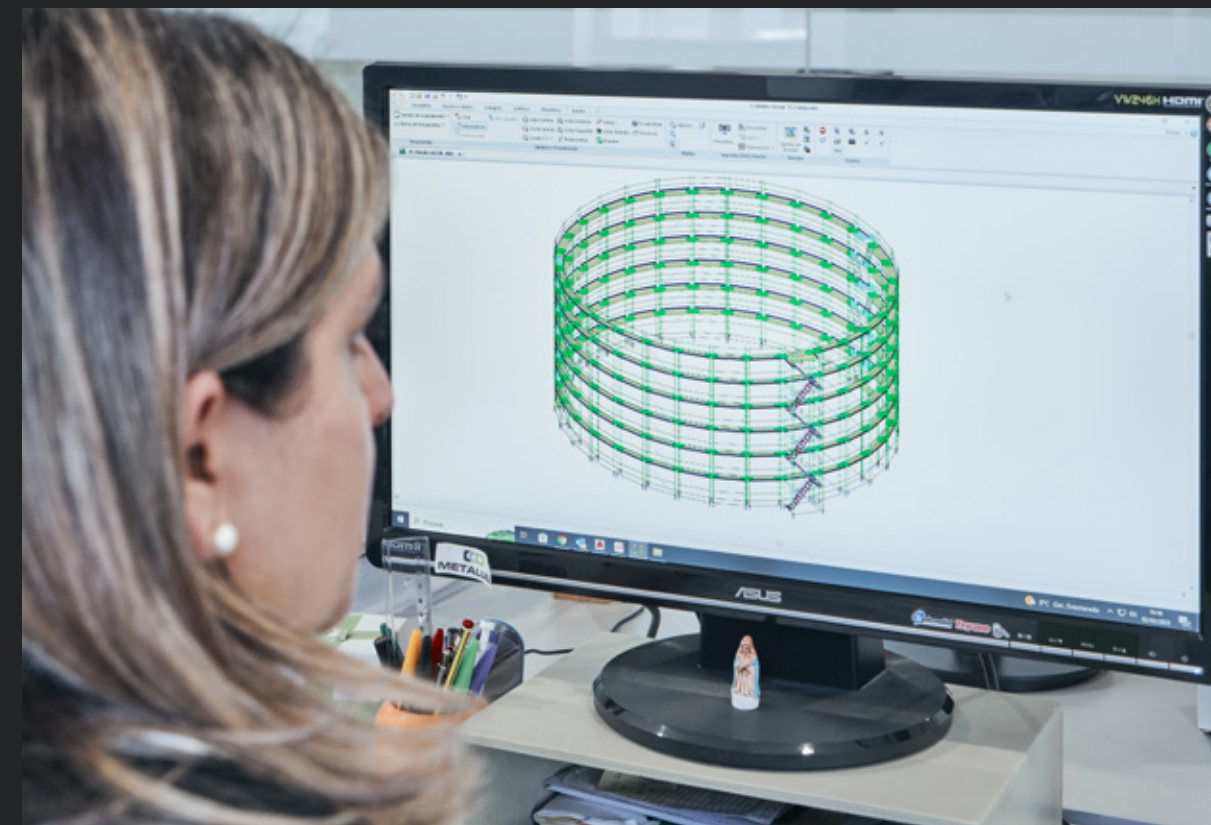




A woman with long brown hair, wearing a green sweater, is seated at a desk in an office. She is looking at a computer monitor. The desk has various items on it, including a black folder and some papers. The office has a modern feel with a glass partition in the foreground. On the left side of the glass partition is a large, dark, stylized letter 'P'. The word 'SERVICES' is written in white, bold, sans-serif capital letters across the middle of the image, partially overlapping the glass and the office background.

**SERVICES**





## RENTAL

The **METALUSA Group** produces all the products it sells, as a manufacturing and service provision company. In addition to its sales business, the **METALUSA Group** rents out its equipment to boost its business. This enables its partners to work on large-scale projects in the areas of civil construction, industrial maintenance, the production of shows, shipbuilding and the most wide-ranging engineering work.

The **METALUSA Group** has contributed to the success of its business partners, not entering into direct competition with them.

The rental service is a complementary service available only for our business partners. As such, the partners of the **METALUSA Group** can tailor their needs, conciliating the purchase of a proportion of the equipment with the simple rental of the rest.

All the equipment rented by **METALUSA** is duly identified with green polyurethane paint to easily distinguish it from the equipment that belongs to the business partner.

## PROJECT PREPARATION

The Engineering Department provides a sketch of the construction site preparation that allows work to be carried out when a licenced structural calculation is not required.

The following information is contained in the construction site sketch document:

- **Layout of the equipment on a plan, uprights and cross-sections, drawn up in line with any applicable standards or according to the procedures defined by the technical manual;**

- **Quantities of the material needed to carry out the job, outlining the weights, technical features and other specificities in the technical manual;**
- **Indication of the applicable Standards regarding the use of the equipment and instructions in the technical manual;**
- **Standard key or other page provided upon request, in DWG format and editable.**

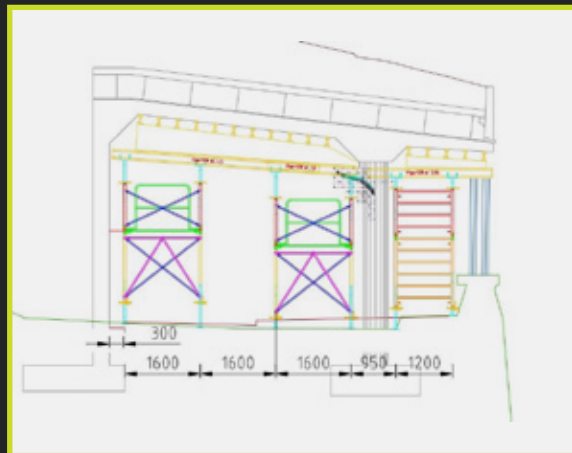




## STABILITY CALCULATION

Upon request, the Engineering Department will supply a structural stability calculation service, providing technical support in the following aspects:

- Information about the standards applied in the assembly and disassembly;
- Supply of the stability calculations of the products;
- Provision of specific software.

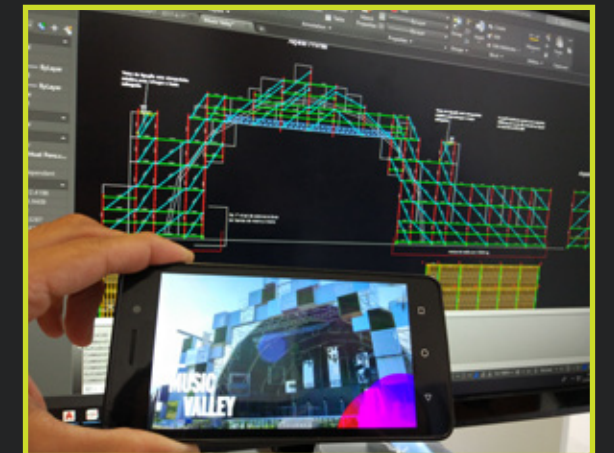


## TECHNICAL-COMMERCIAL SUPPORT

Works involving a high degree of engineering require careful and constant monitoring. The **METALUSA Group** has a technical-commercial team with vast experience in supporting clients and providing technical knowhow that will give the necessary and immediate help to its business partners.

The technical-commercial team of the **METALUSA Group**, with decades of experience, will help with the full range of issues and challenges, finding the most rational and effective solution for the problems that crop up day to day.

This support is essential for the correct undertaking of the projects and will be crucial to maximise the results.







# ON-THE-JOB SUPPORT

The **METALUSA Group** technicians, thanks to their specialised training in the assembly and disassembly of equipment, can be requested to go to a construction site to assess any situation or unforeseen event or to monitor the start of the assembly.

Drawing on their in-depth technical knowledge and experience in a wide range of projects, they provide essential help in putting the construction supervisors at ease.



# POST-SALE ASSISTANCE

Formwork, scaffolding and shoring equipment needs maintenance. The **METALUSA Group** provides a specialised cleaning and maintenance service, guaranteeing that the equipment is ready for the next job.

The technical-commercial team and the factory can meet the challenges of a highly competitive sector that is constantly changing. To make sure the goals of our business partners are achieved, we have a team available comprising experienced engineers and highly specialised personnel who will satisfy and exceed expectations in the projects to which they are assigned.







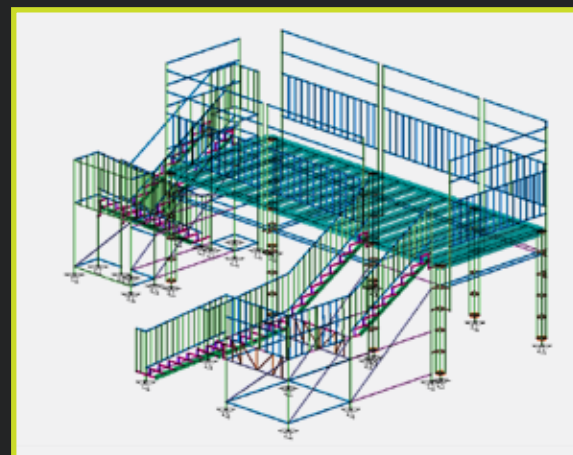
## SOFTWARE

The **METALUSA Group** uses TRICALC-based software, tailored to the needs of its business partners, thanks to a technological collaboration agreement with GRAITEK and PON CAD.

This software provides all the possible solutions that can be applied to the full range of products. Quick and user-friendly, this software draws up the projects, works out the quantity of material needed, and calculates a budget tailored to the client's needs.

The **METALUSA Group** provides the Stability Calculation service, upon request, especially for highly complex projects or when the basic utilisation thresholds stipulated in the Technical Manual of the product are exceeded.

Working alongside the business partner, a plan is drawn up to carry out the project, considering the different phases and rotational cycles needed and the scheduling of the delivery of the equipment.



## TRAINING AND SAFETY

In-house and external experts regularly organise training activities in the **METALUSA Group** in the various regions where we operate. By sharing the experience and knowhow with the staff, it is possible to help them improve their technical and professional performance.

The formal training is undertaken in specific seminars for the product family in question. In these seminars, the theoretical and practical information is supplied about the equipment, standards, safety and conditions of use.

In addition to this training, technicians are available to carry out short training initiatives, usually one day long, onsite or at the facilities of our business partner.











[www.metalusa.net](http://www.metalusa.net)

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