METALUSA

SHORING TOWERS

TOWROK

TOWROK®

Innovation and Safety

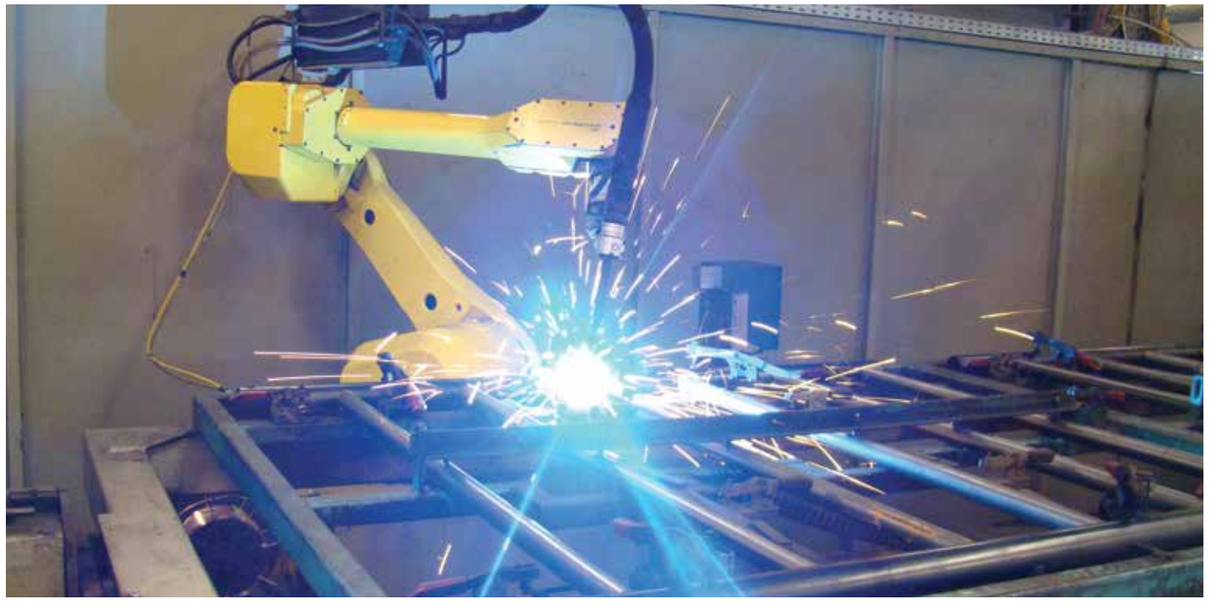
Metalusa regarded innovation and safety as mandatory requirements for the implementation of the Towrok® shoring towers.

These two requirements are met without prejudice to the functionality of the product and two of its main strengths are its speed of assembly and dismantling as well as the durability of the system.

Towrok® shoring towers are endowed with high quality, complying with Standard EN 12813 achieved by means of a high-tech production system.

The production system used to manufacture the Towrok® Towers deploys totally automated, robotised technology.

METALUSA SEEKS TO MEET THE REQUIREMENTS OF THE MARKETS WHERE IT OPERATES, PROVIDING PRODUCTS THAT OUTPERFORM EXPECTATIONS, COMBINING **INNOVATION**, **SAFETY** AND **QUALITY**.



A Simple, Efficient Solution

The shoring towers built by elements, once assembled, form a rigid, very safe structure.

The elements of the Towrok® system are made to withstand loads of at least 60 kN per element or 180 kN per tower, constituting the best option for shoring at a height of heavy loads with minimum safety requirements.

Towrok® shoring towers are the system indicated for implementing highly complex works in which the versatility of the equipment is a pre-requisite, always maintaining high safety indices, to wit under heavy load conditions.

Productivity at the Works' Site

The components of the Towrok® shoring system were developed to allow simple assembly and dismantling so as to get a better performance out of the costs associated with these operations.

The Towrok® shoring system deploys a low number of elements, thereby seeking to boost productivity at the works' site and to achieve low maintenance operation costs.

To boost productivity in the movement of Towrok® shoring tower structures with the aid of a crane, two innovative technical solutions have been developed.

At the base of the structure the leveller has an attachment plate for connecting the leveller quickly and safely to the shoring element. The connecting bar links the elements at a height and they are secured by the safety latch built into the element.

The Towrok® shoring system can be easily adapted to any kind of formwork.

The system is endowed with a set of safety elements which allow easy, totally safe assembly and dismantling in line with the most demanding standards in force.

The combination of the various elements allows the implementation of Shoring Towers which are between 1,70m and 10m high.

For heights exceeding 10m, it is necessary to calculate the stability of the Towrok® structure.

For towers whose height exceeds 5m, the elements need to be tied to each other every 3m of height using Ø48x3,2mm tubes and 48/57mm fixed clamps.

Stability and Safety

Under normal usage conditions the Towrok® Tower is self-standing up to 5m high.

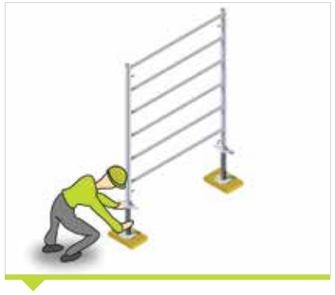
Between 5 and 10m high the structure of the towers must be tied to each other by means of a tube and clamp and with diagonals.

For heights exceeding 10 metres a stability calculation must be carried out based on the product manual. Where necessary, said calculation can be carried out by the Metalusa engineering services.

The assembly and dismantling of the Towrok® shoring towers is straightforward, making the system highly versatile and capable of resolving the most varied situations at the works' site.

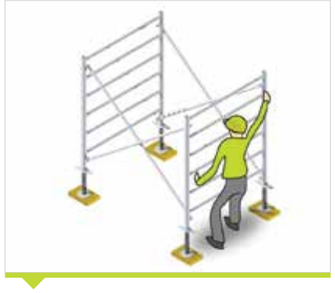
Assembly Productivity

1ST STAGE
Untie and remove the 1st element to start assembly.



2nd STAGE
Assemble 2 base levellers and then the shoring element.

3rd STAGE
Assemble two 1,60x1,25 diagonals at the element.



4th STAGE
Assembling the shoring element on the opposite side.

5th STAGE
Assembly 2 Guardrails from the ground upwards. Level and vertically align the structure.

6th STAGE
Place another 2 elements and then close the Guardrail safety latch.

7th STAGE
Place the platforms on the element bars.

8th STAGE
Place 1 diagonal and a Guardrail from the working platforms.

9th STAGE
After placing the diagonal and Guard-rail on the opposite side.

10th STAGE
Place two 1,0 x 1,20m elements.

11th STAGE
Move the platforms 0,5m downwards.

12th STAGE
Place another platform level 2,0m away.

13th STAGE
Assemble two 1,6 x 0,75m diagonals at the elements as from the 2nd level of platforms.

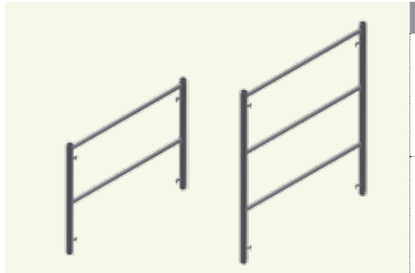
14th STAGE
Assemble the forks and adjust to the necessary elevation.

15th STAGE
Place the beams on the forks.

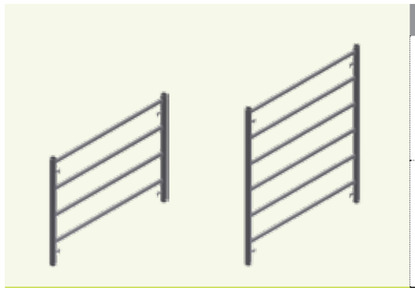
THE TOWROK® SHORING TOWER ALLOWS GREAT PRODUCTIVITY:

- Rapid assembly;
- Easy assembly with the aid of a connector;
- The base levellers and forks allow speedy adjustment and levelling;
- The safety latch and the affixation plate keeps the structure joined when moving from one position to another.

Towrok® Elements



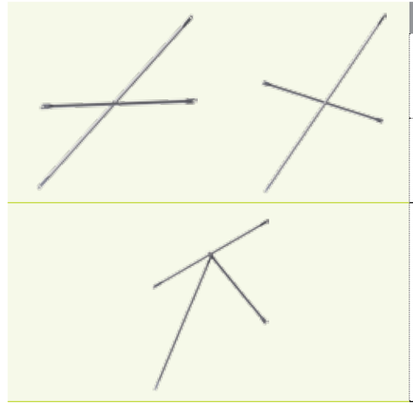
P040101	REINFORCED SHORING ELEMENTS	Weight (Kg)
P0401011000G	Galv. Shoring element 2R 1,2x1,0 m	12,50
P0401011500G	Galv. Shoring element 3R 1.2x1.5 m	18,40



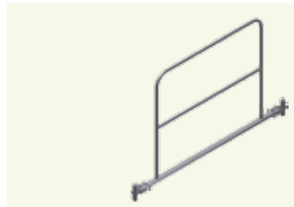
P040102	SUPER REINFORCED SHORING ELEMENTS	Weight (Kg)
P0401021000G	Galv. shoring element 4R 1,2x1,0m	16,00
P0401021500G	Galv. shoring element 6R 1.2x1.5m	24,40

P040103	SHORING TOWER TERMINAL ELEMENT	Weight (Kg)
P0401031000G	Galv. tower terminal 2R 1,2x1,0m	13,90

P040104	BARS FOR SHORING TOWERS	Weight (Kg)
P0401041600G	Galv. Towrok® horizontal bar Ø30 mm with 1,60m	2,20
P0401051600G	Galv. Towrok® connection bar 1,60m	6,60
P0401050160G	Spigot w/ Ø48x160mm	0,63



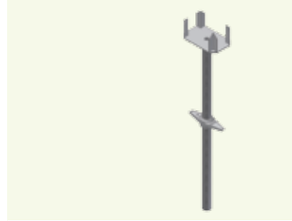
P040106	DIAGONALS FOR SHORING TOWERS	Weight (Kg)
P0401060750G	Galv. Diagonal "X" with Ø30mm 1,60x0,75m	4,50
P0401061250G	Galv.Diagonal "X" with Ø30 mm 1,60x1,25m	6,10
P0401061600G	Galv. Diagonal in "V" with Ø30 mm 1,60m	6,30



P040108	ASSEMBLY GUARDRAIL FOR SHORING TOWERS	Weight (Kg)
P0401081600G	Galv. Assembly guardrail for shoring towers 1,60m	14,00

P040109	BASE LEVELLERS WITH CLAMPING CHUCK	Weight (Kg)
P0401090900G	Galv. Base leveller Ø48+clamping chuck with 0,90m	6,90

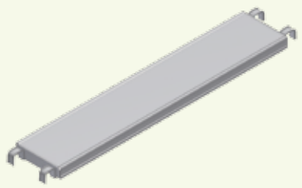
P040111	ARTICULATED BASE LEVELLERS	Weight (Kg)
P0401110900G	Galv. Articulated base leveller Ø48 with 0,90m	7,00



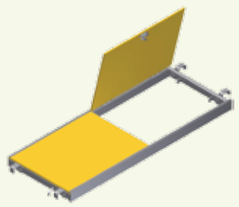
P040112	FORKS FOR SHORING TOWERS	Weight (Kg)
P0401120500G	Galv. Fork 235x150 Ø48 with leveller 0,50m	4,40
P0401120900G	Galv. Fork 235x150 Ø48 with leveller 0,90m	8,00

TOWROK®

	P040190	SHORING TOWER ACCESSORIES	Weight (Kg)
	P0401900004G	Fork accessory to secure wooden beams	5,00

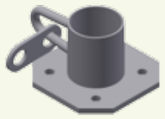


	P010150	STANDARD STEEL PLATFORMS 300mm	Weight (Kg)
	P0101501600G	Galv. metallic platform 1,60x0,30m	11,60

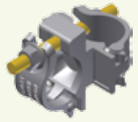


	P040115	STANDARD SERVICE PLATFORMS	Weight (Kg)
	P0401151600	Service platform made of aluminium/cp 1,60x0,70m for Towers	15,60

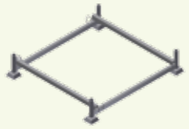
	P040118	TOWROK® SKIRTINGS	Weight (Kg)
	P0401181200	Side skirting 1,20m - Towrok®	2,90
	P0401181600	Front skirting 1.60m - Towrok®	4,00



	P040190	SHORING TOWER ACCESSORIES	Weight (Kg)
	P0401900001G	Galv. support base for shoring towers	1,00



	N45NCB0600000005	Galv. orthogonal bracket 60/48	1,28



	P0401900003G	Galv. pallet for shoring elements Towrok®	26,50

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COMPETE 2020
PROGRAMA OPERACIONAL COMPETITIVIDADE E INTERNACIONALIZAÇÃO

PORTUGAL 2020

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