mabey

Propping & Jacking

mabey.com

Welcome to mabey

Every construction and infrastructure project brings unique challenges. That's where Mabey Hire expertise makes the difference.

We are a leading temporary works specialist and, since pioneering the market 60 years ago, we've been at the forefront of our industry, building a reputation for engineering and service excellence.

Our expertise spans civil infrastructure, buildings & utilities sectors, and we are the only temporary works specialists in the country that can design, supply, install and monitor temporary works solutions.

Our capabilities include groundworks, propping, jacking, formwork and falsework systems, temporary access solutions, temporary bridges, and structural and environmental monitoring.

We have a 70-strong national engineering team, the UK's widest range of temporary works equipment, and a nationwide network of 17 service-focused depots.

All of this enables us to deliver the right solution for our customers, whatever the scale or complexity of their project.

What makes Mabey Hire different?

A 70-STRONG NATIONAL ENGINEERING TEAM

Who have worked on some of the most complex and largest construction and infrastructure projects in the UK.

CREATIVE DESIGN APPROACH

Delivering award winning first to market product and service innovations.

A COMPLETE SOLUTION

No other UK temporary works provider can offer a complete in-house solution across design, supply, installation and monitoring for planned, reactive and emergency projects.

WORKS Offering unrivalled range breadth and depth.

UK'S WIDEST RANGE

OF TEMPORARY

NATIONWIDE NETWORK OF 17 SERVICE-FOCUSED DEPOTS

We take pride in our commitment to deliver right first time service excellence.

COMMITTED TO QUALITY, SAFETY AND THE ENVIRONMENT

We hold UKAS accreditation to ISO 9001, ISO 14001 and ISO 45001 as well as numerous procurement schemes and safety awards.

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INTEGRITY

Our customers expect us to operate to the highest standards and we are proud to be one of the first UK companies to achieve ISO 37001 anti-bribery standard.



Engineered Solutions

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We believe in a world without boundaries. At Mabey Hire we take our customer's project vision and make it our challenge to engineer the right temporary works solution to bring it to life.

Our large, 70-strong team of gualified and professional engineers, are dedicated to using our creative engineering approach to deliver some of the most exciting construction and infrastructure projects in the country.

For customers who would like us to take away the complexity of managing the enabling stage of multi-phase, multi-partner projects, our expert teams can design, supply and install.

To discuss your project with one of our engineers please email us at action@mabeyhire.co.uk

An engineered solution tailored to your needs

Design Brief

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Our engineering team will work with you to understand the challenges at the critical early stage of the project. This can also include on-site visits from our local field engineers making sure we get the design brief just right, ensuring that the temporary works aspect of a project does not impact any other parties on site.

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MONITOR

6

Handover

Our experienced engineers

will assess the assembly and installation of the scheme, if

necessary, detail amendments

provide a handover certificate.

from the original design and

7

Completing our end-to-end engineered solution for your project, our structural and environmental monitoring solutions, with real-time data help you understand the behaviour of your structure or building environment.



We have the widest range of temporary works equipment, from propping to groundworks, to temporary access and much more. Our engineers have everything to hand to design the complete solution within the constraints of your project.

> <u>р</u> SUPPLY

Using the latest tools such as 3D Stress Analysis programmes, FEA (Finite Element Analysis) and Soil Interaction software, our experienced, qualified engineers design and

check every scheme.



Our team work with you delivered at the right time, in

Site Services

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Unique to the temporary works market, we have experienced site teams to install our kit. This unique service reduces project complexity and alleviates risks and delays, and is available across our range of services.



to schedule the project and ensure our solution is the right sequence, every time.

Engineering the future

Here at Mabey Hire, we are committed to driving our industry forward. Whether through using the latest technologies or through learning and development, we are constantly looking for ways to improve safety and efficiency for our customers.

With a dedicated digital engineering team embedded in our business, we use the latest technology to help our customers design winning bids, reduce the costs of construction, speed up delivery, improve safety and reduce the full-life cost of infrastructure.

We are extremely passionate about raising standards in the temporary works industry. In fact, the ICE has approved our structured training agreement and many of our engineering team are either Fellows of the ICE, Chartered Engineers or are working towards professional qualifications.

Looking further to the future, our STEM Education Programme, which encourages school children to consider a career in engineering, enables a new generation of engineers to take our industry forward.



BIM (BUILDING INFORMATION MODELLING)

Our early adoption of Revit 3D software in our scheme designs, enabled us to further help our clients to win and deliver projects. We were the first in the temporary works industry to achieve BIM Level 2 certification for Design and Construction.

STEM (SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS)

We take our responsibility for encouraging the next generation of engineers seriously. That's why we have built the STEM Education programme, using LEGO® to inspire children to consider a career in engineering, delivered by our own STEM Ambassadors.

LEARNING & DEVELOPMENT

With our in-house ICE accredited training programme we are committed to supporting the development of our engineers to raise standards within the temporary works industry.





IMMERSIVE TECHNOLOGY

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Our highly skilled digital experts develop tools using the latest technologies to take clients on an immersive journey of their project. We use virtual design and the latest software to reduce the risk of any unforeseen issues before the project even begins.

Propping & Jacking

As an award winning temporary works specialist, Mabey Hire has over 60 years experience providing customers large and small with solutions to their propping requirements. Whether it's a light propping job, a bridge lift, a façade retention or anything in-between, Mabey Hire's wide and versatile range, combined with our engineering teams skills, ensure we can deliver a solution.

We also offer a unique installation and monitoring service. Offering full on-site installation of your propping system and any subsequent monitoring that may be required. We also have the capability to respond to reactive or emergency situations for example, enabling our customers to re-open major roads very quickly after bridge strikes.

Read on to find out more, or talk to us about your project today on: 0845 741 3040 or email action@mabeyhire.co.uk.



Facade Retention

Our Mass systems have been designed

specifically to meet the needs of the Building

refurbishment market.



Propping and Shoring Our large range is perfect for any vertical, horizontal or raking propping and is used extensively in the infrastructure market.



Modular Towers The versatility of our range allows for a large range of applications within the Civil Engineering sector.

The right product for every project

Our Propping Systems have the weight capacity to support low to extremely high load propping applications. Use our load capacity comparison table and chart to ensure you find the right Mabey Hire Propping System for your project.

Low Load (under 100kN)	Medium Load (above 100kN/ under 600kN)	High Load (above 600kN/ under 2000kN)	Extremely High Load (above 2000kN)
Adjustable Props (p10)	System 160 (p16)	Mat 125 (p32)	MU Towers (p40)
Kwikstage (p12)	Mass 10 (p20)	Superprop (p36)	-
Titan Prop (p14)	Mass 25 (p24)	-	-
-	Mass 50 (p28)	-	-

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This chart is to be used as a reference guide only and details the maximum loading capacities for each of our Propping systems. For Prop designs please refer to the appropriate Technical Data Sheet available on our website, as capacities vary significantly depending on structural arrangement and load application.

This chart must only be used for indicative selection of the propping system required.

For further information on any of our propping systems, please refer to our website at **mabey.com**



Adjustable Props

Our range of Adjustable Props are perfect for light duty propping projects. Available in a variety of sizes, they are height adjustable and lightweight, making them versatile, quick to install (with no tools required) and easily handled on site throughout loading and installation.

Designed in accordance with EN1065, these props have a maximum load bearing capacity of 35kN and feature retaining links on the pins and inner tubes for increased safety during installation. Supplied with 150mm x 150mm end plates as standard, these props can also be used with U-heads allowing connection to needle beams.

Configurations Propping

Applications

Vertical Propping Lightweight Building

Propping

Soffits

Strongboy Needling

Adjustable Props

Key Benefits:

- Designed in accordance with EN1065
- Height adjustable and lightweight
- Versatile and guick to install
- Lincoln Pin safely secures the load and does not obstruct adjustment
- Self clean threads that clean in both directions
- U-head alternative available, allowing connection to needle beams

Standard Heights and Weights

Size	Closed height (m)	Extended height (m)	Weight (kg)
0	1.07	1.82	14.7
1	1.75	3.12	21
2	1.98	3.35	24.2
3	2.59	3.95	26.3
4	7.0	4.07	70 5



For further information on the Mabey Hire Adjustable Props, please refer to our Technical Data Sheet at **mabey.com/uk/technical-library**





Kwikstage

Our Kwikstage Shoring is the ideal solution for projects that require a modular brace tower with a maximum axial capacity of 55kN. Featuring both Spigot and Open Ended standards, the modular system is both versatile with minimal tools required for installation, and lightweight, providing ease of use on site.

Our unique V pressings, attached at 495mm vertical centres along the tube, allows shoring ties to be connected easily, ensuring quick assembly of the system.

Configurations Modular Brace Towers

Applications

Casting Concrete Soffits, Floors and Roofs

Falsework

Access or Shoring

Kwikstage Components

Standards

Fabricated from steel scaffold tube to BS EN 39:2001, there are 2 types of 'Standard' within the Kwikstage system. Our Standards have a spigot at one end, enabling them to be connected end to end and our 'Open Ended Standards' then allow the use of U-heads and Base Jacks at either end. Each type of Standard allows Shoring Ties to be connected quickly and easily with their unique V pressings at regular intervals along the tube.

End Type	Length	Weight
	(m)	(kg)
	1.473	7.9
Spigot	1.981	12.0
	2.972	17.4
	0.991	5.3
Open Ended	1.473	7.9
	1.981	12.0
Section Properties		
	Nominal Wall Cross Sectional	Moment of Radius of

	Outer Diameter (mm)	Nominal Wall Thickness (mm)	Cross Sectional Area, A (cm²)	Moment of Inertia, I (cm ⁴)	Radius of Gyration, r (cm)
BS EN 39:2001 Steel Tube	48.3 +/- 0.5	4.0	5.57	13.8	1.57

2 Bracing

The Kwikstage bracing components consist of shoring ties for horizontal bracing, trigger braces providing nodal triangulation of panels and shoring jack braces.







Shoring Jack Brace Bay Width (B) (m) 0.8 - 1.3 1.118 - 1.929 1.939 - 2.75

Shoring Ties

Bay Width (B)

(m)

06

0.9



For further information on the Mabey Hire Kwikstage system and components, please refer to our Technical Data Sheet at mabey.com/uk/technical-library

Weight

(ka)

5.8

9.0

10.5





Titan Prop

Being one of the lightest props on the market, the lschebeck Titan® prop has an impressive load bearing capacity of 100kN. Made from extruded aluminium and at only 18kg in weight, the prop can easily be lifted without the use of mechanical equipment. With a range of additional ancillary items, the Titan is an ideal solution for many back propping and basement support works, and is compatible with the Needle Beams within both our System 160 and Mass 10 systems.

Configurations Standalone Propping Modular Brace

Towers

Applications Vertical Propping Deadshoring

Titan Prop Components

mabey

Titan Legs and Jacks

height further.

Size 2 Leg

500 Leg Ext.

Screw Jack

Titan Ledger Frame

Made from extruded aluminium, the Titan leg is available in one basic size, with a working range of 1700mm to 2900mm. It has 4 continuous slots to allow ledger

optimum height. Titan screw jacks can be

fitted at the bottom of each leg, offering

vertical adjustment of 1.2m and a 500mm extension is available to increase the

1700-2900

500

1600

900

Length (mm) Weight (kg)

500 Leg Extension

Titan Leg Profile

18.0

4.3

10.4

7.5

frames and different accessories to be fitted quickly and securely at the

Section Properties

	Cross Sectional Area, A (cm²)	Moment of Inertia, I (cm4)	Section Modulus, Z (cm³)	Weight (kg/m)
Extruded Profile	16.275	224	40.7	4.395
Adjustable Jack	15.57	77.0	22.1	10.4

Titan Leg Capacities

Prop Loading

100 90 80 70 60 50 40 20 20 10 6 10 1 No. Level of Ledger Frames in Height – – – – 2 No. Level of Ledger Frames in Height Titan Screw Jack Capacities 100 90 80 70 60 50 40 30 400 500 600 700 800 900 1000 1100

Safe Working Loads

The safe working loads for the Titan equipment have been obtained through testing and calculations based on the safe stresses from BS8118 with a minimum factor of safety of 2.0 applied.

Size 2 Leg Titan Ledger Frame

NOTE: In some circumstances, the screw jack will be the limiting factor.

For further information on the Mabey Hire Titan Prop and components, please refer to our Technical Data Sheet at **mabey.com/uk/technical-library**



System 160

With a high strength to weight ratio, the unique design of our System 160 creates a compact, high load propping system. Offering a capacity of up to 200kN and a compact 230mm x 180mm prop, the system is lightweight and man-handleable and its clamp connections make it quick to install. The system is ideal for the most demanding formwork and propping jobs.

Configurations Standalone Propping Modular Brace Towers

Modular Brace Tower: Primary Beams Needlebeams

Applications Vertical Propping Horizontal Shoring Formwork Needling Light Façade Retention Plan Bracing Parapet Replacement



System 160 Components



Props

360

540

900

1800

2340

2700

3600

System 160 prop units form the basis of this system. Fabricated from twin 2.75mm thick back to back cold-formed web and flange sections (Material Grade: HR50 F45), they are provided with 101mm diameter holes in the webs to allow the connection of auxiliary components. The unique design provides high load capacity in a compact 230mm x 180mm prop unit. Components are sized to allow the system to be built by hand within existing structures where required.

Section Properties

	Area (cm²)	Moment of Inertia (cm ⁴)		1 ⁴) Section Modulus (cm ³)		Radius of Gyration (cm)	
	A	l _{xx}	Ц_* УУ	Z _{xx}	Z _{yy} *	r _{xx}	r_*
Gross	21	1940	189	168	21	8.8	2.7
"Note on Y-Y properties: Performance in the Y-Y direction is relatively complex and values are based on testing and finite element analysis. Refer to Mabey Hire engineers if further information is required.							

Prop Loading Capacity



Safe Working Loads

The safe working loads for members and joints given here are generally based on theoretical values calculated in accordance with BS 449. In all cases a minimum factor of safety of 1.7 against the onset of permanent deformation has been established.

2 Needle Beams

System 160 Needle Beams allow loads to be shared between props. They are available in a number of UC sections, each allowing an increased bending moment up to a maximum of 376kNm.



U.C. (k 152 > 152 > 203> 203 254 x 254 x 254 x

. Section kg/m)	Length (mm)	Material Grade	Maximum Bending Moment (kNm)	Weight (kg)
x 152 x 37	2000	S275	48	84
x 152 x 37	2500	S275	48	105
< 203 × 60	3000	S275	103	200
x 203 x 71	3000	S275	128	225
(254 x 107	2000	S355	309	241
254 x 107	2500	S460	376	275
(254 x 107	3030	S275	236	365
			-	-



Pivot blocks, connectors and various plates are available as standard items from stock, further enhancing the flexibility of the System 160 range.



Pivot Block





Web Connector



Fixed Head Unit Heavy Duty Scaffold Clip





Swivel Connector

Push Pull Adjustable Base







90° Prop Unit Connector Six Way Connector Header Connector

For further information on the System 160 system and components, please refer to our Technical Data Sheet at mabey.com/uk/technical-library





Mass 10

Our Mass range is one of the most versatile modular shoring and propping systems available on the UK market. Using a large range of off-the-shelf components with holes in both the flanges and the webs, allows the systems to be built up into a number of different configurations from individual shoring to stiff, efficient towers & trusses, and facade retention structures.

Putting the customer at the heart of our engineering, means the systems have been designed with maximum flexibility in mind. The Mass 10 components are compact and lightweight, with each of the soldiers weighing just 16kg/m, resulting in a propping solution for those areas where access is restricted. The Mass 10 system can be quickly and easily built up into a number of different configurations including stand alone propping and modular brace towers and can support loads of up to 200kN.

Configurations

Standalone Propping Modular Brace Towers Primary Beams Needlebeams

Applications

Demolition Formwork

Parapet Replacement

Ideal for applications where access is restricted



Mass 10 Components



Props

Length (mm)

The Prop unit forms the basis of the Mass 10 system. Fabricated from twin 3mm thick cold-formed channel sections with 14mm diameter holes in flanges and end plates allows the connection of Mass 10 auxiliary components. The Mass 10 prop units are available in 7 lengths allowing for many configurations.

Weight (kg)

Section Pro	operties						
	Area (cm²)	Moment of	Inertia (cm¹)	Section Mo	odulus (cm³)	Radius of G	Syration (cm)
	A	l _y	l _z	W _{el2y}	W _{el₂z}	i _y	I _z
Nett	15.0	450	306	60	41	5.4	4.5
Gross	16.7	541	348	72	46	5.6	4.5

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2

3

1

Bending Capacity 15 --+-- - - - 4 Bolts / 6 Bolts z-z 13 12 10 0 5 4 . 2 0 0 2 3

Eurocodes

The equipment has been assessed and is fully compliant to Eurocodes. Strengths relating to these codes are published in the technical data sheet for Mass 10.

2 Needle Beams

Mass 10 Needle Beams allow loads to be shared between props, this enables trestles to be built using braces and vertical props.

The Mass 10 Needle Beams are available in a number of UC sections, each allowing an increased maximum bending moment up to a max of 376kNm.







Adjustable ends, header beam connectors and base plates are available as standard items from stock, further enhancing the flexibility of the Mass 10 range.







Adjustable Pivot End Compression = 100kN Tension = 65kN

Adjustable Spherical End Compression = 120kN



Fixed Pivot End Compression = 100kN Tension = 100kN

For further information on the Mass 10 system and components, please refer to our Technical Data Sheet at mabey.com/uk/technical-library



Mass 25

Ideal for the Building and Refurbishment market, our Mass range is one of the most versatile modular shoring and propping systems available on the UK market. Using a large range of off-the-shelf components with holes in both the flanges and the webs, allows the systems to be built up into a number of different configurations, from individual shoring to stiff, efficient towers and trusses and façade retention structures.

Putting the customer at the heart of our engineering means the systems have been designed with maximum flexibility in mind. The components are compact and lightweight, enabling manhandling if necessary, whilst the robust design of Mass 25, from galvanised cold formed steel allows it to support loads of up to 340kN on a single leg, meaning fewer components are needed and thus saving on assembly time. The system also has both mechanical and hydraulic capacity and can be supported with our real-time load monitoring system.

Configurations

Standalone Propping Modular Brace Towers Trusses Primary Beams Needle Beams

Applications

Vertical Propping Horizontal Shoring Formwork Needling Facade Retention Plan Bracing Parapet Replacement Travelling Gantries Hydraulic Propping



Mass 25 Components



1 Props

Length (mm) Weight (kg)

90 180

360

The Prop unit forms the basis of the Mass 25 system. Fabricated from twin 4mm thick cold-formed channel sections (Material Grade: S420 MC), they are provided with 18mm diameter holes in flanges, webs and end plates to allow connection of Mass 25 grillage, bracing and auxillary components. The Mass 25 prop units are available in seven lengths, allowing for many configurations.

> 7.8 9.8

> 13.7

Section Pro	operties						
	Area (cm²)	Moment of	Inertia (cm³)	Section Mo	odulus (cm²)	Radius of G	yration (cm)
	A	l _{xx}	577	Z _{xx}	Z _w	r _{xx}	r
Nett	23.54	996	684	110	76	6.5	5.4
Gross	26.42	1219	789	135	87	6.8	5.5

2700---- Prop Loading Capacity 350 ------

300

200

150

100

50

250 ------







Safe Working Loads

The safe working loads for members and joints given here are generally based on theoretical values calculated in accordance with BS 449 and BS 5975 but with additional safety factors applied to ensure a minimum factor of safety of 2.0.

3 Grillage Beams

Mass 25 Grillage beams allow loads to be shared between props, allowing trestles to be built using braces and vertical props. The Mass 25 Grillage Beams are fabricated from 203x203x60kg/m UC sections (Material Grade S355 J2). Beams are provided with holes in flanges and end plates to accept Mass 25 props, bracing and auxiliary components.

Section Properties

	Area (cm²) A	Moment of I _{xx}	Inertia (cm²) I	Section Mc Z _{xx}	odulus (cm³) Z _{yy}	Radius of G r _{xx}	yration (cm) r _{yy}
Nett	66.2	5147	1694	491	165	8.82	4.9
Gross	76.4	6125	2065	584	201	8.96	5.2

Load Capacity - Bending (for an effective length of 2m)

	Section x-x	Joint Capacity x-x
Bending Capacity (kNm)	95	20

Length (mm)	Weight (kg)
900	70.0
1800	132.1
2520	182.8
3240	233.5
	•



Ancillary Items

Adjustable ends, pivot ends and base plates are available as standard items from stock, further enhancing the flexibility of the Mass 25 range.



Adjustable Pivot End Compression = 210kN* Tension = 85kN *prop length at 3m



80° Pivot End Compression = 250kN Tension = 120kN



Adjustable Spherical End Compression = 220kN Tension = 0kN





Single Base Plate

For further information on the Mass 25 system and components, please refer to our Technical Data Sheet at **mabey.com/uk/technical-library**

call us on 0845 741 3040 or email action@mabeyhire.co.uk



erfect complement to the Mass 25 system. For more information,

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Mass 50

Ideal for the Building and Refurbishment market, our Mass range is one of the most versatile modular shoring and propping systems available on the UK market. Using a large range of off-the-shelf components with holes in both the flanges and the webs, allows the systems to be built up into a number of different configurations, from individual shoring to stiff, efficient towers and trusses or to form large, complex façade retention structures.

Putting the customer at the heart of our engineering means the systems have been designed with maximum flexibility in mind. The components are compact, enabling manhandling if necessary, whilst the robust design of Mass 50, from galvanised cold formed steel allows it to support loads of up to 600kN on a single leg, meaning fewer components are needed and thus saving on assembly time. The system also has both mechanical and hydraulic capacity and can be supported with our real-time load monitoring system.

Configurations

Standalone Propping Modular Brace Towers Trusses Grillages

Applications

Vertical Propping Horizontal Shoring Raking Propping Formwork Needling Facade Retention Plan Bracing Parapet Replacement Travelling Gantries Hydraulic Propping



Mass 50 Components



1 Props

The Prop unit forms the basis of the Mass 50 system. They are Fabricated from twin Smm thick cold-formed channel sections (Material Grade: S355 JO). The 22mm diameter holes in flanges, webs and end plates allows the connection of Mass 50 grillage, bracing and auxillary components. The Mass 50 prop units are available in 8 lengths allowing for many configurations.



Section Properties







2 Bracing

Our bracing components allow Mass 50 props to be built into trusses and towers, adding even greater flexibility to the system.







Safe Working Loads

The safe working loads for members and joints given here are generally based on theoretical values calculated in accordance with BS 449 and BS 5975 but with additional safety factors applied to ensure a minimum factor of safety of 2.0.

Eurocodes

The equipment has been assessed and is fully compliant to Eurocodes. Strengths relating to these codes are published in the Eurocode version of the technical data sheet for Mass 50.

3 Grillage Beams

Mass 50 Grillage beams allow loads to be shared between props, allowing trestles to be built using braces and vertical props. The Mass 50 Grillage Beams are fabricated from 254x254x107Kg/m UC sections (Material Grade: S275 J0). Beams are provided with 22mm diameter holes in flanges, webs and end plates to accept other Mass 50 components enabling a true modular system.

Section Properties

	Area (cm²) A	Moment of I _{xx}	Inertia (cm²)	Section Mo Z _{xx}	odulus (cm³) Z _{yy}	Radius of G	yration (cm)
Nett	112.7	14627	4905	1097	379	11.4	6.6
Gross	136.4	17510	5928	1313	458	11.3	6.6

Load Capacity - Bending (for an effective length of 2m)

	Section x-x	Joint End Plate Capacity x-x	Joint with TF020 Cover Plate in Tension (6 Bolts Each Side)	Joint with TFO28 Cover Plate in Tension (10 Bolts Each Side)
Bending Capacity (kNm)	170	25*	55*	90*

Length (mm)	Weight (kg)
1000	137.3
2000	259.3
3500	441.3
5000	631.8

*limited by	y section proper	ties		
	1000	2000	3500	5000

Ancillary Items

Adjustable Pivot End

Pivot End

Adjustable ends, pivot ends and base plates are available as standard items from stock, further enhancing the flexibility of the Mass 50 range.













For further information on the Mass 50 system and components, please refer to our Technical Data Sheet at **mabey.com/uk/technical-library**

Mat 125

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Our Mat 125 system is a high strength, robust and versatile propping system offering a capacity of up to 1550kN per column, which can be used as individual propping or built into high strength towers and trusses. Full compatibility with the Mabey Hire Mass range and with our range of Hymat hydraulic jacks, further increases the versatility of this system.

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N.P. I.S. MANAGAR

Configurations Stand-alone Propping Modular Brace Towers Trusses

L

Applications Bridge Support Façade Retention Heavy Duty Falsework Hydraulic Propping Bearing Replacement



Mat 125 Components



Props

The Prop Unit forms the basis of the Mat 125 system, has a working load of 1550kN per prop, and is regularly used in conjunction with our Hymat Jack System to pre load, strike or lift from the top of the props. Available in heights from 0.6m to 3.6m and with 22mm diameter holes in the webs and the batten and end plates, allows the connection of the Grillage and bracing components.

Length (mm)	Weight (kg)	15
610	110.5	
914	133.9	
1219	158.1	
1829	222.0	
2438	270.5	
3658	383.0	1.0
End Eld	evation	
x	Section	

Section Properties Moment of Inertia (cm4) Area (cm²) Α $I_{\rm xx}$ l_{yy} Nett 74.9 5565 11568

Gross	94.8	7597	14122	598.2	1034.6

Prop Loading Capacity



Section Modulus (cm³)

Z_{yy}

847.4

 $Z_{\rm xx}$

438.2

Radius of Gyration (cm)

r

12.4

12.2

 $r_{\rm xx}$

8.6

8.9



2 Bracing

Mat 125 includes a range of angle bracing that bolts directly to the prop units via bracing cleats. These enable users to create simple stable towers and prop lines.



Tower Elevation Assembly

A range of angle braces are available to brace the MAT 125 columns at 1500mm or 3000mm centres to form high load towers or braced column rows.



Plan Bracing Assembly in Plan View

Plan braces and brackets are available to brace tower structures.

Grillage Beams

The Mat 125 Grillage Beams are available in standard and heavy RSJ sections. Available single or in joist pairs, all grillage beams are provided with 22mm diameter holes in the flanges and webs to accept Mat 125 Props and other components enabling a true modular system.

Length (mm)	Standard Weight (kg)	Heavy Weight (kg)
1524	220.9	266.0
2083	295.6	357.7
2564	358.2	434.5
3046	419.7	509.9
3607	507.9	615.7
4570	631.3	766.3
6094	843.0	1024.4
7618	1054.8	1279.5
9142	1266.4	1538.6

Section Properties

Bending Capacity Sir

Bending Capacity P

	Area (cm²) A	Moment of I _{xx}	Inertia (cm ⁴)	Section Mc Z _{xx}	idulus (cm²) Z _{yy}	Radius of G r _{xx}	iyration (cm) r _{yy}
Single Joist Nett	71.6	11203	774	666	102	12.3	3.3
Single Joist Gross	83.9	13185	921	865	121	12.5	3.3
Paired Joist Nett	143.1	22407	•	1332	•	12.5	•
Paired Joist Gross	167.8	26370	•	1730	•	12.5	•
Single Joist Nett	87.1	13242	994	787	130	12.3	3.4
Single Joist Gross	102.5	15640	1177	1026	154	12.4	3.4
Paired Joist Nett	174.2	26484	•	1574	•	12.3	·
Paired Joist Gross	205.0	31280	•	2052	•	12.4	•

*Y-Y values for paired joists omitted as joists are not fully structurally connected eg with batten plates

Load Capacity - Bending (for an effective length of 3m)

s	Section x-x			Section x-x
gle (kNm)	80	ş	Bending Capacity Single (kNm)*	100
air (kNm)	160	Hear	Bending Capacity Pair (kNm)*	200

*Bending capacity may be reduced if co-existent shear

Did you know...

Ancillary Items

Adjustable ends, connectors and connector plates are available as standard items from stock, further enhancing the flexibility of the Mat 125 range.







Adjustable Screw End

Prop Hinge Unit











Push Pull Swivel Connector





For further information on the Mat 125 system and components, please refer to our Technical Data Sheet at mabey.com/uk/technical-library

call us on 0845 741 3040 or email action@mabeyhire.co.uk



The safe working loads for members and joints given here are generally based on theoretical values calculated in accordance with BS 449 and BS 5975 but with additional safety factors applied to ensure a minimum factor of safety of 2.0.

Superprop

Our Superprop system is a high load propping system with integrated adjustment and hydraulic pre load/lifting facility. With its unique pinned joints, the system is quick to assemble and provides a load capacity of up to 1950kN. Superprop combines the flexibility of an off-the-shelf solution with high load capacities and is widely used for the support and lifting of bridge decks and heavy loads.

Configurations Standalone Propping Modular Brace Towers Raking Props

Applications

Heavy Duty Vertical Propping

Heavy Duty Horizontal Shoring

Bearing Replacement

Hydraulic Propping



let

Superprop Components



Props

Each prop has a maximum working load of 1950kN and features adjustable heads and bases with the facility to add hydraulic jacks for pre-loading or lifting operations.

	Height (mm)	Component	Weight (kg)	1h
	50	Plate	76	
	385	Extension	197	
	762	Prop	187	
	1000	Extension	260	
	1524	Prop	277	
	3048	Prop	462	
×	7)-	Find Elevation	5- x	a .





Section Modulus (cm³)

The equipment has been assessed and is fully compliant to Eurocodes.

Strengths relating to these codes are published in the technical data

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2376

Radius of Gyration (cm)

4.0

13.1

6000mm

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16.9

16.9

2 Grillage / Header Beams

The Superprop grillage beams feature a unique full strength pinned splice arrangement. These connect to the heads and bases of the props to provide load transfer or spreading arrangements.

Pin to Pin (mm)	Weight (kg)
2000	517.8
4000	800.0
6000	1163.6





Section Properties

Single Beam

Twin Beam

Area (cm²)

Δ

85.5

171.0

Moment of Inertia (cm⁴)

1365

29448

24329

48660

Eurocodes

sheet for Superprop.

Safe Working Loads

The safe working loads for members and joints given here are generally based on theoretical values calculated in accordance with BS5975 and BS449 as well as the component capacities that have been derived from full scale tests. Where full scale tests have been carried out a minimum factor of safety of 1.7 against the onset of permanent deformation has been established.

3 Bracing

Superprop is braced using a special bracing panel that bolts into the chord blocks using chord bolts. The panels are a standard 1549mm wide (prop centres 2050mm) and are available in heights of 1524mm and 3048mm.

Height (mm)	Width (mm)	Weight (kg)
1524	1549	160
3048	1549	267





Ancillary Items

Adjustable heads, base units and extensions are available as standard items from stock, further enhancing the flexibility of the Superprop range.







Adjustable Base Unit









Adjustable Head Unit



Base Unit





For further information on the Superprop system and components, please refer to our Technical Data Sheet at mabey.com/uk/technical-library

MU Towers

Our Mabey Universal Towers were designed in-house by our highly experienced engineers and have been used on some of the biggest propping projects in the UK for example the construction of the Mersey Gateway.

Extremely heavy duty, this system is unique to the UK market in its ability to support loads of up to 8000kN (approx.. 800 tonnes) and can be used as a free standing tower.

Our MU Tower system is made up of a small number of components, meaning that a large section of the tower can be built extremely quickly. The tower can be erected in situ or as separate sections on the ground and lifted in by crane.

As every situation requiring this solution is so unique, please contact our team to discuss this system in more detail, at **action@mabeyhire.co.uk** or 0845 741 3040.







Jacking

Our extensive range of hydraulic jacks, flat jacks, ancillaries and control equipment has been developed to provide the construction and allied industries with an unrivalled service for the controlled application of high load hydraulic systems. For each individual project with a hydraulic element our Project Engineers and Hydraulic Technicians will design and detail the jack layout, hydraulic pressurising and control system best suited to our clients' specific application.

Design Codes

All of our hydraulic cylinders comply with the accepted industry standards BS EN 1494:2001 and ASME B30.1, a code recognised and accepted by Highways England.

Testing

All our hydraulic equipment is subject to a rigorous in house inspection and testing regime, developed in line with ISO 9001:2000 and LOLER.

Jacking Capabilities

Offering one of the largest fleets of hydraulic jacks and ancillaries in the UK, our extensive range is available as part of a design or straight hire. Our team of hydraulic experts ensure that every jack is fully tested and issued with a calibration certificate prior to every hire.

Major Lifting

Our wide range of hydraulic jacking systems can be used with or without our propping systems for precise controlled hydraulic movement. Ideal for major lifting projects such as bridge jacking and the lifting & lowering of other large, heavy structures eg containers, machinery etc.

Monitoring & Control

Our bespoke solutions and unrivalled experience in the movement of structures using controlled hydraulic jacking systems, have enabled us to develop and design synchronised pumps and computer controlled jacking techniques. All supported by our live data monitoring which ensures mitigation management by minimising the risks and potential failure.

Weighing

Integrated hydraulic jacks with load monitoring capabilities allows us to accurately weigh large heavy structures or industrial containers, silos and tankers etc.

Pre-Loading

Hydraulic jacks can be used in pre-loading applications from structural steel to pre-load structural shoring. Flat jacks can be used in temporary pre-load applications but can also be used to form a permanent part of a structure when they are filled with resin.

Hydraulic Sliding

Hydraulically moving a heavy structure such as machinery, containers etc., horizontally from one position to another. This can be achieved by using hydraulic push/pull jacks and PTFE slide bearings.

Stressing & Testing

The stressing technique uses hydraulic jacks to apply force to bolts or cables to strengthen for pre-loading. Hydraulic jacks can also be used for testing to ensure the structure/component has been installed correctly and can safely withstand the load imposed on them

Site Services

Our Jacks can be used for a wide range of hydraulic site



services from stressing and tensioning to onsite load testing.

For further information on the Mabey Hire Hydraulic Jacking range, please visit our website at mabey.com



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Applications

Major Lifting

Weighing

Pre-Loading

Hydraulic Sliding Stressing & Testing

Monitoring & Control







Plain Ram Jacks

All Jacks in this range are single acting, incorporating a 5° spherical head. This jack series is lightweight and versatile, intended for general use or in conjunction with the full range of our propping systems.

Hymat Jacks





Screwed Ram Jacks

We offer a range of screwed ram jacks for general use. All jacks in this range are single acting, and incorporate a 5° spherical head. The screwed Ram Jacks include a threaded locking collar to allow load transfer from the hydraulic ram, providing a mechanical load path.

	Capacity (kN)	Stroke (mm)	Closed Height (mm)	Diameter (mm)
Plain Ram Jacks	101-500	100-400	175-540	57-170
Hymat Jacks	736	50-300	215-505	254
Screwed Ram Jacks	245-5110	30-200	135-516	95-400
Low Height Jacks	490-5101	12-45	60-192	175-400
Hollow Ram Jacks	265-576	155-330	323-521	114-159
Climbing Jacks	1470-4415	150	460-510	250-470

Did you know...

Jack Capabilities

All our Hydraulic Jacks can be Computer Controlled

Allowing you to remotely control the movement of the structure. This can be linked to our advanced monitoring solutions, giving us the ability to carefully monitor your structure, and provide you with real-time data and built-in warnings and stop alarms on our LIVESite platform.



Low Height Jacks







Hollow Ram Jacks

Available in single or double acting, this range is intended for use with a threaded bar system such as Dywidag. Jacks can be used in conjunction with our Mass 50 system (see p28), adopting specially fabricated base plates to ensure concentric connection. The hollow plunger allows both pull & push forces and enables fast ram retraction.

Climbing Jacks

The Climbing Jack system is designed to raise or lower heavy loads through greater distances than conventional jacks. The system "climbs" using double acting hydraulic jacks on stacks of Ekki timber located within a guide frame.





Flat Jacks*

Due to the low profile of our flat jacks they can be used in the tightest of spaces, used in lifting, lowering, pre-tensioning and stressing. They can be both a temporary solution or part of a permanent design.

*Do not have hydraulic or computer controlled capabilities.

Jack Capabilities

	Capacity (kN)	Stroke (mm)	Closed Height (mm)	Diameter (mm)
Flat Jacks	79-3393	25	32	120-600

For further information on the Mabey Hire Hydraulic Jacking range, please visit our website at mabey.com

Monitoring

We also offer an industry-leading range of monitoring solutions designed to provide you with vital, real-time information about structural movement and environmental impact.

Our expert team brings together a wealth of engineering experience with cutting edge technology to give you highly accurate measurement and real-time information about stress, load, noise and more.

All of your data is instantly visible through our unique LIVEsite web platform. Configured to meet your specific requirements, LIVEsite enables you to take full control of your site's safety, delivering both assurance and compliance.

To talk to us about a monitoring solution for your project, call 01942 408988 or email us at instrumentationengineering@mabeyhire.co.uk.



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Our project management approach ensures you get the full monitoring solution, from start to finish.

Data configuration

Our unique web based reporting software, Mabey LIVEsite is pre-configured for each project based on a clear understanding of client needs with built in trigger levels to alert users to any breaches.

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Data visualisation

Clients are able to view accurate, real-time data that is easy to interpret through the use of graphs, schematics and 3D modelling.

5

MONITORING

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System planning & design

Installation &

configuration

Our team will install

and ensure accurate

configuration of all

on site.

monitoring equipment

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Early engagement with our clients ensures that our expert engineers design a tailored monitoring solution to all projects.

Reporting

Templates are set up within the LIVEsite system to enable quick and easy reporting.

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Working with Mabey Hire

Any delay impacts a construction project significantly, so our customers demand a right first time service. We have built our business to ensure we meet that need.

As an award-winning temporary works specialist - we have the knowledge, experience and the support network to ensure we deliver an unrivalled service. This ensures we can deliver a quick and efficient solution, from design through to delivery and installation, throughout the UK.

This service is backed by our commitment to quality, safety and the environment.

4.8/5

CUSTOMER

SATISFACTION

RATING

mab mabey 0845 741 3040 £2M ıl. ANNUAL 98.75% INVESTMENT IN EQUIPMENT ON TIME IN FULL INVOICE £1M CORRECT ANNUAL INVESTMENT IN VEHICLES

Site Services

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Successful completion of any contract requires co-operation and a desire to succeed from all parties. Our mission is to bring the benefit of our market-leading products together with our experienced engineers and our installation capability to offer safe, economic and least intrusive temporary works solutions, delivered on time and on budget. Our site management and installation teams work closely with the engineers and our clients to advise, plan and execute works on site in a safe, timely manner with due regard to the needs of others working around us.

Customer Service Excellence

We pride ourselves on our commitment to customer service excellence and regularly conduct external research to refine and improve our service offering, striving for complete customer satisfaction.

Commitment to Quality, Safety and the Environment

Our health and safety programme has been recognised by numerous professional bodies across the construction and manufacturing industry.





Third party accreditation:

Safety Awards:



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Mabey Near You

Working from 17 locations across the UK, we're never far away from your next project.







mabey

