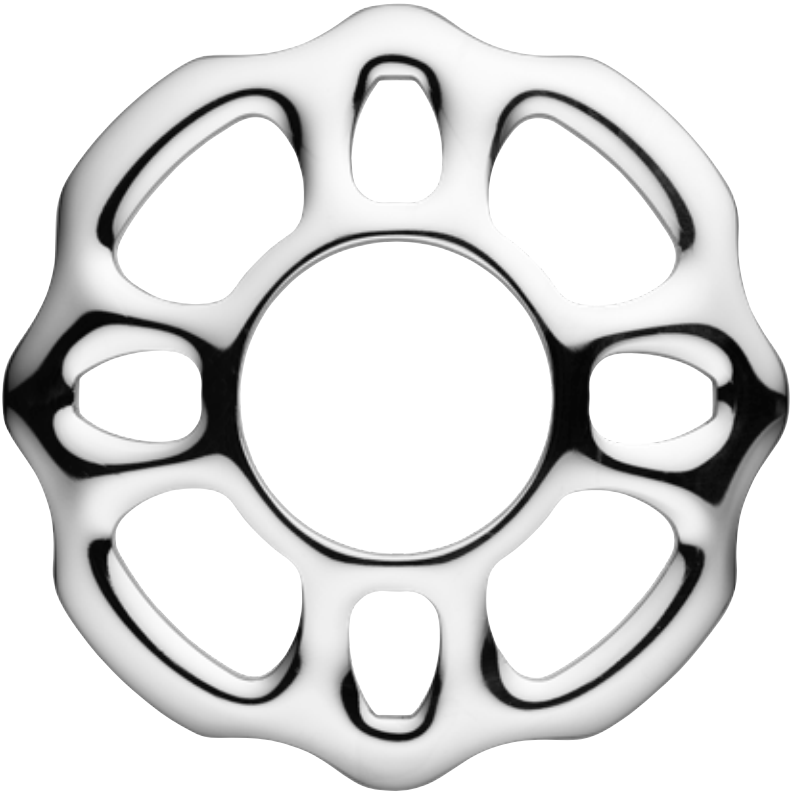
TRAD UK
HIRE & SALE
SCAFFOLDING &
SAFETY SYSTEMS



PLETTAC METRIX®

USER GUIDE

FOCUSSED ON SERVICE



DISCLAIMER:

Whilst TRAD UK and the author have made every reasonable effort to ensure that the information contained within this user guide is correct at the time of printing, you should be aware that TRAD UK and the author do not accept any liability for any inconvenience, loss or damage caused by the result of any inaccuracy, or omission, within this publication.

PLEASE NOTE

You should read and ensure you understand this manual in its entirety prior to commencing work.

Only trained and competent operatives should erect, dismantle or modify PLETTAC METRIX scaffolding at all times.

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GUIDANCE NOTE



This manual is valid only for the use of

Genuine PLETTAC METRIX system scaffold, manufactured by Altrad Plettac and supplied by TRAD UK.

TRAD UK and Altrad Plettac reserve the right to alter or amend without notice the design and / or specifications of any of the equipment forming part of the PLETTAC METRIX system, in the interests of improvement.

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ABOUT TRAD UK

TRAD UK, a member company of the TRAD Group, is one of the UK's market leaders for the supply of system scaffolding, scaffold tube, fittings, boards, stair towers, temporary roofing systems and associated equipment.

All the products we stock are of the highest quality and comply fully with all relevant British or European Standards. In addition, with our commitment to exceeding all safety standards, all our products, whether sourced internationally or within the UK, are subject to thorough testing by qualified external UK & European testing bodies.

From the smallest requirement to complete hire or sale packages, our UK-wide network of depots have the resources and capabilities to meet every demand.

TRAD UK is a full non-contracting member of the National Access & Scaffolding Confederation (NASC) and is a fully accredited ISO 9001 company.

The TRAD Group is a member of the Altrad Group of companies.




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COMITE VENDÔME

ABOUT PLETTAC METRIX

PLETTAC METRIX is a hot-dipped galvanized scaffold system which utilizes a wedge head, welded to the end of the horizontal members (such as ledgers and transoms). This head fits exactly round the perforated rosettes, which contain specially formed openings capable of taking up to eight horizontals / diagonals at any one time. These rosettes are welded to the vertical support members (standards) at 500mm intervals. Due to the way the rosette openings are formed virtually any angle can be set. The wedges are driven home with a 500g hammer, until the jarring blow, giving a rigid and secure connection by friction.

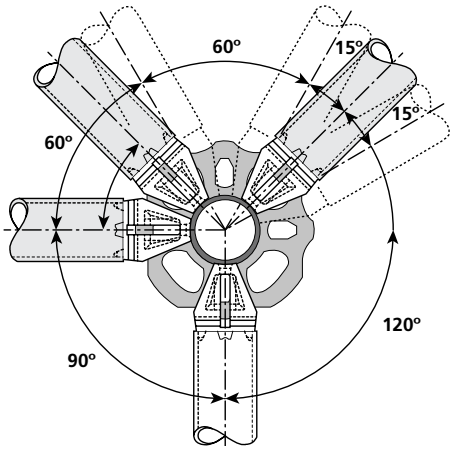
PLETTAC METRIX is a revolutionary rosette system, where the sizes of horizontal members are divisible by a combination of other sizes. This has the advantage of allowing extra verticals within the bay length or breadth, by using smaller horizontals on one side. For example a 2.5m bay may be split on the opposing side using 1.5m and 1m horizontals. This is a unique feature, no other rosette or ring system achieves this with standard tubular equipment in both horizontal directions.

PLETTAC METRIX uses base collars for setting out allowing one operative to base the scaffold out safely, and requires no further levelling once the base lift has been set out. It is generally faster to erect, adapt and dismantle than other system scaffolds, and over 60% quicker than conventional tube and fittings.

PLETTAC METRIX can be used with three types of platform, galvanized steel decks; aluminium decks; or combined aluminium & plywood decks.

PLETTAC METRIX is a true modular scaffolding system that is easily adaptable, and is particularly suitable for use in heavy duty industrial and civil engineering applications.

This guide sets out the basic components of the system and how to use them. This system can be used for all types of access scaffold work, from the basic to the complex. For information on PLETTAC METRIX components and applications not shown in this guide, please contact your nearest TRAD UK Branch (locations are detailed on the rear cover of this guide).



PLETTAC METRIX offers many advantages over other forms of scaffolding, including:

Divisibility	PLETTAC METRIX's unique feature allows the use of extra vertical members within the middle of a bay, with the use of smaller ledger or transom sizes.
Strength	PLETTAC METRIX's rosette and wedge head system forms a positive, frictional locking connection that makes it extremely robust with load capacities in excess of those provided by conventional tubes & fittings and other system scaffolds.
Speed	PLETTAC METRIX's rosette and wedge head fixing device makes PLETTAC METRIX system scaffold faster and simpler than most other system scaffolds.
Compatibility	PLETTAC METRIX can also be used in conjunction with traditional tubes, fittings & boards.
Cost Savings	PLETTAC METRIX's lack of loose components coupled with the galvanised finish make the system easy to use and exceptionally cost effective.

PLETTAC METRIX is tested in line with the ISO 9001 series of quality management systems and has met or exceeded the criteria to satisfy BS EN 12810, BS EN 12811 and the NASC Code of Practice.

PLETTAC METRIX and its associated products offer compliance with the current editions of the following:

BS EN 12810 Part 1	Façade Scaffolds made of prefabricated components: Product Specifications
BS EN 12810 Part 2	Façade Scaffolds made of Prefabricated Components: Particular Methods of Structural Design
BS EN 12811 Part 1	Scaffolds - Performance Requirements & General Design
BS EN 12811 Part 2	Information on Materials
BS EN 12811 Part 3	Temporary Works Equipment - Load Testing
BS EN 39 Part 1	Metal Scaffolding, Couplers and Special Couplers in Steel
BS EN 74 Series	Couplers, Spigots and Base Plates for use in Falsework and Scaffolds
BS 2482	Timber Boards for use in Scaffolding

PLETTAC METRIX holds the following Designations under BS EN 12810-1:

EN 12810—6N—SW09/300—H2—B—LS

EN 12810—5N—SW09/300—H2—A—LS

EN 12810—6N—SW09/250—H2—A—LS

EN 12810—6N—SW06/300—H2—B—LS

EN 12810—6N—SW06/300—H2—A—LS

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PLETTAC METRIX & SAFETY

1 Competence of Erectors

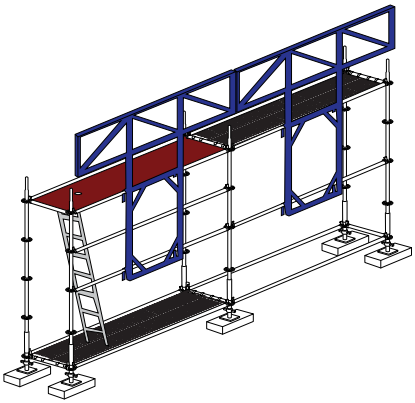
Competence of individuals working at height is now a direct requirement of the current "Work at Height" regulations. Consequently, employers have a duty to ensure that all individuals involved in the erection, modification or dismantling of any scaffolding equipment have received the training necessary to enable them to carry out their work in a safe manner.

The Construction Industry Scaffolders Record Scheme (CISRS) is currently recognised as a world-leader in providing specific system training through the System Scaffold Product Training Scheme (SSPTS), which ultimately provides the requisite level of competence. SSPTS is available through our nationally accredited training partners. For further information, please contact your local TRAD UK depot, details of which can be found on the rear cover of this guide or visit **www.traduk.co.uk**

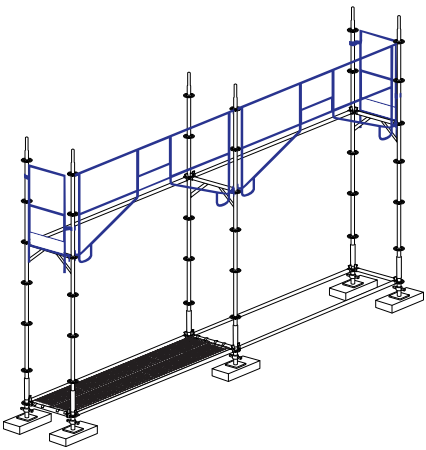
2 Work at Height / Fall Prevention

The current edition of the Work at Height Regulations places a duty on employers to protect individuals from harm. Scaffolding inevitably carries a risk of falling from height and consequently, it is of paramount importance that all activities are assessed for risk, planned and a safe system of work is adopted during any scaffold activity. It is therefore strongly recommended that the procedures outlined in the NASC's guidance note SG4 - "Preventing Falls in Scaffolding Operations" are followed. SG4 describes several safe methods of work, including the use of collective fall protection systems such as an advanced guardrail or scaffolder's steps.

PLETTAC METRIX has a system exclusive permanent advanced guardrail system, which provides collective fall protection for scaffold operatives, and all other trades, from erection to dismantle.



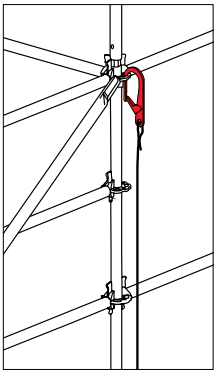
Advanced Guardrail

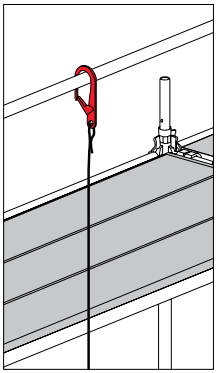


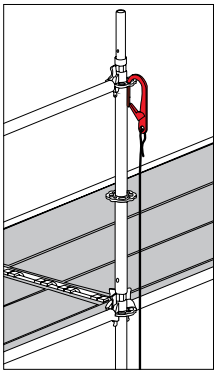
Permanent Advanced Guardrail

3 Harness and Lanyard Anchor Points

To ensure the safety of PLETTAC METRIX erectors, it is important that fall protection equipment is only attached to those components that are capable of withstanding any likely imposed loads. This section details the key components acceptable for attachment, based on all scaffolds being erected in accordance with this guide.







GUIDANCE NOTE

ATTACHMENT CAN ONLY BE MADE TO THE FOLLOWING COMPONENTS!

- PLETTAC METRIX rosette – 2m above the platform the erector is standing on, and secured by transom and ledger.
- PLETTAC METRIX rosette – 1m above the platform the erector is standing on, and secured by transom or ledger.
- PLETTAC METRIX tubular horizontals (only those of 48.3mm outside diameter), in order of preference: 2m above the platform the erector is standing on; at guardrail height; and then, as a last resort, at foot level. All horizontals must be secured at both ends.

4 Rescue of Suspended Casualties

While the current Work at Height Regulations requires that work at height be carried out safely, they also require that contingency plans be made for any eventuality. This extends to making plans to rescue personnel suspended by fall arrest equipment. Personnel should be fully trained to use all relevant rescue equipment for the event of a suspended casualty.

Note: Details relating to rescue and what should be considered can be found in the latest editions of the NASC guidance notes SG4 & SG19 (SG19 - "A Guide to Formulating a Rescue Plan").

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MANUAL HANDLING

The following basic rules should be adhered to when manually handling the PLETTAC METRIX system and associated components.

- Plan lay down / storage areas in advance, to reduce the distance materials have to be manually handled.
- Always check the transit route before manual handling, to ensure that it is suitable and free from obstructions and any tripping hazards.
- When handling long materials, beware of damaging property, overhead electric lines, other people and moving vehicles.
- Only tackle loads that can be reasonably handled by the individuals involved – i.e. consider personal physical capabilities.
- Manual handling operations should be eliminated where possible, by using mechanical handling equipment and manual handling aids whenever possible. These include light-lines, gin wheel, forklifts and cranes etc.
- Use the correct knots and hitches if using rope to lift equipment.

Note: Details relating to manual handling and what should be considered can also be found in the latest edition of the NASC guidance note SG6 – "Manual Handling in the Scaffolding Industry".

GUIDANCE NOTE



Always use the correct kinetic handling technique:

- Make sure your feet are on a firm level base, a comfortable distance apart (Approx. 300mm).
- Use your legs and not your back to bend.
- Raise your head slightly and tuck in your chin to keep your spine straight.
- Avoid turning / twisting the trunk of the body.

SAFETY ON SITE

As is the case with any scaffold, only trained and authorised scaffold operatives should carry out the erection, dismantling or modification of a PLETTAC METRIX structure. Consideration must always be given to those that may be affected by the works being carried out. To ensure that the highest standards of safety performance are maintained, consideration should be given to the following:

1 If the scaffold is on rough or uneven ground, ensure that it is erected on adequate timber sole boards which are properly levelled and bedded, and that the ground is capable of withstanding the proposed loadings.

2 All working platforms must be complete with double guardrails and a toe board, and free from trip hazards or projections. Where there is a risk of items falling, the use of the brick guards should be considered.

3 Do not overload the working platforms with brick or any other materials. If you require to stack large quantities of material at platform level, then a PLETTAC METRIX loading tower should be utilised.

4 All scaffolds require adequate bracing and ties. Neither should be removed without giving consideration to firstly installing alternative bracing or ties, to ensure the continued safety of the scaffold (further design may be required).

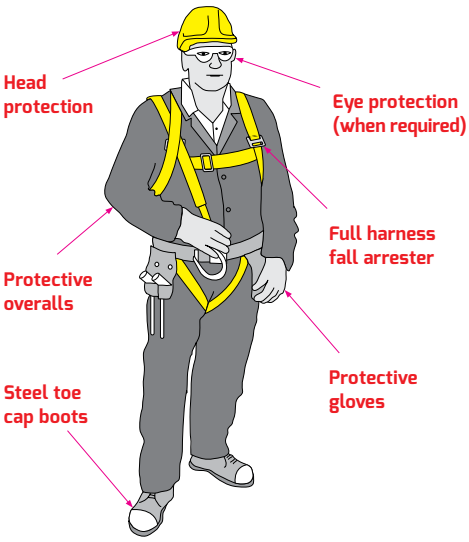
5 Stair access towers or ladders must be provided for all working platforms. Staircase towers provide safe and convenient access for operatives and materials. Staircases should be the preferred choice for access. For shorter duration projects where the use of ladders Is acceptable for access, ensure they are founded on a solid base and are securely fixed at the top.

6 All scaffolds must be erected in strict accordance with this user guide. Any configurations outside of this guide including sheeting, netting or other similar wind sails should be referred to a person competent in the design of PLETTAC METRIX.

7 Any unauthorised interference should be immediately reported to site management with any incomplete or unsafe parts of the scaffold being clearly marked and access restricted.

8 All PLETTAC METRIX components require visual inspection before use. **No** damaged equipment should be used within the scaffold structure. Any equipment found damaged should be immediately set aside In a quarantined area, clearly marked and senior management informed. Maintenance and repair procedures should only be carried out by qualified / approved personnel.

9 Always wear appropriate PPE with Hi-Vis where required.



Typical PPE requirements

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GENERAL RULES FOR SAFETY

Always

- Always ensure all who erect, adapt and dismantle the scaffold are trained and competent to do so.
- Always ensure all risk assessments and method statements have been carried out, then communicated to those concerned, and understood.
- Always ensure that there is adequate storage space for the materials.
- Always ensure that there is clear access to the work area and that the ground is level and suitable for the scaffold.
- Always work to current SG4 guidelines.
- Always ensure that there are adequate tying points.
- Always ensure loads are evenly distributed.
- Always ensure scaffold inspections are carried out and recorded as per current legal requirements.
- Always ensure that all defects are notified to the site management immediately.

Never

- Never let untrained persons erect, modify or dismantle the scaffold.
- Never remove guardrails, toe boards or brick guards.
- Never remove ties without prior approval.
- Never create gaps in platforms by removing decks or boards.
- Never remove restrictions or warning signs from the scaffold structure.
- Never undermine the scaffold by digging trenches underneath or near the base.
- Never add sheeting or netting without prior approval.
- Never use damaged materials.
- Never allow unqualified / unapproved personnel to repair damaged equipment.
- Never load directly on to the access scaffold's working platform (always use a loading tower).
- Never overload the scaffold.

GUIDANCE NOTE

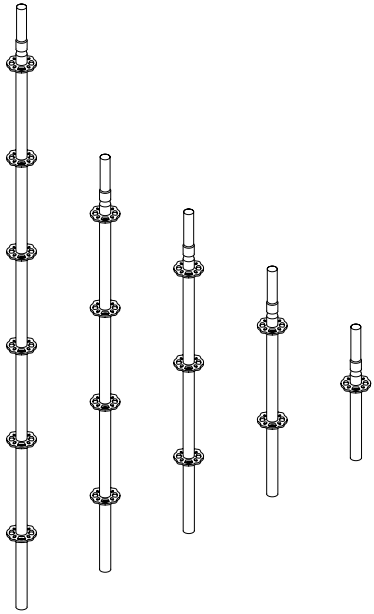
Safety is no accident.
Don't risk it – if in doubt ask!

The information given in this PLETTAC METRIX user guide relates solely to genuine PLETTAC METRIX equipment supplied by TRAD UK.



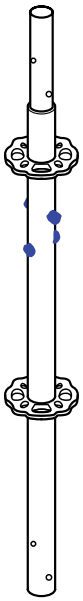
COMPONENTS

1 Standards



These items form the vertical members of the scaffold and are made from 48.3mm diameter x 3.2mm thick high-grade steel tube. They incorporate the distinctive rosettes which are welded at 500mm centres. The lowest rosette is located at 400mm from the bottom of the standard, to the upper surface of the rosette. The rosettes are the fixing points for up to eight further components (ledgers, transoms, diagonals, etc.). At the top of the standards, there is a 200mm crimped spigot that allows the vertical connection of further standards. Where there is a need for transmission of heavy tension loads (hung scaffolds for example) standards are available with bolted spigots. At the bottom and top of each standard, there are corresponding drilled holes to allow two standards to be bolted together.

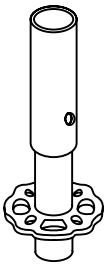
Code	Height (m)	Overall Height (m)	Weight (kg)	Crimped / Bolted
285001	4.00	4.20	18.84	C
285005	3.00	3.20	14.37	C
285010	2.50	2.70	12.13	C
285015	2.00	2.20	9.90	C
285020	1.50	1.70	7.66	C
285025	1.00	1.20	5.43	C
285030	0.50	0.70	3.19	C
285035	4.00	4.20	19.90	B
285040	3.00	3.20	15.42	B
285045	2.50	2.70	13.19	B
285050	2.00	2.20	10.95	B
285055	1.50	1.70	8.72	B
285060	1.00	1.20	6.48	B
285065	0.50	0.70	3.86	B



2 Base Collar

Used at the base of the scaffold in conjunction with the adjustable base jacks, or in the forming of cantilevered scaffolds.

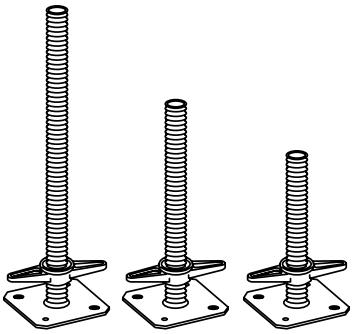
Code	Height (m)	Weight (kg)
285070	0.33	2.09



3 Adjustable Base Jacks

The 6 tonne adjustable base and head jack comes in three sizes, and is used in conjunction with base collars, to accommodate variations in ground levels.

Code	Height (m)	Weight (kg)
285075	0.80	4.29
285080	0.61	3.58
285085	0.40	2.87



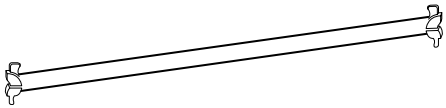
4 Divisible Metrix Ledgers

These components form the longitudinal ledgers of the system, and for widths of up to 1.3m can also be used as the transoms. The wedge heads welded at each end locate around the rosettes of the standards, to form the basic bay sizes.

When ledgers are used as transoms, the PLETTAC METRIX decks fit directly onto the 48.3mm diameter tubular member of the ledger.

These components are also used to form the guardrails on boarded platforms.

Code	Standard Spacing (m)	Overall Length (m)	Weight (kg)
285101	3.00	2.951	10.11
285103	2.50	2.451	8.53
285106	2.00	1.951	6.96
285109	1.50	1.451	5.38
285111	1.30	1.251	4.94
285112	1.00	0.951	4.03
285115	0.70	0.651	3.09
285118	0.50	0.451	2.23
285121	0.40	0.351	2.03
285124	0.30	0.251	1.67
285127	0.18	0.131	1.24



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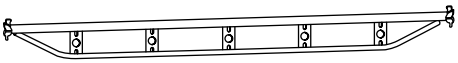
5 Reinforced Double Ledgers / Transoms

Used as a transom where increased load capacity is required or, where a width of over 1m is necessary.

PLETTAC METRIX decks fit directly onto the tubular upper chord member.

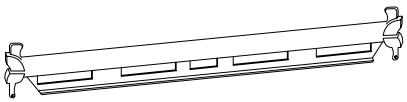
Double Ledgers

Code	Standard Spacing (m)	Overall Length (m)	Weight (kg)
285130	3.00	2.951	18.99
285133	2.50	2.451	15.82
285136	2.00	1.951	12.65
285139	1.50	1.451	9.48



Transoms

Code	Standard Spacing (m)	Overall Length (m)	Weight (kg)
285142	1.50	1.451	9.95
285143	1.30	1.251	8.70
285145	1.00	0.951	5.00

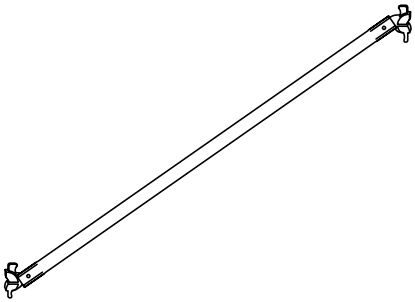


6 Vertical Diagonals (Brace)

This component forms all types of vertical bracing that is required for a PLETTAC METRIX scaffolding structure. Brace come in differing lengths to suit any bay length combined with a 2m lift height. A swivelling wedge head is positioned at each end of the brace to allow connection to the structure, both ends must be fixed.

Alternative sizes of vertical brace may be available for differing lift heights.

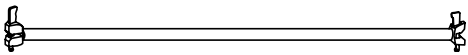
Code	Standard Spacing (m)	Overall Length (m)	Weight (kg)
285201	3.00	3.478	12.44
285205	2.50	3.082	11.23
285210	2.00	2.721	10.12
285215	1.50	2.410	9.16
285220	1.00	2.171	8.43
285225	0.70	2.073	8.12



7 Horizontal Diagonal Plan Brace

Used to stabilise 1.0m wide PLETTAC METRIX scaffold on structures which are not fully decked. An angled wedge head is positioned at each end of the brace to allow connection to the structure, both ends must be fixed.

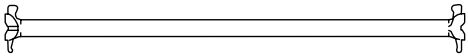
Code	Size (m)	Overall Size (m)	Weight (kg)
285262	1.00m x 2.50m	2.648	9.30



8 Diagonal Ledger Plan Brace

Used to stabilise 2.5m square PLETTAC METRIX scaffold structures, particularly useful in forming plan brace or wing ties in buttresses or loading towers. A wedge head is positioned at each end of the brace to allow connection to the structure, both ends must be fixed.

Code	Size (m)	Overall Size (m)	Weight (kg)
285242	2.50m x 2.50m	3.487	11.90



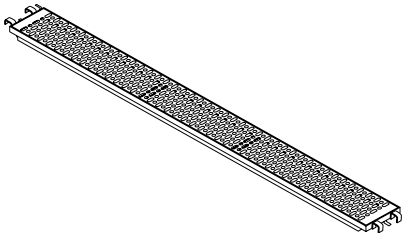
9 Steel Decks

Used to form the working platform, these decks are manufactured from galvanised steel. They are laid directly onto the tubular supports, and come complete with handles, wind clips, anti-tilting devices and slots for timber toe boards. Available in both 0.30m an 0.20m wide.

The allowable working load is 6kN/m^2.

Note: Integral handles are for manual handling only, they are not to be used as a fixing point for ropes, light-lines or other lifting apparatus.

Code	Length (m)	Width (m)	Weight (kg)
285301	3.00	0.30	22.71
285302	2.50	0.30	17.59
285304	2.00	0.30	14.48
285306	1.50	0.30	11.22
285307	1.30	0.30	10.03
285308	1.00	0.30	8.12
285310	0.70	0.30	6.07
285312	3.00	0.20	18.20
285314	2.50	0.20	15.41
285316	2.00	0.20	12.71
285318	1.50	0.20	9.73
285319	1.30	0.20	8.69
285320	1.00	0.20	6.91
285322	0.70	0.20	5.17

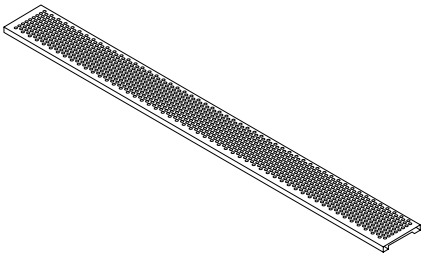


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10 Steel Scaffold Boards

A replacement for conventional timber scaffold boards and used predominantly as a "lap-board" to cover gaps in the main deck at awkward corners, etc. These boards come equipped with small spigots to the underside which are fixed through the holes on the main deck and secured with a 3mm diameter security pin.

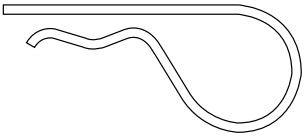
Code	Length (m)	Width (m)	Weight (kg)
285342	3.00	0.30	14.21
285344	2.50	0.30	11.94
285346	2.00	0.30	9.74
285348	1.50	0.30	7.47
285350	1.00	0.30	5.18
285352	0.70	0.30	3.82
285354	3.00	0.20	11.10
285356	2.50	0.20	9.31
285358	2.00	0.20	7.53
285360	1.50	0.20	5.74
285362	1.00	0.20	3.96
285364	0.70	0.20	2.88



11 Security Pin

A 3mm diameter security pin to secure the steel scaffold boards.

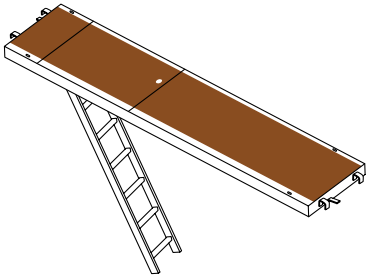
Code	Weight (kg)
285366	0.01



12 Composite Trapdoor Decks

Used to form openings within the working platform, to allow access / egress, these are manufactured with an aluminium frame, and a composite timber sheet for the platform. They are laid directly onto the tubular supports, and come complete with handles, wind clips, anti-tilting devices and slots for timber toe boards. Only available in 600mm wide. The 3m and 2.5m lengths come complete with an aluminium ladder.

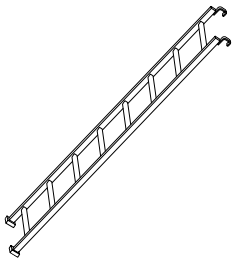
Code	Length (m)	Width (m)	Weight (kg)
285374	3.00	0.60	24.10
285376	2.50	0.60	25.40
285378	2.00	0.60	17.30
285380	1.50	0.60	14.00



13 Aluminium Ladder

A lightweight ladder designed to span between 2m lifts. Can be used with all types of trapdoor decks.

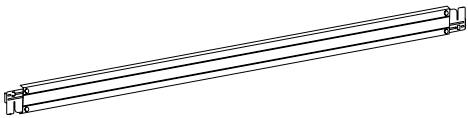
Code	Length (m)	Weight (kg)
285382	2.07	4.10



14 Steel Toe Board

A 150mm high electroplated steel toe board. The fitment on the end locates between the standard and the transom wedges.

Code	Length (m)	Weight (kg)
285401	3.00	8.12
285405	2.50	6.81
285410	2.00	5.51
285415	1.50	4.20
285417	1.30	3.71
285420	1.00	2.90
285425	0.70	2.12
285430	0.50	1.62
285435	0.40	1.35
285440	0.30	1.09



15 Timber Toe Board

A 150mm high treated timber toe board. Has steel pins which fit in the corresponding slots on the decks.

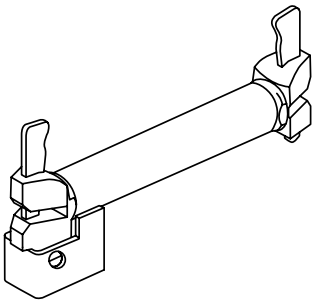
Code	Length (m)	Weight (kg)
285445	3.00	6.35
285450	2.50	5.34
285455	2.00	4.33
285460	1.50	3.31
285465	1.00	2.30
285470	0.70	1.69



16 Lite Console (Hop-Up) Bracket

This item is located at the standard, to provide support outwith the main platform, for a 300mm wide deck.

Code	Length (m)	Weight (kg)
285515	0.40	2.64



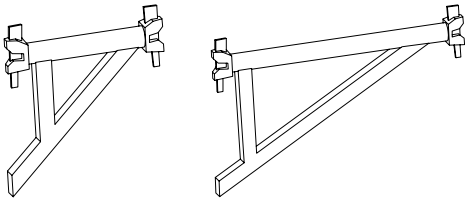
© TRAD UK 2020

17 Reinforced Console (Hop-Up) Bracket

These components are designed to increase the width of the overall working platform, by supporting additional decks beyond either face of the scaffold. They incorporate a wedge head at both ends for attachment to the main scaffold, and to locate base collars or standards on the opposing face.

The 0.7m wide can also support an aluminium stair flight.

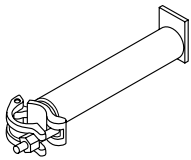
Code	Length (m)	Weight (kg)
285505	0.70	4.91
285508	0.50	3.96
285510	0.40	3.48



18 Coupler Console (Hop-Up) Bracket

This item is located (via a half-coupler) at the standard, to provide support outwith the main platform, for a 200mm wide deck.

Code	Length (m)	Weight (kg)
285520	0.22	1.30

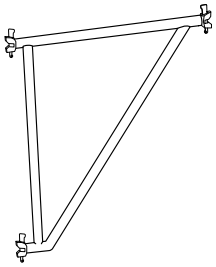


19 One Metre Reinforced Console (Hop-Up) Bracket

These components are designed to increase the width of the overall working platform, by supporting additional decks beyond either face of the scaffold. They incorporate a wedge head at both ends for attachment to the main scaffold, and to locate base collars or standards on the opposing face.

They can also support an aluminium stair flight.

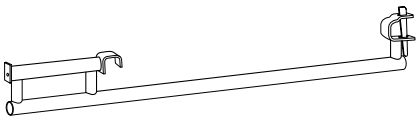
Code	Length (m)	Weight (kg)
285501	1.00	9.37



20 Ledger to Ledger Side Bracket

This item is located in any position between two standards, and is supported by two ledgers at the same level. They provide deck support outwith the main platform.

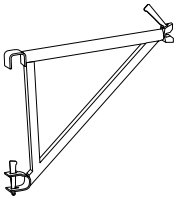
Code	Platform Width (m)	Side Width (m)	Weight (kg)
285525	1.00	0.70	10.50
285530	1.00	0.40	8.30
285535	0.70	0.70	9.40
285540	0.70	0.40	7.20



21 Intermediate Console (Hop-Up) Bracket

This item is located in any position between two standards, and is supported by two ledgers on different levels (one above the other, 500mm apart). They provide deck support outwith the main platform.

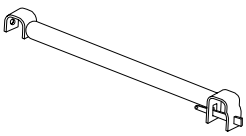
Code	Length (m)	Weight (kg)
285545	0.70	6.73
285550	0.50	5.71
285555	0.40	5.22



22 Intermediate Transom (Ledger to Ledger)

Used where the platform requires intermediate support, they span between the inner and outer ledgers and are secured in place by a locking device at one end, to prevent movement during use.

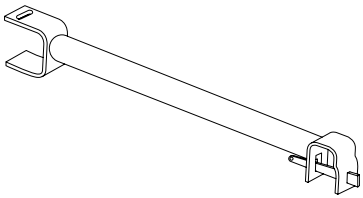
Code	Length (m)	Weight (kg)
285148	3.00	11.84
285151	2.50	10.06
285154	2.00	8.29
285157	1.50	6.51
285160	1.00	4.73
285163	0.70	3.65



23 Intermediate Transom (Deck to Ledger)

Used to create an opening in a platform between a deck and a ledger.

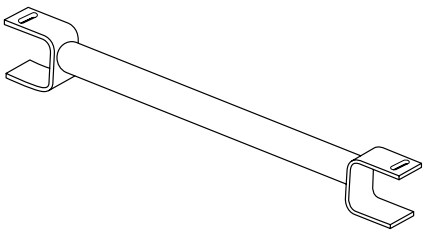
Code	Length (m)	Weight (kg)
285166	1.00	5.10
285169	0.70	3.90



24 Intermediate Transom (Deck to Deck)

Used to create an opening in a platform between two decks.

Code	Length (m)	Weight (kg)
285172	1.00	4.90
285175	0.70	3.70



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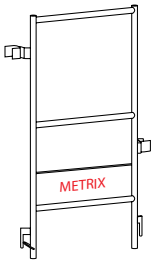
COMPONENTS ANCILLARY COMPONENTS

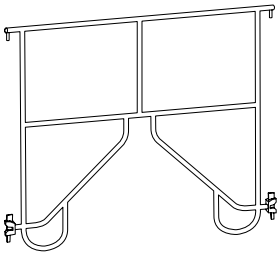
This section details components not covered by other categories, and completes the PLETTAC METRIX system range of products.

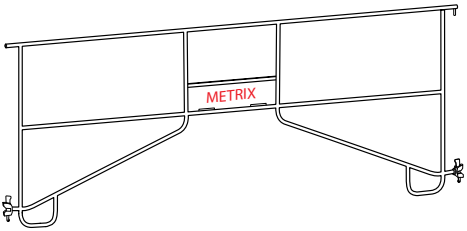
1 Permanent Advanced Guardrail

This product is manufactured from galvanised steel and is used as an alternative to traditional ledgers and guardrails at fully decked platforms. As the guardrails are installed from the secured level below, scaffold operatives are constantly within a protected area.

Code	Length (m)	Weight (kg)
285601	3.00	15.50
285605	2.50	13.30
285610	2.00	10.00
285615	1.50	9.50
285616	1.30	10.20
285620	1.00	8.50
285625	0.70	7.20



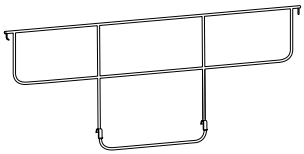




2 Permanent Advanced Side Guardrail

The guardrails are installed from the secured level below, perpendicularly to the permanent advanced guardrails, for towers between 1.5m and 3m wide. Must be used in conjunction with Reinforced Double Ledgers.

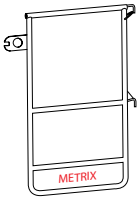
Code	Length (m)	Weight (kg)
285630	3.00	11.10
285635	2.50	9.90
285640	2.00	8.90
285645	1.50	7.50



3 Safety Swing Gate

A self-closing gate that is used to allow safe access to and from the working platform.

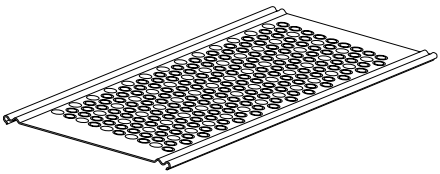
Code	Length (m)	Weight (kg)
285650	1.00	6.50
285655	0.70	5.50



4 Steel Cover Plate

A 0.28m wide plate used to cover small gaps in the scaffold. Particularly useful at return corners with inside decks. Secured to the steel decks with four cover plate screws or steel cover plate bolts.

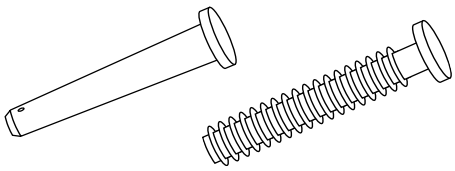
Code	Length (m)	Weight (kg)
285482	1.20	4.62
285484	0.60	2.34



5 Cover Plate Screws / Bolts

The screws are manufactured from high density polyethylene (PEHD), while the bolt variant is manufactured from steel. Both are used to secure the steel cover plates to the steel decks, the steel bolts are used in conjunction with the security pin.

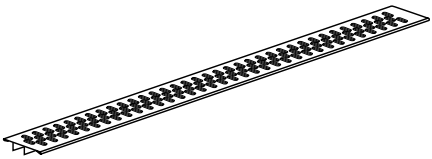
Code	Type	Weight (kg)
285305	Plastic	0.01
285486	Steel	0.01



6 Universal Filler Deck

These optional steel plates are used to cover the ledger between the main platform and the inside decks.

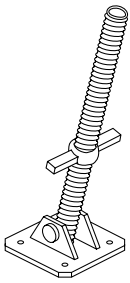
Code	Length (m)	Weight (kg)
285472	3.00	15.91
285474	2.50	13.10
285476	2.00	10.30
285478	1.50	7.50
285479	1.30	6.70
285480	1.00	4.80



7 Swivel Base Jacks

To support standards on sloping ground, up to 45-degrees from the horizontal. These should always be secured to their support surface below, using the holes provided.

Code	Length (m)	Weight (kg)
285090	0.78	5.97



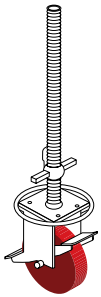
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8 Castor Wheel

Used in place of adjustable base jacks when PLETTAC METRIX is erected to form mobile towers.

Load carrying capacity 11.9kN for centric load introduction.

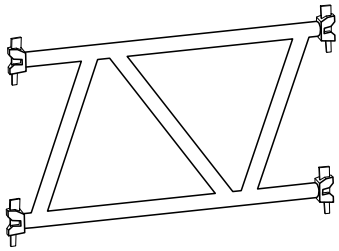
Code	Weight (kg)
285710	8.40



9 Trim Beam

50mm deep galvanised steel beam with two wedge heads either side. Used where the scaffold width needs to be changed from 1m to 0.7m, or vice versa.

Code	Length (m)	Weight (kg)
285801	1.00	14.10

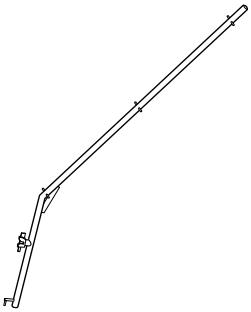


10 Protection Fan Bracket

Fits to the outside standards of the scaffold structure and are linked with PLETTAC METRIX decks and ledgers to form a protection fan.

Must be supplemented with raking tubes to support the outer edge at each location. It is acceptable to use EN 39 tube and EN 74 load bearing couplers.

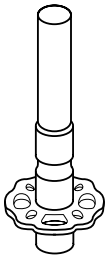
Code	Length (m)	Weight (kg)
285715	2.24	11.78



11 0.16m Starting Standard

Can be used in place of the base collar, when connecting to the outer wedge head of the console hop-up brackets.

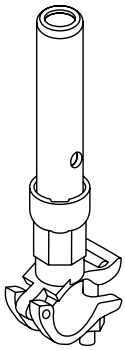
Code	Weight (kg)
285066	2.10



12 Coupler Ledger Spigot for Standard

Attached to a lattice beam or ledger, via the half-coupler, to allow a puncheon standard to be fixed.

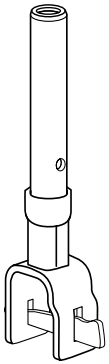
Code	Weight (kg)
285720	1.58



13 Wedge Spigot for Standard

Use in place of, or where a half coupler cannot be fixed, to allow a puncheon standard to be fixed.

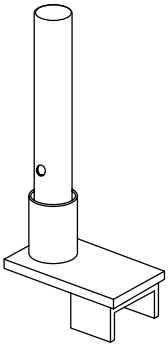
Code	Weight (kg)
285733	2.13



14 U-Head Ledger Spigot for Standard

Use where a half coupler cannot be fixed, to allow a puncheon standard to be fixed.

Code	Weight (kg)
285725	2.28

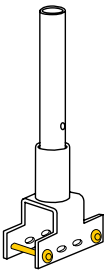


15 U-Head Beam Spigot for Standard

Use where a half coupler spigot cannot be attached, to allow a puncheon standard to be fixed to a wedge head beam.

Can also be inverted and used in-place of the spigot in a bolted standard, to support ALTRIX Alloy Beams.

Code	Weight (kg)
285730	2.18

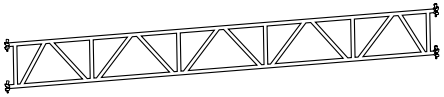


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16 Galvanised Steel Wedge Head Beams

50mm deep galvanised steel beam with two wedge heads either side. Used to create openings within the scaffold.

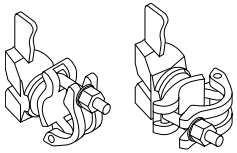
Code	Length (m)	Weight (kg)
285805	10.00	109.78
285810	9.00	99.13
285815	8.00	88.47
285820	7.00	77.09
285825	6.00	66.45
285830	5.00	55.80
285835	4.00	45.15
285840	3.00	34.50
285845	2.50	29.98
285850	2.00	23.84
285855	1.50	17.76
285860	1.00	13.20



17 Wedge Head Fittings

Used for connecting conventional 48.3mm diameter scaffold tube to an PLETTAC METRIX scaffold at the rosette. Available in two types, swivel and perpendicular.

Code	Type	Weight (kg)
285755	Perpendicular	1.10
285760	Swivel	1.18



18 Adjustable Base Jack Retainer

Used to secure the adjustable base jacks,when lifting PLETTAC METRIX scaffold by crane.

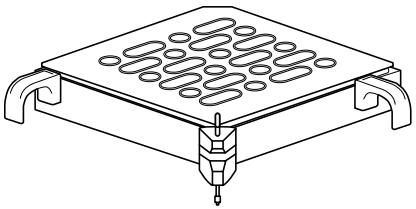
Code	Length (m)	Weight (kg)
285740	0.50	3.10



19 Corner Deck

These galvanised steel units allow inside platforms at internal corner returns.
A wedge head locates around the rosette of the standard, while hooks fit directly over the adjacent Console (Hop—Up) Brackets or Ledgers.

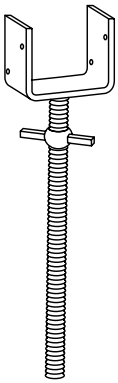
Code	Size (m)	Weight (kg)
285394	0.40 x 0.40	5.80
285396	0.70 x 0.70	12.61



20 U-Head

Intended for use with standards with no spigots. U-Heads provide placement to hold aluminium, steel and timber beams.

Code	Length (m)	Weight (kg)
285750	0.50	6.65



21 Lifting Spigot

Replaces the spigot in the top of a bolted spigot standard, to allow lifting by crane.

Maximum load not to exceed 700kg per spigot, and must be fixed with two nut / bolt sets per spigot.

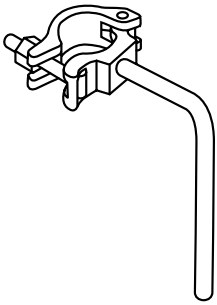
Code	Weight (kg)
285745	3.00



22 Toe Board Clip

Used to fix conventional scaffold boards as toe boards, and also where the fixing of proprietary toe boards is not possible in the normal manner.

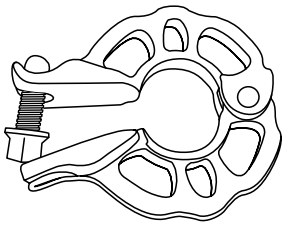
Code	Weight (kg)
285765	1.20



23 Rosette Coupler

Used to fix PLETTAC METRIX components to the standards at any level between the welded rosettes.

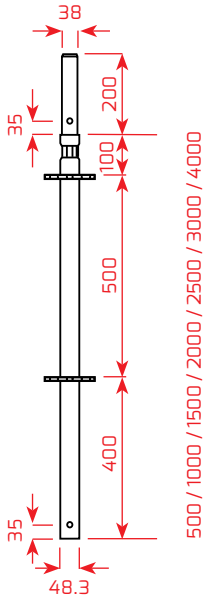
Code	Weight (kg)
285790	1.08



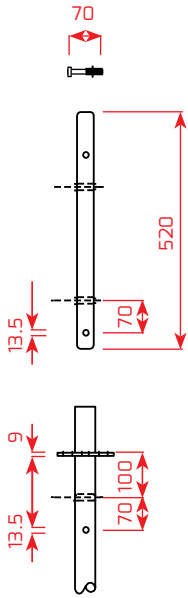
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COMPONENTS USEFUL DIMENSIONS

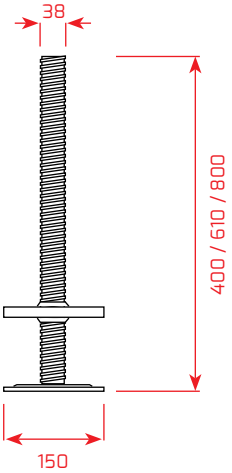
1 Crimped Standards



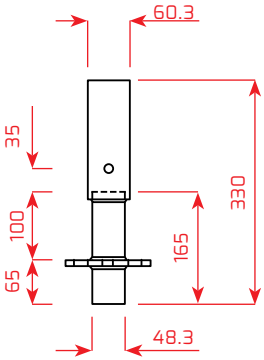
2 Bolted Standards



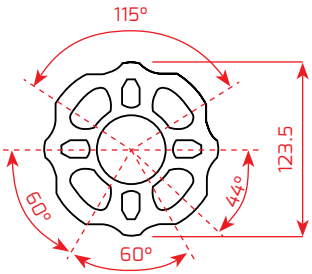
3 Base Jacks



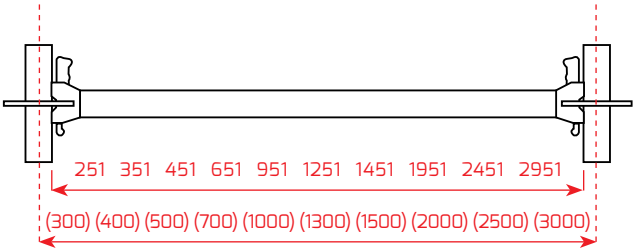
4 Base Collar



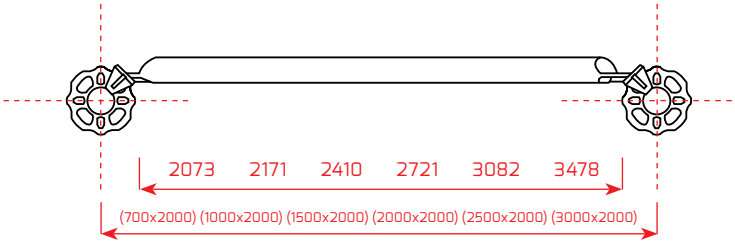
5 Rosette



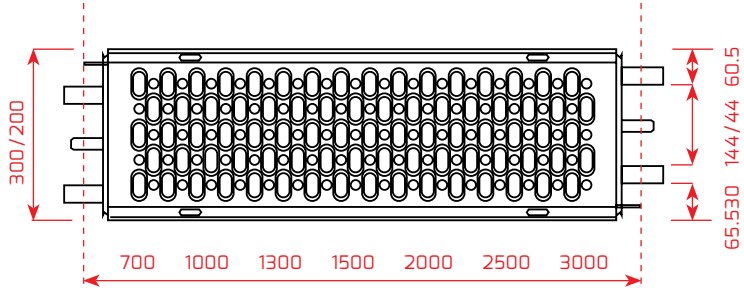
6 Ledgers



7 Vertical Diagonals (Brace)



8 Steel Decks



All dimensions in mm unless stated.

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For every bay size there is a corresponding colour code on the ledgers and the vertical diagonal brace, making each corresponding size easily identifiable, and leaving no room for error in the preparation of works.



Yellow ≤ 0.7m



Cyan 1.3m



Green 2.0m



Purple 1.0m



Brown 1.5m

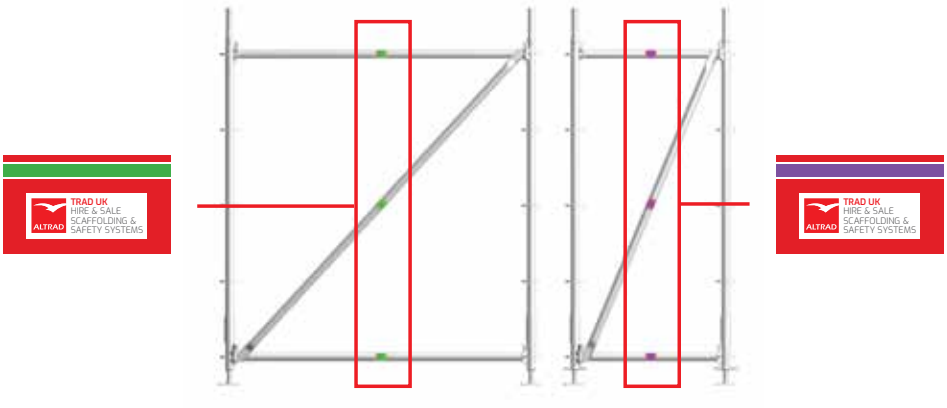


Red 2.5m



Blue 3.0m

One colour of ledger and diagonal brace on one bay.



ERECTION & DISMANTLING GUIDANCE

This section describes the basic erection and dismantling procedures for PLETTAC METRIX scaffolds.

As with all scaffolding, only trained, competent operatives should erect, dismantle or modify PLETTAC METRIX scaffolds at any time.

TRAD UK recommends, that as a minimum, the working practices for all scaffold activities set out in the NASC's document SG4 – "Preventing Falls in Scaffolding Operations" are applied at all times.

Prior to commencing work, make sure all method statements, risk assessments and permits are in place, and that suitable tie points are available.

Ensure that the ground is level and firm and capable of taking the imposed load of the completed scaffold. Where required, use wooden sole boards of the correct size to spread the load over the ground.

Set out the scaffold according to the ground levels and working platform heights required. If using inside boards, determine the set-off distance required from the building.

Start from the most convenient point, usually at the highest ground level, adjacent to the corner of the building.

It is recommended that erecting and dismantling the scaffold is carried out by a minimum of two operatives.

Current legislation states that, when complete, a scaffold is required to be inspected:

- Before being used for the first time.
- Following significant alteration.
- At least every seven days from the date of the last inspection.
- Following adverse weather or any event likely to have affected its strength or stability.

Further advice on inspection and handover requirements can be found in the current edition of the NASC's publication SG35 "Guidance on the Handover of Scaffold Structures".

Note: If using advanced guardrails or scaffolder's steps, information relating to the use of these products should be obtained from the original supplier.

BASIC ERECTION PROCEDURE

Step 1

Screw adjustable base jacks to their estimated height, and layout with wooden sole boards or plastic pads (dependent on the make-up of the supporting ground), along with ledgers and transoms in their approximate positions (Fig.1).

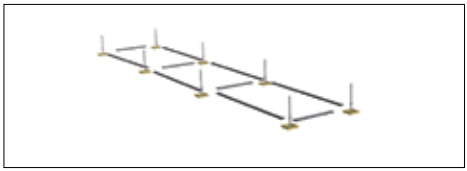


Fig. 1

Step 2

Place a base collar over each base jack as shown (Fig.2).

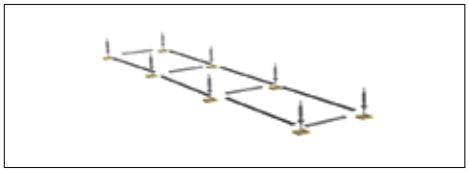


Fig. 2

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Step 3

Connect the rosettes of the base collars with the chosen size of ledgers and transoms, by locating the wedges in the appropriate hole (Fig. 3).

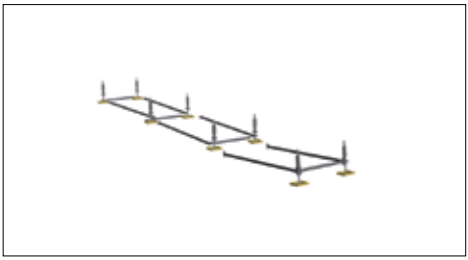


Fig. 3

Step 4

You may complete the first bay by levelling the scaffold structure using the adjustable base jacks with the aid of a spirit level, making any adjustments necessary (Fig. 4).

Drive the wedges home, with a 500g hammer, until the jarring blow is identified.

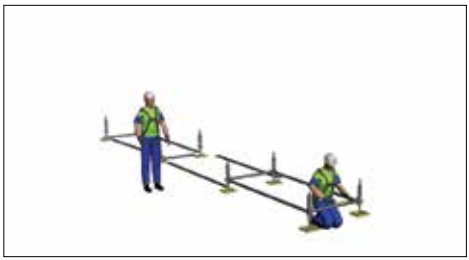


Fig. 4

Step 5

The scaffold base can now be extended to the required length, by adding further components to the existing bay, using the same procedures described (Fig. 5).

Note: Once the scaffold is levelled and aligned for all base lifts, no further levelling of the scaffold is required.

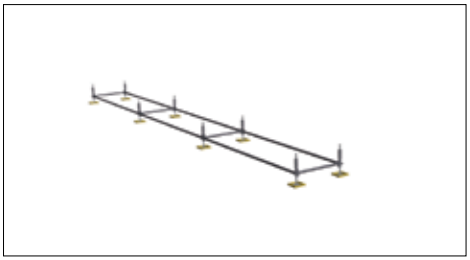


Fig. 5

Step 6

Standards are now set in the base collars. In this example three metre standards are used (Fig. 6).

Although not necessary with PLETTAC METRIX, it is considered good practice to alternate the standard sizes in scaffolds above 6m high. This allows joints to be set within different levels.

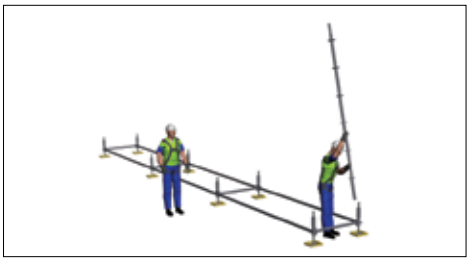


Fig. 6

Step 7

If required, the bottom level may be decked at this point and a single handrail may be installed to create a protected work area for scaffolders. This is followed by the construction from below of the first working platform, by connecting ledgers and transoms at the required height (Fig. 7).



Fig. 7

Step 8

Once the steel for the first level is complete, the face brace is fixed to the rosettes and should span from lift level to lift level (Fig. 8).

Note: If using a scaffolder's step or similar, the guardrails of the next lift should be installed at this point using a Safe System of Work, information on the use of scaffolder's steps should be obtained from the original supplier. Please see page 44 for the frequency of brace required.



Fig. 8

Step 9

The appropriate sizes and type of decks, are then located upon the transoms (Fig. 9). Where required, a trap deck and ladder may be installed.

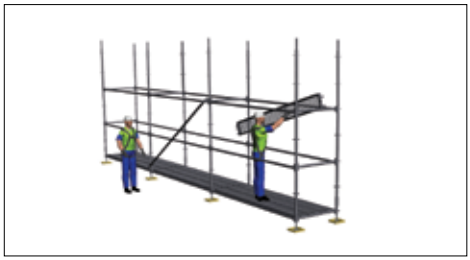


Fig. 9

Step 10

Each deck is equipped with a wind clip at either end. Turn the clips under the tubular transom to prevent any uplift in case of strong winds (Fig. 10).

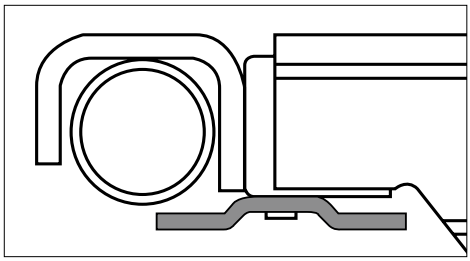


Fig. 10

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Step 11

The working platform and access area can now be completed, by adding double guardrails / toe boards / safety gates, and paying particular attention to the current NASC guidance note SG4 – "Preventing Falls in Scaffolding Operations" (Fig. 11).

Note: It may be necessary to 'top-out' the standards before guardrails may be fixed.



Fig. 11

Step 12

Additional lifts can be constructed, simply by adding further standards onto the spigots of the lower lift. Ledgers, transoms and decks are then used, as previously described, to create the next level (Fig. 12).

Note: Always ensure that the scaffold is braced and tied in accordance with bracing and tie patterns specified in this user guide, or by design.



Fig. 12

BASIC ERECTION PROCEDURE

ADVANCED GUARDRAIL

Steps 1 to 6

Proceed as described in the previous sections 1 to 6.

Note: When using the permanent advanced guardrail system it is necessary to always have two rosettes available above the next lift level. This enables the fixing of the guardrails from the level below. This is achievable by forward planning, and the use of various different standard sizes. Standards must always be joined between the top guardrail of the preceding lift and the new lift level. This allows the standards to always be fixed and prevents any rotation.

Step 7

If required, the bottom level may be decked at this point and a single handrail may be installed to create a protected work area for scaffolders.

The framework for the next working platform can now also be installed by connecting the transoms and the inside ledgers only, in the same manner as before (Fig. 13).



Fig. 13

Step 8

Install the permanent advanced guardrail units by locating the top hooks into the rosettes at upper guardrail height, then connect the lower wedge heads to the rosettes at ledger level (Fig. 14).

Note: The advanced guardrail system is more easily fixed by holding the panels to the outside of the scaffold structure.



Fig. 14

Step 9

The face brace should now be connected to the structure at the rosettes on the bottom lift, and should span from lift level to lift level from the foot-tie lift to the first level of the permanent advanced guardrails (Fig. 15).

Note: Please see page 44 for the frequency of brace required.



Fig. 15

Step 10

The appropriate sizes and type of decks, are then located upon the transoms. Remember to turn the wind-clips as described previously.

Where required, a trap deck and ladder may be installed (Fig. 16).



Fig. 16

Step 11

The working platform and access area can now be completed by adding toe boards / safety gates / double inside guardrails if necessary, and paying particular attention to the current NASC guidance note SG4 – "Preventing Falls in Scaffolding Operations" (Fig. 17).



Fig. 17

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Step 12

Additional lifts can be constructed, as before, simply by adding further standards onto the spigots of the lower lift. Ledgers, transoms, advanced guardrail units and decks are then used, as previously described, to create the next level (Fig. 18).

Note: Always ensure that the scaffold is braced and tied in accordance with bracing and tie patterns specified in this user guide, or by design.



Fig. 18

BASIC ERECTION PROCEDURE

TIPS AND TRICKS

1 Fixing of Ledgers

When positioning ledgers, firstly place the wedge head at one end of the ledger, on top of the rosette, hooking the wedge into the appropriate hole. This prevents the ledger becoming loose while the opposing end is positioned correctly and fixed. Move the wedge head into the correct position and drive the wedge home once the second end is secure (Fig. 19).

2 Through the Trap Method

A 'safe method of work' can be adopted by fixing the guardrails of the next lift by sitting in the trap door of the ladder access. This allows the operative to then move into a safe area. Operatives must have their harnesses attached to an appropriate fixing point until all wedges on the guardrails are driven home and there is no possibility of falling (Fig. 20).

Note: The far end of the guardrail must initially be fixed as per Fig 19.



Fig. 19



Fig. 20

CORNER RETURNS AND INSIDE PLATFORMS

This section completes the erection process, by showing methods in which PLETTAC METRIX scaffolding can be used to create corner returns and inside platforms.

Corner returns can be formed by using either a configuration of divisible ledgers or perpendicular wedge head fittings.

1 Corner Returns using Divisible METRIX Ledgers

Due to the revolutionary nature of the PLETTAC METRIX system's divisible ledgers, corner returns can be formed by using a combination of ledgers of differing sizes, linking two scaffold runs together, at right angles.

If a ledger is positioned to the inside within the last bay, of an existing run of PLETTAC METRIX scaffold remove this first. Position an inside standard, equipped with a collar and jack (at the required height and correct distance from the building face) at the inner face of the last bay of the existing scaffold. The new standard is then linked, using the required smaller sizes of ledger, to the existing inside standards of the first run of scaffold (some minor height adjustments may be required with the aid of a spirit level). This now forms the first set of standards for the corner return (Figs. 21 & 22).

If the distance from the new standard to the existing end standard is greater then the desired width of the new elevation, then a second new standard (equipped with a collar and jack at the required height) is positioned between, and linked with the required length of ledger (Fig.23).

Continue erecting the new elevation, fixing components in the sequence and manner described in the basic erection guide.

Console (hop-up) brackets are used to create inside platforms, which allow most building projections to be overcome.

Further guidance on the use of Console (Hop-up) Brackets can be found on data sheets TGMTX002 & TGMTX003.

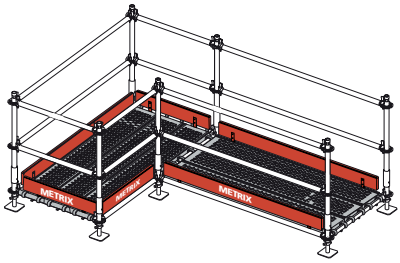


Fig. 21, Divisible Ledger Method

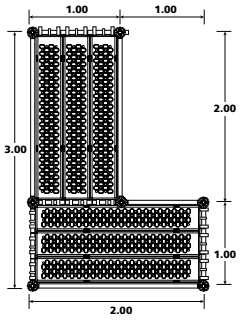


Fig. 22, Divisible Ledger Method

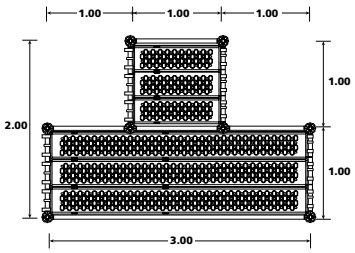


Fig. 23, Divisible Ledger Method

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2 Corner Returns using Wedge Head Fittings ('Fly-past')

Corner returns can be formed by using perpendicular wedge head fittings to link two PLETTAC METRIX scaffold runs together, at right angles. This allows for the 'fly-past' method to be adopted, eliminating the need for non-standard bays.

Attach a wedge head fitting, via the half coupler, to the bottom, inner ledger of the existing scaffold, at the correct distance from the building face. Position an inside standard, equipped with its collar and jack (at the required height), alongside and connect to the wedge head in the normal way. Fix a second wedge head fitting at the next lift level, plumb and secure the standard into position.

Now, place the outside standard with collar and jack (set at the correct height) alongside the inner ledgers of the existing scaffold. Connect the inside and the outside standards, firstly at the base lift level and then the next lift level, with ledgers of the required size. Wedge head fittings can now be used to fix these standards to the existing ledgers (some minor height adjustments may be required with the aid of a spirit level). This now forms the first set of standards for the corner return (Fig. 24).

Continue erecting the new elevation, fixing components in the sequence and manner described in the basic erection guidance, taking care to cover any gaps with a suitable board or deck.

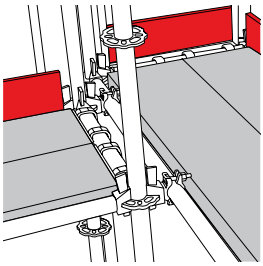


Fig. 24, 'Fly-past' method

3 Using the Coupler Console (Hop-Up) Bracket

This item is located (via a half-coupler) at the standard, to provide support outwith the main platform, for a 200mm wide deck, and can be positioned anywhere between the rosettes. The decks prevent the brackets from spreading. It is particularly useful in forming a step from the scaffold to another level (Fig. 25).

Where required, use conventional scaffold boards or steel boards to cover any remaining gap in the inside platform.

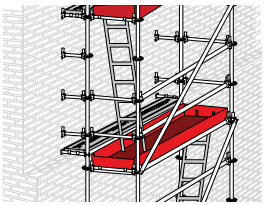


Fig. 25

4 Using the 0.4m Reinforced Console (Hop-Up) Bracket

These components are fixed to the standards at the required height in the usual manner. Once the brackets are connected insert one 300mm deck per bay to create the inside platform. The decks prevent the brackets from spreading (Fig. 26).

Where required, use conventional scaffold boards or steel boards to cover any remaining gap in the inside platform.

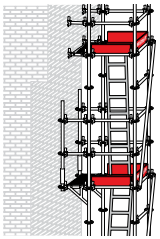


Fig. 26

5 Using the 0.5m or 0.7m Reinforced Console (Hop-Up) Bracket

These components are fixed to the standards at the required height in the usual manner. Once the brackets are connected fix the appropriate size of deck to complete the inside platform. For the 0.5m bracket size insert two 200mm wide decks per bay. In the case of the 0.7m wide bracket, two 300mm wide decks (or alternatively one 600mm wide deck) are used per bay. The decks prevent the brackets from spreading (Fig. 27).

Where required, use conventional scaffold boards or steel boards to cover any remaining gap in the inside platform.

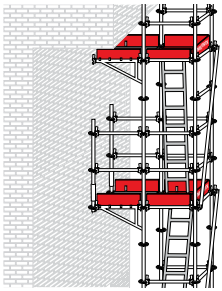


Fig. 27

The 700mm wide console hop-up bracket can also be used to support a 600mm wide aluminium staircase unit (Fig. 28).

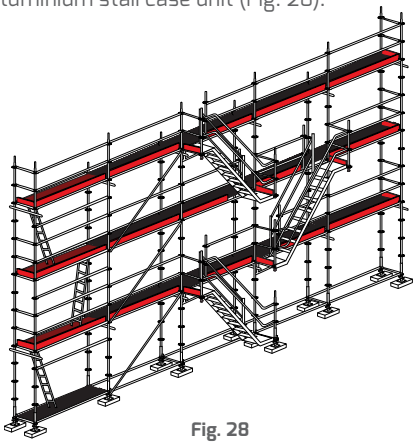


Fig. 28

6 Using the 1.0m Reinforced Console (Hop-Up) Bracket

These components are fixed to the standards at the required height in the usual manner. Once the brackets are connected insert three 300mm decks, or one 300mm plus one 600mm wide deck per bay to create the inside platform. The decks prevent the brackets from spreading (Fig. 29).

Where required, use conventional scaffold boards or steel boards to cover any remaining gap in the inside platform.

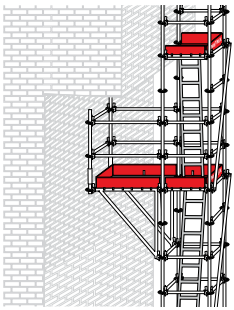


Fig. 29

7 Inside Platform Guardrails

Where required, an inside platform guardrail can be created by attaching a collar or 0.16m starting standard to the brackets, which incorporate an inside wedge head. Standards of the appropriate size are then connected to the collars or starting standards, to allow the location of ledgers in the rosettes to form the inside guardrails.

Note: Where reinforced console (hop-up) brackets are used to support aluminium staircase units, or where the inside deck arrangement is wider than the main deck, qualified design input must be sought from a competent temporary works / scaffold design engineer, regarding the design and positioning of ties and the connection between vertical standards.

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8 Using the Ledger to Ledger Side Bracket

This item is located in any position between two standards, and is supported by two ledgers at the same level. They provide deck support outwith the main platform (Fig. 30 & 31).



Fig. 30



Fig. 31

9 Using Tube and Fittings

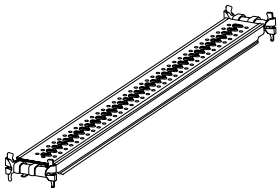
It is permissible to use conventional tube, fittings and boards, to supplement the PLETTAC METRIX system, where required. Examples of this are:

- Tying In
- Additional Bracing
- Cantilever Platforms
- Rakers
- Non-standard bays
- Joining off-set bays / runs

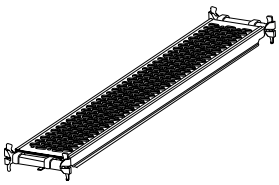
This list is not exhaustive. For further information and supply, please contact your local TRAD UK depot, details of which can be found on the rear cover of this guide.

Note: All tube and fittings must comply with the relevant standards detailed on page 6 of this manual.

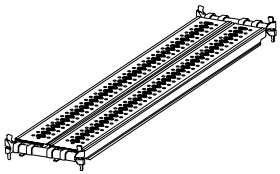
TYPICAL DECK LAYOUTS



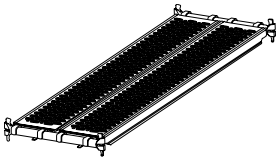
0.3m ledger = 1 No. 200mm wide deck



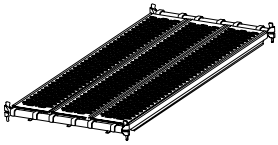
0.4m ledger = 1 No. 300mm wide deck



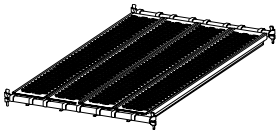
0.5m ledger = 2 No. 200mm wide deck



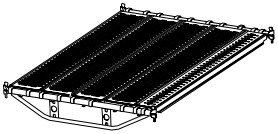
0.7m ledger = 2 No. 300mm wide deck



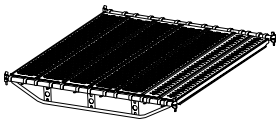
1m ledger = 3 No. 300mm wide deck



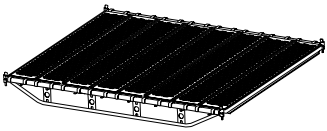
1.3m ledger = 4 No. 300mm wide deck



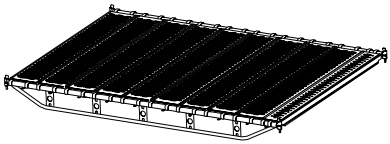
1.5m ledger = 4 No. 300mm wide deck +
1 No. 200mm wide deck



2m ledger = 5 No. 300mm wide deck +
2 No. 200mm wide deck



2.5m ledger = 8 No. 300mm wide deck



3m ledger = 9 No. 300mm wide deck +
1 No. 200mm wide deck

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BASIC DISMANTLING PROCEDURE

Step 1

Prior to commencing work, make sure all method statements, risk assessments and permits are in place.

Step 2

Check that the scaffold is still in the properly erected condition. Make sure that all components and ties have not been interfered with and all platforms are clear of any loose material and debris prior to dismantling.

Step 3

Decide on the safe lowering method by which the components shall be removed to the ground, for example hand to hand, crane, hoist, forklift truck or hand-line.

Under **no** circumstances should 'bombing' be used to lower equipment.

Once the components are safely on the ground they should be stacked neatly ready for transportation.

Step 4

To allow access and also for the removal of materials, make sure that there is a minimum of one bay of the scaffold that is a safe working platform, i.e. fully decked & guardrailed for the full height of the scaffold.

Step 5

All components fixed above the top platform's guardrails should be removed by un-securing the wedges via a hammer blow and removing the component from the rosette. Components should then be lowered to ground level.

Step 6

The top working platform can now be dismantled, paying particular attention to the current NASC guidance note SG4 – "Preventing Falls in Scaffold Operations". It is assumed in this dismantling process that the system exclusive permanent advanced guardrail is used, or a scaffolder's step is utilised.

If using an temporary advance guardrail or scaffolder's step information relating to the use of these products should be obtained from the original supplier.

Step 7

Remove any toe boards and associated brackets, and transfer to the ground.

Step 8

From a safe working platform directly below remove all decks. These components should either be lowered to the ground or used to create a platform on the next level, if the scaffold is not fully boarded.

Note: If the scaffold is not fully boarded, a temporary safe working platform must be installed, below each lift, during the progressive dismantle.

Step 9

Remove each guard-rail in sequence by un-securing the wedges of each component, as previously described, and dis-engage from the rosettes. In the case of ledgers being used as guard-rails, any 'topped-out' standards can be now removed.

Move progressively along the scaffold towards the access point and lower components to ground level.

Step 10

Remove each component in sequence at the previous platform level by un-securing the wedges and disengaging from the rosettes.

Move progressively along the scaffold towards the access point, removing any 'topped out' standards as you go, and lower components to ground level.

When dismantling face bracing they must be removed in one action. Brace should **not** be left hanging from one fixing point.

Step 11

Repeat steps 6 to 10, dismantling and lowering the scaffold in the sequence described.

Note: Ties should be dismantled progressively, and only be removed when they prevent further dismantling.

Step 12

At ground level, remove all standards from the collars, then work progressively towards the last bay, removing components from the rosette of the collars. When the collars are no longer connected to one another remove them from the adjustable base jacks.

Step 13

If any element of this dismantling sequence cannot be complied with, please seek advice from your local TRAD UK depot, details of which can be found on the rear cover of this guide.

GUIDANCE NOTE

When dismantling long elevations of PLETTAC METRIX scaffolding it may be easier to dismantle the scaffold in sections (i.e. five or six bays at a time).



Always make sure that any remaining scaffold is left in a safe and secure condition.

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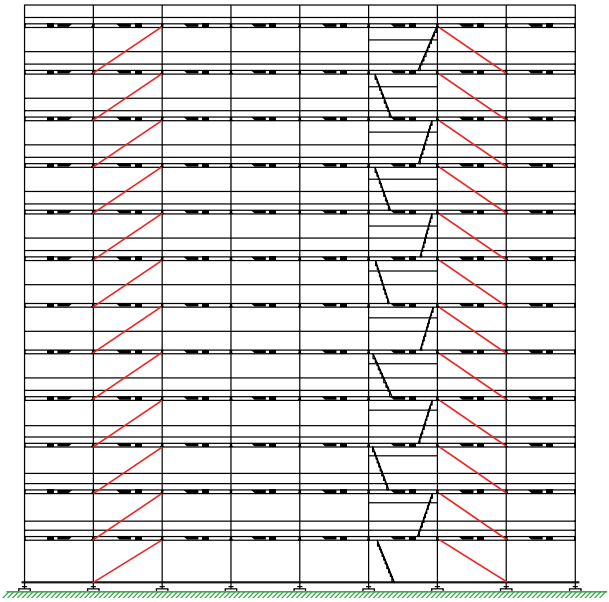


Fig. 32

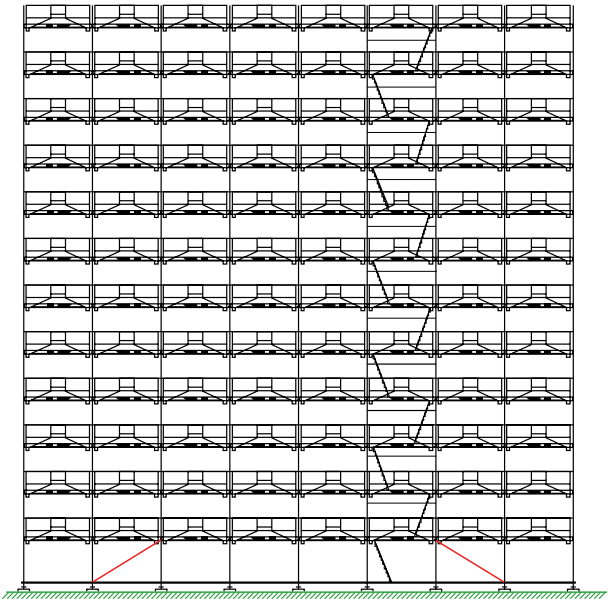


Fig. 33

BRACING

1 Diagonal Face Bracing

PLETTAC METRIX system scaffolding requires a certain amount of diagonal face brace to eliminate any tendency for the scaffold to distort or sway.

Where ledgers are used as guardrails, face bracing is required one bay in every 15m maximum, i.e. every fifth 3m bay or sixth 2.5m bay, for the full height of the scaffold structure. The brace in each subsequent bay should face the opposite direction from those in the previous (Fig. 32).

When used in a fully decked independent access scaffold erected in 2.0m lift heights, up to a maximum height of 24.0m, the PLETTAC METRIX permanent advanced guardrail system stabilises the structure. It is therefore only necessary to fix face brace from the ground level to the first level of the structure that these handrails are located, with the frequency and direction as previously described. The permanent advanced guardrails must be fitted to all further lifts, or face bracing must be applied as normal (Fig. 33).

When the permanent advanced guardrails are used in situations other than which is previously described, face brace must be fixed as normal.

If possible bracing of the end bays should be avoided.

2 Ledger Bracing

PLETTAC METRIX structures do not generally require ledger bracing under normal use. Ledger bracing can be used when ties cannot be located in the correct positions, or where scaffolds extend above the building. Advice must be sought from a competent temporary works / scaffold design engineer in these situations.

3 Plan Bracing

PLETTAC METRIX structures only require plan bracing under certain conditions. Where the structure is not fully decked, plan brace must be fitted at each un-decked level. In this situation the plan brace is fixed to each bay which has face brace attached (one bay in every 15m maximum).

Where systemised brace is not available, the use of BS EN 39 tube and BS EN 74 fittings is acceptable as an alternative, in all cases. Scaffold tubes of the appropriate length can be fixed to the standards with right angled couplers within 300mm of the node point, directly below the lift.

Plan bracing may also be required where ties cannot be located in their correct positions. For information relating to this, or any other situation not detailed, please refer to a competent temporary works / scaffold design engineer.



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LOADING

1 Working Platform

The maximum loading for a PLETTAC METRIX system scaffolding is 6kN/m² (BS EN 12811 load class 6), based on 2.5m bay lengths and 1m bay widths (using reinforced transoms). For scaffolds with more than one working lift, the maximum loading is one platform at 6kN/m² + one otherat 3kN/m². All working platforms are checked under each load case in accordance with EN 12811-1:2003, table 3, for the 3m, 2.5m and the 2m ledger sizes.

2 Loads Imposed Upon the Foundations of an PLETTAC METRIX Scaffold

The foundations for a PLETTAC METRIX scaffold should be adequate to carry and disperse the loads imposed, both locally at each standard and, in general, to carry the whole weight of the scaffold.
The responsibility for the adequacy of the foundations should be established and approved prior to erection.

The client for the scaffold and / or the contractor may need to be consulted. The foundation for a scaffold should be maintained in an adequate condition during the life of the scaffold. Regular inspection procedures must be completed in line with current legislation and the use of the scaffold should be suspended if there is found to be any loss of support.

3 Component Capacities

For individual component load capacities please contact your nearest TRAD UK Branch for the requisite documentation. Locations are detailed on the rear cover of this guide.



TYING

1 Forces Upon the Building Structure from Ties

All access scaffolds will impose forces upon the structure they are fixed to, through their ties. An assessment should be initially made regarding the ability of the structure they are fixed to, either globally, due to its own instability, or locally, as a result of defective finishes. Loadings from the ties into the supporting structure are dependent upon the live loading to the working platforms, the height of the scaffold, the wind loading imposed upon the scaffold, and the cladding status of the scaffold. Where ties cannot be positioned in the correct pattern, qualified design input must be sought.

2 Tie Connections

Appropriate continuous lengths of tube, or the proprietary tie tubes should be fitted to the inside and outside standards or ledgers of the PLETTAC METRIX structure (Fig. 34).

The positioning of the tie axis must be within 300mm of the node point, although within 150mm is considered good practice. Where required to satisfy the Headroom Class, H2, of BS EN 12811-1, the tie axis must be no more than 200mm from the node point.

Standard BS EN 39 tube and BS EN 74 right angle fittings can be used to form the tie connection in conjunction with a proprietary tie system (Figs. 35 & 36).

Note: Where ties cannot be positioned within 300mm of the node point, or where clear headroom is required, standard or light duty ties may be fixed to only the inside standards or ledgers. However, qualified design input must be sought from a competent temporary works / scaffold design engineer, regarding their design and positioning.

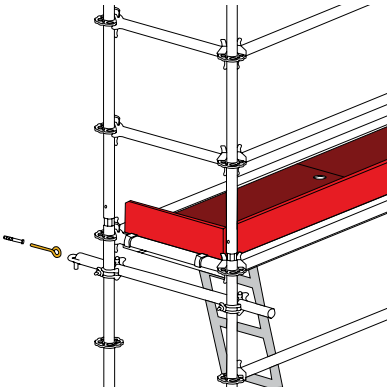


Fig. 34

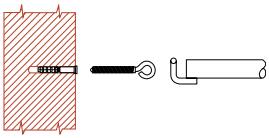


Fig. 35

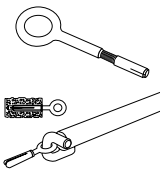


Fig. 36

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In addition to masonry anchors, the following tie assemblies (Figs. 37 - 40) may also be used to ensure the stability of the PLETTAC METRIX system. Where suggested configurations cannot be used, qualified design input must be sought.

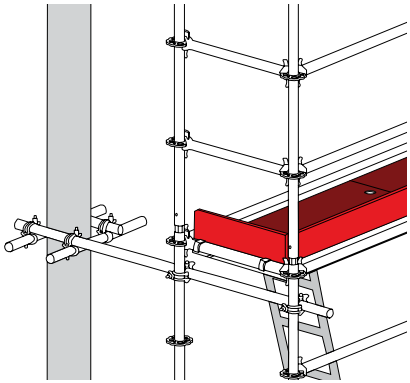


Fig. 37

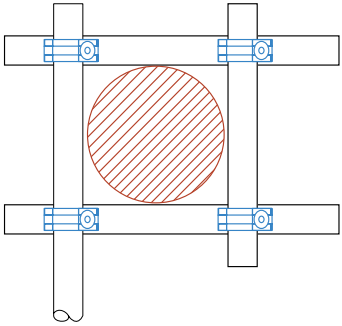


Fig. 38

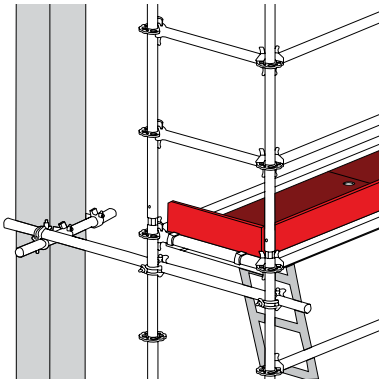


Fig. 39

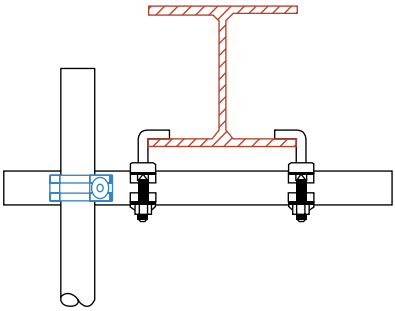


Fig. 40

Note: A minimum of three ties must be tested and at least 5% (1 in 20) thereafter. These should be chosen at random and spread evenly throughout the structure.

3 Tie Patterns

The following grids (Figs. 41 - 42) detail the tie patterns to be used with PLETTAC METRIX scaffold (Max. lift heights 2m).

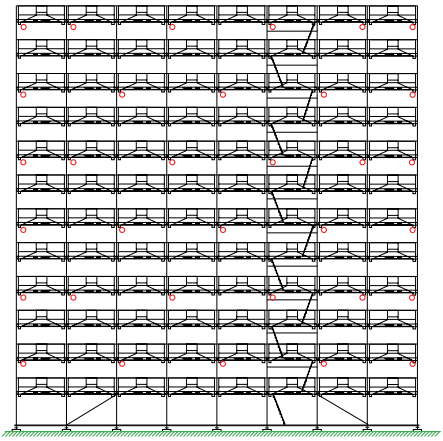


Fig. 41, Ties every 24m²

Additional ties are to be positioned on the two outer sets of standards, the maximum distance between being 4m. In all other cases the maximum vertical distance on one row, between ties is 8m.

Horizontally the ties must be positioned at every second row of standards. The maximum vertical distance between each horizontal row of ties is 4m, with alternate standards being tied from the last preceding row.

Note: Where ties cannot be positioned in the correct pattern, qualified design input must be sought.

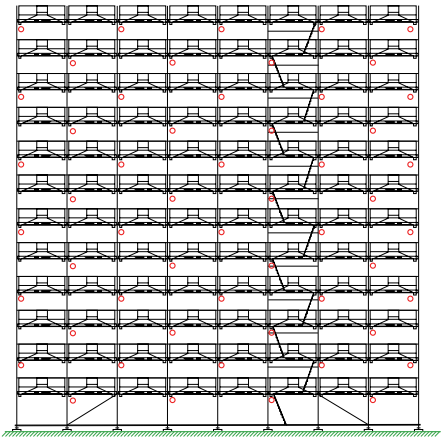


Fig. 42, Ties every 12m²

Additional ties are to be positioned on the two outer sets of standards, the maximum distance between being 2m. In all other cases the maximum vertical distance on one row, between ties is 4m.

Horizontally the ties must be positioned at every second row of standards. The maximum vertical distance between each horizontal row of ties is 2m, with alternate standards being tied from the last preceding row.

Where this pattern is not possible, it is acceptable to fix ties at every row of standards, every second lift, to achieve ties every 12m².

Note: Where ties cannot be positioned in the correct pattern, qualified design input must be sought.

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SCAFFOLD DESIGNATION					MAX HEIGHT IN METRES (m)	
LOAD CLASS	BAY LENGTH (m)	BAY WIDTH (m)	TRANSOM TYPE	CLADDING TYPE	TIES AT ALTERNATE LIFTS (24m²)	TIES AT EVERY LIFT (12m²)
6	3.0	0.7	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0
5	3.0	1.0	REINFORCED	NONE	24.0	–
				DEBRIS NET	–	24.0
4	3.0	1.0	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0
6	2.5	0.7	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0
6	2.5	1.0	REINFORCED	NONE	24.0	–
				DEBRIS NET	–	24.0
5	2.5	1.0	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0
6	2.0	0.7	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0
6	2.0	1.0	TUBULAR	NONE	24.0	–
				DEBRIS NET	–	24.0

The maximum height to which a PLETTAC METRIX Scaffold may be erected is dependant upon a number of factors, the most important of which are:

- The vertical and horizontal distances between tied points on a standard.
- The lift height.
- Wind loading.
- The vertical loadings in the legs due to the self-weight, and the working platform loading.
- Whether or not the foot ties are used.
- The inclusion of Debris Netting or Sheeting to the Scaffold.
- Whether or not the cantilever platforms are used.

SAFE WORKING HEIGHTS OF THE PLETTAC METRIX SYSTEM

The Safe Height Table shown is based on all scaffolds being limited to a maximum height of 24m (12 lifts) incorporating a maximum of two working lifts. This is due to the increased potential for wind loading to vary from the standard guidance because of local conditions. Scaffolds in excess of this height and / or incorporating more than two working lifts can be constructed, but special consideration should be given to their design. Please contact your local TRAD UK depot or a competent temporary works / scaffold design engineer for guidance if these or any of the conditions below are to be exceeded.

The Safe Working Height table is based on:

- Tie patterns being adhered to at all times.
- 2m lift heights.
- PLETTAC METRIX scaffold's wind loads being calculated to BS EN 12811, where the "in service" wind speed is 18.05m/s, and the "out of service" wind speed varies between 22.23m/s and 30.55m/s. All locations have no significant local features such as cliffs, steep hills, ridges, in coastal locations, to tall structures surrounded by other tall structures which may cause funnelling of the wind pressures, or altitudes in excess of 100m above sea level and within 100km of the closest distance to sea upwind. If the site; is at least 2km inside a town terrain, is shielded by buildings within 100m and the average height of the surrounding buildings are 5m or more then it is classified as a "Town" site. All other locations are considered to be "Country".
- Two working lifts: one fully loaded and one at 50% loading.
- Foot ties fitted to all scaffolds.
- Any debris netting spans from lift height to lift height.

The safe height table and section capacities contained within this PLETTAC METRIX user guide are based upon live loading from the intended use only. Additional loading may accrue on the working platforms or components as a consequence of atmospheric precipitations such as ice, snow, sand or dust. The working processes may also cause debris such as sand, grit or demolition debris to accumulate on the working platforms or components, which will also increase the live loading above that allowed for. Where this is seen to occur or is expected to occur, further guidance should be sought from a competent temporary works / scaffold design engineer, which may result in a downgrading of the Load Class of the scaffold.

The parameters detailed in this manual are based on calculations, and are the results of extensive testing by accredited independent testing facilities.

PLETTAC METRIX has achieved the status of an NASC approved system, and complies fully with the NASC's Code of Practice.

Note: For pavement lifts and floor height lifts greater than 2m, the advice of a competent temporary works / scaffold design engineer should be sought.

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STABILITY & BUTTRESSING

1 Rakers

On structures where it may not be suitable to use physical tie arrangements, a PLETTAC METRIX scaffold, which is not sheeted or debris netted, can be supported up to a maximum top guardrail height of 6m using raking tube arrangements.

Single galvanised BS EN 39 tubes up to a maximum length of 6.4m may be used as rakers. These are preferably fixed at the top to the ledgers with BS EN 74 right angle couplers, or secondly fixed to the standards using BS EN 74 swivel couplers. These raking tubes are then tied back to the standards at the foot and mid-levels using galvanised tube and BS EN 74 right-angled couplers. The rakers are then joined horizontally at these lower levels by galvanized tube ledgers and right-angled couplers. The angle of the raking tube should be at no more than 2:1 (vertical to horizontal).

At the foot of the raker, a galvanised tube should be driven into the ground at a 45-degree angle, to a depth of approximately 1.2m. The capacity of these anchors is dependent on the ground conditions.

If these anchors are not suitable, kentiledge weight may be used as an alternative. Please contact your local TRAD UK depot or a competent temporary works / scaffold design engineer for guidance (Fig.43).

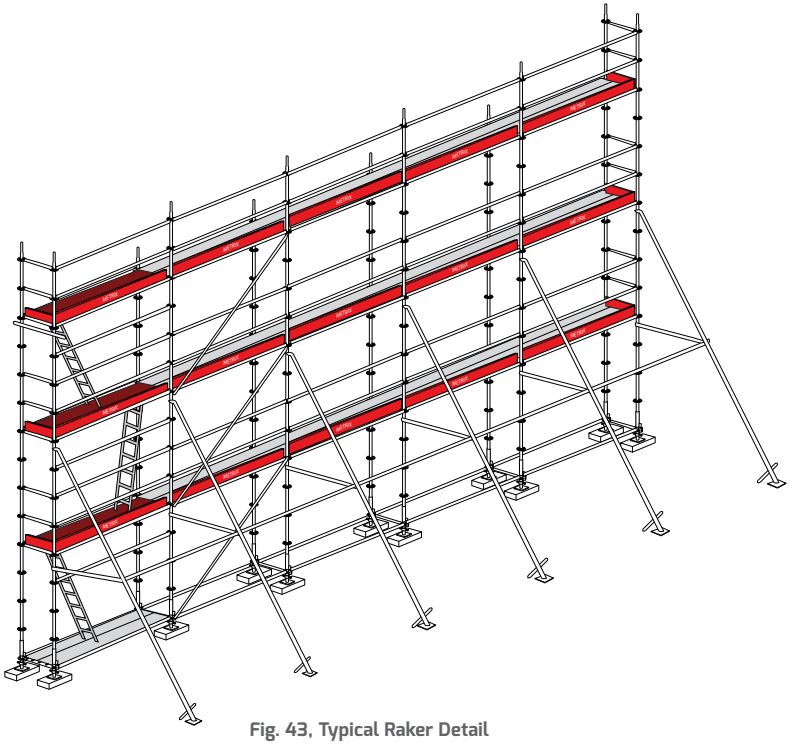


Fig. 43, Typical Raker Detail

2 Buttresses

Again on structures where it may not be suitable to use physical tie arrangements, it is possible to achieve stability of a PLETTAC METRIX scaffold, which is not sheeted or netted, by using fully braced buttresses.

Typically, buttresses will be erected using a 2.5m x 2.5m bay or a 3m x 3m bay, and positioned at a frequency of one in every four bays. The remaining standards on the main access scaffold (between buttresses) require to be plan braced (wing-tied) to the outer standard of the nearest buttress, using galvanised tube and right-angled couplers.

To prevent any tendency for the scaffold to fall inwards, small lengths of tube must butt against the wall, or structure. These tubes must be connected to the inside face of the scaffold with BS EN 74 Class B right angled fittings, within 300mm of the node points.

If the preceding is not suitable, it may be necessary to anchor the outside standards of the buttress to the ground, or use kentiledge weight as an alternative. Information and guidance relating to these arrangements should be sought from a competent temporary works / scaffold design engineer.

The maximum top guardrail height to which a 2.5m x 2.5m buttress arrangement can support a 1m wide independent PLETTAC METRIX scaffold is 10.5m, while a 3m x 3m buttress may support the same to 12m high. Advice must to be sought from a competent temporary works / scaffold design engineer for heights in excess of this level (Fig. 44).

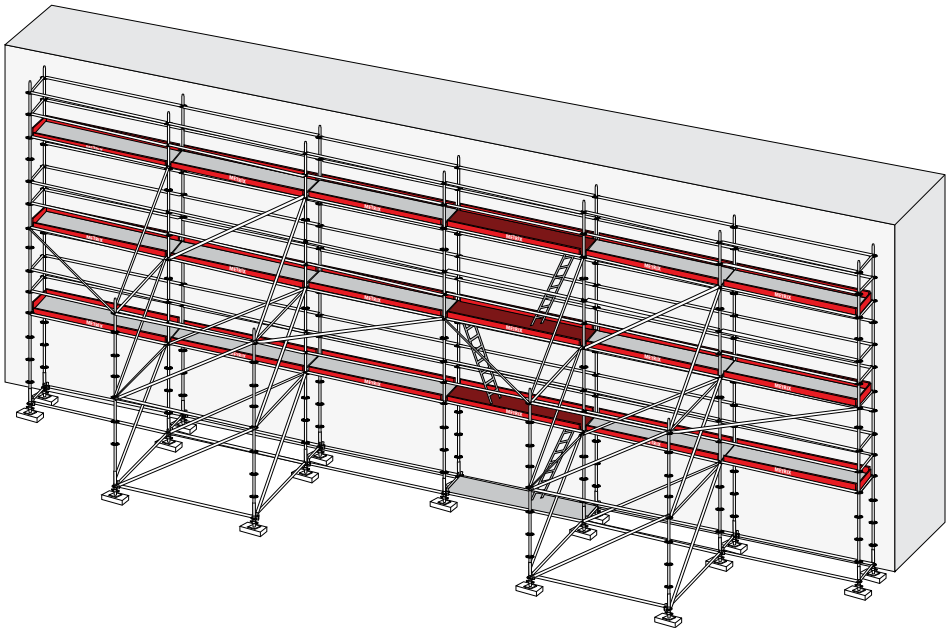


Fig. 44, Typical Buttress Detail

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PLETTAC METRIX Typical Staircases

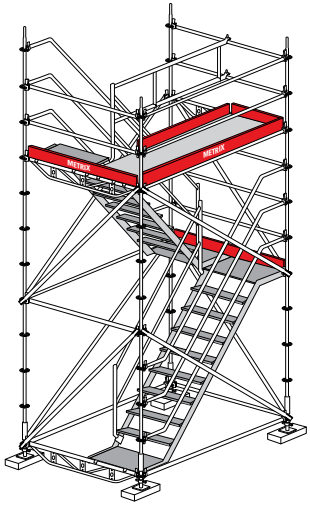


Fig. 45

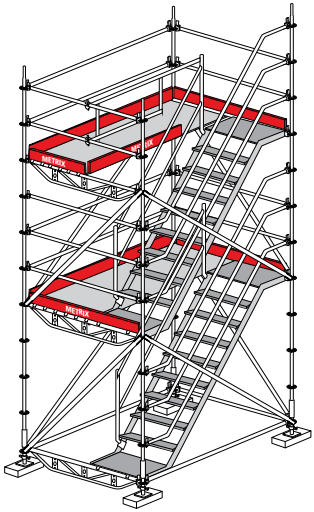


Fig. 46

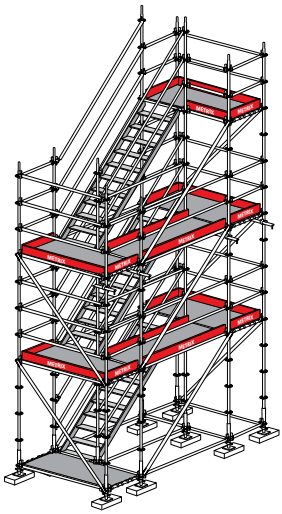


Fig. 47

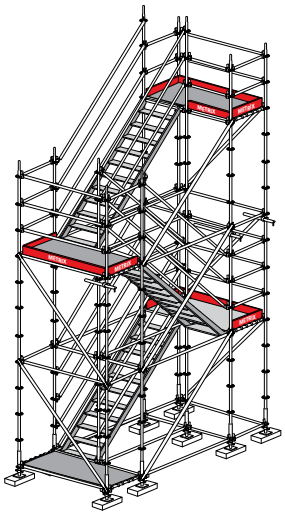


Fig. 48

STAIRCASE TOWERS

PLETTAC METRIX staircase towers provide a safe, user-friendly solution and are quick and simple to erect, allowing improved access and egress for site personnel.

PLETTAC METRIX staircase towers are available in different configurations, according to load capacity and height requirements.

Special staircase components can be used with standard PLETTAC METRIX equipment to form staircase towers. Aluminium staircase units are placed within either a 1.5m, 2.5m or 3m long bay which are either 0.7m, 1m, 1.5m or 2m wide.

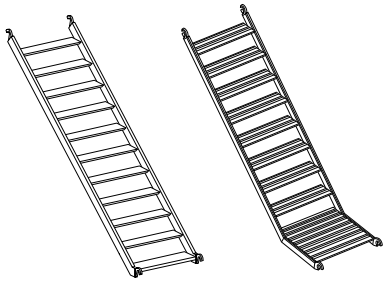
Certain staircase towers need not have separate landing platforms, these are incorporated within several models of the aluminium units.

These staircase towers should be tied at every standard, every other lift.

1 0.85m Wide Staircase Units

These units are only available for a 2.5m long x 1.0m wide bay with either a 2.0m or 1.5m lift height. All units come complete with hooks, at the top and bottom of the stair stringers, that locate over the ledgers.

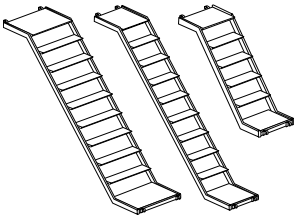
Code	Size (m)	Weight (kg)
285901	2.5 x 2.0	30.50
285903	2.5 x 1.5	33.60



2 Staircase Unit with Landing

These units are available in varying sizes, for maximum flexibility. Units have hooks, at the top and bottom platforms, that locate over the ledger.

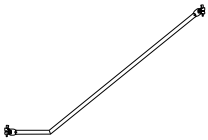
Code	Size (m)	Weight (kg)
285905	3.0 x 2.0 x 0.9	33.60
285910	2.5 x 2.0 x 0.9	32.40
285915	1.5 x 1.0 x 0.9	19.00
285920	3.0 x 2.0 x 0.6	28.00
285925	2.5 x 2.0 x 0.6	27.20
285930	1.5 x 1.0 x 0.6	16.00



3 1.5m Staircase Handrails

These galvanised steel units are used to provide the handrails for the 1.5m lift height, x 0.85m wide staircase units. They come in both left and right hand configuration, two of each are required per stair, and are attached to the standards via swivelling wedge heads.

Code	Hand	Weight (kg)
285957	Right	10.80
285958	Left	10.80

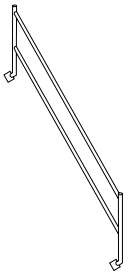


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4 Internal Guardrail

These aluminium units provide internal edge protection to the staircase units with landings, they are attached with two 10mm diameter bolts with 22mm diameter nuts.

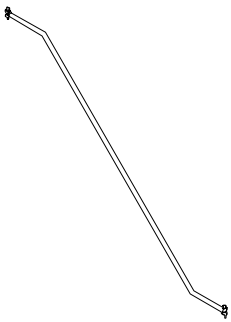
Code	Stair Size (m)	Weight (kg)
285940	3.00	7.50
285945	2.50	6.70



5 External Guardrail

These steel units provide external edge protection to the staircase units with landings, they are attached to the standards via wedge heads.

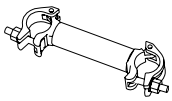
Code	Stair Size (m)	Weight (kg)
285950	3.00	12.98
285955	2.50	10.72



6 Internal Guardrail Liasion

These provide internal edge protection to close any gap at the landings, between internal guardrails. It comes in two sizes, the longer length for the 3.0m stair and the shorter for the 2.5m stair.

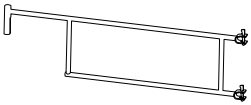
Code	Stair Size (m)	Weight (kg)
285935	0.300	2.00
285936	0.227	1.60



7 Landing Guardrail

Provides edge protection on the top of a 2.5m or 3m tower using staircase units with landings.

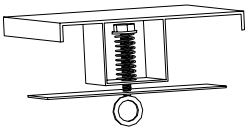
Code	Size (m)	Weight (kg)
285960	2.40 x 0.50	10.40
285965	1.95 x 0.50	8.70



8 Junction Plate

Junction plate between two stair units of 900mm at adjacent landings.

Code	Stair Size (m)	Weight (kg)
285970	2.50	0.90
285975	3.00	1.40





PLETTAC METRIX Typical 8 Leg 4.5m x 2.0m Staircase quantity list, using 0.85m wide staircase units.

Code	Description	1.5	2.0	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
285001	4.0M METRIX STANDARD			4		4		8	4	4	4	12	8	8
285005	3.0M METRIX STANDARD		4	4		4	4		4	12	4	4		8
285010	2.5M METRIX STANDARD	4			8		8		8		8		8	
285015	2.0M METRIX STANDARD		4		4	4	4	4			4		4	4
285020	1.5M METRIX STANDARD	4												
285025	1.0M METRIX STANDARD	2	2	3	7	3	4	8	4	4	5	5	9	9
285070	METRIX BASE COLLAR	8	8	8	8	8	8	8	8	8	8	8	8	8
285080	0.61M METRIX BASE JACK	8	8	8	8	8	8	8	8	8	8	8	8	8
285103	2.5M METRIX LEDGER	6	6	8	8	8	10	10	10	10	12	12	12	12
285106	2.0M METRIX LEDGER	12	12	19	19	19	26	26	26	26	33	33	33	33
285112	1.0M METRIX LEDGER	18	18	28	28	28	38	38	38	38	48	48	48	48
285136	2.0M METRIX REINFORCED LEDGER	2	2	3	3	3	4	4	4	4	5	5	5	5
285205	2.5M X 2.0M METRIX DIAGONAL BRACE		6		6	12		6	12	18	6	12	18	24
285210	2.0M X 2.0M METRIX DIAGONAL BRACE		2		2	4		2	4	6	2	4	6	8
285227	2.5M X 1.5M METRIX DIAGONAL BRACE	2		4	2		6	4	2		6	4	2	
285228	2.0M X 1.5M METRIX DIAGONAL BRACE	2		4	2		6	4	2		6	4	2	
285304	2.0M X 0.3M METRIX STEEL DECK	6	6	10	10	10	13	13	13	13	16	16	16	16
285378	2.0M X 0.6M METRIX COMPOSITE TRAPDECK			1	1	1	1	1	1	1	1	1	1	1
285382	2.07M METRIX ALUMINIUM LADDER			1	1	1	1	1	1	1	1	1	1	1
285410	2.0M METRIX STEEL TOEBOARD	2	2	3	3	3	4	4	4	4	5	5	5	5
285420	1.0M METRIX STEEL TOEBOARD	4	4	6	6	6	8	8	8	8	10	10	10	10
285733	WEDGE SPIGOT FOR METRIX STANDARD	2	2	3	3	3	4	4	4	4	5	5	5	5
285901	2.5M X 2.0M X 0.85M METRIX STAIRCASE		1		1	2		1	2	3	1	2	3	4
285903	2.5M X 1.5M X 0.85M METRIX STAIRCASE	1		2	1		3	2	1		3	2	1	
285957	1.5M METRIX STAIRCASE GUARDRAIL R.H.	2		4	2		6	4	2		6	4	2	
285958	1.5M METRIX STAIRCASE GUARDRAIL L.H.	2		4	2		6	4	2		6	4	2	

Notes: 1. Quantities include for all equipment required to erect staircase to current SG4 guidelines.

2. Vertical standard configurations assume all 1.5m lift stair units are positioned between ground and first level for one 1.5m stair unit, ground and second for two 1.5m stair units and ground and third for three 1.5m stair units.

continued ›

Code	Description	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	20.0	22.0	24.0
285001	4.0M METRIX STANDARD	16	12	20	16	24	20	28	24	32	28	32	36	40
285005	3.0M METRIX STANDARD		12	4	8		12	4	8		12	8	12	8
285010	2.5M METRIX STANDARD													
285015	2.0M METRIX STANDARD	4			4	4			4	4		4		4
285020	1.5M METRIX STANDARD													
285025	1.0M METRIX STANDARD	10	6	7	11	12	8	9	13	14	10	15	12	17
285070	METRIX BASE COLLAR	8	8	8	8	8	8	8	8	8	8	8	8	8
285080	0.61M METRIX BASE JACK	8	8	8	8	8	8	8	8	8	8	8	8	8
285103	2.5M METRIX LEDGER	14	14	16	16	18	18	20	20	22	22	24	26	28
285106	2.0M METRIX LEDGER	40	40	47	47	54	54	61	61	68	68	75	82	89
285112	1.0M METRIX LEDGER	58	58	68	68	78	78	88	88	98	98	108	118	128
285136	2.0M METRIX REINFORCED LEDGER	6	6	7	7	8	8	9	9	10	10	11	12	13
285205	2.5M X 2.0M METRIX DIAGONAL BRACE	18	30	24	36	30	42	36	48	42	54	60	66	72
285210	2.0M X 2.0M METRIX DIAGONAL BRACE	6	10	8	12	10	14	12	16	14	18	20	22	24
285227	2.5M X 1.5M METRIX DIAGONAL BRACE	4		4		4		4		4				
285228	2.0M X 1.5M METRIX DIAGONAL BRACE	4		4		4		4		4				
285304	2.0M X 0.3M METRIX STEEL DECK	19	19	22	22	25	25	28	28	31	31	34	37	40
285378	2.0M X 0.6M METRIX COMPOSITE TRAPDECK	1	1	1	1	1	1	1	1	1	1	1	1	1
285382	2.07M METRIX ALUMINIUM LADDER	1	1	1	1	1	1	1	1	1	1	1	1	1
285410	2.0M METRIX STEEL TOEBOARD	6	6	7	7	8	8	9	9	10	10	11	12	13
285420	1.0M METRIX STEEL TOEBOARD	12	12	14	14	16	16	18	18	20	20	22	24	26
285733	WEDGE SPIGOT FOR METRIX STANDARD	6	6	7	7	8	8	9	9	10	10	11	12	13
285901	2.5M X 2.0M X 0.85M METRIX STAIRCASE	3	5	4	6	5	7	6	8	7	9	10	11	12
285903	2.5M X 1.5M X 0.85M METRIX STAIRCASE	2		2		2		2		2				
285957	1.5M METRIX STAIRCASE GUARDRAIL R.H.	4		4		4		4		4				
285958	1.5M METRIX STAIRCASE GUARDRAIL L.H.	4		4		4		4		4				

3. Quantities allow for two access points only, one to the top and one to the bottom of the towers, via the 1.0m side of the landing areas. Multiple access points are possible, guardrails, ledgers and toe boards must be adjusted to suit.

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PLETTAC METRIX Typical Loading Tower

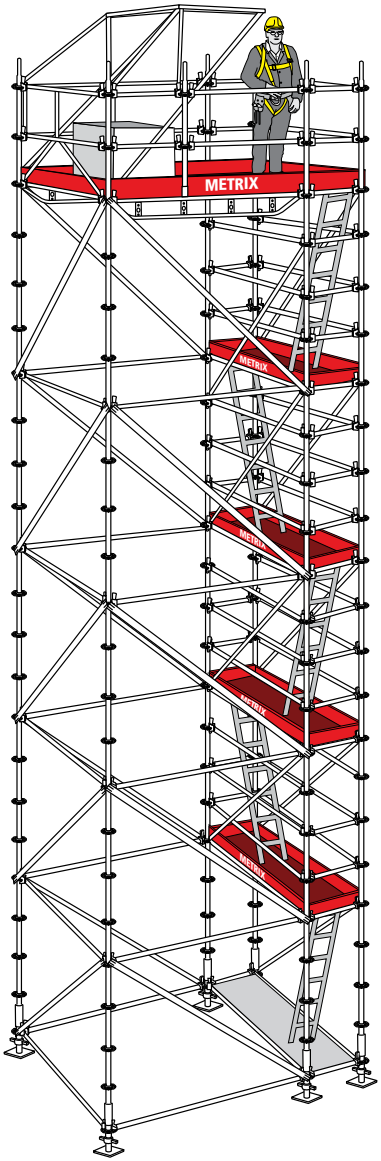


Fig. 49

LOADING TOWERS

The PLETTAC METRIX loading tower (see Fig. 49) uses standard PLETTAC METRIX components along with a special safety gate, to form a strengthened platform specifically for the loading of materials by forklift truck or crane. Depending on the load capacity required standard steel decks are placed on either reinforced ledgers or the steel wedge head beams.

The standard loading tower has a plan depth of 2.5m and can be either 2m, 2.5m or 3m wide on the opening side. They can be erected either as part of the main scaffold structure or a stand-alone tower. In both cases, suitable ties are required, along with façade and plan bracing (wing ties).

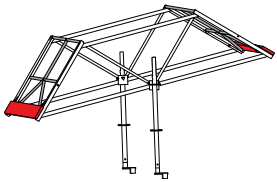
Note: High capacity loading tower configurations with openings of up to 4.0m are available. Please contact your local TRAD UK depot for details.

1 Loading Tower Safety Gate

In order to provide leading edge protection before, during and after loading of materials onto the loading tower, the loading tower safety gate should be used. This system uses an up-and-over counterbalance mechanism providing a continuous guardrail before, during and after loading, ensuring the operator is at all times protected (Fig.50).

Depending on the size of opening required, a combination of two each of the fronts, arms, posts and, where necessary, U-Head Ledger Spigots are used to construct one complete gate.

Code	Description	Weight (kg)
285656	Yellow 4.0m Gate Front	36.00
285657	Yellow 3.0m Gate Front	27.00
285661	Galvanised 3.0m Gate Front	11.80
285666	Galvanised 2.5m Gate Front	10.4
285671	Galvanised 2.0m Gate Front	8.90
285672	Loading Tower Gate Post	6.53
285674	Loading Tower Gate Arm	22.80
285725	U-Head Ledger Spigot	2.28



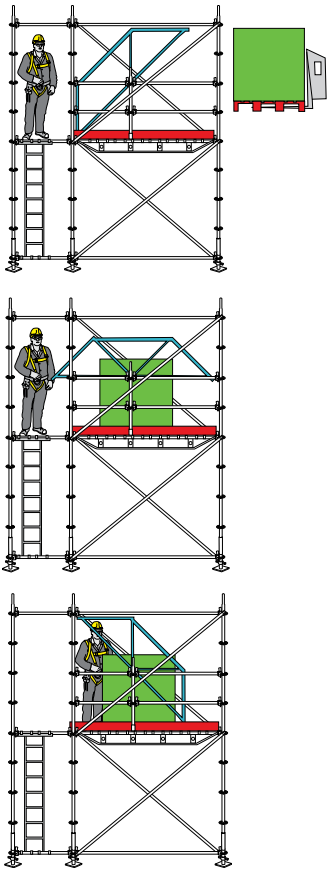


Fig. 50

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2 Standard Loading Tower – Working Detail

Depending on the load capacity required, either reinforced ledgers, or steel wedge head beams are fixed to both sides of the tower. They span from the front to the rear standards and connect to either one or two node points (rosettes) on each standard. Ledgers of required size are then used to complete the rectangle / square of the tower.

The loading tower can now be boarded using standard steel decks (see page 40 for configuration). Guardrails to the side of the tower are formed, using a special 1.0m standard (loading tower gate post) which is connected to a support spigot. These are located on the top chord of the reinforced ledger or wedge head beam. Between the posts and the existing tower standards 1.0m ledgers are fixed on one side, with 1.5m ledgers to the other, completing the guardrail. The arm components of the loading tower safety gate are now attached to the box welded to the top rosette of the posts and secured with the integral bolts / clips. Leading edge protection is now formed from connecting the arms with two of the desired size of loading tower gate fronts, one at the front and one at the rear of the gates, and secured with the integral bolts / clips.

As the wedge head beam covers two node points, when using this component, the lowest point on which the first working lift on the scaffold can be located is at the second rosette height.

A foot-tie must be used and sole boards of the correct size must be placed beneath each adjustable base jack.

The loading tower must be braced on all four sides where possible. However, if multiple platforms are being used and the tower is part of a larger PLETTAC METRIX structure, then the loading tower must be braced on the front elevation from foot-tie level, to the first working lift (if possible), and on both sides for the full height of the scaffold.

Loading towers that are part of a larger main scaffold require to be plan braced (wing-tied) from the outer standard to the main scaffold on both sides of every lift.

Note: All loads must be spread evenly across the platform. For loading towers with more than one working lift, the maximum loading is one platform at 100% loading (see table below) + one other at 50% loading.

Code	Component Description	Gate Width (m)	Safe Working Load (kN)	Safe Working Load (kN/m²)
285133	2.5m Reinforced Ledger	3.00m	27.60	3.68
285133	2.5m Reinforced Ledger	2.50m	37.50	6.00
285133	2.5m Reinforced Ledger	2.00m	30.00	6.00
285845	2.5m Wedge Head Beam	3.00m	45.00	6.00
285845	2.5m Wedge Head Beam	2.50m	37.50	6.00
285845	2.5m Wedge Head Beam	2.00m	30.00	6.00


METRIX
METRIX

PLETTAC METRIX Typical Mobile Tower

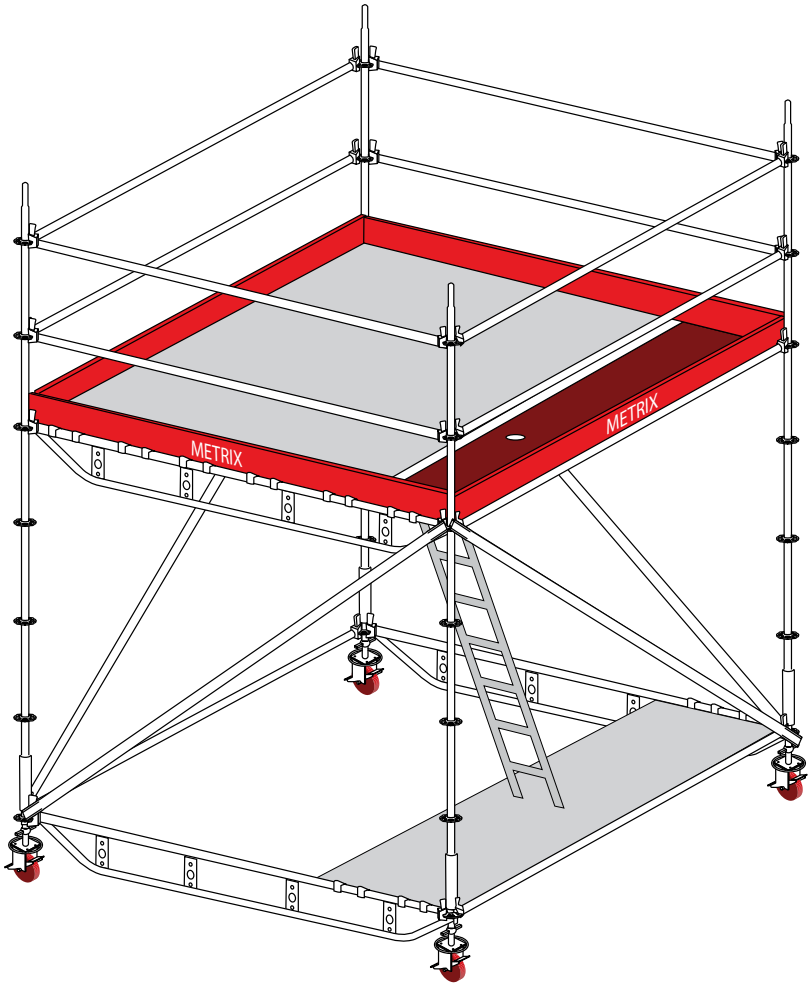


Fig. 51

STATIC & MOBILE TOWERS

PLETTAC METRIX towers can be erected using standard components, standard adjustable base jacks, or bespoke castor wheels, for full mobility (Fig. 51).

Static towers may be erected to a maximum height of 24m, provided they are secured in line with the tie pattern shown in figure 52. Heights above this are possible but should be referred to a competent temporary works / scaffold design engineer.

All towers must be fitted with façade bracing on all external faces throughout the full height of the PLETTAC METRIX tower.

Additional plan bracing is also required where the frequency between decked levels exceeds 4m throughout the tower. Plan bracing can be installed using BS EN 39 scaffold tubes and BS EN 74 fittings.

Note: Scaffold ties must be fitted to both inside and outside standards.

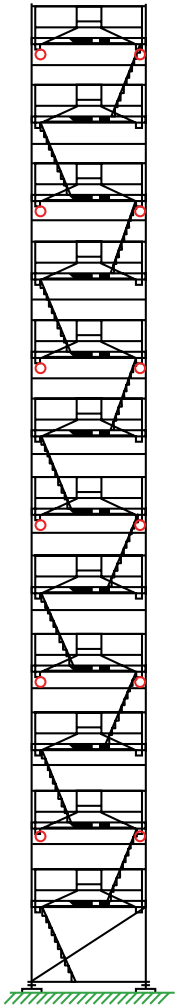


Fig. 52

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PLETTAC METRIX Typical Ladder Access

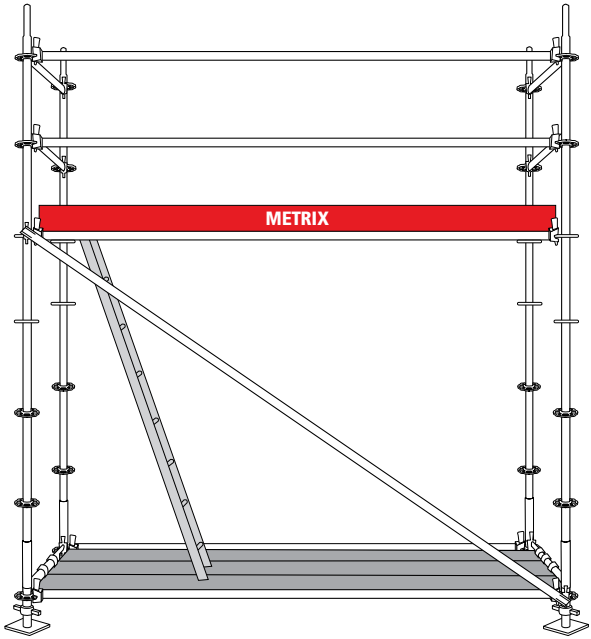


Fig. 53

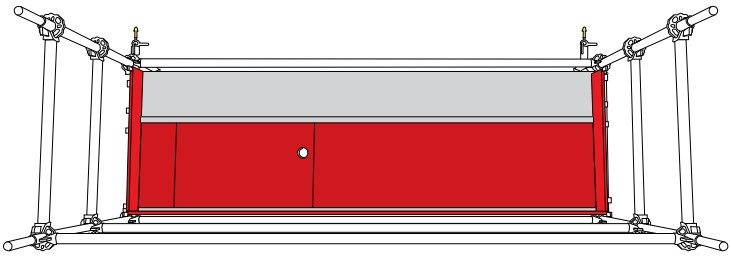


Fig. 54

LADDER ACCESS TOWERS

PLETTAC METRIX ladder access towers can be used within a PLETTAC METRIX main scaffold structure, or as an independent ladder access tower.

The ladder access tower framework should be erected in accordance with the procedures set out in the basic erection guide, being normally built within a 2.5m or 3m bay. A trap door deck replaces two 300mm wide decks on the scaffold platform. The 3m and 2.5m trapdoor deck platforms have an integral aluminium ladder attached, while aluminium ladders need to be attached to smaller sized trapdoor decks.

Trapdoors can be positioned at almost any position in a PLETTAC METRIX scaffold with clever use of the three types of intermediate transoms and trapdoor decks (Fig. 55).

When ladder towers are required as the accessto a PLETTAC METRIX main scaffold structure, their location should be given careful consideration, taking into account thefollowing recommendations:

- An external ladder access tower should be erected to the side of the main scaffold where possible, allowing the working platform to remain intact. The end guardrails provide a firm handhold above the platform.
- When an external ladder access tower is not feasible, the ladder access should be positioned to the end of a scaffold run. This will keep any disruption to the working platform to a minimum. The end guardrails provide a firm handhold above the platform.
- Only as a last resort should the ladder access be positioned in the general run of the main scaffold. Where this is the case other measures to ensure a firm handhold should be provided, at least 1.05m above the landing place. Conventional scaffold ladders may be used, and should be secured as per the recommendations set out in the latest edition of the NASC's guidance note TG20. In this scenario any gaps left in the platform must be covered, or surrounded with a guardrail with access provided by a swing safety gate. Where necessary conventional tube and fittings may be used to form the guardrail.

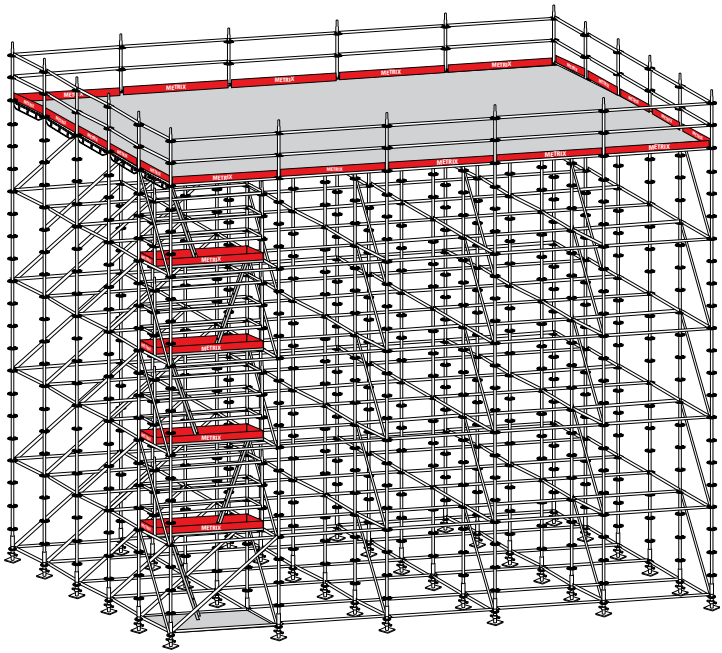
Note: Independent ladder access towers follow the same criteria regarding bracing and ties as static towers.

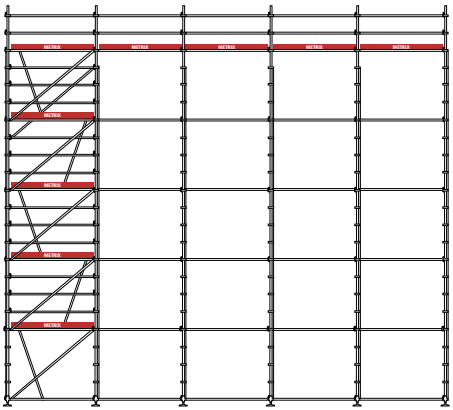


Fig. 55

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PLETTAC METRIX Typical Internal Birdcage





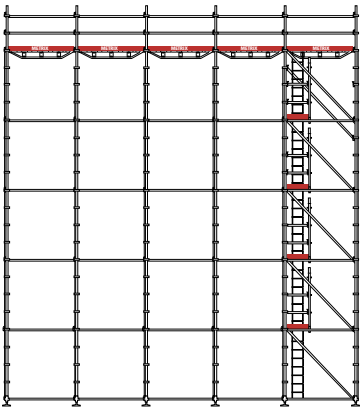


Fig. 56

Note: Scaffolders “safe-zone“ guardrails omitted for clarity.

INTERNAL BIRDCAGES

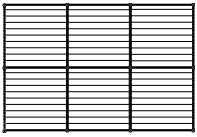
PLETTAC METRIX birdcage scaffolds provide one of the most cost effective methods of providing access to large areas such as ceilings and atriums. Standard components are used in conjunction with reinforced ledgers as transoms, allowing a combination of bay sizes to cover the floor area required. Steel decks can be laid in parallel (Fig. 57), or alternatively, they can be laid perpendicularly in each alternate bay, giving increased load capacity (Fig. 58).

Vertical diagonal bracing is fixed using normal PLETTAC METRIX diagonal braces, and is required throughout all PLETTAC METRIX birdcage scaffolds. They are required on every line of standards, at a frequency of one in every fifth bay, for the full height of the scaffold. Where systemised brace is not available, or cannot be used it is acceptable to use BS EN 39 tubes with BS EN 74 fittings. Scaffold tubes of the appropriate length should preferably be fixed to the ledgers with right angle couplers, or alternatively, to the standards with swivel couplers, allowing minimum obstruction to any working platform. Vertical diagonal bracing must be fixed as close to the node point as possible but no further than 300mm.

When a PLETTAC METRIX birdcage scaffold is to be built internally as a free standing structure, the maximum height achievable is four times the smallest base dimension, to a maximum of 10.5m high to the top guardrail. There must be no horizontal wind load, every line of vertical standards must be supported from the ground and be braced as previously described. It is recommended however, that if an anchoring facility exists then this should be made use of, to increase the stability of the scaffold structure. Advice on the placement of ties, and heights required outside of this guidance, should be referred to a competent temporary works / scaffold design engineer (the client and / or the contractor may also need to be consulted).

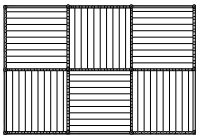
Plan bracing is not usually required, although where deemed to be necessary systemised brace can be used. Where systemised brace is not available, the use of BS EN 39 tube and BS EN 74 fittings is acceptable as an alternative. Scaffold tubes of the appropriate length tubes can be fixed to the standards with right angled couplers within 300mm of the node point, directly below the lift.

Advice must be sought from a competent temporary works / scaffold design engineer when PLETTAC METRIX birdcages are to be built externally.



BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²)					
	BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
1.5	6.0	6.0	6.0	6.0	6.0	6.0
2.0	6.0	6.0	6.0	6.0	4.5	4.5
2.5	6.0	6.0	4.5	3.5	3.0	2.5
3.0	6.0	4.0	2.5	2.0	1.5	1.0

Fig. 57, Decks in parallel



BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²)					
	BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
1.5	6.0	6.0	6.0	6.0	6.0	6.0
2.0	6.0	6.0	6.0	6.0	6.0	6.0
2.5	6.0	6.0	6.0	6.0	6.0	4.5
3.0	6.0	6.0	4.5	4.0	3.0	2.5

Fig. 58, Decks perpendicular

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PLETTAC METRIX Typical Circular Access

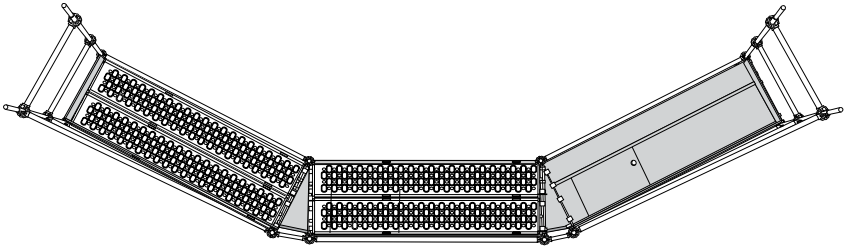


Fig. 59

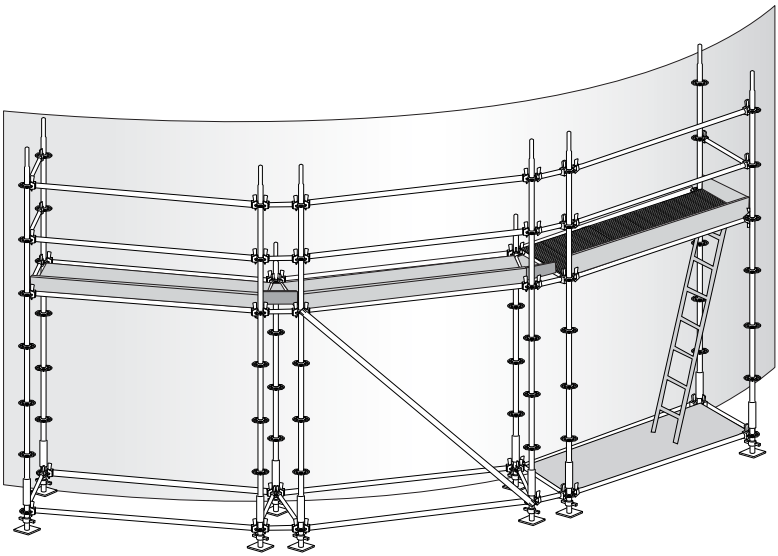


Fig. 60

CIRCULAR ACCESS

PLETTAC METRIX system scaffold provides a simple solution to creating circular scaffolds. Using standard equipment, with a number of bespoke components, circular structures can be erected with speed and ease. Dependent on the curvature required every bay or every alternate bay can be erected using these specialised components.

On the inside face of the scaffold one standard is common to two bays, whereas on the outside there are two, forming a triangular infill bay.

The outer standards are connected by normal ledgers of the desired length at the main bay, while the adjustable ledgers are fixed to the triangular infill bay. Where adjustable ledgers are not available, or cannot be used it is acceptable to use BS EN 39 tubes with BS EN 74 fittings.

The inner standard is connected to the outer standards by special right or left hand vessel transoms. These transoms are fixed to either the smaller or larger holes of the rosette on the inner face and the small hole on the outer.

Within any bay where the right and left vessel transoms are used, the inner standards are connected by the straight vessel ledger.

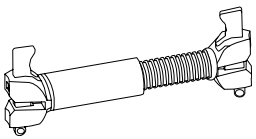
The scaffold is then decked as normal, with the triangular infill bay being covered with either of the two tank decks, steel or conventional scaffold boards.

PLETTAC METRIX circular scaffolds must have diagonal vertical brace fixed every second bay, for the full height of the scaffold.

1 Adjustable Ledger

Adjustable ledger for tank, replaces tube and coupler links. The adjustable ledger has an length range of 280mm to 380mm centre to centre on the connected standards.

Code	Weight (kg)
285199	2.46



2 Straight Vessel Ledger

Straight ledger for the inside face, exists in 1.6m, 2.1m, 2.6m and 3.1m.

Code	Length (m)	Weight (kg)
285178	3.10	10.50
285181	2.60	9.02
285184	2.10	7.30
285187	1.60	5.69

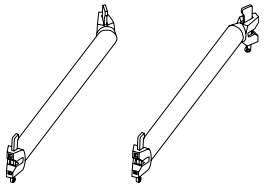


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3 Left & Right Hand Vessel Transom

Right or left angled ledger, exists in 0.7m and 1m.

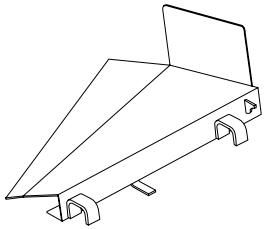
Code	Hand	Length (m)	Weight (kg)
285190	Right	1.00	4.60
285193	Left	1.00	4.60
285196	Right	0.70	3.30
285198	Left	0.70	3.30



4 Tank Deck with Integrated Toe Board

Used to complete the platform, covers the triangular infill bay. Comes complete with integrated toe board.

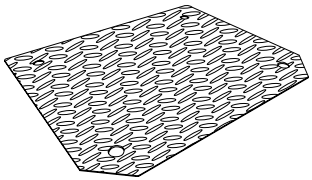
Code	Length (m)	Weight (kg)
285384	1.00	12.00
285386	0.70	7.00



5 Tank Deck

Used to complete the platform, covers the triangular infill bay. Must be fixed to the deck below to prevent movement.

Code	Length (m)	Weight (kg)
285388	0.70	10.50





CANTILEVERS USING VERTICAL DIAGONAL BRACE

It is possible to use PLETTAC METRIX vertical diagonal brace, in compression and tension, to support cantilevered platforms.

Note: Current SG4 guidance **must** be followed during the following procedures, and operatives are required to connect their personnel fall protection equipment to appropriate points on the main scaffold structure (which are detailed on page 8 of this guide), where there is a risk of fall from height.

Compression Step 1

Pre-assemble two identical units consisting of a 0.5m standard, base collar or 0.16m starting standard; a vertical diagonal brace and a reinforced double transom.



Fig. 61

Compression Step 2

Fix the first pre-assembled unit to the scaffold by connecting the first diagonal brace to the correct lower rosette position, then repeat with the second unit.

Fix a ledger between the pre-assembled units, then push the whole assembly out, securing into place by connecting the ledgers / reinforced double to the rosettes of the main scaffold at the correct lift level.

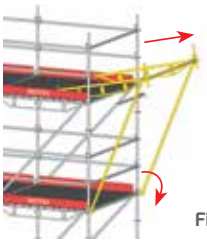


Fig. 62

Compression Step 3

Place the decks onto the supporting ledger / reinforced double ledger and slide into position by using each subsequent deck to push the one in front, until the area is complete.



Fig. 63

Compression Step 4

Complete the guardrails and toe-boards using standards, ledgers and toe-boards of the appropriate size.



Fig. 64

Tension Step 1

Pre-assemble two identical units consisting of a 0.5m standard, base collar or 0.16m starting standard; a vertical diagonal brace and a reinforced double transom.

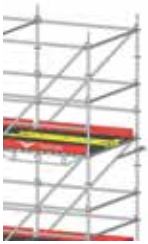


Fig. 65

Tension Step 2

Fix the first pre-assembled unit to the scaffold by connecting the first diagonal brace to the correct upper rosette position, then repeat with the second unit.

Fix a ledger between the pre-assembled units, then push the whole assembly out, securing into place by connecting the ledgers / reinforced double to the rosettes of the main scaffold at the correct lift level.

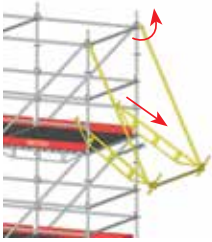


Fig. 66

Tension Step 3

Place the decks onto the supporting ledger / reinforced double ledger and slide into position by using each subsequent deck to push the one in front, until the area is complete.

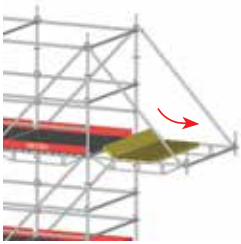


Fig. 67

Tension Step 4

Complete the guardrails and toe-boards using standards, ledgers and toe-boards of the appropriate size.



Fig. 68

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The following is the result of calculation, however it is only an indication of the capacity of the cantilever itself, on one level only. It is important that the supporting PLETTAC METRIX scaffold and any structure to which the scaffold is tied are taken into consideration, with a global calculation and design being carried out by a competent temporary works / scaffold design engineer.

1 Loading of Single Cantilever Bays

Compression

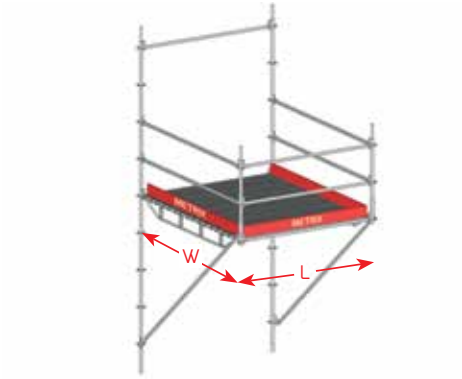


Fig. 69

BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²)					
	BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
0.7	6.0	6.0	6.0	6.0	6.0	6.0
1.0	6.0	6.0	6.0	6.0	6.0	6.0
1.5	6.0	6.0	6.0	6.0	6.0	6.0
2.0	6.0	6.0	6.0	4.5	3.0	3.0
2.5	6.0	4.5	3.0	2.0	2.0	1.5
3.0	4.5	3.0	1.5	0.75	-	-

Tension

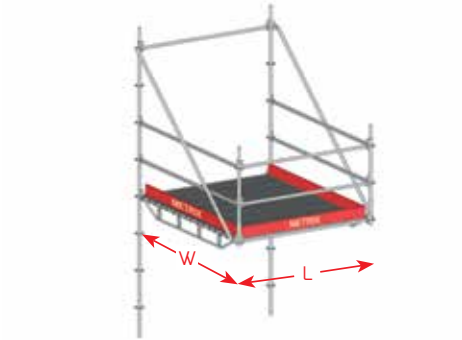


Fig. 70

BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²)					
	BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
0.7	6.0	6.0	6.0	6.0	6.0	6.0
1.0	6.0	6.0	6.0	6.0	5.0	6.0
1.5	6.0	6.0	6.0	6.0	6.0	6.0
2.0	6.0	6.0	6.0	6.0	6.0	6.0
2.5	6.0	6.0	6.0	6.0	6.0	4.5
3.0	6.0	6.0	6.0	4.5	3.0	3.0

2 Loading of Multiple Cantilever Bays

Compression

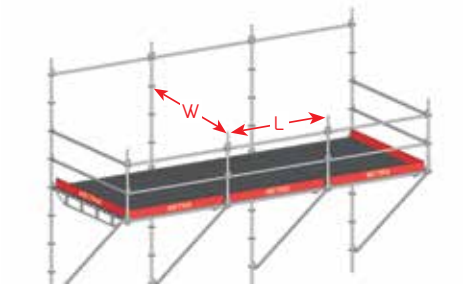


Fig. 71

BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²) BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
0.7	6.0	6.0	6.0	6.0	6.0	6.0
1.0	6.0	6.0	6.0	6.0	4.5	4.5
1.5	6.0	6.0	6.0	4.5	3.0	3.0
2.0	6.0	4.5	3.0	2.0	1.5	1.5
2.5	3.0	2.0	1.5	0.75	0.75	-
3.0	2.0	0.75	0.75	-	-	-

Tension

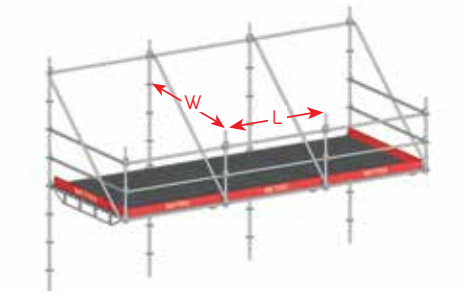


Fig. 72

BAY WIDTH (m)	UNIFORMLY DISTRIBUTED LOAD (kN/m²) BAY LENGTH (m)					
	0.7	1.0	1.5	2.0	2.5	3.0
0.7	6.0	6.0	6.0	6.0	6.0	6.0
1.0	6.0	6.0	6.0	6.0	4.5	4.5
1.5	6.0	6.0	6.0	6.0	6.0	4.5
2.0	6.0	6.0	6.0	4.5	4.5	3.0
2.5	6.0	6.0	4.5	3.0	3.0	2.0
3.0	6.0	4.5	3.0	2.0	1.5	1.5

Note: The preceding tables, for both single and multiple cantilevers in compression and tension, are based on single tubular ledgers supporting steel PLETTAC METRIX DECKS for both the 0.7m and 1.0m bay widths, all other bay widths utilise reinforced double ledgers. In all cases, one verticle diagional brace is used per pair of standards.

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OTHER PRODUCTS

1 ALTRIX Temporary Roof System

ALTRIX is an all aluminium modular temporary roofing and weather protection system, which utilises the slide sheet keder model.

ALTRIX is more than just a roof. The chords and vertical posts of the beams are manufactured from 48.3mm diameter alloy tube making them suitable for use in many normal scaffold applications.

With 3.0m, 2.5m, 2.0m and 1.5m bay sizes ALTRIX is designed to work particularly efficiently with PLETTAC METRIX, although it is not limited to this application. ALTRIX can be used with almost any scaffold type.

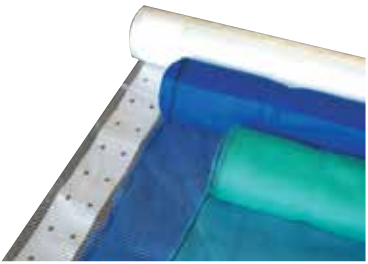


2 Scaffold Sheeting and Netting

TRAD Sheeting and Debris Netting is a cost effective and versatile temporary containment and weather protection solution.

TRAD Sheeting is manufactured from clear low-density polythene, reinforced with high-density polythene yarn.

TRAD Debris Netting is manufactured from high-density polythene monofilaments that have been UV stabilised.



3 Tools & Tool Holders



4 Harnesses & Lanyards



5 Scaffold Tube



6 Fitting Bins



7 Scaffold Fittings



8 Post Pallets



9 Alloy Beams



10 Tags & Signs



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CONTACT US:

Glasgow Depot
TRAD UK
TRAD Wharf
244 Bernard Street
Glasgow
G40 3NX

Tel: 0141 550 3666

London Depot
TRAD UK
Renwick Road
Barking
Essex
IG11 0SB

Tel: 020 8517 1212

Manchester Depot
TRAD UK
TRAD House
Cromwell Road
Bredbury
Stockport
SK6 2RF

Tel: 0161 430 4666

Leeds Depot
TRAD UK
TRAD House, Unit 1b
16 Cross Green Way
Cross Green
Industrial Estate, Leeds
LS9 0SE

Tel: 0113 249 9555

Birmingham Depot
TRAD UK
TRAD House
Brickhouse Lane
West Bromwich
West Midlands
B70 0DY

Tel: 0121 522 2333

Andover Depot
TRAD UK
58 Whittle Road
West Portway
Industrial Estate
Andover, Hampshire
SP10 3FB

Tel: 01264 350 505

www.traduk.co.uk

0845 899 0845 / traduk@trad.co.uk

Edition 5, February 2021

User guide created by Alan Slater

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