

802/02

Operating & Safety Guide 802

BOSS GRP
(Fibreglass)
Access Tower

Designed to the European Standard EN1004, the BOSS Alloy Tower provides the ideal platform for light work.
Two versions are available: 1450 mm & 850 mm wide, each with either 1.8 m or 2.5 m deck lengths.

SAFETY CHECKLIST

ENSURE ALL BRACE CLAWS OPERATE CORRECTLY

INSPECT COMPONENTS PRIOR TO ERECTION

INSPECT TOWER PRIOR TO USE AND AFTER MOVEMENT

TOWER UPRIGHT AND LEVEL

CASTORS LOCKED AND LEGS CORRECTLY ADJUSTED

DIAGONAL BRACES FITTED

STABILISERS FITTED AS SPECIFIED

PLATFORMS LOCATED CORRECTLY

TOEBOARDS LOCATED

CHECK GUARDRAIL BRACES ARE FITTED CORRECTLY (SEE ILLUSTRATION BELOW)

CHECK FRAME INTERLOCK CLIPS ARE LOCKED (SEE ILLUSTRATION BELOW)

ENSURE HORIZONTAL BRACES AND GUARDRAILS ARE FITTED CORRECTLY

REFER TO THIS CHECKLIST BEFORE USING EACH TIME

EQUIPMENT CARE

Keep the equipment clean, you will find this less of a chore if you clean it regularly, rather than wait until the end of the hire period.

Components should be stored with due care to prevent damage. Frames and decks should be stored in the vertical position.

When not in use, store the equipment somewhere clean, dry and safe from thieves and unauthorised users.

... have you been trained

The law requires that personnel using this type of equipment must be competent and qualified to do so. Training is available at HSS Training Solutions 0845 766 7799

...any comments?

If you have any suggestions to enable us to improve the information within this guide please e-mail your comments or write to the Safety Guide Manager at the address below e-mail: safety@hss.com

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INTRODUCTION

This BOSS User Guide is designed to provide you with step by step instructions to ensure your system is erected easily and safely using the **3T (Through the Trapdoor)** method. Before assembly, please read the this guide carefully.

The law requires that operatives must be competent and qualified to erect the tower. If another person is involved, please pass on these instructions.

For further information on the safe use of Mobile Access Towers consult the PASMA Guide or EN 1298.

If you need further information, design advice, additional guides or any other help with this product, please contact your local HSS Hire.

GENERAL SAFETY

For advice on the safety and suitability of this equipment contact your local HSS Hire.

There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.

The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.

This equipment should only be used by an operator who has been deemed competent to do so by his/her employer.

This equipment is designed to be used by an able bodied, competent adult who has read and understood these instructions. Anyone with either a temporary or permanent disability should seek expert advice before using it.

Keep children, animals and bystanders away from the work area. Cordon off a NO GO area using cones and either barriers or tape, available for hire from your local HSS Hire.

Never use this equipment if you are ill, feeling tired, or under the influence of alcohol or drugs.

Wear practical, protective clothing, gloves, footwear and a protective hard hat.

Avoid loose garments and jewellery that could catch in moving parts, tie back long hair.

Make sure that anyone in the immediate work area is warned of what you are doing.

Check the condition of the equipment before use. If it shows signs of damage or excessive wear, return it to your local HSS Hire.

Check that all components are on site, undamaged and are functioning correctly – (refer to Checklist and Quantity Schedules). **Damaged or incorrect components shall not be used.**

Check the ground on which the mobile access tower is to be erected and moved is **capable of supporting the tower**. The safe working load is 225 kgs (500lbs) per platform level, uniformly distributed up to a maximum of 720kgs (1580lbs) per tower (including self weight).

Towers must always be **climbed from the inside** using the built in ladder during assembly and use.

IDENTIFIER

4 RUNG LADDER FRAME

END TOEBOARDS

HORIZONTAL BRACE

4 RUNG SPAN FRAME

SIDE TOEBOARDS

PLATFORM (FIXED AND TRAP DOOR DECKS)

DIAGONAL BRACE

STABILISER

2 RUNG FRAME

CASTOR

ADJUSTABLE LEG

2 RUNG LADDER FRAME

It is recommended that towers should be tied to a solid structure when left unattended.

Adjustable legs should only be used for levelling and not for gaining extra height.

Safety Warning

Do not use boxes or stepladders or other objects on the platform to gain extra height.

The assembled tower is a working platform and should not be used as a means of access or egress to other structures.

Tower components should be lifted using a reliable lifting material (e.g. strong rope), employing a reliable knot (e.g. clove hitch), to ensure safe fastening and always lift within the footprint of the tower.

Assembled mobile towers should not be lifted with a crane or other lifting device.

The tower should only be moved by manual effort, and only from the base.

When moving the tower, beware of live electrical apparatus, particularly overhead, plus wires or moving parts of machinery.

No person or materials should be on the tower during movement.

Caution should be exercised when wheeling a tower over rough, uneven or sloping ground, taking care to unlock and lock castors. If stabilisers are fitted, they should only be lifted a maximum of 25mm above the ground to clear ground obstructions.

The overall height of the tower when being moved, should not exceed 2.5 times the minimum base dimensions, or 4 metres overall height.

After every movement of the tower use a spirit level to check that it is vertical and level and set the adjustable legs as required.

Beware of high winds in exposed, gusty or medium breeze conditions. If the wind is likely to reach gale force the tower should be dismantled.

Wind Description	Beaufort Scale	Beaufort No.	Speed in m.p.h	Speed in m/sec
Medium Breeze	Raises dust and loose paper, twigs snap off	4	8-12	4-6
Strong Breeze	Large branches in motion, telegraph wires whistle	6	25-31	11-14
Gale Force	Walking is difficult	8	39-46	17-21

Mobile towers are not designed to be suspended. For more information contact your local HSS Hire.

Stabilisers and ballast weights shall always be fitted when specified.

Assemble only as instructed.

Safety Warning

Beware of horizontal forces (e.g. power tools) which could generate instability. Maximum horizontal force 20kg.

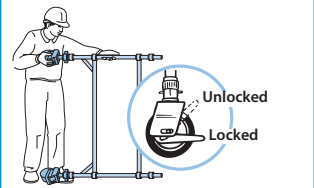
1450 TOWERS ASSEMBLY

We recommend a minimum of two people to build Boss Towers. Always start building with the smallest height frames at the base of the tower:

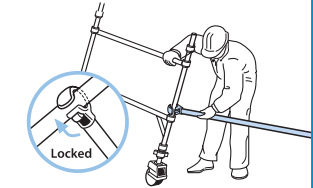
Platform Heights (meters)	Frame at base
1.7, 2.2, 3.7, 4.2, 5.7, 6.2, 7.7, 8.2, 9.7, 10.2, 11.7, 12.2	2 rung
2.7, 4.7, 6.7, 8.7, 10.7	3 rung
1.2, 3.2, 5.2, 7.2, 9.2, 11.2	4 rung

Where all 3 frame heights are used in a tower, start with 2 rung frames at the base, with the 3 rung frames next and the 4 rung frames on the top (see Quantity Schedules).

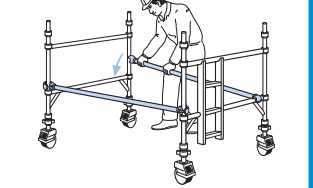
1 Push castor onto adjustable leg to secure. Insert 2 adjustable leg / castor assemblies into span frame. Base plates can be fitted to adjustable legs if it is not necessary to move the tower.



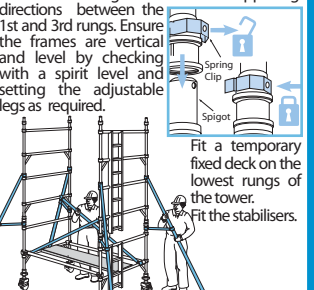
2 Fit one horizontal brace (red) onto the vertical of the span frame, just above the bottom rung, with the claw facing outwards. The frame will now be self supporting.



3 Position the ladder frame as shown and fit the other end of the horizontal brace onto the vertical, just above the bottom rung. Fit a second horizontal brace between the bottom rungs on the other side of the frames to square the tower.

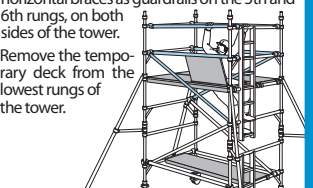


4 Fit 2 additional end frames and check the frame interlock clips are engaged. Fit 2 diagonal braces in opposing directions between the 1st and 3rd rungs. Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as required.



5 Fit 2 more diagonals in opposite directions between the 3 and 5th rungs of the tower.

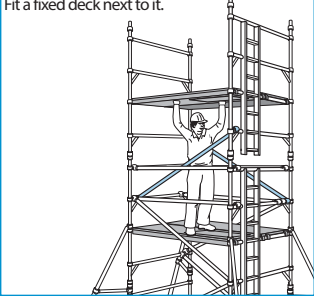
Fit a trapdoor deck on the 4th rungs with the trapdoor next to the ladder and opening towards the outside of the tower. Fit a fixed deck alongside it. Climb the ladder and, from the protected trapdoor position, fit horizontal braces as guardrails on the 5th and 6th rungs, on both sides of the tower. Remove the temporary deck from the lowest rungs of the tower.



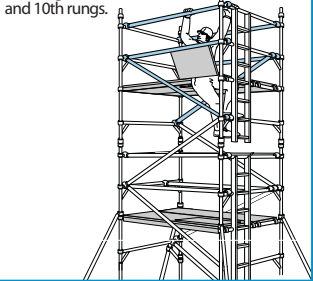
6 Add 2 more frames. Ensure ladders are always positioned one above the other.



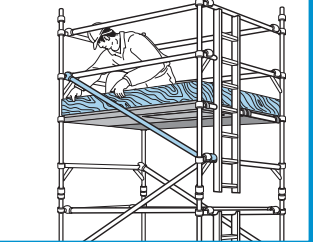
7 Fit 2 more diagonals between the 5 and 7 rungs. Fit a trapdoor deck on the 8th rungs of the tower. Fit a fixed deck next to it.



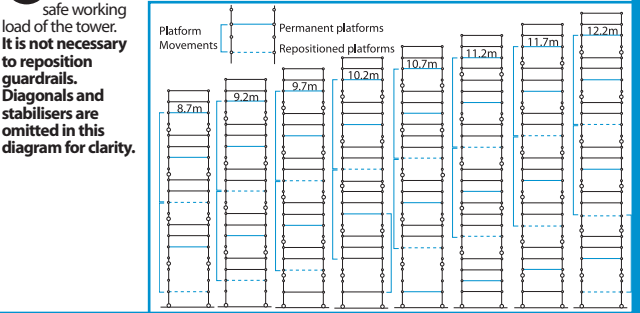
8 Fit 2 more diagonals between the 7th and 9th rungs. Climb the ladder and from the protected trapdoor position, fit 4 more guardrails on the 9th and 10th rungs.



9 Repeat the previous steps until the required height of tower is reached. Fit a single diagonal at the top of the tower as shown. Fit the toeboards. The tower is now complete.



10 For 1450 width towers over 8.2m it is necessary to reposition platforms during the assembly and dismantling process to reduce the number of components and optimise the safe working load of the tower. It is not necessary to reposition guardrails. Diagonals and stabilisers are omitted in this diagram for clarity.



850 TOWERS ASSEMBLY

Always start building with the smallest height frames at the base of the tower:

Platform Heights (meters)	Frame at base
1.7, 2.2, 3.7, 4.2, 5.7, 6.2, 7.7, 8.2, 9.7, 10.2, 11.7, 12.2	2 rung
2.7, 4.7, 6.7, 8.7, 10.7	3 rung
1.2, 3.2, 5.2, 7.2, 9.2, 11.2	4 rung

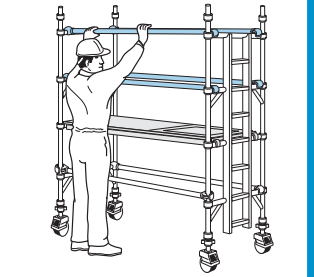
Where all 3 frame heights are used in a tower, start with 2 rung frames at the base, with the 3 rung frames next and the 4 rung frames on the top.(see Quantity Schedules).

1 The procedure illustrated shows a 3.2m platform height tower starting with a 4 rung frame.

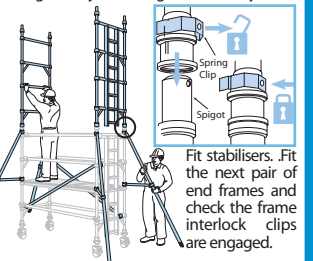
2 Insert adjustable leg/castor assemblies into end frames and lock the castors, see 1450 assembly diagram step 1

3 Base plates can be fitted to the adjustable legs if it is not necessary to move the tower. Fit 2 horizontal braces to the 850 end frames as shown in steps 2 and 3 for the 1450 tower procedure

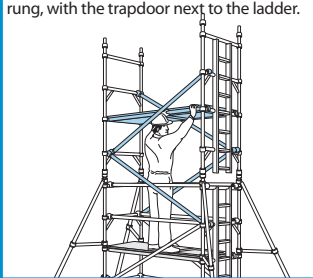
4 Fit a trap door deck on the 2nd rung with the trapdoor next to the ladder. Fix guardrails on the 3rd and 4th rungs on both sides of the tower.



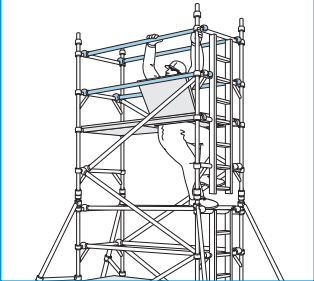
5 Fit 2 diagonal braces in opposing directions between the 1st and 3rd rungs. Ensure the frames are vertical and level by checking with a spirit level and setting the adjustable legs as necessary.



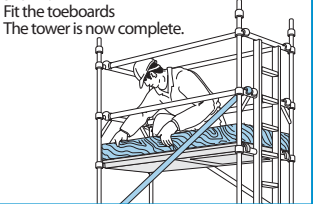
6 Fit 2 pairs of diagonal braces in opposing directions between the 3rd and 5th rungs and the 5th and 7th rungs. Locate a trapdoor deck on the 6th rung, with the trapdoor next to the ladder.



7 Climb up the inside of the tower and from the protected position of the trapdoor, fit guardrails to the 7th and 8th rungs (in that order) on both sides of the tower.



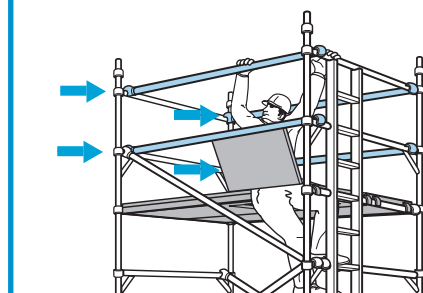
8 Continue the procedure until the required working height is reached, adding additional pairs of end frames, diagonal braces and fitting trapdoor platforms, as shown on previous steps. At every platform level, add horizontal braces as guardrails from the protected position within the trapdoor. Fit a single diagonal at the top of the tower as shown. Fit the toeboards. The tower is now complete.



DISMANTLING

To take down the tower reverse the building sequence.

- Remove toeboards and pass down the tower.
- When removing guardrail braces, unlock the 4 claws furthest from the trapdoor and then return immediately to the protected position within the trapdoor.
- Remove upper platforms from protected platform levels below.
- Pass removed components to a colleague.



Safety Warning

ONLY USE ADJUSTABLE LEGS TO LEVEL THE TOWER AND NOT GAIN EXTRA HEIGHT.

NEVER climb or stand on to the platform until it is fully guard railed. Guardrails should be 0.5m and 1.0m (1 and 2 rungs) above the platform in all cases.

Above 4m height, it is essential that at least two persons are used to build BoSS Towers.

GENERAL NOTES--

- Ties should be used when the tower goes beyond its safe height, beyond the limits of the stabilisers, or if there is a danger of instability. They should be rigid, two wayties fastened to both uprights of the frame with load-bearing right angled or swivel couplers. Only couplers suitable for the 50.8mm diameter tube of the tower should be used. Ideally, ties should be secured to both faces of a solid structure by means of anchorages.
- The tie frequency may vary depending on the application, but they should, at a minimum, be every 4 metres height.
- Brace claws, frame interlock clips, trapdoor catches and platform windlocks should be regularly checked to ensure they lock correctly.
- Check the condition of the components before erecting tower. Damged or incorrect components should not be used

STABILISERS

Attach one stabiliser to each corner of the tower and fully extend telescopic sections. Secure top and bottom clamps. Ensure clamps are rigidly fixed to prevent movement. When moving tower, check for obstructions and lock feet a maximum of 25mm off the ground. Unlock the castors, and move tower. After moving check all castors are locked and stabilisers are repositioned and in good contact with the ground.

NOTE:

- Stabilisers and ballast weights shall always be fitted when specified.
- The Quantity Schedules shows the recommended stabilisation. In circumstances where there is restricted ground clearance for stabilisers contact your local HSS Hire for advice. Ballast must be of solid materials (i.e. not water or loose sand) and should not be positioned to overload individual legs. Ballast should be secured against accidental removal where practicable, and be supported on the lowest rungs of the bottom frames.

QUANTITY SCHEDULE 1450 WIDTH TOWERS

	WEIGHT (kg)						INTERNAL/EXTERNAL USE										HEIGHT (meters)												INTERNAL USE HEIGHT (meters)											
COMPONENT	1.8	2.5	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2															
125/150/200mm Castor	3.2	3.2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4															
Adjustable leg assembly	1.1	1.1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4															
1450 2 Rung Ladder Frame	12.6	12.6		1	1			1	1				1	1			1	1			1	1		1	1															
1450 2 Rung Span Frame	6.7	6.7		1	1			1	1			1	1			1	1			1	1		1	1																
1450 3 Rung Ladder Frame	15.1	15.1		1	1		1	1		1		1		1		1	1		1	1		1	1																	
1450 3 Rung Span Frame	9.5	9.5		1	1		1	1		1		1		1		1	1		1	1		1	1																	
1450 4 Rung Ladder Frame	17.5	17.5	1		1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6															
1450 4 Rung Span Frame	12.2	12.2	1		1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6															
1.8m, 2.5m Fixed Deck	17	23	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	3	3	3	3	4	4	4	4															
1.8m, 2.5m Trap Deck	19	25	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	3	3	3	3	4	4	4	4															
1.8m, 2.5m Horizontal Brace	2	2.5	6	6	6	6	10	10	10	10	14	14	14	14	18	18	18	18	22	22	22	22	26	26	26															
2.1m, 2.7m Diagonal Brace	2.3	2.6	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23															

NUMBER OF WORKING PLATFORMS ALLOWED

The MAXIMUM SAFE WORKING LOAD (the combined weight of the users, tools and materials) that may be placed on the tower is the total weight less the self weight of the tower. The total weight for the towers shown in the schedule is 720kg.

PLATFORM LOADING

On a 1450 tower a platform comprises of two decks placed side by side. The maximum safe working load (the combined weight of the users, tools and materials) that may be placed on a platform is 225kg. This must be evenly distributed over both. The quantities will enable BOSS Towers to be built safely and therefore comply with the requirements of the Work at Height Regulations. They include double guardrails to all platforms, and toeboards will need to be added if any levels are used as working platforms and for storage of materials. EN 1004 requires platforms at least every 4m, and these measures will exceed that requirement.

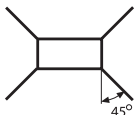
BALLAST: Internal/External Use

There is no requirement for ballast on 1450 towers if using stabilisers as detailed in the table.

STABILISERS

To improve rigidity, larger stabilisers can be used at a lower level than shown in the table.

Angle of Stabiliser



QUANTITY SCHEDULE 850 WIDTH TOWERS

	WEIGHT (kg)				INTERNAL/EXTERNAL USE								HEIGHT (meters)												INTERNAL USE HEIGHT (meters)							
COMPONENT	1.8	2.5	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2							
125/150/200mm Castor	3.2	3.2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
Adjustable leg assembly	1.1	1.1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4							
850 2 Rung Ladder Frame	9.1	9.1		1	1			1	1				1	1			1	1			1	1		1	1							
850 2 Rung Span Frame	3.5	3.5		1	1			1	1				1	1			1	1			1	1		1	1							
850 3 Rung Ladder Frame	10.4	10.4		1		1		1		1		1		1		1		1		1		1		1								
850 3 Rung Span Frame	5	5		1		1		1		1		1		1		1		1		1		1		1								
850 4 Rung Ladder Frame	11.7	11.7	1		1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6							
850 4 Rung Span Frame	6.6	6.6	1		1	1	2	1	2	2	3	2	3	3	4	3	4	4	5	4	5	5	6	5	6							
1.8m, 2.5m Fixed Deck	17	23																														
1.8m, 2.5m Trap Deck	19	25	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6							
1.8m, 2.5m Horizontal Brace	2	2.5	6	6	6	6	10	10	10	10	14	14	14	14	18	18	18	18	22	22	22	22	26	26	26							
2.1m, 2.7m Diagonal Brace	2.3	2.6	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23							

COMPONENT	1.8	2.5	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2	9.7	10.2	10.7	11.2	11.7	12.2
1.8m/2.5m Site Toeboard	3.2	4.4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.6m End Toeboard	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Small Stabiliser	4.7	4.7			4	4	4	4	4																
Large Stabiliser	5.5	5.5								4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Ballast Required (Ext) 1.8m	1																								
Ballast Required (Ext) 2.5m	1														25	50	75								
Total self weight (kgs) 1.8m	1.8		80	92	113	138	151	163	168	195	208	220	226	250	263	275	280	304	317	329	335	359	372	384	389
Total self weight (kgs) 2.5m	2.5		92	104	126	156	172	184	189	223	239	251	256	287	327	365	395	350	366	378	384	414	430	442	447
Max Tower Load			720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
Max Safe Load	1.8		640	628	607	582	569	557	552	525	512	500	594	470	457	445	440	416	403	391	385	361	348	336	331
Max Safe Load	2.5		628	616	594	564	548	536	531	497	481	469	464	433	393	355	325	370	354	342	336	306	290	278	273

NUMBER OF WORKING PLATFORMS ALLOWED

The MAXIMUM SAFE WORKING LOAD (the combined weight of the users, tools and materials) that may be placed on the tower is the total weight less the self weight of the tower. The total weight for the towers shown in the schedule is 720kg.

PLATFORM LOADING

On an 850 tower a platform comprises of a single deck only. The maximum safe working load (the combined weight of the users, tools and materials) that may be placed on a platform is 225kg, evenly distributed over the deck. The quantities on the table, will enable BOSS Towers to be built safely and therefore comply with the requirements of the Work at Height Regulations 2005. They include double guardrails to all platforms, and toeboards will need to be added if any levels are used as working platforms and for storage of materials. EN 1004 requires platforms at least every 4m, and these measures will exceed that requirement.

BALLAST: Internal/External Use

Stabiliser requirements are based on calculations