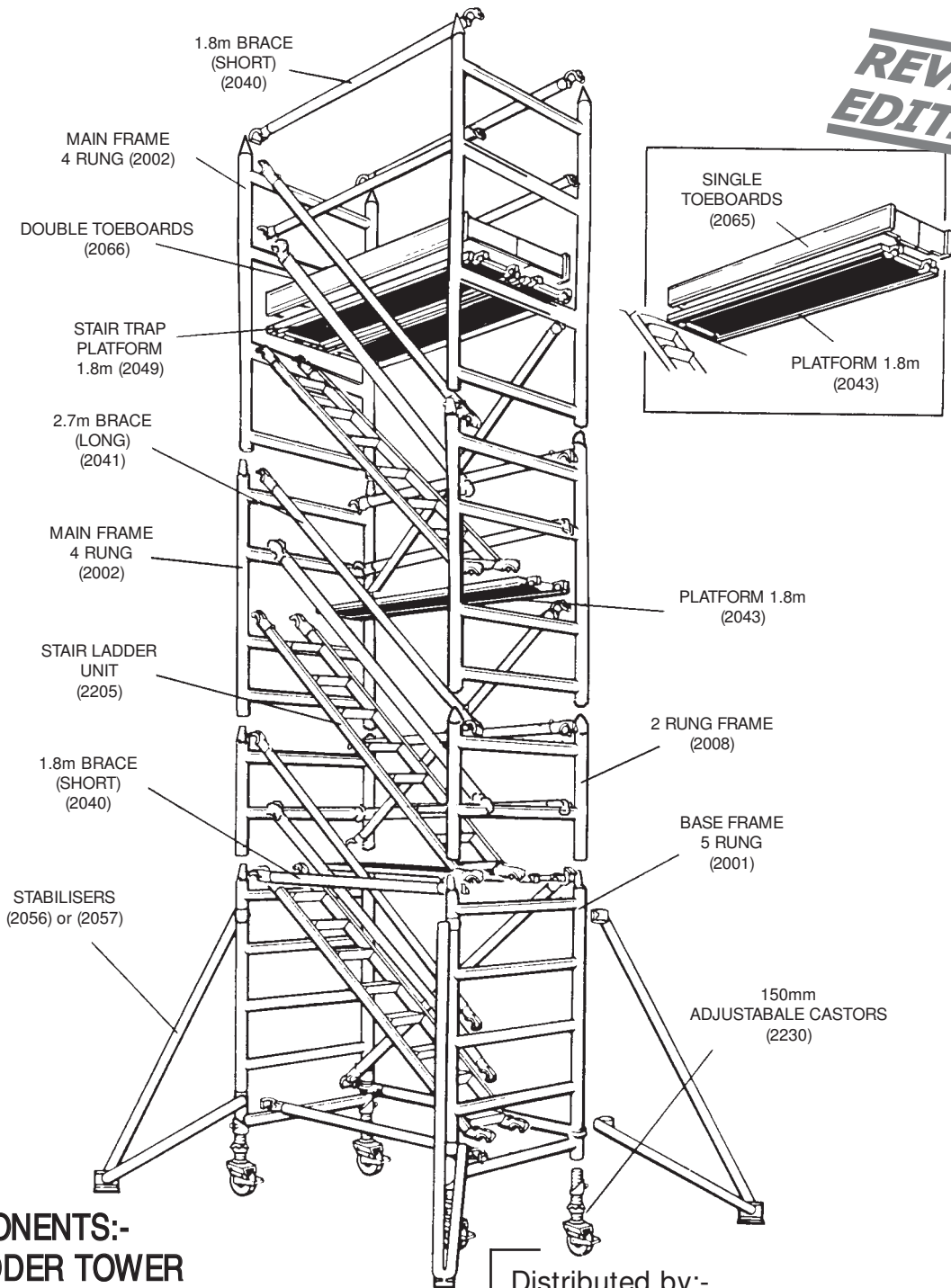


Industrial ALUMINIUM TOWERS STAIR LADDER ERECTION MANUAL

TO BS-EN 1004-2004

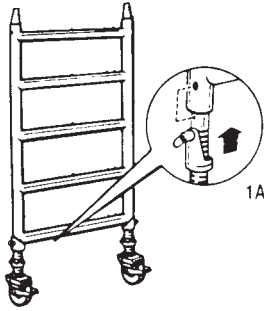
**REVISED
EDITION 3**



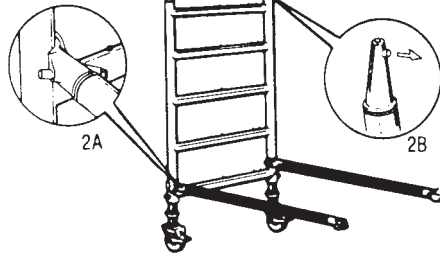
**COMPONENTS:-
STAIR LADDER TOWER**

Distributed by:-

STAIR LADDER ERECTION MANUAL EVEN HEIGHT TOWERS. (2.4m, 4.4m, 6.4m, etc)



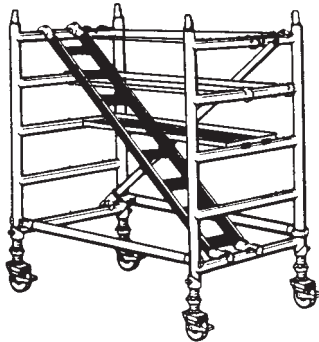
1. These towers should be erected by at least 2 competent persons. Contact your supplier for details of appropriate training. Check you have the correct equipment and it is in working order. Apply brakes and fit adjustable castors into both 5 rung frames ensuring that spring loaded pin is engaged in hole provided (see detail 1A).



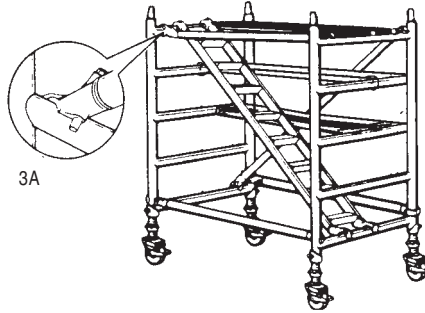
2. Make sure pegs on frame head fittings always point towards middle of tower (see detail 2B). Fit two short horizontal braces to vertical tubes of one of the frames ensuring spring loaded pin faces outwards (see detail 2A).



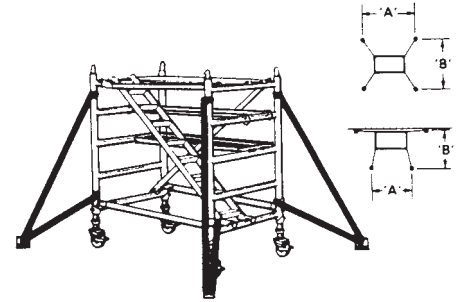
3. Fit opposite ends of short braces to other 5 rung base frame ensuring pegs on frame head fittings point towards middle of tower.



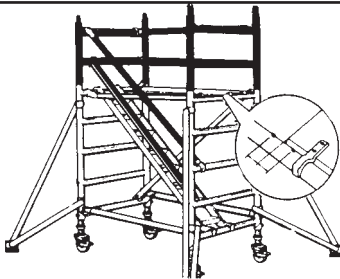
4. Fit long diagonally brace and stair unit so they face opposite directions and the long brace is as close to the frame vertical tubes as possible. Fit a temporary platform on 3rd or 4th rung down from top of frame and fit 4 short braces as temporary guardrails.



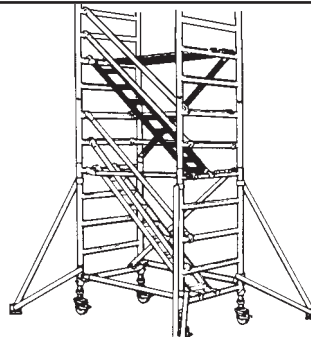
5. Working from the temporary platform, place short brace onto horizontal frame rung next to stair unit (see detail 3A). At this stage level tower by adjusting collar on castor wheel (see construction notes).



6. Fit appropriate stabilisers (see schedule on back page) to each corner of the tower to increase the effective base dimensions A & B. They must be fitted so that when viewed from above the largest square is formed. Ensure the wing nuts are tight to that it is not possible to move stabilisers without slackening off the wing nuts.



7. Add two 2 rung main frames by locating onto head fitting with pegs engaging into holes provided. Position short horizontal brace onto the top rung of upper frame to provide a safety guardrail 1m above platform and temporary guardrail 1 rung below during assembly. Add stair unit handrails as close to vertical frame tubes as possible. Remove both short guardrail braces from top of 5 rung frame, then relocate platform adjacent to top of stair unit ensuring the inside edge is midway between the central location pegs on the frame rung (see detail) ensure gravity latches are located. Then remove remaining 2 temporary braces.

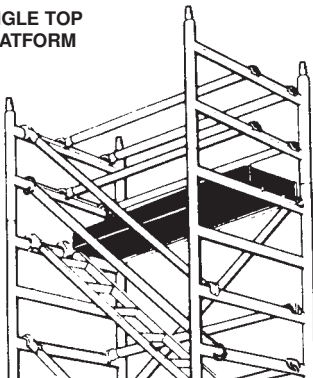


8. Working from first platform with temporary guardrails add 2, 4 rung frames and rear diagonal brace, add further platform, stair unit and stair handrails as before. Working from halfway up stairs so that the operative is in a position protected by the edge of the platform and the bannister braces, position further guardrails and continue building tower repeating this pattern until required platform height is reached.



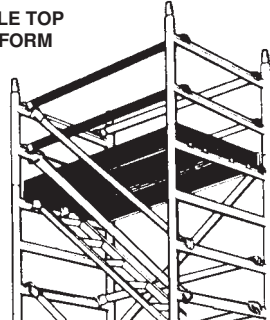
9. When required height is reached add stair unit handrails as before and working from half way up the stairs fit two short braces as guardrails in outside pockets on top rung and second rung down and two short braces on top and second rung down in centre pockets. Then proceed to 10 or 11 as applicable.

SINGLE TOP PLATFORM



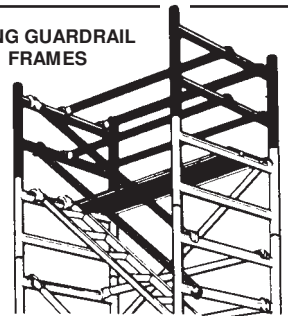
10. Fit single width toeboard.

DOUBLE TOP PLATFORM



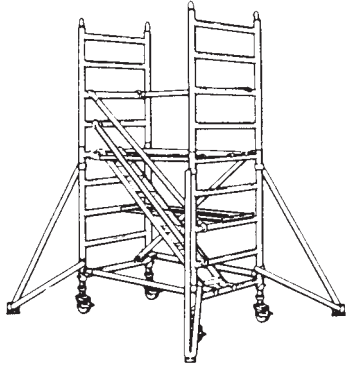
11. Build up to (10) then add fully opening trapdoor so that it hinges towards outside of tower and ensure gravity latches are located. Position short horizontal braces to outside pockets nearest stair and fit double toeboard.

USING GUARDRAIL FRAMES

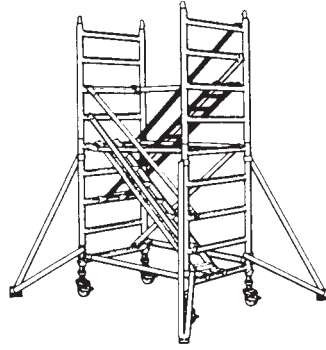


12. If guardrail frames (2 rung frames with no spigots) are used then they should be located at the top of the tower as shown; taking care not to work from an unguarded platform while locating them.

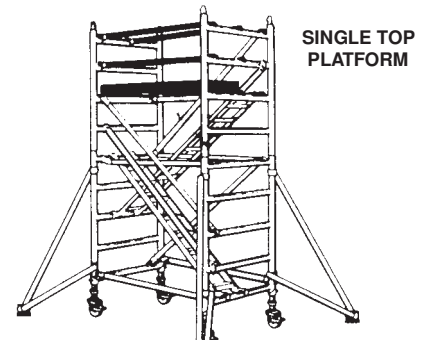
STAIR LADDER ERECTION MANUAL ODD HEIGHT TOWERS. (3.4m, 5.4m, 7.4m, etc



1. Follow instructions 1-6 but do not fit platform other than as an aid to build. Add two 4 rung frames

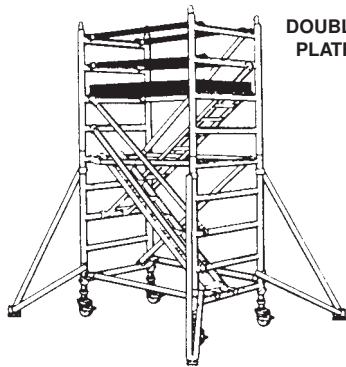


2. Fit second stair unit in opposite direction to first from third rung of base frame. Add stair unit handrails (long brace) as close to vertical frame tubes as possible parallel to second stair but 2 rungs higher. Continue building as shown in box 8 to height required.



SINGLE TOP PLATFORM

3. Working from half way up the stairs, fit platform adjacent to top of stair unit on the third rung down ensuring the inside edge is midway between the central location pegs on the frame rung and gravity latches are located. Fit four short braces as guardrails and a single toeboard.



DOUBLE TOP PLATFORM

4. Add fully opening trapdoor above stair unit so that it hinges towards outside of tower and ensure gravity latches are located. Position short horizontal braces to outside pockets nearest stair and fit double toeboard.

WARNING ALL TOWERS



WARNING: never work from or build, or dismantle the tower from an unguarded platform.

SAFETY NOTES

- Before erecting check ground is level unobstructed and is suitable for the purpose. Also ensure area is clear of overhead obstructions, particularly power cables.
- Check that brakes are applied and the tower is stable before use.
- Do not ride on the tower or attempt to move a loaded tower.
- Always climb the tower from the inside.
- Do not overload the tower. Maximum platformloads 200 kg/m² (2kN/m²). Maximum tower load 2500kg mobile. Maximum horizontal force at platform 30kg.
- When moving a tower, reduce the height to a maximum of 4m. Check that there are no power lines or other obstructions overhead.
- Mobile towers must be moved by pushing at the base only. Beware of soft or uneven ground, drains or potholes and overhead obstructions, especially power cables. Stabilisers may be raised to a maximum of 25mm above the ground. Immediately after moving, apply the brakes and check that the tower is upright and stable and stabilisers returned to ground level.
- Never remove components from a tower whilst it is erected. Dismantling must always be performed from the top. Failure to observe this rule will seriously reduce the strength and safety of the tower.
- Do not use damaged components. Check all components before use and periodically lubricate all moving parts and wipe off surplus oil.
- Beware of high winds. Secure the tower when in exposed positions and when left unattended.
- Do not lean ladders against towers or use ladders on top of platforms.
- At heights where components cannot be passed up or down by hand, a rope should be used for securing to components to aid safe raising and lowering.
- Legislation now calls for inspection and recording of assembled towers. See HSE guidance note 10 (revision 4) for further details.

TYING IN

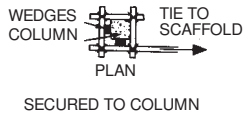
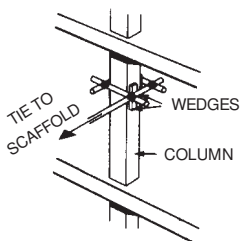
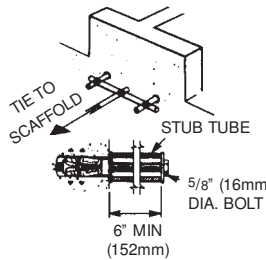


fig. A



SECURE TO EMBEDDED TIES IN CONCRETE

fig. B

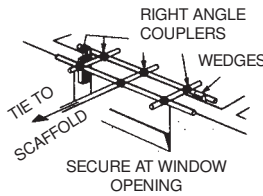


fig. C

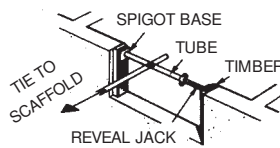


fig. D

NOTE: Arrangement shown in fig. D is considered to be a friction device and should not exceed 1/2 the total number of scaffold ties in any area.

When friction devices are used the connection to the scaffold must be made onto both vertical uprights. Ties should be at no more than 4m intervals.

Beware of high winds: If high winds are forecast do not erect the tower or leave up overnight. When working on towers outdoors for long periods always listen to weather forecasts at night.

Wind-Description	Beaufort-Scale	Beaufort No.	Speed in mph	Speed in m/sec	
Medium Breeze	Raises dust and loose paper small branches sway	4	13 - 18	5.5 - 8	Safe to work on the tower.
Strong Breeze	Large branches in motion, telegraph wires whistle	6	25 - 31	11 - 14	Tie the tower onto a solid Structure. Do not work on tower
Gale Force	Twigs snap off, walking is difficult	8	39 - 46	17 - 21	Towers should on no account be erected in these conditions.

Beware of open ended building which can cause a funnelling effect.

CONSTRUCTION NOTES

- Follow the erection manual to ensure that the correct erection procedure is used.
- Ensure that sufficient equipment is available to construct the tower and is in working order.
- Do not extend castor jacks more than is necessary to level the tower. Adjustable swivel base jacks are available for use on stepped, steeply sloped or soft ground conditions.
- Use a Spirit level to check that the tower is upright.
- The peg on the head fitting must always point inwards.
- Fit the first two horizontal braces to the vertical frame tube. This prevents the frame from falling over during erection and dismantling. Locate all other horizontal braces over the location pegs.
- All diagonal braces are fitted as close as possible to the upright.
- Observe all height limits and fit stabilisers (fig.6) to increase the safe working height to the tower. Towers may also be tied to a suitable rigid structure using standard scaffolding tubes and fittings (see tying in).
- Fit toeboards to all working platforms and ensure that all platforms are adequately guarded.
- The dismantling sequence is the reverse order of the erection process.
- For special or unusual applications contact your supplier for further technical data sheets and expert advice.

COMPONENT SCHEDULE

(Using elements of the 3T method - See pasma technical/safety guidance note 1. Feb 2007)

STAIR LADDER TOWER WITH DOUBLE TOP PLATFORM TO BSEN1004-2004

INTERNAL & EXTERNAL USE

DESCRIPTION	PLATFORM HEIGHT METRIC IMPERIAL	2.4 7'10"	3.4 11'2"	4.4 14'5"	5.4 17'9"	6.4 21'0"	7.4 24'3"
1.4m x 1.8m STAIR	CODE						
150mm Adjustable Castors	2230	4	4	4	4	4	4
1.8m Double Toeboard	2066	1	1	1	1	1	1
1.8m Stair Trap Platform	2049	1	1	1	1	1	1
1.4m 5 Rung Base Frame	2001	2	2	2	2	2	2
1.4m 4 Rung Main Frame	2002	-	2	2	4	4	6
1.4m 2 Rung Frame	2008	2	-	2	-	2	-
1.8m Brace	2040	6	8	9	10	11	12
2.7m Brace	2041	3	5	6	8	9	11
1.8m Main Platform	2043	1	1	2	2	3	3
Small Stabiliser (up to 8.4m)	2056	4	4	4	4	4	4
Large Stabiliser (9.4-12.4m)	2057	-	-	-	-	-	-
Stair Unit	2205	1	2	2	3	3	4
TOTAL SELF WEIGHT OF TOWER (KGS)		166	197	225	259	286	318
MAX No OF WORKING LEVELS/PLATFORMS		1	1	2	2	3	3

INTERNAL USE ONLY

8.4 27'7"	9.4 30'10"	10.4 34'1"	11.4 37'4"	12.4 40'8"
4	4	4	4	4
1	1	1	1	1
1	1	1	1	1
2	2	2	2	2
6	8	8	10	10
2	-	2	-	2
13	14	15	16	17
12	14	15	17	18
4	4	5	5	6
4	-	-	-	-
-	4	4	4	4
4	5	5	6	6
346	386	414	447	474
4	4	5	5	6

STAIR LADDER WITH SINGLE TOP PLATFORM TO BSEN1004-2004

DESCRIPTION	PLATFORM HEIGHT METRIC IMPERIAL	2.4 7'10"	3.4 11'2"	4.4 14'5"	5.4 17'9"	6.4 21'0"	7.4 24'3"
1.4m x 1.8m STAIR	CODE						
150mm Adjustable Castors	2230	4	4	4	4	4	4
1.8m Single Toeboard	2065	1	1	1	1	1	1
1.4m 5 Rung Base Frame	2001	2	2	2	2	2	2
1.4m 4 Rung Main Frame	2002	-	2	2	4	4	6
1.4m 2 Rung Frame	2008	2	-	2	-	2	-
1.8m Brace	2040	7	8	9	10	11	12
2.7m Brace	2041	3	5	6	8	9	11
1.8m Main Platform	2043	1	1	2	2	3	3
Small Stabiliser (up to 8.4m)	2056	4	4	4	4	4	4
Large Stabiliser (9.4-12.4m)	2057	-	-	-	-	-	-
Stair Unit	2205	1	2	2	3	3	4
TOTAL SELF WEIGHT OF TOWER (KGS)		147	178	206	239	267	298
MAX No. OF WORKINGLEVELS/PLATFORMS		1	1	2	2	3	3

8.4 27'7"	9.4 30'10"	10.4 34'1"	11.4 37'4"	12.4 40'8"
4	4	4	4	4
1	1	1	1	1
2	2	2	2	2
6	8	8	10	10
2	-	2	-	2
13	14	15	16	17
12	14	15	17	18
4	4	5	5	6
4	-	-	-	-
-	4	4	4	4
4	5	5	6	6
326	365	395	427	455
4	4	5	5	6

THE ABOVE SCHEDULE INCLUDES FOR:

- (i) 1 WORKING LEVEL AT TOP OF THE TOWER WITH TOP PLATFORM, TOEBOARDS AND DOUBLE HANDRAILS AT 0.5m AND 1m.
- (ii) EVERY 2m A SINGLE INTERMEDIATE PLATFORM WITH HANDRAILS.
TO CONVERT AN INTERMEDIATE PLATFORM TO A WORKING PLATFORM ADD A SINGLE TOEBOARD.
MAXIMUM LOAD ON A 0.61m WIDE x 1.8m LONG PLATFORM IS 2kN/m² WHICH IS 212kgs EVENLY DISTRIBUTED.
MAXIMUM LOAD ON THE TOWER (INCLUDING THE SELF WEIGHT OF THE TOWER) SHOULD NOT EXCEED 2500kgs ON ODD HEIGHT TOWER (3.4, 5.4m etc) OR 1,000kg ON EVEN HEIGHT TOWERS (2.4, 3.4m etc) UNLESS ADDITIONAL SHORT BRACES HAVE BEEN ADDED TO THE 2 RUNG FRAMES USED. (REFER TO SUPPLIER FOR MORE INFORMATION).
MAXIMUM HORIZONTAL FORCE WHEN USING HAND TOOLS, ETC, SHOULD NOT EXCEED 30kgs.
STABILISERS MUST BE FITTED.