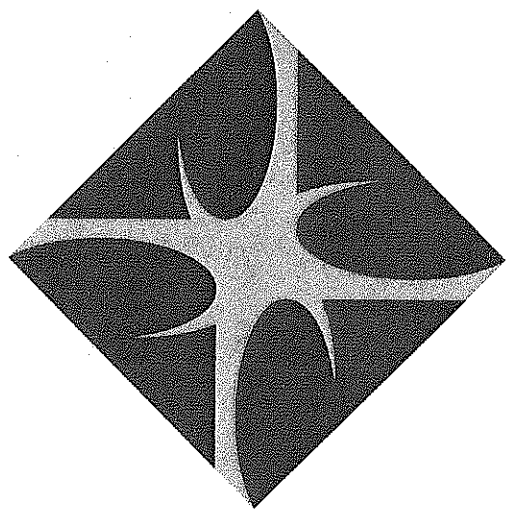
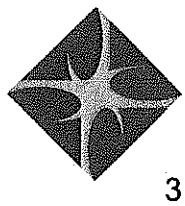


ALQUIP

SCAFFOLDING MANUAL

Version 9 - November 2006



INTRODUCTION

The person(s) erecting, using, dismantling and maintaining the ALQUIP scaffold needs to function with carefulness, commonsense and caution.

This booklet contains general information on the legal requirements, WPH & S requirements, how to erect, stabilize and dismantle your ALQUIP aluminium scaffold.

It is NOT a substitute for acquiring the statutory requirements and information from the relative Federal and State Authorities and Departments.

Note: Only licensed scaffolders may erect a scaffold over 4 metres high.

All information contained herein remains the intellectual property of ALQUIP Pty Ltd.
All copyright reserved.

A Guarantee of ... Strength and Reliability

ALQUIP fabricates the **220 Series** of mobile and static scaffolding with the Hire and Construction Industries in mind. We have a scaffold that will withstand the harsh conditions faced on construction sites. The **220 Series** utilises high-grade Aluminium tube, with a wall thickness throughout of 2.6 mm for additional strength.

Thicker tube means:

Greater strength
More impact resistance
Safer under load
Less deflection = longer product life

The life span of your ALQUIP scaffolding is well in excess of 10 years. Your new scaffold system will work tirelessly and reliably producing you profit for a very long time.

Overview of Legal Requirements

Always ensure that you understand and can comply with the Federal, State and Local Government Acts, Regulations, Compliance and Advisory Standards that apply to the erection and use of scaffolding in the area that you intend using this equipment. You must also identify and acknowledge the requirements of the laws governing you legal obligation under the WPH & S Act[1] covering the work place, provision of due diligence and risk management.

Section 33 of the Workplace Health and Safety Act 1995 states:

Obligation of erector and installers of plant or specified high risk plant

33. An erector or installer of plant or specified high-risk plant at a relevant place has an obligation-

a) To erect or install the plant in a way that is safe and without risk to health; and
b) To ensure that nothing about the way the plant is erected or installed makes it unsafe and a risk to health when used properly.

Examples of Federal and State acts and regulations and authorities:

- Occupational Health and Safety Act 1991 (refer appendix B)
- Workplace Health and Safety Act 1995
- Workplace Health and Safety Regulation 1997 (sets out the requirements for preparing a WPH & S plan)
- Scaffold Advisory Standard 1999: DETIR QLD Gov. WPH & S
- 'Fall from Heights' Advisory Service 2000; DETIR QLD Gov. WPH & S
- Queensland – Workplace Health and Safety
- New South Wales – Work Cover Authority
- Victoria – Work Cover Authority
- Tasmania – Workplace Standards Authority
- South Australia – Work Cover Corporation
- Western Australia – Work Safe
- Northern Territory – Work Health Authority

[1] The Workplace Health and Safety Act 1995 imposes obligations on people at workplaces to ensure workplace health and safety by identifying and managing exposure to the risks at your workplace.

Occupational Health and Safety Act 1985

Introduction:

The Occupational Health and Safety Act 1985 describes itself as 'an Act to promote and improve standards for occupational health, safety and welfare'. It sets out to do this in two ways:

1. By imposing **duties of care** on persons who can influence occupational health and safety, and by **supporting those** duties with inspectorial and enforcements powers and penalties.
2. By promoting consultation within workplaces, including by creating health and safety representatives who are also able to exercise enforcement powers.

Duties:

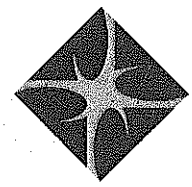
- Duties of care are imposed on the following personas:
- Employers
- Self-employed persons
- Occupiers of workplaces
- Designers of plant
- Manufacturers, importers and suppliers of plant and substances
- Erectors and installers of plant
- Employees

The Act defines 'workplace' as "any place, whether or not in a building or structure, where employees or self employed persons work".

Ordinarily, these people and corporations are required to conduct their affairs in a way that does not create a risk to health and safety. In the case of an employer, the duty is expressed very broadly, so that the employer must ensure that the entire 'working environment' is safe and without risks to health. The duties are not absolute, but must be complied with "so far as is practicable".

This key concept of "practicability" involves the weighing up of the following factors:

- The severity of the hazard or risk
- The general state of knowledge about it and about ways of addressing it
- The availability and suitability, and the cost, of ways of addressing it



Enforcement:

Inspectors appointed under the OHS Act can enter and inspect workplaces at all reasonable times. If they detect a contravention of the Act, or of regulations made under the Act, they can demand that remedial action be taken, or they can take enforcement action, or they can do both.

- An **Improvement Notice** gives a deadline for remedying the contravention. A **Prohibition Notice** does the same, and in the meantime, prohibits the activity if it involves an immediate risk.

- Enforcement is by commencing proceedings to prosecute the offender in court.

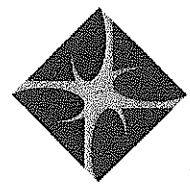
For contravening the Act itself, the maximum fine is $250,000 for a corporation and $50,000 for an individual. For contravening any regulations, the maximum is $40,000 for a corporation and $10,000 for an individual. These penalties apply in relation to every provision that creates a duty ("shall" or "must") or that imposes a prohibition ("shall not" or "must not").

Health and Safety Representatives:

The OHS Act provides a system that allows employees to group together and elect a health and safety representative (HSR) to act on their behalf. An HSR has the power to inspect the workplace, and the employer must cooperate with this. The employer must consult with the HSR about proposed workplace changes that have health and safety implications and, if an HSR requires, it, must establish a Health and Safety Committee to address health and safety issues in the long term. If an HSR detects a contravention of the Act or Regulations, the HSR can require the employer to take remedial action.

A **Provisional Improvement Notice** serves the same purpose as an **Improvement Notice**. An employer who wishes to challenge a Provisional Improvement Notice can call an inspector.

Where there is an immediate risk, a HSR can order a cessation of work – after which either party can require an inspector to attend the workplace to resolve any disagreement.



Regulations and Codes of Practice

The Government can make Regulations under the OHS Act. For the most part Regulations under the Act impose more particular duties in relations to specific types of hazard. To date, Regulations have been made in relation to a number of matters including:

- Plant
- Confined spaces
- Asbestos
- Noise
- Hazardous substance
- Major hazards

Like the Act itself, Regulations impose obligations that must be complied with and that are enforceable when contravened.

The Minister for Work Cover can approve Codes of Practice. Codes provide detailed guidance on how best to comply with the Act and the various Regulations. A duty holder may either follow the code or find a comparable way of complying with the Act and Regulations. There are several Codes of Practice in existence.

Access Platform	is a platform that provides access for persons, or for persons and materials to or from places of work.
Aluminium Staircase	allows for safe and easy movement of personnel and or material to and from workplaces. Lightweight, easy to install. Features include a non-slip stair tread for added safety.
Baseplate	is a plate that is able to distribute the load from the scaffold to the ground or supporting structure.
Brace	is a component fixed diagonally or horizontally between frame of the scaffold to provide rigidity to the scaffold.
Butt Tube	is a tube fixed to a scaffold and butting onto and or fixed to another structure to provide rigidity to the scaffold.
Cantilever Scaffold	is a scaffold that is supported by cantilevered load bearing components.
Castor and Screw Jack	is a swivelling wheel attached to the lower end of a standard, for the purpose of supporting and moving a scaffold and has a screw jack for height variability.
Component	is anything that forms part of a scaffold assembly.
Construction site or workplace	is a workplace where building work, civil construction work or demolition work is done.
Corrosion	occurs when the scaffold or any part thereof remains in contact with acid or alkaline materials over and extended period.
Counterweight	is a weight or series of weights that counterbalance a scaffold.
Frame Scaffold	is a scaffold assembled from prefabricated frames, braces and accessories.
Fully Decked	the scaffold has all the platforms in place.

Grasper	(frame scaffold) is the end part of the aluminium brace, which allows it to be fixed to either the transom or standards of the frame.
Guardrail	is a structural component to prevent persons from falling off any platform, walkway, stairway or landing.
Guy	is a rope or appliance used to secure scaffolding in its position.
Ledger	is a horizontal structural component that longitudinally spans a scaffold.
Lift	is the distance between ledgers or work platforms required to keep the integrity, strength and rigidity of the scaffold.
Loading	is the working load limit of the scaffold and is subject to a formula. Maximum duty live load is: Light Duty 225kg Medium Duty 450kg Heavy Duty 675kg Live Load is the weight distributed to each of the scaffold standards. To obtain the live lead, divide the duty of the scaffold (light, medium or heavy duty) by 3, and then multiply the answer by the number of working bays attached to that standard. Dead Load is the self-weight of the standards plus part weight of all connecting components. Size of Sole Board - length in metres. Dead Load + Live Load divided by bearing pressure in kg divided by width of sole board in metres = length in metres.
Midrail	a safety rail located halfway between a work platform and the top rail running parallel with the work platform.
Mobile Scaffolding	an independent, freestanding scaffold that is mounted on castors.

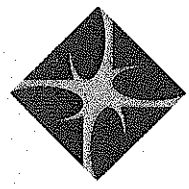
Outrigger	is an inclined load-bearing component that is attached to the standard part of the frame to increase the size of the base to enable the scaffold to be increased in height.
Parapet	is an up stand usually located at the edge of a balcony, roof, bridge and the like.
Plan Brace	a brace placed at the base of the frame that lies horizontally and braces the scaffold diagonally.
Platform	is an elevated surface. (Options are access or standard).
Risk Management	is a process consisting of well defined steps which when taken in sequence, support better decision making by contributing to a greater insight into risk and its impact. It is as much about identifying opportunities as it is about avoiding risks. Refer Appendix A - AS/NZS 4360:1999 Risk Management.
Soleboard	is a component used to distribute a load through a base plate to the ground or other supporting structure.
Spur	is an included load-bearing component that transmits a load to a supporting structure. (Eg. Extra Wide Base Frame).
Specified Work	is a) Construction work; or b) The type of work that is construction work done by someone who, when doing the work, can fall; or c) For residential construction work – more than 3.0m; or d) For other construction work – 2.4m or more; or e) Excavating if the excavation is to a depth of at least 1.5m; or f) Removing, sealing or inspecting for asbestos.
Standard	is a vertical structural component that transmits a load to the ground or supporting structure.
Tie	is a component or assembly of components used to tie a scaffold to a supporting structure.

Toe board	a scaffold plank or purpose designed component fixed on edge / at the edge of the platform, to prevent material falling from the platform.
Transom	is a horizontal component in a scaffold frame.
Working Load Limit (WLL)	is the maximum working load that may be applied to any component or system.
Working Platform	is a platform that is intended to support persons, materials and equipment.

List of Australian Standards

The following standards have been used in the design of ALQUIP aluminium scaffolding products: (www.standards.com.au)

AS / ANZ 4576: 1995 Guide for Scaffolding
AS / ANZ 1576.1: 1995 Scaffolding Part 1: General Requirements
AS / ANZ 1576.2: 1991 Scaffolding – Couplers and Accessories
AS / ANZ 1576.3: 1995 Part 3 Scaffolding – Prefabricated and Tube and Coupler Scaffolding
AS / ANZ 1576.4: 1991 Scaffolding – Suspended Scaffolding
AS / ANZ 1576.5: 1995 Part 5 Scaffolding – Prefabricated Splitheads and Trestles
AS / ANZ 1576.6: 2000 Part 6 Metal Tube and Coupler Scaffolding
Deemed to comply with AS ANZ 1576.3.
AS 1577: 1993 Scaffold Planks
AS 1892.1: 1996 Portable Ladders – Metal
AS 1665: 1992 Welding of Aluminium Structures
AS 1664: 1997 Rules for the use of Aluminium in Structures
AS 1866: 1997 Aluminium and Aluminium Alloys – Extruded Rod, Bar, Solid and Hollow Shapes
AS 1874: 1988 Aluminium and Aluminium Alloys – Ingots and Castings
AS 6001: 1999 Working Platforms for Housing Construction



Workplace Health and Safety Plan

Refer to your local state government body for a copy, for example, Qld DETIR "Scaffold Workplace Health and Safety Plan. www.detir.qld.gov.au

A Workplace Health and Safety Plan must be written in a way likely to be understood easily by the persons entitled under the regulation to a copy of the plan for part of the plan.

A Workplace Health and Safety Plan must be dated and signed by or for the person required to have the plan.

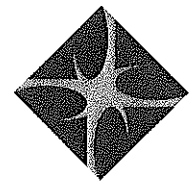
Overview to ALQUIP Requirements

Scaffold is to be used in accordance with current Australian and New Zealand Standards, Workplace Health and Safety Advisory Standard and codes of practice. Scaffolding is erected in accordance with planned hazard prevention and control measures including personal protective equipment to acceptable safe work practice and ALQUIP's requirements.

For safe and efficient erection, alteration and dismantling of scaffolding, scaffolders must:

- Know the basic relevant rules of mechanics.
- Be able to understand the supplier's information, general site plans and specifications for scaffolds. (An ability to make simple calculations of dead load and live load is often needed).
- Have a thorough knowledge of the scaffolding equipment being used.
- Have thorough knowledge of the construction methods and design requirements associated with that equipment.
- Be able to recognize common hazards at the worksite and be capable of taking effective precautions to control risks to health and safety arising from these hazards.
- Visually inspect scaffolding for faults, safety and compliance with design and statutory requirements, codes of practice and guidelines.

- Have the physical skills needed for scaffolding construction.
- Be competent in manual lifting techniques.
- Work safely and confidently at heights.
- Correctly use the various tools, ropes and gin wheels.
- Erect and dismantle scaffolding in the correct sequence.
- Possess a certificate or competency in basic scaffolding for erection of modular scaffold more than 4.0m in height and be familiar with AS / ANZ 4576: 1995 'Guidelines for Scaffolding'.



A guide to safe working practices ... including the stability of the erected scaffold

Check for potential hazards such as:

- Overhead power and service lines
- Underground services
- Uneven and / or unstable ground
- Trees
- Allowable floor loading as appropriate
- Other workers and persons
- Corrosive substances
- Surrounding buildings / structures / vessels / equipment / vehicular traffic / cranes
- Barricades
- Inadequate lighting
- Hazardous materials
- Dynamic loading such as concrete pump line

Scaffolding Code of Practice 2004

Scaffold Vicinity

Has sufficient public protection been provided?
Have sufficient safeguards against electric powerlines been provided?
Is there sufficient control over vehicle movement?
Is there sufficient control over crane operation?

Supporting Structure

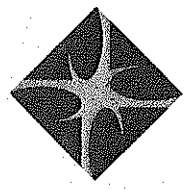
Is the supporting structure in good condition?
Does the supporting structure have adequate strength?
Are there sufficient controls to prevent adverse deterioration of the supporting structure?
Are all measures to strengthen the supporting structure adequate?
Is the risk of the supporting structure being overladed from other sources adequately controlled?

Soleboards and Base Plates

Are there sufficient soleboards?
Are the soleboards of suitable material and in a serviceable condition?
Are the soleboards secured?
Are there sufficient base plates?
Are the base plates serviceable and of suitable dimension?
Are the base plates secure?

Scaffold Structure

Are the standards bearing firmly?
Are the standards plum (or as designed)?



Are the longitudinal standard spacings correct?
Are the transverse standard spacings correct?
Are the joints in standards correctly positioned?
Are the transoms level (or as designed)?
Is the bracing adequate?
Is the scaffold sufficiently stable?
Are the ties correctly positioned and correctly fixed?

Platforms

Does the scaffold have the required number of working platforms?
Are the working platforms at the required locations?
Are catch platforms correctly positioned?
Are the platforms and supporting scaffold constructed for the appropriate duty live loads?
Are the platform dimensions suitable for the intended work?
Is there adequate edge protection?
Are the platforms correctly constructed?

Access and Egress

Is there access and egress to all working platforms?
Are temporary stairways correctly installed?
Are portable ladders of an industrial grade, serviceable and correctly installed?
Are access ways and access platforms correctly installed?

Containment Sheeting

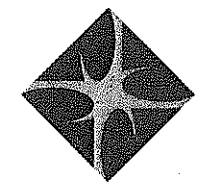
Has the scaffold been designed for wind loading on any containment sheeting?
Are the fixing ties secured?
Are there any rips or tears?
Are the overlap joints satisfactory?

General Fitness for Purpose

Is there adequate provision for material handling?
Are the clearances between the scaffolds and adjacent structures correct?
Is there adequate protection from falling debris?
Has the scaffold been adequately designed to support all attachments?
Are all approaches and platforms effectively lit?

Mobile Scaffolds

Is the supporting surface hard and flat?
Is the area of operation free of floor penetrations, power lines and other hazards?
Are the castor wheel locks in working order?



It is a requirement of ALQUIP and we request that:

Work is performed safely

If scaffold is being erected on uneven ground ensure:

- **The scaffold is levelled using height adjustable screw jacks and;**
- **the site is left clear of all surplus components, equipment, tools and debris.**

Erection of ALQUIP Scaffolding

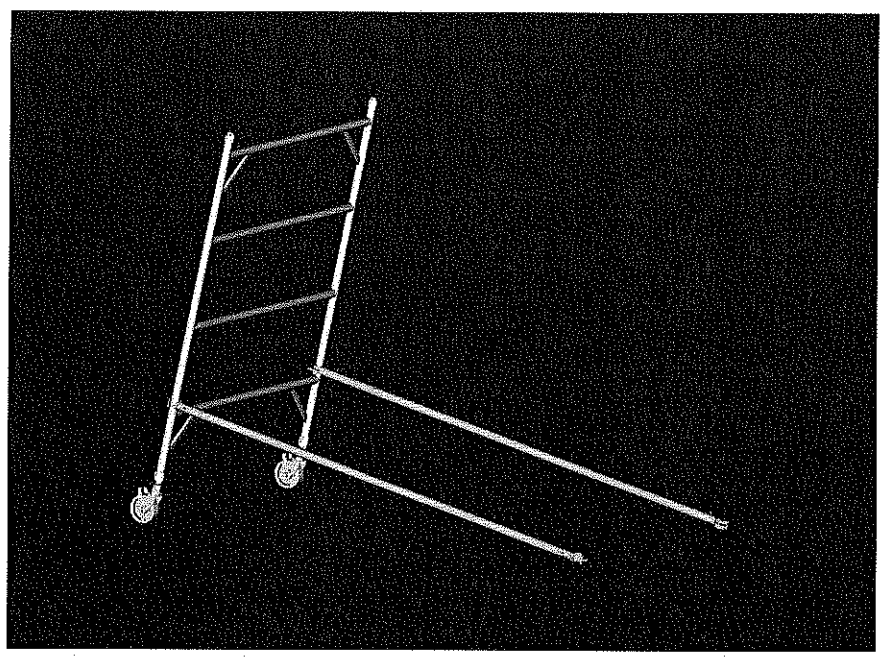
Carry out risk assessment and check for potential hazards before erecting scaffold.

Please note that when horizontals are clipped to standards (vertical component) they are designed for sideways deflection only and are not load supporting. Therefore do not step on these horizontals when climbing into the scaffold. Do not stand on mid-rails or handrails.

Instructions:

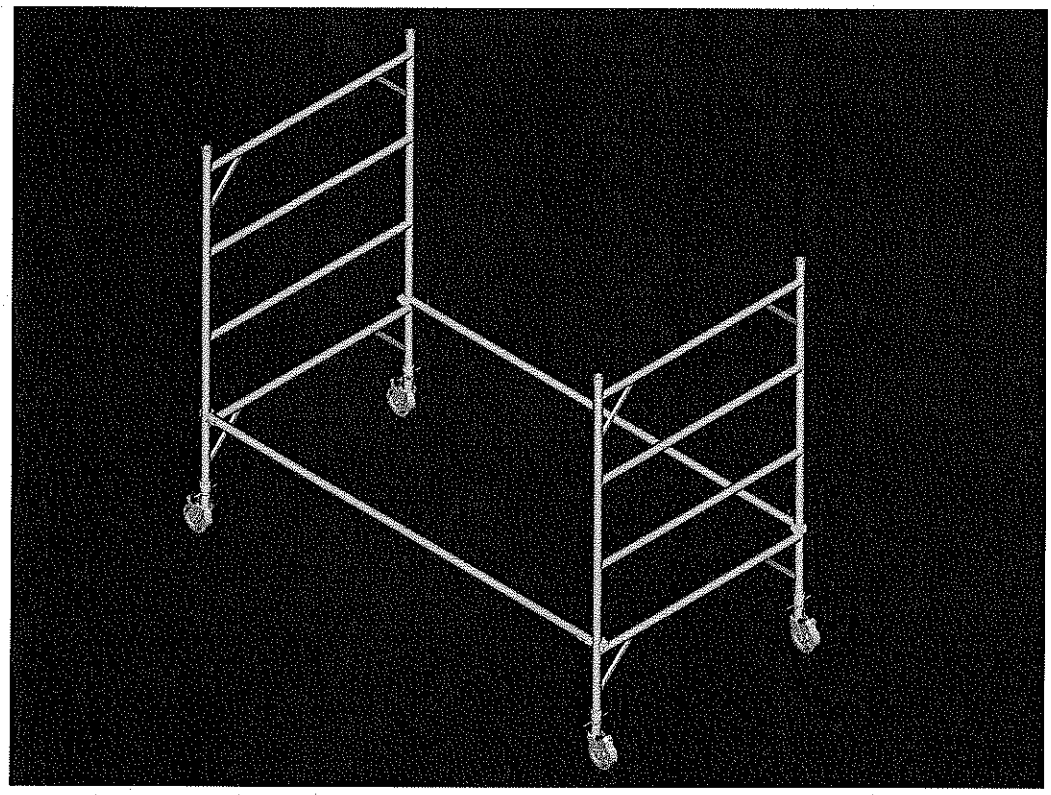
Step 1

Lock brakes on castors and attach 2 horizontal braces (yellow) to inside of standards (vertical component) above bottom transom (horizontal component).



Step 2

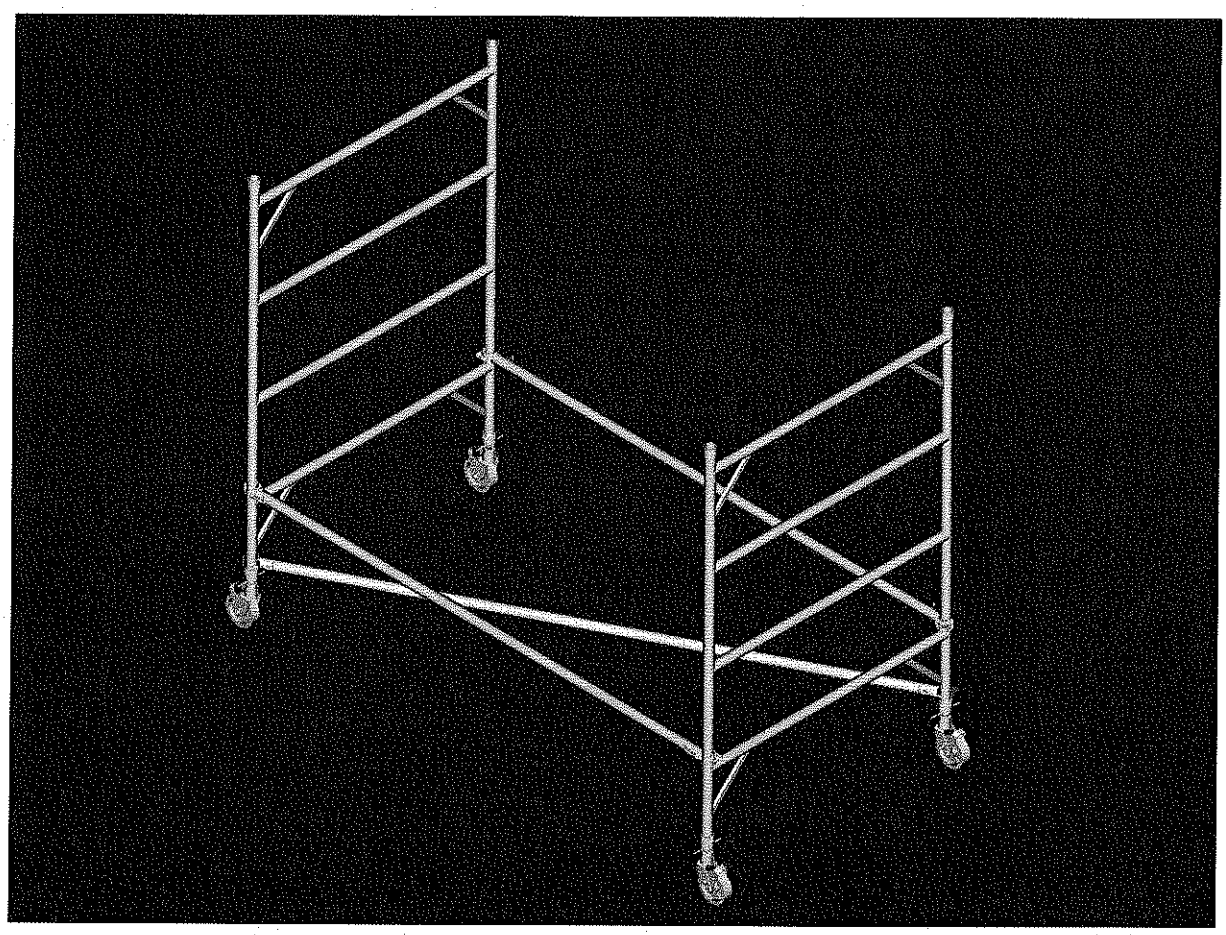
Lock brakes on castors of second base frame and attach horizontal braces to INSIDE of standards. Use screw jacks to approximately level scaffold. Ensure tommy bars on castors are pushed in to prevent injury.



Always ensure you understand and can comply with the regulations that apply to the erection and use of scaffolding in the area that you intend using this equipment.

Step 3

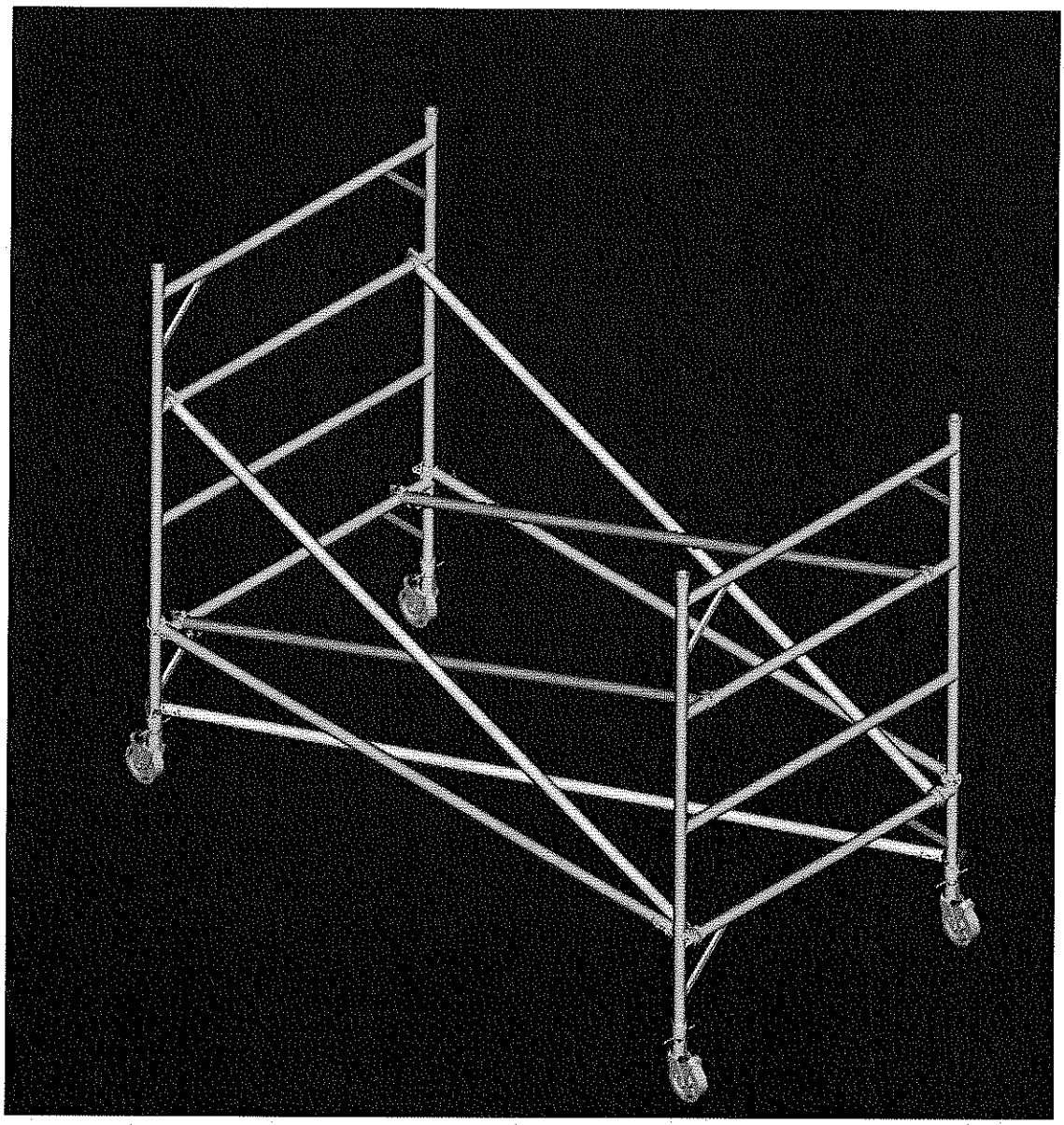
Attach plan brace (red) to diagonally opposite standards. The suggested position is above the cup nut, which is below the bottom transom or rung of base frame. Plan bracing should be incorporated at the base to provide stability to the base of the mobile scaffold. Alternatively the base of the mobile scaffold may be fully decked out.



Step 4

Install 4 diagonal braces (silver) inside frame from bottom transom to third transom up (2 spaces). These should be as close as practical towards the outside of the frame. Level scaffold in each direction using height adjustable screw jacks.

NB 0.7 m wide scaffolds require only 2 diagonal braces running in opposite directions.

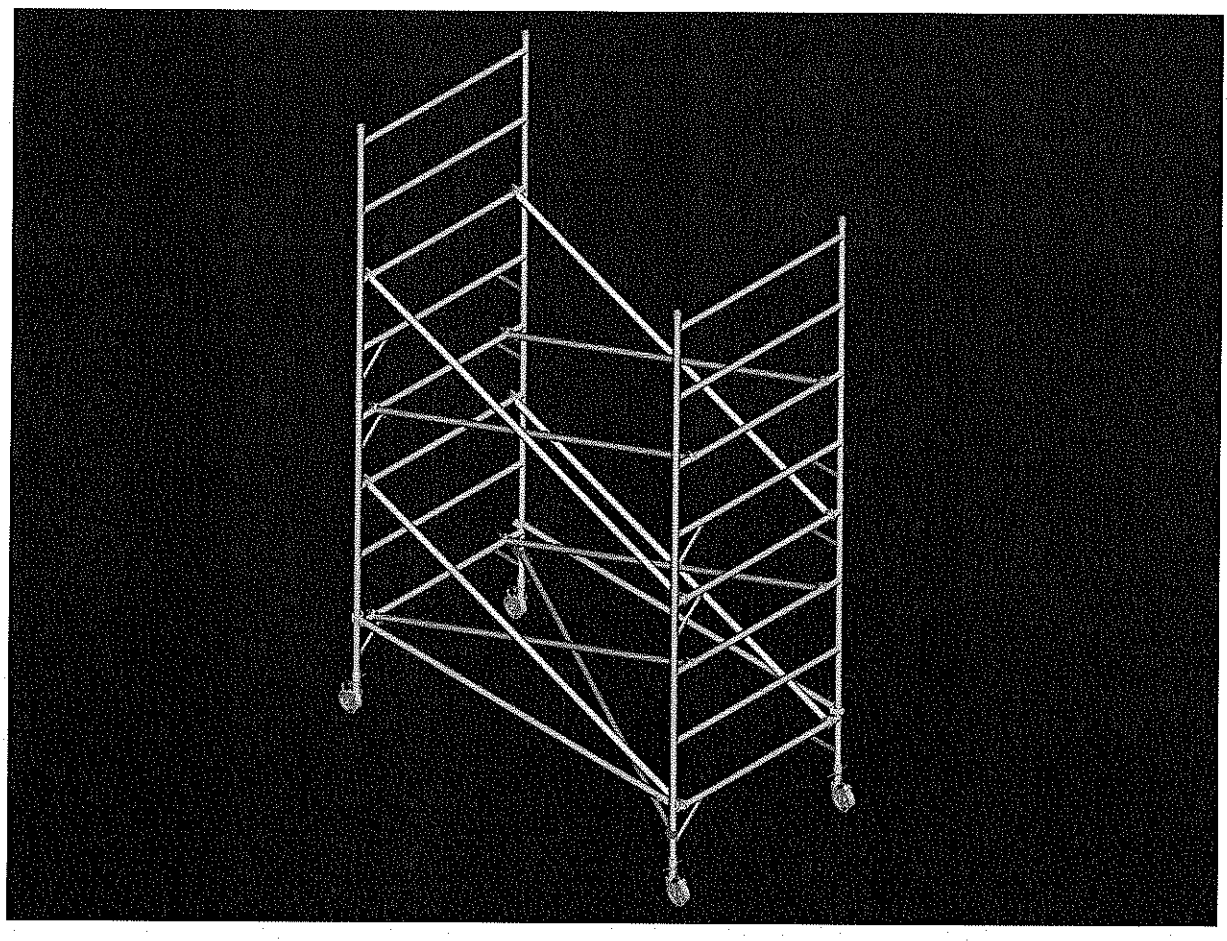


Step 5

Add upper frames 1.9m high 1.4m high and 0.9m high as required, installing 4 diagonal braces per lift in 1.3m wide gear and 2 diagonal opposing braces per lift in 0.7m wide gear. Each brace should be attached to the top transom of the frame below.

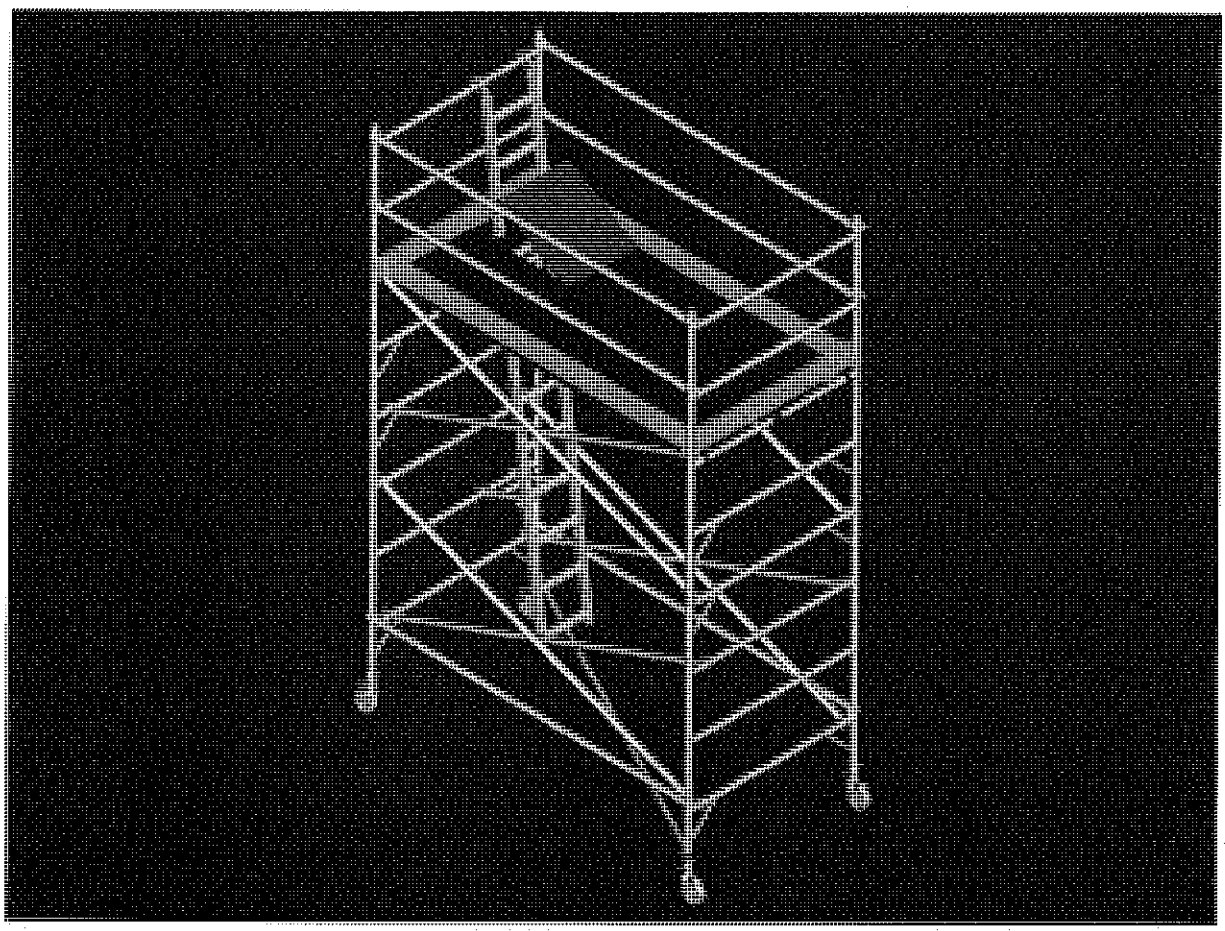
For a scaffold that requires intermediate platforms to aid erection, clip horizontal braces as handrails while adding height.

NB The normal industry accepted rule of platform height with a minimum base dimension below 1200mm must not exceed 2 times the smallest base dimension. For a scaffold with a minium base dimension above 1200mm must not exceed 3 times the smallest base dimension. For platform heights exceeding this formula, outrigger props must be installed to increase the stability.



Step 6

When required platform height is reached, ensure 2 transom spaces extend beyond for handrails. Install platforms. Attach 4 horizontal (yellow) braces to standards as handrails and midrails. Install internal access ladders and toe boards ensuring ladder extends past platform level (min. 900mm).



Please note that when horizontals are clipped to standards (vertical component) they are designed for sideways deflection only and are not load supporting. Therefore do not step on these horizontals when climbing the scaffold. Do not stand on midrails and handrails.

NB 180 series scaffold require one metre high guardrail frames or additional 'one rung' handrail frames to comply with Australian Standards.

Dismantle – Standard Scaffold

Dismantle is the reverse of the above page.

It is important that the dismantling procedure adopted for any scaffold must mirror the construction procedure but in reverse.

Take the scaffold down in a planned manner, starting at the top and ensuring that at all times that the structural strength of the scaffold system is maintained.

You do not cut or remove all ties or braces before you have dismantled the upper working platforms.

Carefulness, commonsense and caution are factors that cannot be built into scaffolding. These must be provided by the person(s) erecting, using, dismantling and maintaining the ALQUIP scaffold.

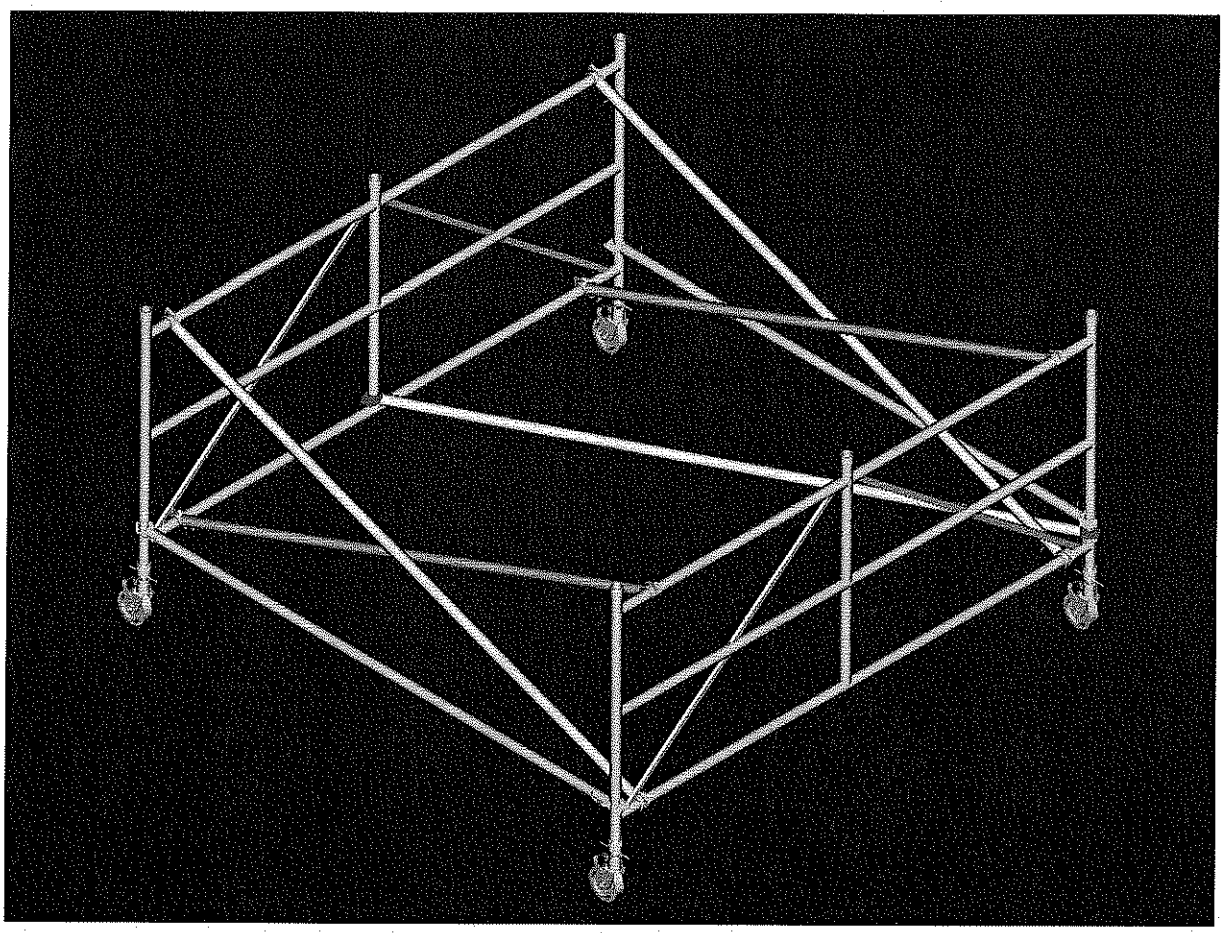
With ALQUIPs unique rail spacing any frame can be a handrail and you don't need special handrail frames. Any 2 levels about a platform gives you a legal handrail and mid rail so that not only do you save the expense of special handrail frames which can't be used for anything else, but site assembly is easier and quicker.

Extra Wide Base Frame

Carry out risk assessment and check for potential hazards before erecting scaffold. Please note that when horizontals are clipped to standards (vertical component) they are designed for sideways deflection only and are not load supporting. Therefore do not step on these horizontals when climbing in to the scaffold. Do not stand on mid-rails or handrails.

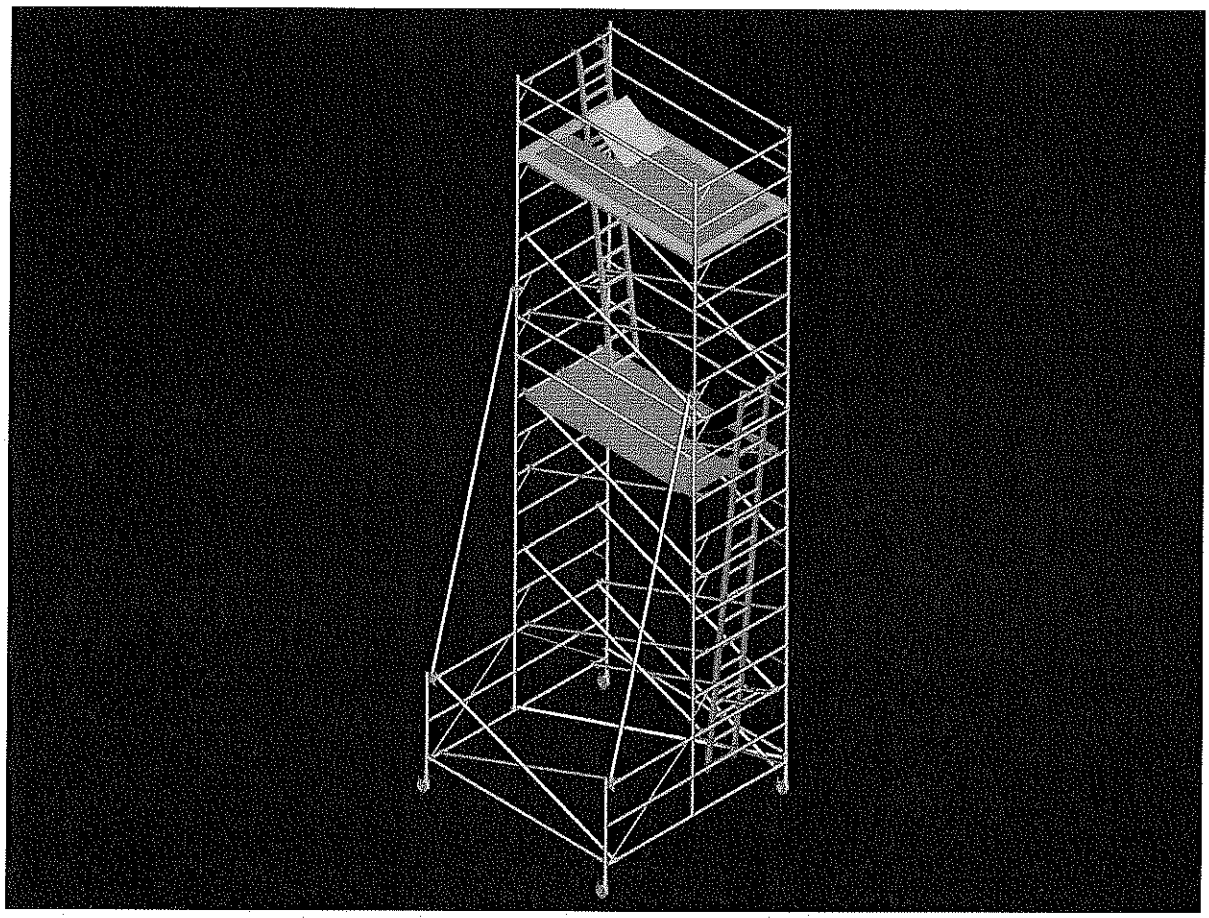
Follow Steps 1,2,3, and 4 as set out. Ensure fames are orientated in the same direction and 1 plan brace (red) is installed directly under where the 1.3m wide tower will be.

Level scaffold in each direction using height adjustable screw jacks. Your scaffold should now look like this:



Add upper frames 1.9m high, 1.4m high and 0.9m high as required, installing 4 diagonal braces per lift in 1.3m wide gear. Each brace should be attached to the top transom of the frame below and as near as practical towards the outside of the frame.

For a scaffold that requires intermediate platforms to aid erection, clip horizontal braces as handrails while adding height. Install spur braces (as shown) as soon as possible and intermediate landing platform with access ladder. Hand and mid rails need to be provided for intermediate work level/s.



When required platform height is reached, ensure 2 transom spaces extend beyond for handrails. Install platforms. Attach 4 horizontal (yellow) braces to standards a handrails and mid rails. Install internal access ladders and toe boards ensuring ladder extends past platform level (min 900mm).

Please note that when horizontals are clipped to standards (vertical component) they are designed for sideways deflection only and are not load supporting. Therefore do not step on these horizontals when climbing into the scaffold. Do not stand on mid rails or handrails.

NB 180 Series Scaffold require one metre high guardrail frame or additional 'one rung' handrail frames to comply with Australian Standards.

Intermediate working platforms may vary according to the work requirements. However, ensure ladder access and hand and mid rails are installed as per erection procedure given. *Only suitable qualified personnel should erect and dismantle scaffolding.*

Dismantle – Extra Wide Base Frames

Dismantle is the reverse of the above.

It is important that the dismantling procedure adopted for any scaffold must mirror the construction procedure but in reverse.

Take the scaffold down in a planned manner, starting at the top and ensuring that at all times that the structural strength of the scaffold system is maintained.

You do not cut or remove all ties or braces before you have dismantled the upper working platforms.

Carefulness, commonsense and caution are factors that cannot be built into scaffolding. These must be provided by the person(s) erecting, using, dismantling and maintaining the ALQUIP scaffold.

With ALQUIPs unique rail spacing any frame can be a handrail and you don't need special handrail frames. Any 2 levels about a platform gives you a legal handrail and mid rail so that not only do you save the expense of special handrail frames which can't be used for anything else, but site assembly is easier and quicker.

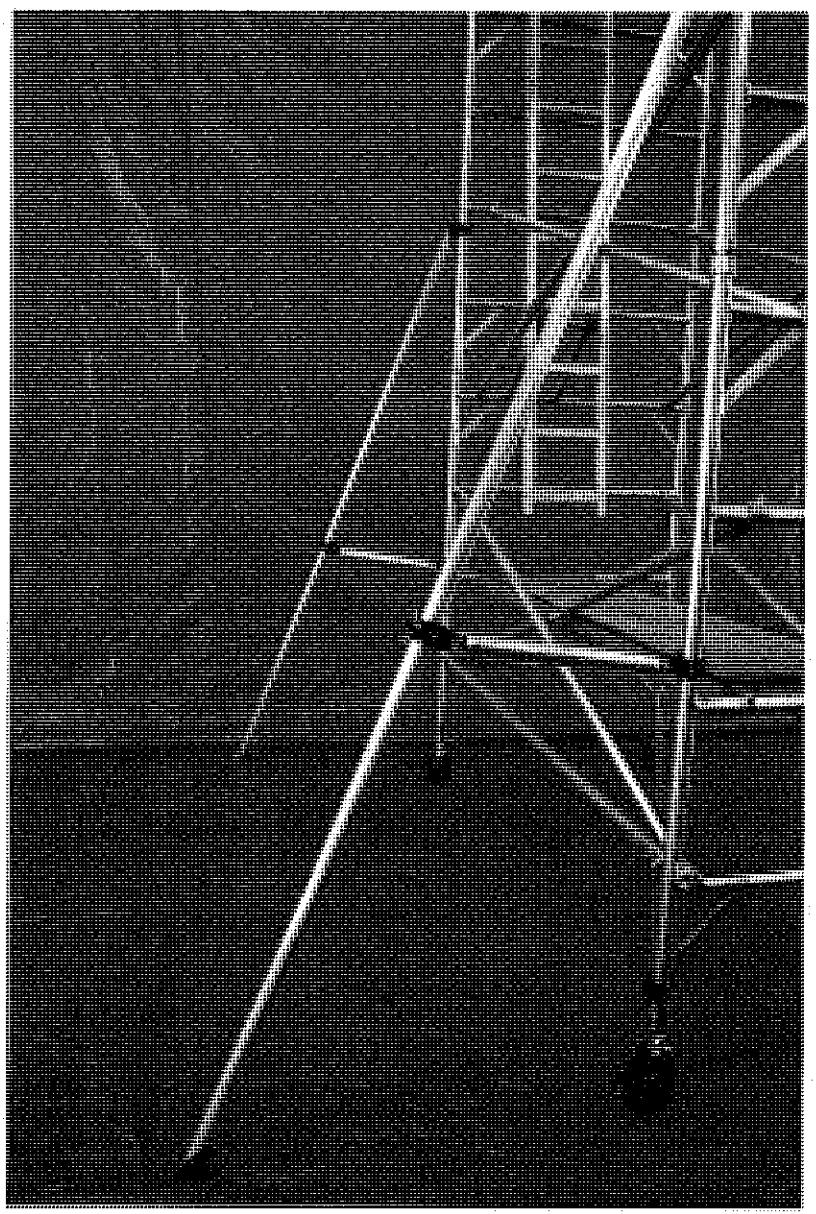
ALQUIP SPECIALISES IN ALUMINIUM ACCESS EQUIPMENT
The extent of the range gives a versatile system with a very broad spectrum of applications.

Outrigger Props

Two outrigger props may be used when scaffold is against a wall or solid structure and the scaffold platform height does not exceed the wall height. At all other times four outrigger props should be used (two on each side).

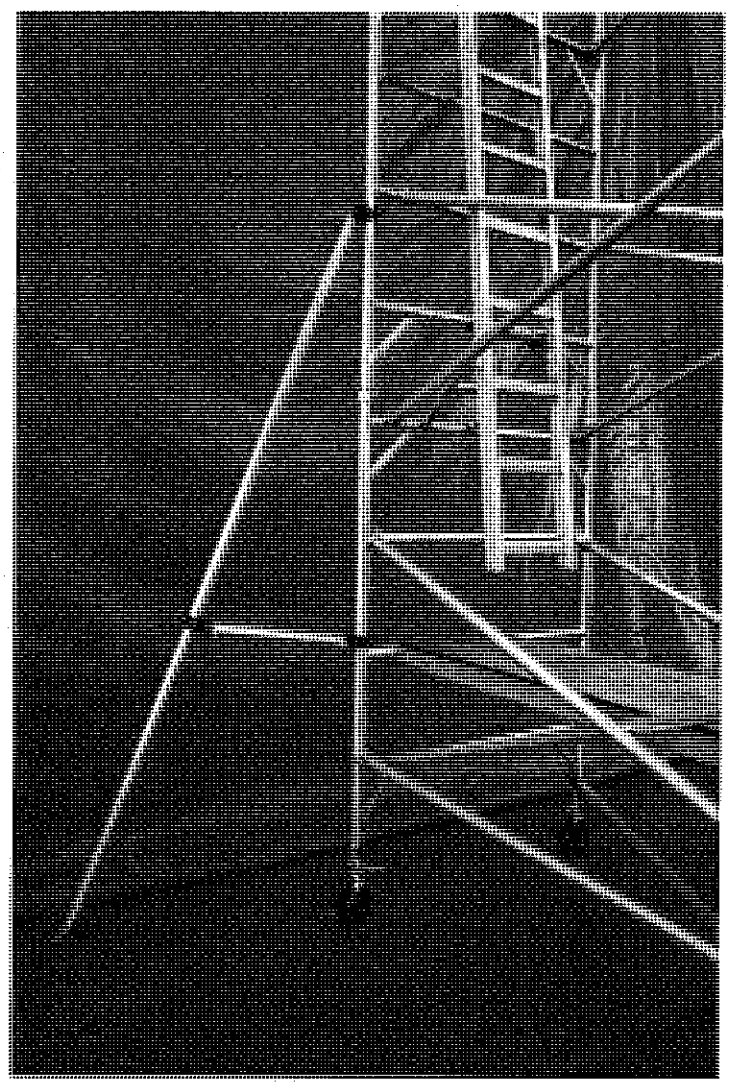
The normal industry accepted rule of platform heights not exceeding 2 times the smallest base dimension below 1200mm or 3 times the smallest base dimension above 1200mm applies. For example, 1.3m wide scaffold with outrigger props adjusted outwards by 0.7m can then be erected to 6.0m platform height. 1.3m + 0.7m = 2.0m which is greater than 1200mm or 1.2m, therefore 3 x 2.0m = a maximum height of 6.0m.

The supporting surface for the outrigger props must give adequate support. Outriggers must then be adjusted to provide firm pressure on the supporting surface.



Sole plates must be used on soft ground.

When moving mobile scaffold with outriggers fitted, it is good practice to lift outrigger feet the minimum required space to achieve mobility. Care is needed because of the reduced base size when feet are clear of the supporting surface.



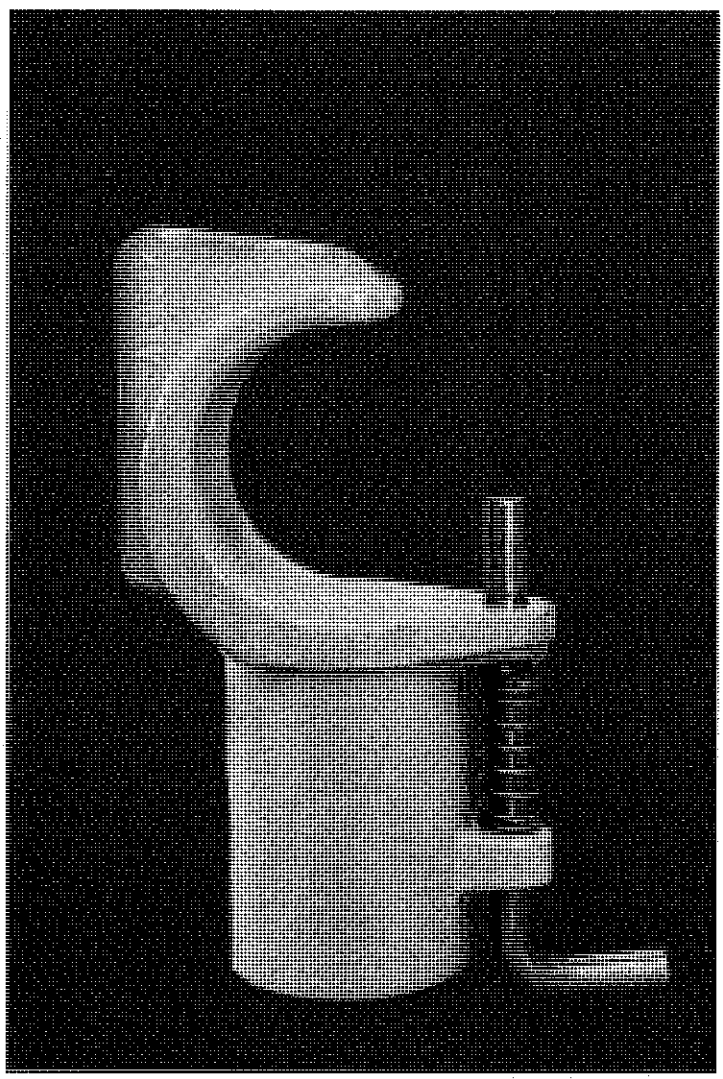
Once you've invested in the ALQUIP system that suits your needs today, rest assured there is enormous adaptability and flexibility available to meet your needs of the future.

Alquip specialises in Aluminium Access Equipment and the extent of the range gives a versatile system with a very broad spectrum of application.

Grasper

ALQUIP believes scaffolding assembly / dismantling should be quick and easy so we use a simple spring loaded pin that not only locks effectively and safely – it's also superbly easy to maintain ... when you want to dismantle your scaffold, it stays where it's put ... and doesn't lock itself back on when bumped.

The mechanism is largely protected from damage by the heavy-duty reinforced grasper 'nose' which absorbs most of the shock if a brace is dropped.



Grasper Repair Kit available:

- 1 x washer
- 1 x split pin
- 1 x 8mm bent pin
- 1 x spring

Single Width Scaffold Components – 220 Series

0.7m Wide Base Only

2 x base frames (4 rung) with castors and screw jacks
2 x diagonal braces
2 x horizontal braces
1 x plan brace
1 x standard platform
2 x Outriggers (when platform is above 1.4m)

0.7m Wide Base and Guardrail

2 x base frames (4 rung) with castors and screw jacks
2 x 0.7m wide and 0.9m high upper frame as guardrail
2 x diagonal braces
6 x horizontal braces
1 x plan brace
1 x access platform
2 x 0.7m toe board ends
2 x toe board sides
2 x Outriggers

If additional height is required:

- Add 3 or 4 rung upper frame on top of the base frame.
- Use 2 x diagonal braces in opposing directions per lift.
- Outrigger props must be used when platform height is greater than 1.4m.

If working on wall or sheer face:

- 2 outrigger props must be used.

If working in an open environment, (not against a wall or sheer surface):

- 4 outrigger props must be used. (One outrigger prop at each corner of scaffold.)

The rule of thumb for stability of a mobile or static scaffold is 2 times the least base dimension up to platform height.

For example, 3.0m length x 0.7m wide scaffold = 2 x 0.7 = 1.4m to platform height.

ALQUIP SPECIALISES IN ALUMINIUM ACCESS EQUIPEMENT and the extent of the range gives a versatile system with a very broad spectrum of application.

Single Width Scaffold Components – 180 Series

0.7m Wide Base Only

2 x base frames (5 rung) with castors and screw jacks
2 x diagonal braces
2 x horizontal braces
1 x plan brace
1 x standard platform
2 x Outriggers (when platform is used above 1.4m)

0.7m Wide Base and Guardrail

2 x base frames (5 rung) with castors and screw jacks
2 x 0.7m wide and 1.0m high upper frame as guardrail
2 x diagonal braces
6 x horizontal braces
1 x plan brace
1 x 2.4m access platform
2 x 0.7m toe board ends
2 x toe board sides
2 x outriggers

If additional height is required:

- Add 3, 4 or 5 rung upper frame on top of the base frame.
- Use 2 x diagonal braces in opposing directions per lift.
- Outrigger props must be used when platform height is greater than 1.4m.

If working on wall or sheer face:

- 2 outrigger props must be used.

If working in an open environment, (not against a wall or sheer surface):

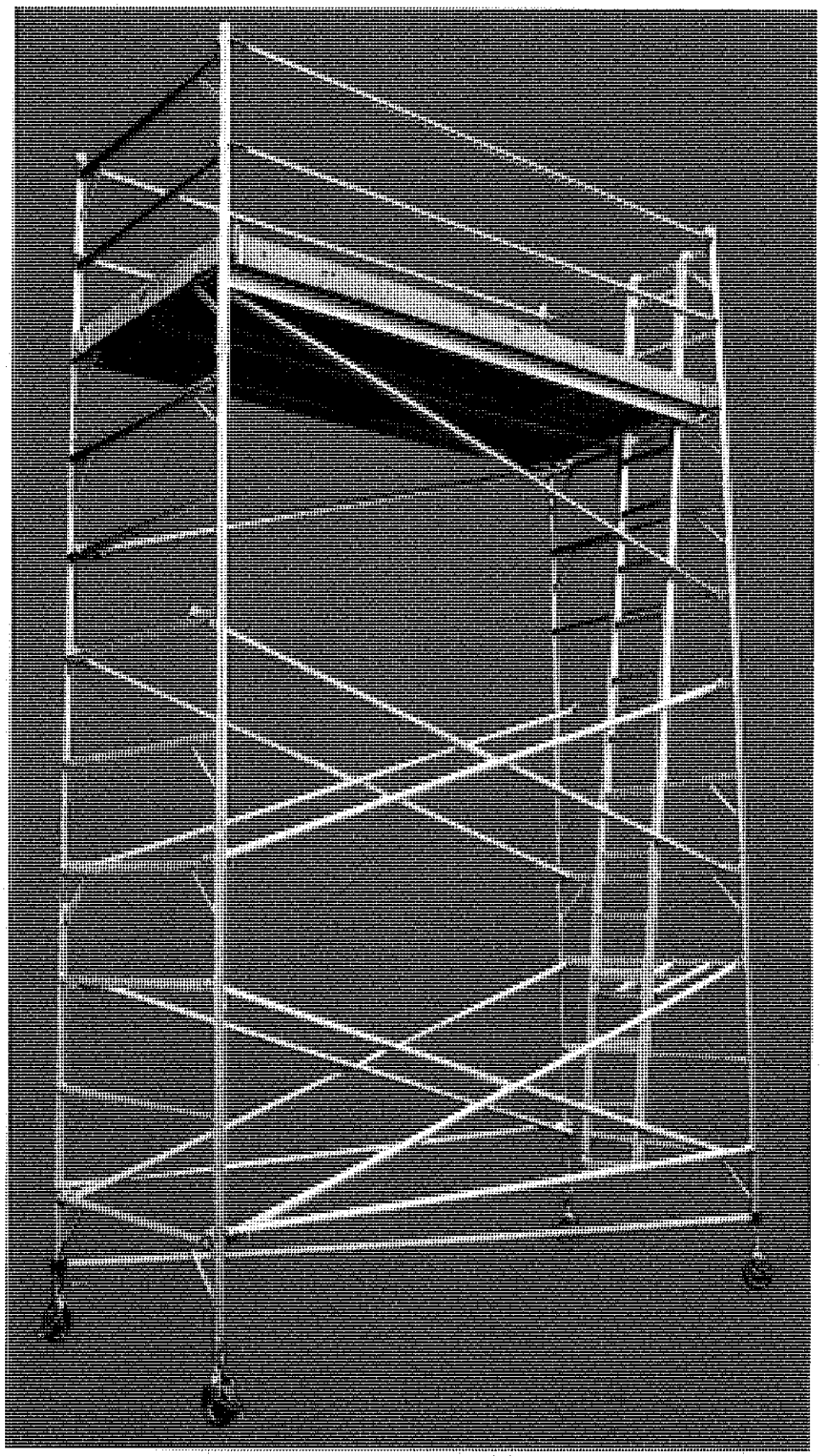
- 4 outrigger props must be used. (One outrigger prop at each corner of scaffold.)

The rule of thumb for stability of a mobile or static scaffold is 2 times the least base dimension up to platform height.

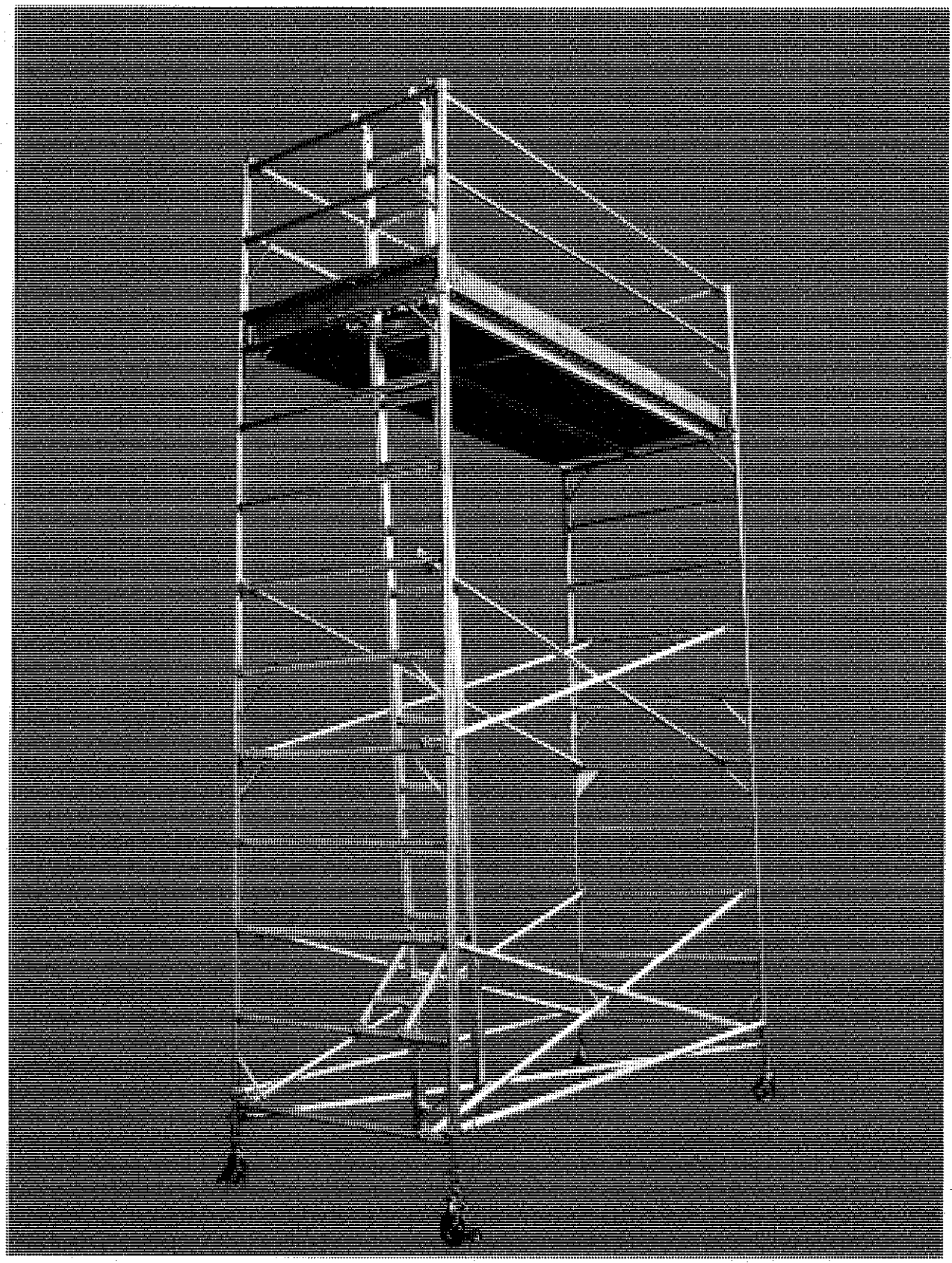
For example, 3.0m length x 0.7m wide scaffold = 2 x 0.7 = 1.4m up to platform height.

ALQUIP SPECIALISES IN ALUMINIUM ACCESS EQUIPEMENT and the extent of the range gives a versatile system with a very broad spectrum of application.

220 Series 4.4m Scaffold



180 Series 4.0m Scaffold

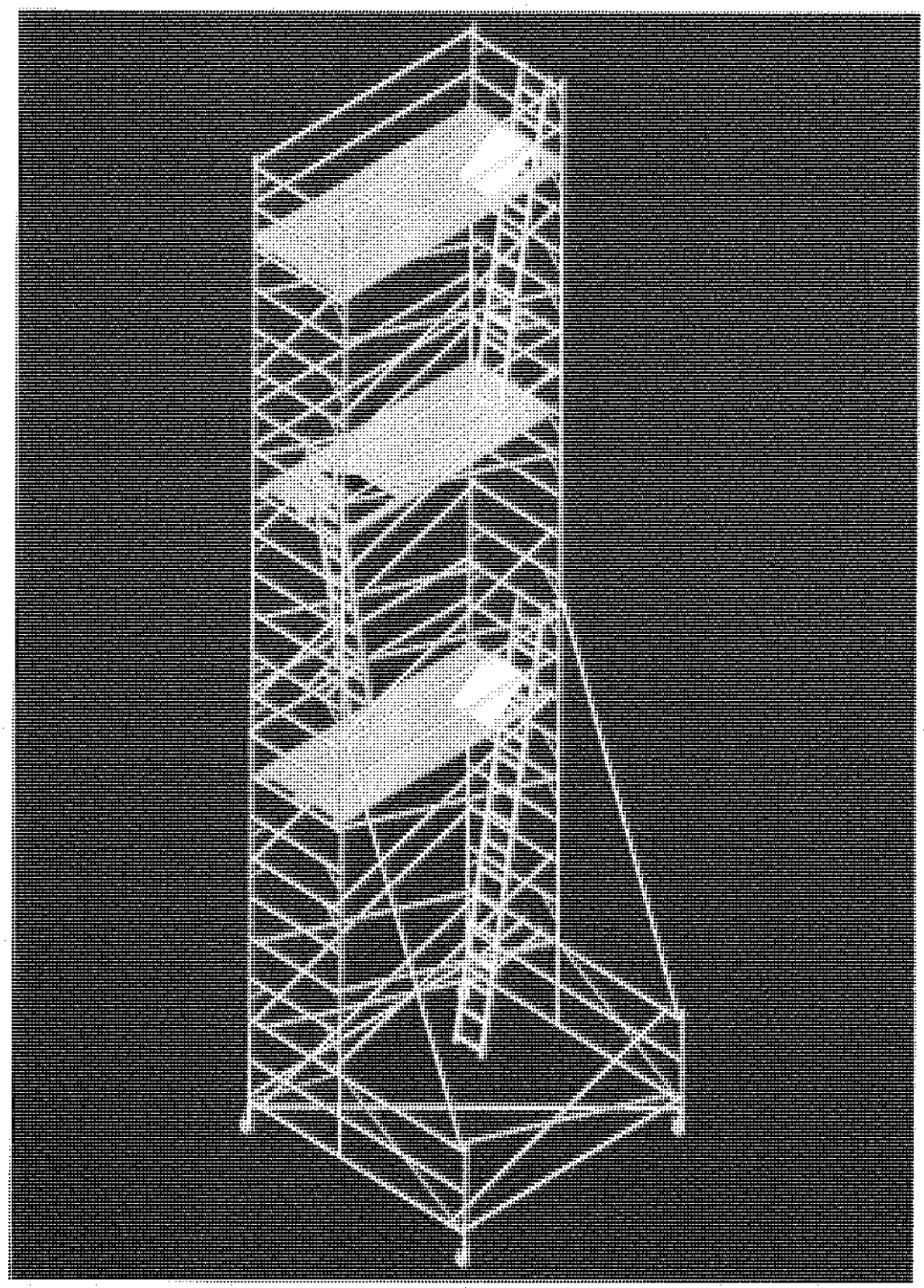


220 Series 10.2m Scaffold

This picture depicts a typical 10.2m platform height 220 series EWBF (extra wide based frame) scaffold, showing the ladder and platform access to the top working level.

Fully decked work levels may vary according to work requirements.

Ladder access platform heights may vary to suit the length of ladder being used. If intermediate working levels are required these must be fully decked.

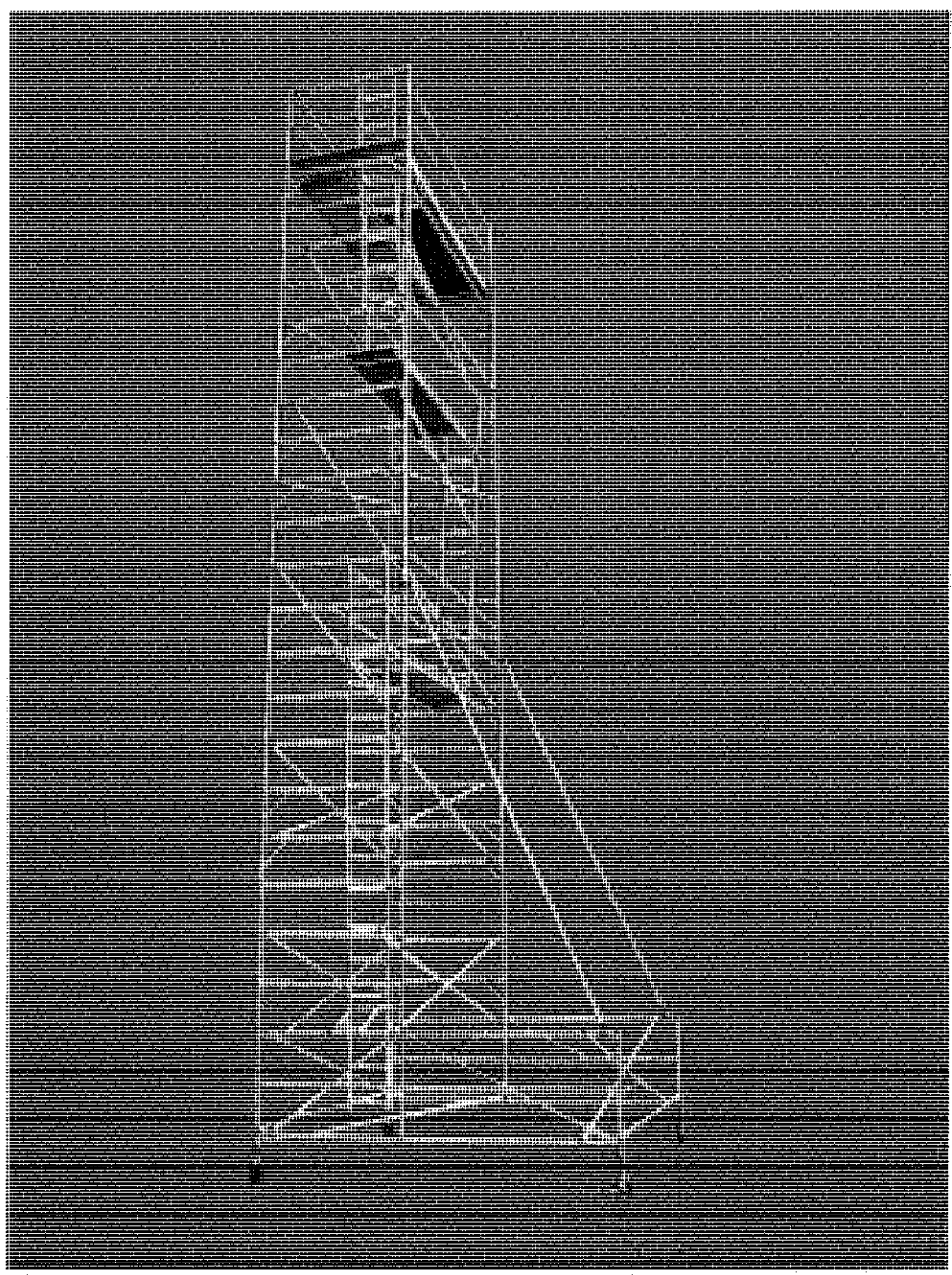


180 Series 9.3m Scaffold

This picture depicts a typical 9.3m platform height 180 series EWBF (extra wide based frame) scaffold, showing the ladder and platform access to the top working level.

Fully decked work levels may vary according to work requirements.

Ladder access platform heights may vary to suit the length of ladder being used. If intermediate working levels are required these must be fully decked.



The intended duty of the scaffold –

Including maximum platform capacity

Specifications:

A scaffold with internal access ladder, handrails and a proper working platform must be used if a person can fall greater than two (2) metres.

ALQUIP scaffolding is designed for a maximum live loading of 225kg WLL (2.2kN) per working level with single platform and 450kg WLL (4.4kN) per working level with double platforms.

Light Duty: for example as used by painters, sign writers, maintenance staff etc: 225kg WLL (2.2kN) per working level with one platform.

Medium Duty: for example as used by a solid plasterer or a builder, who, because of his equipment, may need medium duty scaffolding 450kg WLL (4.4kN) per working level with double platforms.

Heavy Duty: aluminium scaffolding should NOT be used for heavy duty 675kg (6.6kN) per working level eg bricklayers.

For towers that could be exposed to wind loads or have a height to base ratio greater than 3:1 specialized advice is available by contacting ALQUIP (Australia) tel: 1800 654 444 or EQUIPTEC (New Zealand) tel: 0800 840 000.

The ALQUIP 220 Series Scaffold may be used within the following guidelines:
Maximum load per Bay = 17.6 kn (1800 kg)
Maximum load per level per Bay = 4.4 kn (450 kg)
The maximum load per Bay may comprise any combination of medium and light duty work levels provided the total load per Bay does not exceed that mentioned above.

The abovementioned Working Load Limits are also applicable when Walk Thru Upper Frames are substituted for Standard Upper Frames. However, Walk Thru Upper Frames **MUST NOT** be substituted for Base Frames.

Static Scaffold

Static scaffolds can achieve higher working levels when tied in to a suitable supporting structure.

Compatible tube and fittings must be used to stabilise a scaffold that is higher than the industry recognised rule of thumb – 3 x the least base dimension over 1200mm and 2 x the least base dimension under 1200mm. These ties must be at every vertical interval to comply with these rules.

For example: for a 1.3m double width 15m high scaffold, a maximum of **five working** levels per tower is allowable.

The Duty Live Load (Refer AS/NZS 1576.1:1995) allowed on a maximum of three of the five working levels is Medium Duty (450kg). The remaining two working levels are designated Light Duty (225kg). (Gross Combination 1800kg).

A static scaffold, which is tied in to a structure, would need to have the dead load taken into account.

ALQUIP can customize for you – building your system to suit your requirements. Yes – you can use standard scaffold couplers with confidence. The ALQUIP 220 series tube is 2.6mm thick and its strong ... it's outside diameter matches the internationally recognised standard scaffold coupler size of 48.4 mm. With these attributes the manufacturer states with certainty that these couplers can by safely used on ALQUIP frames.

Maximum Height – 220 Series

The maximum height of the working platform of a mobile scaffold with a minimum base dimension greater than 1200mm should not exceed three (3) times the smallest base dimension. For example – 3.0m long and 1.3m wide scaffolds should not exceed 3 x 1.3m = 3.9m

The maximum height for the working platform of a mobile scaffold with a minimum base dimension less than 1200mm should not exceed two (2) times the smallest base dimension. For example – 3.0m long and 0.7m wide scaffolds should not exceed 2 x 0.7m = 1.4m.

To achieve a higher platform level then determined by the rules above, either extra wide bases or outrigger props must be used. The preferred option is to use extra wide gear although in confined spaces outrigger props are acceptable.

However:
Alquip 220 series 10.2m high 3m long x 1.3m scaffold on a 3.0m trussed base satisfies the requirements of Clause 2.7 of AS/NZS 1576.1:1995 "Stability of Free Standing Scaffolds".

When scaffolds need to exceed to exceed the above working platform heights special outriggers and base designs are available. **Please contact ALQUIP (Australia) tel: 1800 654 444 or EQUIPTEC (New Zealand) tel: 0800 840 000 for advice.**

In conditions of heavy wind loads or if scaffold is used to support advertising banners, shade cloth or any attachment to the scaffold, the normal stability provided may not be adequate and the manufacturer must be contacted for advice.

The actual centre measurement of the scaffold frames are as follows:
(Remember to add 48.4mm to find the actual frame width).

0.7m wide = 679mm
1.3m wide = 1,286mm
2.0m wide = 1,913mm
2.5m wide = 2,493mm
3.0m wide = 3,049mm

When scaffold base dimensions are exactly the same i.e. 2.5m long and 2.5m wide then the direction of frames and braces can be reversed partway up. This can be a big advantage on awkward jobs such as when steel pipe work passes through a scaffold.

All transom centres of all frames are 465mm apart. This means on the Alquip 220 Series Scaffold two transom spaces (930mm). This exceeds the Australian Standard minimum handrail height of 900mm, (refer AS 1576.1).

- 1.9m high frames have 4 rungs -= 1,860mm actual height.
- 1.4m high frames have 3 rungs = 1,395mm actual height.
- 0.9m high frames have 2 rungs =- 930mm actual height.
- Standard base frames with castors installed = 2,110mm actual height
- Extra wide base frames with castors installed = 1,450mm actual height.
- Screw jacks - have 450mm of threaded adjustment available for uneven surfaces.

Castor wheels have a machined aluminium rim (not plastic) and run on sealed wheel bearings. Tyres are non-marking polyurethane. Each castor has a working load limit

- of 600kg. Galvanized swivel base plates are available for use on rough or soft ground. They also need to be used when erecting scaffolds on stairs, roofs, steep driveways, etc.

To increase or achieve stability use compatible size tube and couplers to tie scaffolding to buildings through penetrations (eg, windows) or over parapet.

Maximum Height 180 Series

The maximum height of the working platform of a mobile scaffold with a minimum base dimension greater than 1200mm should not exceed three (3) times the smallest base dimension. For example – 3.0m long and 1.3m wide scaffolds should not exceed 3 x 1.3m = 3.9m

The maximum height for the working platform of a mobile scaffold with a minimum base dimension less than 1200mm should not exceed (2) times the smallest base dimension. For example – 3.0m long and 0.7m wide scaffolds should not exceed 2 x 0.7m = 1.4m

To achieve a higher platform level then determined by the rules above, either extra wide bases or outrigger props must be used. The preferred option is to use extra wide gear although in confined spaces outrigger props are acceptable.

However:
Alquip 180 series 9.3m high 3m long x 1.3m scaffold on a 3.0m trussed base satisfies the requirements of Clause 2.7 of AS/NZS 1576.1:1995 "Stability of Free Standing Scaffolds".

When scaffolds need to exceed to exceed the above working platform heights special outriggers and base designs are available. **Please contact ALQUIP (Australia) tel: 1800 654 444 or EQUIPTEC (New Zealand) tel: 0800 840 000 for advice.**

In conditions of heavy wind loads or if scaffold is used to support advertising banners, shade cloth or any attachment to the scaffold, the normal stability provided may not be adequate and the manufacturer must be contacted for advice.

The actual centre measurement of the scaffold frames are as follows:
(Remember to add 48.4mm to find the actual frame width).

0.7m wide = 679mm
1.3m wide = 1,286mm
2.0m wide = 1,913mm
2.5m wide = 2,493mm
3.0m wide = 3,049mm

When scaffold base dimensions are exactly the same i.e. 2.5m long and 2.5m wide then the direction of frames and braces can be reversed partway up. This can be a big advantage on awkward jobs such as when steel pipe work passes through a scaffold.

All transom centres on all frames are 405mm apart. Alquip 180 Series Scaffold require one metre high guardrail frame or additional 'one rung' handrail frames to comply with Australian and New Zealand standards.

The actual height of the frames are as follows:

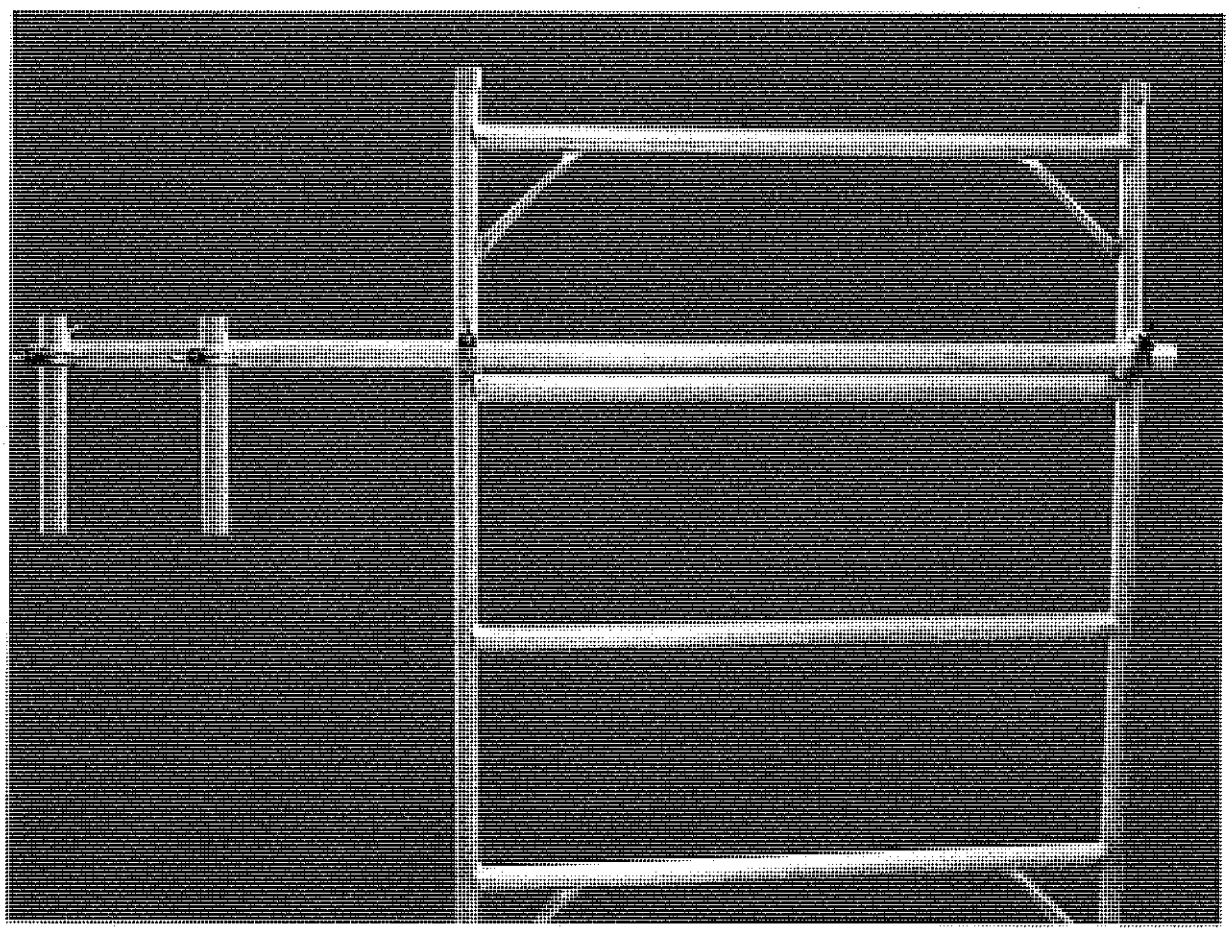
- 2.0m high frames have 5 rungs = 2025mm actual height.
- 1.6m high frames have 4 rungs = 1620mm actual height.
- 1.2m high frames have 3 rungs = 1215mm actual height.
- 0.8m high frames have 2 rungs = 810mm actual height.
- Standard base frames with castors installed = 2045mm actual height
- Extra wide base frames with castors installed = 1235mm actual height.
- Screw jacks – have 450mm of threaded adjustment available for uneven surfaces.

Guidance for the type of scaffolding coupler:

to use when connecting ties and other accessories.

90° swivel or parallel coupler to suit the following tube sizes may be used with Alquip scaffolding.

- 48.4mm O.D. Tube 220 Series (these are the same as standards steel scaffold fittings)
- 50.8mm O.D. Tube 180 Series



Maintenance:

- Plywood used on the platforms is 12mm thick structural grade hardwood and will withstand many years of outdoor use without any protection. Plywood will become slippery when painted.

- Castor wheels have sealed bearings, which are sealed against dirt and moisture. All castors sold after February 1996 has a grease nipple fitted to lubricate the pintle bearings. Twice a year (more frequently under dirty conditions) pump a small amount of grease in until it comes out through the top pintle bearing. None will come out of the bottom bearing as it has a seal to the outside.

- Screw jacks should be fully wound out occasionally, brushed clean and lightly oiled. (Suggest 50:50 mix of kerosene and engine oil).

- Brace grasper pins and springs should also be given a few drops of light oil, particularly if stored in the weather. (Repair kits are available).

- All base frames are fitted with plastic plugs internally on the standards to exclude dirt, plaster, etc from interfering with the free turning of the jack. Base frames should be turned upside down and tapped on the ground whenever a build up of foreign material occurs. If plugs should ever be damaged, please contact ALQUIP, tel 1800 654 444 and a replacement will be posted to you.

- Any cracks in welds should be ground out and repaired by a certified welder or returned to be repaired by certified ALQUIP welding staff.

- Couplers and accessories should be maintained so that they can be used as intended, for example, nuts should be free running and swivels should turn freely.

- Avoid excessive oil, grease or paint, which can cause a coupler or accessory to slip.

- Do not apply uncontrolled heat to couplers or accessories.

- A bent plate of an adjustable base plate should be straightened. If straightening is not possible, the base plate should be discarded.

Maintenance: When to discard a component

- If a platform hook becomes closed or extended in any way it should be discarded.

- If a grasper becomes closed or extended in anyway for any reason it should be discarded.

- If a coupler is cracked it should be discarded.

- Whilst mild denting or bowing of tube components may be straightened, if the component is creased it should be discarded.

- Use grasper gauge to test fitness, (available on request).

- Contact **ALQUIP (Australia) tel: 1800 654 444 or**
  EQUIPTEC (New Zealand) tel: 0800 840 000
  for clarification if there is any doubt about the component.

Transportation

Transport maybe made easier with the use of a scaffold stillages (cradle) to contain the scaffold or by palletising the scaffold on a wooden pallet and strapping with plastic ribbon. Loading would be with a forklift or crane.

All loads must be securely fastened as slippage occurs with aluminium components. Ensure you comply with state and federal transport acts regarding:

- Maximum height
- Maximum overhang
- Rope tail length (30 cm maximum)
- Method of strapping.

Storage

Equipment is best stacked away from corrosive material, such as salt, acid, chlorine. It is best stacked where it will not create a safety hazard. When standing frames vertically against a structure ensure that the structure will support the weight of the scaffold. Scaffold frames may be stored stacked on top of each other to reduce space and allow for moisture runoff if stacked outdoors.

Attention: - Safety Directive

Attention all ALQUIP Aluminium Scaffolding Customers

Please note that when horizontals are clipped to standards (vertical component) they are designed for sideways deflection only and are not load supporting.

Do not step on these horizontals when climbing into the scaffold.

Please do not stand on mid-rails or handrails.

Misuse by dropping from height or throwing onto the back of vehicles, for example, can damage the ends of graspers. Fittings should be regularly inspected and any damaged fittings should be replaced.

Further, if the grasper becomes closed or extended in any way for any reason it is to be discarded.

Please use ALQUIP Grasper Gauge to test for fitness. (Available on request).