



INDUSTRIAL ROPE ACCESS
OPERATING PROCEDURES

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APPENDIX A: RISK ASSESSMENT PROFORMA

1. SCOPE

These procedures apply to the methods and techniques employed by Hancock Industrial Abseiling Ltd to carry out Industrial Rope Access work on buildings, structures, steep slopes and other features.

2. REFERENCES

The references in these documents relate to works that are carried out using Industrial Rope Access as a work positioning system, and fall arrest techniques.

3. LEGISLATION, REGULATIONS & GUIDELINES

The following are used by **Hancock Industrial Abseiling Ltd** for guidance and conformity with industry legislation:

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995(RIDDOR95)

Construction (Health, Safety and Welfare) Regulations 1996 C (HSW) R

Construction (Design and Management) Regulations 1994 (CDM)

Construction (Lifting Operations) Regulations 1961

Control of Substances Hazardous to Health Regulations 1994 (COSHH)
(Updated from 1988)

European Directive 89/686/EEC Personal protective equipment (PPE)

Health and Safety at Work etc. Act 1974

Management of Health and-Safety at Work Regulations Approved Code of Practice

Personal Protective Equipment at Work Regulations 1992

HSE: Health and Safety in Construction (HS (G) 150). ISBN 07176 1143 4

HSE: Personal protective equipment at work. ISBN 0 11 886334 7

BS 2830: 1994 Specification for suspended access equipment
(Suspended chairs, traditional steeplejack's seats, work cages,
Cradles and platforms) for use in the building, engineering
Construction, steeplejack and cleaning industries

BS 5974: 1992 Code of practice for temporarily installed suspended
scaffolds and access equipment

BS 6037: 1993 Code of practice for permanently installed suspended
access equipment

LOLER (The Lifting Operations and Lifting Equipment Regulations) 1998

BS EN 795: Code of Practice for temporary bolt installation

PUWER (The Provision and Use of Work Equipment Regulations) 1992

BS EN 341: Personal protective equipment against falls from a height -
Descender devices (for rescue)

BS7883: Code of practice for application and use of anchor devices

BS7985 (2002): Code of Practice for Rope Access for Industrial Purposes

4. GENERAL PRINCIPLES

Requirements and Guidelines are documented for all aspects of work which is to be undertaken in high and/or exposed situations using rope access techniques. The work situation is always assessed to ensure that all risks to safety and the quality of the work required are fully understood.

Forward planning is paramount when engaged in rope access activities. Hancock Industrial Abseiling Ltd will plan, manage and organise the work to minimise any risks to technicians, other personnel involved with rope access and to third parties. Prior to technicians being mobilised, Risk Assessments, Method Statements and Health & Safety Plans will be in place. Full adherence to the Construction (Design & Management) Regulations is undertaken.

The following objectives relate to the use of rope access methods whilst on site:

- (a) Methods are chosen that are appropriate for the proposed work in hand
- (b) Operatives are selected who will be suitable for working at heights and for the job being undertaken
- (c) Technicians carrying out rope access work will be trained and qualified to IRATA standards
- (d) A competent IRATA level 3 supervisor shall supervise the work, and he or she shall regularly monitor technicians to ensure they are working in a safe and sensible manner
- (e) Technicians wear the correct PPE (Personnel Protective Equipment) in respect to the work they are involved with
- (f) All rope access equipment will be in a good working condition and is treated in accordance with Hancock Industrial Abseiling Ltd QA documents

The operations and training carried out by HIA Ltd shall comply with their own quality assurance documents, current copies of which shall be kept in the office and supplied to sites. All operations and training shall comply with the current IRATA Guidelines and General Requirements, and updates of these.

5. PERSONNEL

5.1 DIRECTOR'S RESPONSIBILITIES

- a) Responsible for the establishment, supervision and effective implementation of the Safety Organisation
- b) Responsible for the appraisal of priorities for Health, Safety and Welfare through the application of resources for preventative measures, training and other relevant Health and Safety matters
- c) To develop policy statements, codes of practice and safe working procedures
- d) Ensure that statutory obligations are complied with e.g. statutory notices are posted, First Aid equipment and trained personnel are available and the Company is operating to current accepted codes etc.
- e) Investigate accidents and near misses in conjunction with the Health and Safety Adviser
- f) Arrange for training requirements
- g) Acquaint staff with the literature etc. relating to Health, Safety and Welfare
- h) Assist staff to discharge their responsibilities under the Health and Safety at Work etc. Act, and other regulations
- i) Arrange for inspections and audits of work sites at regular intervals
- j) Ensure as far as it is reasonably practicable that personnel employed by the Company are:
 - a) Working to a safe and approved system
 - b) Given appropriate training and instruction
 - c) Given adequate and effective supervision
 - d) Given appropriate welfare facilities
- k) Ensure that assessments are carried out in line with management of Health and Safety at Work Regulations 1992 and COSHH Regulations 1989
- l) Ensure that the preparation, recording, monitoring and review of the risk assessment hazard for all aspects of the work are carried out, records of which shall be made available to any authorised person, in line with the Health and Safety at Work Regulations 1992
- m) Ensure that accident records are kept and that IRATA accident returns are made on a timely basis
- n) Ensure that technicians are in receipt of a copy of HIA's 'Technician's Handbook.

5.2 EMPLOYEES' AND SUB CONTRACTORS' RESPONSIBILITIES

All personnel working with and for HIA Ltd have a responsibility:

- a) To take reasonable care for the health and safety of himself and all persons who may be affected by his acts or omissions
- b) To co-operate with his employer in complying with all the health and safety regulations
- c) Not to interfere or abuse and Health and Safety precautions/equipment e.g. removal of signs, removal of guards on machinery etc.
- d) To ensure that accidents (however small) are reported to the site supervisor who shall then record the matter in the accident book
- e) To report any suspected defective equipment immediately

It is the responsibility of the site supervisor to inform Head Office of all accidents and/or any other issues that may compromise Health and Safety.

It is the responsibility of the Quality Assurance manager (Ryder Deyn) to ensure that IRATA accident returns are submitted in accordance with IRATA requirements, and that any notifiable accidents and near-misses are dealt with appropriately, and in accordance with the requirements of RIDDOR.

5.3 SELECTION OF PERSONNEL FOR ROPE ACCESS OPERATIONS

All rope access personnel shall as a minimum hold an IRATA level 1 certificate and shall have been independently assessed to IRATA levels 1, 2 or 3.

Personnel who are engaged in Industrial Rope Access and are employed by HIA Ltd shall meet the requirements laid out in this procedure and comply with IRATA guidelines.

Only IRATA qualified rope access technicians shall be employed by HIA Ltd.

In accordance with HIA Ltd's Racial Equality and Equal Opportunities Policy, all candidates for employment will be considered, regardless of race, culture, ethnic or national origin, religious belief, gender, sexuality, marital status, age, or physical or other handicap.

Candidates considered for operations in rope access shall have a sufficient education, training and experience to ensure they understand the principles and procedures of rope access techniques.

Personnel should be:

- a) Physically fit and free from any disability that would prevent them from working safely

- b) May have an active background in one of the following: climbing, mountaineering, caving, military training
- c) Have a respective trade or qualification, which can be used with rope access
- d) Be of a responsible, mature and co-operative nature
- e) Candidates for training and operations shall be assessed according to IRATA guidelines
- f) If having no prior experience of using tools, plant and equipment, they will be trained, before any employment commences, in the use of such items by experienced operatives. The acquiring of extra certification (such as chain saw or spraying training) will be encouraged, and such equipment will not be made available to those who do not hold the necessary certification for their use.
- g) If English is not the candidates first language, they shall be fluent in spoken and written English. Rope access demands impeccable communication at all times.

Candidates for training and operations shall not show any contra indications for working at height and in strenuous environments. All candidates are requested to complete a self-certification medical questionnaire prior to undertaking training.

Prospective operatives references shall be checked in order to confirm that their experience and qualifications are appropriate for the proposed operations.

6. TRAINING AND SUPERVISION

6.1 General

HIA Ltd is committed to a high level of training for all its technicians and believes that rope access work can be carried out in a safe reliable manner.

6.2 Training

HIA Ltd shall use only IRATA qualified personnel to train other candidates. All trainers shall be qualified to IRATA level 3. All assessors shall be IRATA registered.

HIA Ltd has three levels of training for industrial rope access. These comprise IRATA levels 1, 2 & 3.

6.2.1 Level 1

Level 1

At level 1, a Rope Access Technician shall be capable of performing safe activities under the supervision of a level 3 Technician. The basis of the training course will be that prescribed in the IRATA General Requirements (January 2005), and will comprise:

- Theoretical knowledge
- Equipment & rigging
- Manoeuvres
- Climbing
- Rescue/hauling

A Level 1 technician will not be allowed to supervise or train others in Access Techniques, but he or she will be responsible for equipment issued to them (ropes, harnesses and so forth) and responsible for reporting and checking of the same. They will be able to assist in rigging and standard operations under the supervision of a level 2 or 3 technician, and will be able to undertake a rope access rescue involving descent by him/herself and have a knowledge of hauling systems.

6.2.2 Level 2

A Level 2 Rope Access Technician shall be capable of performing the requisite activities under the supervision of an IRATA level 3 technician. He or she will have knowledge of safety, quality assurance procedures and legislation relating to rope access, and undertaking rescues and other rope access tasks. The basis of the

training course will be that prescribed in the IRATA General Requirements (January 2005), and will comprise:

- Theoretical knowledge
- Equipment & rigging
- Manoeuvres
- Climbing
- Rescue/hauling

He/she should have a broad knowledge of legislation, safety requirements and quality procedures relating to rope access. Candidates must be experienced, qualified to rope access technician level 1 and have 1000 hours rope access work experience to be assessed at level 2. The level 2 assessment can be undertaken with a minimum of 1 year post level 1 experience. The level 2 courses shall be four days long. Assessment shall be made to IRATA guidelines and carried out by an IRATA approved assessor.

6.2.3 Level 3 Rope Access Supervisor/Team Leader

Level 3 training is aimed at experienced level 2 rope technicians. Technicians will provide proof of the following: 1000 working hours and a minimum of 1 year work experience as a level 2 technician and approved first aid certificate.

Technicians carrying out training shall be trained to an advanced level of rope access techniques, rescue techniques and have familiarisation with Company Quality Assurance and Quality Control Procedures and IRATA Guidelines. Trainers shall be Level 3's.

A Qualified Rope Access Supervisor shall:

- Be capable of complete responsibility for projects at the work site
- Be able to demonstrate all the skills and knowledge required of a lead technician
- Be conversant with all relevant work techniques and relevant legislation
- Have a comprehensive knowledge of advanced rescue techniques
- Hold an approved First Aid certificate
- Have knowledge of the IRATA training scheme

6.2.4 Refresher Training

IRATA certificates are valid for three years, by which time technicians will attend a re-certification course to the appropriate level and will be assessed by an independent IRATA Approved assessor.

Level 1 technicians who have not carried out any rope access work within three months of their assessment will undergo a refresher course before they are sent

out to the work site. This is to make sure they are still familiar with the equipment, and are capable and confident to carry out rope access work. This may take place on site.

All personnel shall be trained in accordance with **HIA Ltd** Training Procedures Manual, IRATA Guidelines and General Requirements.

IRATA Guidelines, General Requirements and updates will be available on all courses for trainees' reference.

6.3 Supervision

HIA Ltd shall ensure that level 3 supervisors will at all times be aware of personnel's discipline whilst engaged in rope access activities, and shall oversee their safety and well being.

Newly qualified personnel will be provided with level 3 supervision to ensure they are adopting safe working techniques, and that additional tuition or re-training will be given whenever deemed necessary to ensure the safety of the operative, the team and the public.

Where it is deemed necessary for personnel not employed by HIA Ltd (e.g. a client) to gain access to a specific place at the work site, it will be at the discretion of the level 3 to set up a suitable work position. The supervisor in charge of such a situation will be in full control throughout the operation.

6.4 TRAINING CERTIFICATES AND LOGS

HIA Ltd shall ensure that for levels 2 & 3 trainees, their log books exhibit the required minimum number of hours and minimum periods between level changes as stipulated by irate. **HIA Ltd** will keep records of personnel IRATA certificates, and shall keep records of the assessment as detailed in the IRATA general requirements section 19.4.2. This will include training course reference, trainer names, assessor name, log book, and any other relevant information.

Records of log books, IRATA certificates and photographic I.D. cards will be kept at the HIA Ltd office. HIA Ltd will ensure that personnel certificates and logbooks are maintained up to date.

7.0 SELECTION OF EQUIPMENT FOR WORK POSITIONING

7.1 General

Prior to equipment being issued for a particular project, all equipment will be examined and assessed individually. This is to ensure that the equipment is fit for use and of the highest standard whilst being used at the work site

Only equipment listed in these procedures will be used in the implementation of rope access methods. Only certified equipment that can withstand falls and shock loading will be acceptable for work positioning.

7.2 Identification of Equipment

All rope access equipment owned by Hancock Industrial Abseiling Ltd shall be identified with unique numbers in the following fashion

Karabiners	Colour coded to certificates of conformity and individually numbered
Wire Strops	Engraved or colour coded
Stops	Engraved
ID descenders	Engraved
Ascenders	Engraved
Crolls	Engraved
Hand Jumars	Engraved
Back up devices	Engraved
Harnesses	Permanent marker Pen
Ropes	Permanent marker Pen/Heat Shrunken Tape

Other equipment should be indelibly marked with a Unique Identification Number.

All load-bearing equipment shall come from approved suppliers and shall meet the relevant National, European or International standard (BS/EN/ISO) for the equipment, and shall be purchased with certificates of conformity.

Only ropes made from poly-amide (nylon) or polyester will be used for rope access activities.

Lengths cut from ropes will be clearly identified, both on ropes and certificates. Each length cut will be marked with the original rope's ID.

All equipment is marked with its original Certificate number and/or a unique HIA Ltd number directly traceable to a Certificate of Conformity

Equipment will be withdrawn from service following damage, after a fall, when considered by a 'Competent Person' to be unfit for use, or at the end of their maximum serviceable life, whichever comes first. Details of these criteria are in the ascend equipment procedures document. It is every technician's responsibility to check their equipment prior to use and to report any defects to the office. Equipment is not be allowed to come in contact with harmful substances, and will be stored on site in a designated place chosen by the team leader to ensure its safety and integrity.

Access equipment withdrawn from service shall be clearly identified as such and returned to the store for disposal.

Original certificates of conformity will be held at HIA Lt d's office.

7.3 Inspection of Equipment

Prior to equipment being sent out on a project, and at intervals as specified in **HIA Ltd** Q.A.005 section 4.1, a visual and tactile inspection shall be carried by personnel that are competent and experienced in inspecting rope access and associated equipment. Any equipment that is damaged will be repaired if possible or disposed of. The definition of a competent person is included in QA005.

When equipment has been mobilised to the work site the supervisor and technicians will also check that the equipment is in good working order and fit for use. Any pieces of equipment found to be in an unsuitable condition shall be returned to the stores and repaired or disposed of.

It is the responsibility of all supervisors and technicians to take care of all rope access and associated equipment whilst out of store, both on site and in transit. Equipment in transit shall be treated as if it is in store.

When equipment has been returned from a project it will be checked and serviced. Any pieces of equipment found to be in an unsuitable condition shall be repaired or disposed of.

All equipment will be inspected and an inspection report produced at six-monthly intervals in accordance with the LOLER regulations.

7.4 Quarantine Procedure

Where equipment on site is found to be defective, it must be brought to the attention of the competent person (always a level 3), the equipment must not merely be tagged and put to one side.

The level 3 then removes it immediately to a 'safe place' away from PPE in use, and tags the equipment as 'Quarantined – not to be used'. He/she contacts the office at the earliest opportunity, by phone or in person, and the rope access manager decides whether the equipment stays on site (if a secure quarantine area exists) to be returned to store later, or comes back to the store immediately/at the first opportunity.

Once returned to the office, or if identified at the store; defective or suspect equipment awaiting disposal is locked in a cupboard outside of the rope access room and dealt with there, and does not re-enter the rope access room. Only a specified person has the key to that cupboard.

The equipment is inspected by a competent person and, if considered unusable, is disposed of at the municipal tip immediately. If it is not possible to take it immediately, it is returned to the quarantine cupboard with a note on it, saying 'To be disposed of'. The item is crossed off the equipment list in the store and subsequently removed from the typed equipment list on the admin computer.

7.5 Protective Clothing

Technicians will be familiar with all personal protective equipment and ensure that it is in good condition at all times. When working in inclement weather, technicians shall wear adequate clothing to ensure that they are kept warm and dry, so that the fatigue and numbing effects of cold do not prejudice them.

Coveralls will be close fitting for ease of working and to avoid catching in equipment but not so tight that personnel will be restricted in movement. Coveralls will be replaced or repaired if damaged, as and when necessary. When personnel are working with cutting or welding equipment, the coveralls shall be flame retardant and will meet Ascend/Client specification and will be worn at all times whilst engaged in rope access activities.

Appropriate PPE will be provided and shall be used at all times, such as goggles, ear protection, hard hats, life jackets, etc.

Personnel will wear protective footwear at all times, ensuring that they are in good condition and are of the correct fit.

When personnel are working in high noise environments, they will be required to wear the necessary hearing protection at all times.

7.6 Life jackets

These shall be used over water, where the risk assessments deem necessary, and shall be of a type that cannot accidentally become loose or detached, and do not interfere with the rope access systems' smooth operation. Compressed air uninflated jackets shall be used where appropriate.

8.0 TOOLS AND WORK EQUIPMENT

8.1 General

The tools that are used when carrying out rope access activities will depend on the project in hand. However, it is important that the tools chosen for a specific project are suitable for the work intended. Electrical and power tools will be in a good condition and suited to the environment in which they are to be used, and will comply with local regulations. Prior to technicians being sent on a project, the company shall ensure that they are familiar with, and experienced in using, the relevant equipment.

8.2 Hand Tools

Small hand tools that weigh less than 8kg may be connected to the technicians harness via a lanyard. This will prevent the accidental dropping of tools to the ground below. Electrical tools shall be of 110 voltage and the lanyard will be connected to the body, not the mains lead.

8.3 Large Tools

Larger tools that weigh more than 10kg shall be connected via an independent line i.e. (10.5mm static rope). These ropes must be identified to eliminate confusion with the working and back-up ropes. When large electric and pneumatic tools are being used technicians will make sure that they do not interfere or cause any hindrance whilst working.

8.4 Plant, machinery & tools

a) All plant and machinery to be checked before use. None shall be used if found to be defective nor used if any form of guard or safety device is missing.

No equipment to be used of any item of plant or machinery unless adequate instruction has been given.

b) Any defects in plant or machinery are to be reported to the Site Supervisor or, in his absence, to the Director.

c) All plant and equipment are to be stored in a safe manner, preferably under lock and key within the compound.

d) Tools and equipment must comply with local regulations and standards.

e) Hired in equipment shall be from ISO9002 accredited hire shops, such as HSS, Speedy Hire, A Plant and Hewden Lift & Shift. Where appropriate, hired-in equipment will conform to the relevant regulations, and will be certified.

8.5 Highly inflammable substances

- a) Smoking is not allowed where petrol or plant are stored or worked upon.
- b) Only up to a maximum of 4 gallons (approx 15 litres) of petrol may be stored. Suitable safety containers are the only acceptable means of storing petroleum spirit.

9.0 PLANNING

9.1 Method Statements and Risk Assessments

9.2 General

These shall always be carried out prior to undertaking rope access works. Design stage and construction stage Health and Safety plans shall be carried out in accordance with the Construction (Design and Management) Regulations 1994.

BS7985 is used for guidance in assessing potential work environments and their suitability for rope access.

9.3 Particular

Prior to any work being undertaken, the project and the tender/contract documents shall be reviewed to ensure that the work is suitable for rope access work methods.

Where it is not practical for personnel to attend briefings, the Team leader or Supervisor must ensure that personnel are familiarised with work procedures through 'toolbox' talks. All personnel on site shall have access to, and be familiar with, the work site file, which will contain copies of the IRATA Guidelines and General Requirements, and company procedures.

9.4 Mobilisation/Return of Equipment

When equipment is required at a Work site, the following procedure will apply:

The itemised equipment shall be checked to ensure that certificates are current and that the equipment is in good working order.

All equipment shall be inspected to satisfy the criteria for rope access work.

Equipment shall then be packed in rope bags and mobilised to the work site. On arrival at the work site the team leaders shall double check all equipment and check that it is in good working order prior to use.

9.5 Selection of Work Team

The Project Manager will select the work team suited to the specific project. This will normally be a team consisting of Multi-Disciplined Personnel. For all access work, the team will consist of at least one level 3 Rope Access Supervisor/Team Leader. The other team members can be either level 1 or level 2.

For normal access work the team size should be a minimum of three persons, however, if the access work were of an extremely straightforward nature, then a two-person team

would be acceptable. It should be noted that in such a two-man team, the work must be of a relatively straightforward nature in case a rescue be required.

9.6 Preparation

Particular note should be made of the Hazard Analysis, any special job requirements or difficulties, and any certification required.

Operation procedures shall be available and, where requested, project specific procedures will be provided.

Current copies of the ascend rope access procedures, IRATA Guidelines and General Requirements shall be kept in the site file. Current, including updated, procedures shall be issued to sites.

Each work site file shall contain a proforma for reporting incidents and accidents, as per RIDDOR 95 guidelines.

A quarantine proforma shall be kept in the site file for recording decommissioned items of rope access equipment.

On arrival at the work site, Team Leaders shall report to the designated Client contact and ensure that the team completes all registration with Safety Officers, if applicable, and project specific procedures can be discussed and agreed. Correct liaison is essential for the work.

The team leader shall apply for any necessary work permits in good time, so that each shift can prepare any required arrangements and commence work without delays. All personnel involved with the work should have a clear understanding of the work permit. The team leader will brief all personnel on this and other aspects of the work.

Work permits are a safety aid and not a guarantee or substitute for common sense, so personnel must constantly ensure that systems remain safe, and that those associated electrical cables, piping systems and the like are isolated or secured.

Work areas should be cordoned off using solid barriers if possible and defined with warning signs placed inside or incorporated into the barriers before any work begins.

The protection of third parties using spaces within, below or adjacent to, the work site shall always be considered as a risk assessment prior to works beginning, and adequate provision made to ensure the safety of third parties, for instance with the use of danger and men working overhead signs, and the provision of working cordons below working areas.

If a permit to work system is in use this must be strictly adhered to. If no permit to work system is in place the building manager must be made aware that no conflicting works can be carried out during the abseiling duties.

On residential and commercial properties the facilities manager is to notify the residents of the work commencement and completion date, a minimum of 48 hrs prior to any abseiling activities.

If the local county council operates a permit system, such as the city of London, the responsible office should be contacted and the permit arranged. The health and safety representative will advise on the correct signage and barrier allowance for the particular area to be affected.

Other structures including bridges differ in the 3rd party notification process.

The governing body of the water way ie: the Port of London Authority should be notified at least 6 weeks before work commencement and permission must be gained from them . The police on both sides of the river should also be notified of the proposed works.

A warning can then be given by the PLA (Port of London Authority) to other water craft using the river.

Other notes appertaining to the care of 3rd parties:

The abseiling operatives must empty their pockets thoroughly before abseiling activities commence to ensure coins and other items do not drop out.

All hand tools, buckets, communication equipment must be secured to the operative by lanyards at all times whilst working at height.

If any persons wilfully ignore the barriers and step inside the cordon all work must cease immediately until the 3rd party is removed.

If any conflicting works are noticed all works should cease until the other working party is made aware of the conflict and stops work in the danger area.

If it is deemed necessary due to busy pedestrian traffic and the possibility of a 3rd party ignoring the cordon a sentry shall be placed at ground level to ensure pedestrian safety.

A Cordon and A sentry should also be positioned at the point of descent, ie roof level if required.

Facilities for rescue and a first aid kit shall be provided to every work site. This shall be under the auspices of the supervisor who shall inform the office of any replacements required. The contents of the first aid box shall be in accordance with the recommendations of the British Red Cross "First Aid at Work" course.

9.7 Work site assessment will cover the following:

9.7.1 Safe Approach

- Establish "Exclusion Zone"
- Safe Approach to Work Area
- Awareness of other Personnel/Activities
- Edge Preparations
- Anchors
- Rope Protection
- Weather

9.7.2 Access Methods

- Ascending
- Descending
- Traversing
- Rope Transfers

9.7.3 Rescues

- Rescue retrieval systems
- Mid-rope situation from above
- Mid-rope situation from below
- Administration of immediate first-aid on the rope
- Local rescue/standby services

9.8 Main Anchor Points

A suitably experienced and competent person shall make an assessment of the provision for main anchor points. The criteria shall be in accordance with good structural engineering practice and may include permanent structural members in existence on a building/ slope, and/or those installed in accordance with BSEN795 as temporary or permanent anchorages for a project. In any case the anchor points used shall be unquestionably sound.

There will at all times be a minimum of two entirely separate anchor points for any single rope access procedure. Each anchor point shall be assessed by a competent person (approved by **HIA Ltd**) prior to use. Where bolts have been installed to BSEN795 these will be load tested as appropriate to a tension load of 10KN.

Ropes redirected from anchors should not exceed an angle of 20 degrees without account of the increased load distribution resulting from the angle of redirection.

Anchor areas shall be protected from interference by third parties.

Anchors for suspended platforms and any heavy tools, materials and equipment that use ropes, shall have separate anchors.

Often it will be possible to connect directly to a substantial steel, concrete or masonry section. Steel wire strops of minimum SWL of 2.2KN will be used. With slings both eyes should be led back to the rope connection and be joined with screw gate karabiners.

Sharp edges should be avoided, and all ropes and slings shall be protected from abrasion using rope protectors.

Ropes will not be subjected to chemical or other site contamination.

After rigging is complete, or when it has been left unattended for short periods such as meal breaks, equipment shall be checked before use. For longer periods, e.g. overnight, equipment should be pulled in and secured. All team personnel must be advised when anchors have been rigged down. (See QA005 Section 3.5 wire ropes).

9.9 Ropes and Associated Equipment

All suspension equipment shall be checked and inspected prior to being used.

The Team Leader shall inspect the ropes prior to their use.

Double attachment points must be used. This may be a double rope system for descending/ascending or traversing, or cows tail lanyards if aid climbing. The suspension equipment should be inspected daily and before each use for signs of damage or deterioration. Ropes should not be allowed to come in contact with harmful substances. When not in use, ropes must not be left lying around and should be stored in designated areas.

Each rope should be attached to the anchor using the appropriate knots and 2 steel screw gate Karabiners or Maillons. It should not run over sharp edges and protectors must be used across angles. Free ends will be knotted.

Abseil ropes should be just long enough to adequately cover the work area. For traverses and any side-pull retrieval system, sufficient spare rope must be available. All abseil ropes will have a knot tied at their lower ends to prevent technicians abseiling off the ends.

Excess rope will allow wind or wave action to entangle it in projections and so forth, restricting the retrieval of the rope and complicating any rescue of incapacitated personnel. Any excess of ropes should be coiled and hung up rather than left to lie on the ground. Alternatively rope can be put into storage bags and suspended below the operator, and fed out as required.

In all cases a recovery technique must be considered for the retrieval of incapacitated personnel. This may be direct lifting by winch or pulley system from above or lowering to another suitable level or sideways pull to an access point. The best method will vary with the location but it must be pre-determined, prepared and briefed by the Team Leader beforehand. The necessary equipment must be available at the work site.

The general arrangement of connections, personnel equipment, tools, holster etc. must be as tidy as possible to facilitate safe and efficient working.

For welding and cutting operations, all susceptible rope and harness attachment areas must be protected by suitable shielding material, e.g. fire retard rope protectors. As back up, the technician should be attached to an anchor point with an additional wire sling.

A separately attached back up device on a separate rope must back up all rope work manoeuvres. Only screw gate karabiners and maillons will be used. Equipment to ascend and descend should always be carried.

When a climbing type seat is used the operative must be attached directly to the ropes via a sit harness, not only via the seat.

9.10 Other Equipment

Personnel shall familiarise themselves with any special equipment before going to the work location. This will normally be carried out prior to commencing a project and will be carried out in a controlled environment. In any case, a “dummy run” is often carried out. Such equipment includes the following: -

Hydro jetting and compressed air tools should be checked at ground level. Couplings should be secured in the correct manner and the hose should never be pulled on.

Qualified personnel who operate welding and cutting equipment should be aware of potential hazards and how to prevent and avoid them. Fire-retardant rope guards should also be used.

Electrical tools should be of 110-volt type and intrinsically safe. Explosive-proof items may be required in confined spaces.

All lifting gear should have current test certificates and conform to the ‘LOLER’ Regulations.

Hand-held radios and mobile phones are used for situations where communication may be difficult. These are intrinsically safe where required.

9.11 General Operations and Procedures

Technicians shall double-check their equipment and anchor points to ensure they are attached to a rope/safety line before approaching unprotected areas.

All personnel are expected to check their personal equipment daily, paying particular attention to software (e.g. harnesses and slings). They should be alert and follow safe working practices at all times, being familiar with any Hazard identification and risk assessment. All personnel must be aware that they are legally responsible for their own health and safety.

Good housekeeping practice is essential, and all personnel should be exemplary in their attitude towards their own equipment and that belonging to others. Personnel should keep equipment, tools and materials in a tidy and clean state at the end of each shift.

Loose equipment, up to a maximum of 8kg, can be secured to the operatives person or kept in a haul bag. Lanyards for hand tools must be of adequate strength and kept as short as possible to minimise impact loads. Items should never be lowered directly above operators, and heavy equipment (over 8kg) must be securely attached to separate lowering and anchoring systems.

Swinging loads are a major danger and personnel should stay alert, keeping fingers and limbs clear of possible crushing areas. Operatives should never attach themselves to heavy loads and should always retreat to a safe area while loads are being manoeuvred.

The area around the work site should be cordoned off, and 'men at work' signs posted to ensure third party safety.

Operatives on site shall always be within eye and ear contact of each other whilst carrying out rope access works. This may necessitate the use of two way radios or mobile phones on many sites.

10.0 WEATHER

It is at the discretion of the level 3 Supervisor whether the work should be suspended due to inclement weather conditions. If the level 3 Supervisor feels that the work should be suspended, the status of the weather will be checked at regular intervals. Depending on wind direction and work location, a wind speed of 25 knots is the normal operating limit.

11.0 DEFINITIONS

For the purposes of these procedures, the following definitions shall apply:

Anchor: A place, fixing or fixture to which the main working ropes and back-up ropes are attached.

Anchor Line: A flexible line that is connected to at least one secure anchor to provide a means of support.

Ascender: A device that is attached to the main working rope and, due to the small teeth on the inside, prevents it from sliding down the rope but allows the operative to ascend.

Back-up Device: A shunt (for example) that is attached to the back-up (Safety) line and industrial sit harness.

Belay: A secure anchor point.

Body Support: An industrial sit harness.

Competent Person: A designated person who has been trained or qualified in his or her respective field that can carry out and supervise a task competently.

Connector: A safety device that opens and closes which secures a technician to anchors or ropes.

Cow's Tails: Short lengths of dynamic rope that attach hardware to the sit harness.

Descender: A device that is used to control the descent of technicians when descending. May also be used for ascending.

Dynamic Rope: Rope that is designed to stretch and absorb energy in the event of a fall.

Fall Factor: The length of the fall divided by the length of rope from the faller to the rope attachment point.

Karabiner: A connector that is formed as an open loop, which has a spring loaded entry gate and is used to attach equipment to ropes and anchors.

Kernmantle Rope: A textile Rope that consists of a core enclosed in a sheath.

Lifting Equipment: Rope slings, chains, shackles, turfers, eye-bolts and webbing, subject to the 'LOLER' regulations.

Maillon Rapides: Screw link connectors that come in different shapes and sizes, which are formed as an open loop and closed by a threaded gate. Used in situations where Multi-directional loads preclude the use of Karabiners.

Method Statement: A document that is written by the party/parties designing or carrying out site works describing how a particular project will be undertaken. (This document normally accompanies a Risk Assessment Document).

Risk Assessment: A document that is written by the party/parties designing or carrying out site works to outline the possible hazards that could occur on a particular project. This document will estimate the severity of the hazards and show how they can be reduced or avoided.

Rope Access: Methods and techniques used as a work positioning to gain access to a place of work.

Safe Working Load: The maximum working load a piece of equipment is designed for.

Sentry/Safety Operatives: People responsible for keeping watch to safeguard the anchorage area, the ground above or below the Work site A full member of the work team but need not be trained in rope access.

Static Rope: A low stretch rope which is used for work positioning in Industrial Rope Access Techniques.

Work Positioning: A technique, which enables technicians to be supported in tension or suspended by the relevant equipment to prevent a fall or serious harm occurring.

12.0 Rope Manoeuvres - Basic

12.1 Ascending

1. Attach Shunt on back-up rope.
2. Attach Croll on working rope.
3. Attach Jumar above Croll on working rope.
4. Push Jumar as high as possible, put foot into Etrier and push with leg pulling the slack rope through the Croll.

12.2 Descending

1. Make sure that the Shunt is above head height.
2. Thread the rope through the Stop and lock off.
3. Prior to descending check area below.
4. Bring Shunt level with Stop.
5. Unlock Stop, grasp cord on Shunt and handle on Stop with left hand and press - making sure that the trailing rope is held in the right hand to control descent.

12.3 Passing Knots

Ascending

1. Ascend ropes as normal.
2. When the Shunt is approximately 6 inches from the knot on the back up rope, clip a spare cows-tail into the knot.
3. Remove Shunt from below the knot and attach it above the knot.
4. Remove cows-tail from knot on back up rope and clip into the knot on the working rope.
5. Remove Jumar from below the knot on the working rope and place above the knot.
6. Stand up in the Etrier and remove the Croll from below the knot and place the Croll above the knot on the working rope.
7. Once past the knots proceed as normal.

Descending

1. Descend down the ropes until the Stop hits the first knot on the working rope.
2. Clip a cows-tail into the knot on the back up rope.
3. Remove the Shunt from above the knot on the back up rope and place below the knot.
4. Attach the Jumar above the Stop as high as possible.
5. Stand up in the Etrier and place the Croll between the Stop and Jumar.
6. Remove the Stop and place below the knot on the working rope.
7. Stand up in the Etrier and remove the Croll and sit down, letting the Stop take the weight. Lock the Stop off.
8. Remove cows-tail from knot on working rope, unlock the Stop and ascend as normal.

12.4 Rope Transfers

1. Once ascended, and at a height to transfer to another set of ropes, personnel must change from ascending to descending mode. From Croll to Stop.
2. Attach Jumar and Croll onto the ropes that you wish to transfer to and pull as much slack as possible.
3. Attach a second Shunt to the back up rope, which is the rope that you wish to transfer to, and place as high as possible.
4. Unlock the Stop and ascend across to the new set of ropes bringing the first Shunt with you until you are in a vertical position.
5. Remove the Stop and Shunt and proceed as normal.

12.5 Passing Deviations

Passing Deviations is similar to passing knots

Ascending

1. Ascend ropes up to deviation.
2. Clip short cows-tail into karabiner on deviation.
3. Unclip ropes from deviation and ascend above.
4. Clip ropes back into karabiner on deviation.
5. Remove short cows-tail from karabiner on deviation.
6. Let the slack rope slide through karabiner by holding the rope below deviation.

Descending

1. Descend down the ropes and stop when level with deviation.
2. Clip short cows-tail into karabiner on deviation.
3. Unclip ropes from deviation and descend below
4. Clip ropes back into karabiner on deviation.
5. Remove short cows-tail from karabiner on deviation.
6. Descend down ropes

12.6 Passing Re-belays

Ascending

1. Ascend to first belay.
2. Clip short cows-tail into karabiner on belay.
3. Transfer from Croll to Stop.
4. Attach Croll and Jumar pulling through all the slack on looped rope in re belays.
5. Remove Shunt and attach to back up rope in re belays
6. Remove short cows-tail from karabiner on belay
7. Press handle on Stop to move across on upper ropes
8. Ascend to next belay

Descending

1. Descend as far down in loop on re belays
2. Change over from Stop to Croll and Jumar
3. Ascend up to belay point
4. Clip short cows-tail into belay
5. Attach Stop and Shunt on vertical ropes as near to knots on belay
6. Remove Jumar from loop and clip into belay
7. Stand up in Etrier, remove Croll and let the Stop take the weight.
8. Remove Jumar and short cows-tail from belay and abseil down

12.7 Rigging

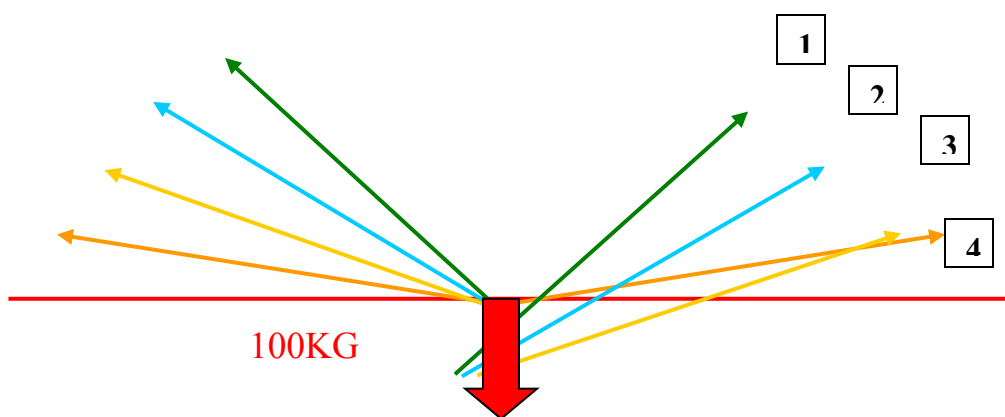
All main Anchor/Belay points used shall be strong and reliable enough to work from. BS7985 recommends a safe working load of 15KN for rope access anchor points.

Working and safety ropes will have separate anchor points, unless there is no doubt that a single anchor point is 100% secure.

Separate attachments from harness to working rope, and to backup or other anchor, will always be used.

It is an important factor when Anchor/Belay points are chosen that in the event of the working rope failing, the safety rope and anchor point is not shock loaded. To prevent the system from shock loading suitable knots that are adjustable will be used and load sharing between anchors is carried out.

Angle loading is another important factor and should always be taken into account when rigging rope systems. By keeping angles low this will reduce the multiplier effect on anchor points.



1	70KG		90°
2	100KG		120°
3	150KG		140°



Angles should not be greater than 120°

12.8 Rescues

There are a large number of rescue scenarios and level 3's supervising site works shall be familiar with rescue requirements and ensure sufficient equipment and personnel are on site to carry out rescues, before beginning works.

12.9 Knots

Knots are used mainly for:

- Rigging ropes
- Attaching cows-tails to harnesses
- Attaching equipment to cows-tails
- Joining ropes together
- Holding equipment
- Temporarily isolating rope damage

The types and uses of knots are demonstrated on IRATA training courses.

12.10 Pendulum

Running belays and deviations may be required in order to reduce the effects of wind in causing a pendulum (with the inherent risk of friction damage to ropes and re directed loads), especially on longer abseil or prussic lines. It is recommended that pendulums shall be of less than 20 degrees or less than 2 metres from a vertical line.

12.11 Lead Climbing

Lead climbing is taught on all HIA Ltd IRATA courses and used in some industrial situations. Risk assessments are carried out for lead climbing on a project by project basis.

12.12 Suspended Platforms

Suspended platforms will have anchor points which are entirely separate from the rope access systems used by personnel.

Appendix A: Risk Assessment Proforma**SAFE SYSTEMS OF WORK****ASSESSMENTS**

At the pre contract stage of any job HIA Ltd will carefully assess all aspects of the work to be undertaken and ensure that all potential hazards are identified. A site inspection may be carried out to determine the means of access, risks to both employees and others, and the nature of the working environment. Advice may be sought from the client regarding any local regulations and permit requirements. A COSHH assessment of any hazardous substance must be completed and any appropriate action undertaken.

Where appropriate, advice will be sought from the client as to whether the site has been checked for asbestos.

THE METHOD STATEMENT

A method statement will be completed following our pre-contract research. This method statement will generally include:

1. The applicable rescue techniques.
2. The safe access by personnel to the anchors.
3. Risks to persons not employed by HIA Ltd and the precautions to be taken to eliminate such risks.
4. Details of the anchors and the rope access system.
5. The specific rope access techniques to be used.
6. Details of the type, safe use and anchoring of tools.
7. The communication techniques and equipment to be employed.
8. The experience of contract personnel.
9. The COSHH assessment.
10. An assessment of substances or other hazards detrimental to roped access equipment which may be present on site and the precautions to be taken against such substances.
11. The procedures for liaison with other contractors on site.
12. Details of permit requirements.

13. Extra instructions specific to the site.
14. Details of the type and use of PPE

The method statement will be discussed in detail with all members of the work team prior to commencement of works.

Risk assessments will be carried out for every project, updated as required on site as work progresses.

