

WORKING AT HEIGHT**Δ 02**

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2 WORKING AT HEIGHT

Intent

The intent of this protocol is to eliminate or minimise the potential for fatalities, injuries and incidents arising from risks associated with Working at Height.

Related Life-Saving Behaviours

1. Always come to work drug and alcohol free.
2. Always use or wear critical safety equipment.
3. Always wear appropriate fall protection equipment when working above two (2) metres.
4. Only operate equipment if trained and authorised.
6. Never modify or over-ride critical safety equipment without approval.
9. Always report injuries and HPRIs.

Key actions

1. A risk assessment must be conducted to identify, analyse and evaluate all hazards associated with Working at Height such as working over water, dropped or falling objects, etc. and an action/treatment plan is implemented.
2. When practicable, advanced technical and engineering solutions must be applied to reduce or eliminate Working at Height hazards.
3. For all identified routine tasks and/or activities involving work above two (2)¹ metres, procedures and permits must be developed, applied and maintained.
4. Competency requirements and training needs must be identified and a training plan developed and implemented.
5. Rescue plans must be developed and tested and suitable recovery equipment made available.
6. Project management plans including work at height risk management processes must be developed and applied for major construction or demolition projects.

¹ Lower heights may be specified to conform to applicable legislations and related code of practices.

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2.1 General requirements

- 2.1.1 A risk assessment must be conducted and documented to identify the hazards and assess the risks associated with Working at Height such as working over water, dropped or falling objects, construction or demolition of structures.
- 2.1.2 A Working at Height procedure meeting the requirements of this protocol must be developed, implemented and maintained.
- 2.1.3 For routine and/or periodic tasks and/or activities involving Working at Height, task specific procedures must be developed and used.
- 2.1.4 Before undertaking any task or activity involving Working at Height, and where safety procedure does not exist, a documented risk assessment must be conducted.
- 2.1.5 Workers conducting a task or activity at a height whilst outside the protection of a fixed access platform with handrails shall wear Full Body Harnesses (FBH), and use lanyards/ Personal Fall-Arrest Systems (PFAS).
- 2.1.6 A Working at Height Permit_[1] must be used for work at heights greater than two (2) metres whenever outside the protection of a fixed access platform with handrails, when Mobile Elevating Work Platforms (MEWP) or crane suspended Workboxes are used.
- 2.1.7 Persons Working at Height must not work alone.
- 2.1.8 Persons Working at Heights must wear appropriate head protection for the task and use chin straps.
- 2.1.9 Where practicable, eliminate or engineer out the risk of falls or use fixed access platforms, MEWPs, Workboxes, and/or Scaffolds.
- 2.1.10 Environmental conditions and events that may affect the Worker to safely complete a task or an activity involving Working at Height hazards must be factored in.
- 2.1.11 All snap hooks and karabiners shall be self-closing and shall be capable of being opened only by a minimum of at least two consecutive actions.
- 2.1.12 Corrosion resistant pieces of equipment (e.g. Anchor Points, snap hooks, Lanyard Connectors, etc.) must be used in preference to other types of material, particularly in corrosive environments (e.g. in process plants).

2.2 Harnesses, Lanyards, Personal Fall-Arrest Systems and Anchor Points

- 2.2.1 Full-Body Harnesses (FBH), Lanyards, Personal Fall-Arrest Systems (PFAS), fall-restraints systems and accessories must be appropriate to the type of work being conducted and meet the relevant recognised design standard.
- 2.2.2 The operator must inspect their fall arrest system or restraint device before use as per manufacturer's instructions. The inspection should include checking for damage to the webbing through burns, chemicals, etc. and damage to buckles, hooks and attachment hardware. The harness and Lanyard must be within their test period (as stamped on the harness and Lanyard).
- 2.2.3 All FBHs must be fitted with a suspension trauma safety strap and appropriately adjusted prior to the use of the FBH.
- 2.2.4 Lanyards must be fitted so fall distances are minimised and the wearer may not fall to a lower

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level without the fall being arrested.

- 2.2.5 Lanyards must have an Energy Absorber device when being used in a PFAS, unless it can be demonstrated that a force of 6kN will not be experienced by the user.
- 2.2.6 When estimating the total fall distance, the extension length of the Energy Absorber (when fitted) must be taken into account.
- 2.2.7 Where Workers are required to detach and reattach at height, a dual lanyard system must be utilised. A person Working at Heights must be attached to an Anchor Point before crossing outside the protection of a fixed access platform and remain attached 100% of the time.
- 2.2.8 A Lanyard assembly must be as short as practicable, its working slack length is to be less than two (2) metres and where practical fitted to limit the Free-Fall Distance to six hundred (600) millimetres.
- 2.2.9 PFAS or fall-restraint equipment attached to an Anchor Point must be used whenever persons work at a height above two (2) metres whilst outside the protection of an installed (fixed) access platform with handrails.
- 2.2.10 PFAS material/equipment must be tested and certified for use, inspected by the user before use and destroyed following a fall or where an inspection has shown evidence of excessive wear or mechanical malfunction.
- 2.2.11 Anchor Points/Systems must be marked as tested and approved by a competent person to verify they are capable of withstanding a breaking force of 15kN, (single person Anchor) or 21kN (two persons Anchor).
- 2.2.12 Where practical, Lanyard Anchor Points on apparatus should be above the head of the Worker and no lower than shoulder height. Where it is impractical to do so, (e.g. on a flat roof) a risk assessment must be conducted and documented, alternative Anchor Points and PFAS must be properly selected.
- 2.2.13 Hard barricading and warning signs shall be installed around an area where an opening has been created (i.e. grating removal due to maintenance purpose or projects).

2.3 Mobile Elevating Work platforms, Workboxes and Scaffolds

- 2.3.1 MEWP and Scaffolds with complete floors, guardrails, toe-bars, safe access and egress must be provided and used. Before being used, they must be inspected and tagged by a competent person.
- 2.3.2 A MEWP should be controlled by an operator in the platform. Where this is not possible (such as underground loaders) an override or emergency stop provision must be accessible in the platform.
- 2.3.3 A person working from a crane suspended Workbox must remain in visual and/or radio contact with the person in control of the crane or the crane operator.
- 2.3.4 Persons working in or on boom-type MEWPs, or man baskets above two (2) metres must wear FBHs with Lanyards affixed to an approved Anchor Point in the platform, or in the case of Workboxes suspended from a crane, to an approved independent point/line outside the Workbox.
- 2.3.5 Only MEWPs, Workboxes and Scaffolds that are designed, constructed, certified and labelled to

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a recognised standard may be used.

- 2.3.6 If an MEWP, Workbox or Scaffold has been repaired or modified, it must be recertified in accordance with the manufacturer's requirements;
- 2.3.7 MEWPs, Workboxes and Scaffolds are to be inspected and maintained. Regular inspections should consider use of non-destructive testing (e.g. dye penetrant testing).
- 2.3.8 Following any significant environmental event (e.g. gale, storm, tornado, thunderstorm, etc.), scaffoldings and other such types of equipment must be re-inspected and re-certified.
- 2.3.9 The use of MEWPs for undertaking maintenance activities on large equipment, including workshop and field maintenance activities must be considered.
- 2.3.10 The installation of fixed access platforms on infrastructure, large mobile plant and equipment where routine maintenance activities require personnel to work at height must be considered.
- 2.3.11 The installation of stairways or other man lifting devices for vehicle access in place of ladders for large mobile plant and equipment must be considered.
- 2.3.12 Self-propelled boom-type elevating work platforms should be fitted with:
 - a) A switch or warning that must be activated or accepted before the propel function is enabled when the boom is swung past 90 degrees; this is to prevent inadvertent movement of the MEWP in the opposite direction to the propel control lever movements. An alarm only is not a satisfactory control;
 - b) A form of secondary guarding or crush protection such as a protective guard structure over the operator or an automatic device to mitigate the severity of an operator crush injury; an example is an interlocked pressure-sensitive bar over the operating controls.

2.4 Ladders

- 2.4.1 Working above two (2) metres from ladders must be avoided, but when no other practicable alternative exists, the following requirements apply:
 - a) A pre-task risk assessment must be carried out;
 - b) A person may ascend or descend a ladder without fall protection provided they are able to use both hands and legs, maintain three points of contact with the ladder, continuously to face the ladder, and take only one rung at a time;
 - c) Fixed vertical ladders greater than 6 metres in height must be provided with a protecting cage, extending a suitable distance above the platform reached;
 - d) Extension ladders must be tied off or footed, have an angle corresponding to one in four (one horizontal to four vertical), be maintained and they must extend at least one (1) metre above the access or work area; and
 - e) If a person is to work from a ladder, PFAS must be used unless three points of contact can be maintained with the ladder and the task does not involve overreaching.

2.5 Falling or dropped objects

- 2.5.1 Whenever a task or an activity involves working a height, risks associated with falling or dropped objects must be identified, assessed and controlled.

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- 2.5.2 When the risks cannot be eliminated, controls must be developed, implemented and maintained to prevent objects from falling or being dropped.
- 2.5.3 Barricades must be erected below work areas to protect Workers from falling objects.
- 2.5.4 Signage and PPE requirements for personnel working in areas with a risk of dropped or falling objects must be developed and applied.

2.6 Rescue

- 2.6.1 Site specific rescue plans and procedures for rescue from height and/or from water must be developed, implemented and maintained.
- 2.6.2 Appropriate rescue equipment must be provided, ready for use and regularly inspected.
- 2.6.3 Competent rescue teams must be ready to intervene at any time.
- 2.6.4 All applicable legal requirements pertaining to fall from height emergency rescue plans and procedures must be satisfied.

2.7 Competency and training

- 2.7.1 Training needs and competency requirements pertaining to Working at Height risks, equipment, procedures and permits must be identified and reviewed on a periodic basis.
- 2.7.2 A training plan including periodical refresher training must be developed, implemented and maintained.
- 2.7.3 Competency must be assessed on a periodic basis, and as legally required.
- 2.7.4 MEWPs may only be used by persons who have been trained, are competent and have been authorised to do so.
- 2.7.5 Crane suspended Workboxes may only be used by persons who have been trained, are competent and have been authorised to do so.

2.8 Additional Requirements for Catastrophic Risk (PMC 5) Situations

- 2.8.1 Where major construction or demolition works are planned and multiple persons are at potential risk:
 - a) The risk assessment must updated on a regular basis;
 - b) A project management plan must be developed which includes the order of activities, inspection requirements, accountabilities and controls be applied; and
 - c) A project manager must be appointed to manage activities in accordance with the plan.

2.9 Definitions

Anchor (ISO 22846-2)

A fixture or place for the attachment of lines or persons.

Anchor Point (ISO 22846-2)

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An attachment point at an anchor for anchor lines or persons.

Anchor System (ISO 14567)

An assembly of multiple anchor devices with one or more PPE attachment points.

Connector ISO (10333-5)

A device, which is used to assemble a PFAS by enabling two other components or subsystems to be physically connected.

A connector has an opening guarded by a self-closing gate with a self-locking feature.

Energy Absorber (ISO 10333-2)

Component designed to dissipate the kinetic energy generated during a fall, and which limits the arresting forces applied to the personal fall-arrest system, anchor device and user.

Free-Fall Distance (ISO 14567)

Total vertical distance through which a worker could fall from the start of the fall to the onset of the arrest.

Full Body Harness (FHB) (ISO 10333-1)

Component of the body-holding device which connects a person into a personal fall-arrest system.

The FBH may comprise straps, fittings, buckles or other elements suitably arranged and assembled to support the body of a person and to restrain the wearer during a fall and after the arrest of a fall.

The FBH may incorporate other fittings which permit its connection into other types of safety systems such as a work-positioning system.

Lanyard (ISO 10333-2)

Finished length of flexible material, which in conjunction with an energy absorber is used as a connecting subsystem in personal fall-arrest system.

Mobile Elevating Work Platform - MEWP (ISO 16368)

Machine/device intended for moving persons, tools and material to working positions, consisting of at least a work platform with controls, an extending structure and a chassis.

Personal Fall-Arrest System – PFAS (ISO 10333-2)

Assembly of interconnected components and subsystems, including a FBH worn by the user, that when connected to a suitable anchor device will arrest a fall from a height.

A PFAS minimises the fall-arrest forces, controls the total fall distance so as to prevent collision with the ground or other relevant obstruction, and maintains the user in a suitable post-fall arrest attitude for rescue purposes.

Permit

Formal system required for specific tasks or activities i.e. working in confined space, whereby a permit has to be issued to an operator prior to commencing work.

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Procedure

Documented process detailing the requirements for conducting an activity or task.

Scaffold (ISO 6707-1)

A temporary structure that provides access for operatives to construction works and support for materials and equipment.

Training

Refers to the initial training to verify competence and subsequent refresher training to verify that the competencies have been retained.

Workbox (Safe Work Australia)

A personnel carrying device designed to be suspended from a crane to provide a working area for persons elevated by and working from the device.

Worker (ICMM 2014, Health and safety performance indicators)

Workers are people who are engaged in work-related activities on behalf of an employer. Workers may be employees, contractors or third parties.

Working at Height

Means conducting work in any place, including a place at or below ground level, where, if precautions were not taken, a person could fall a distance liable to cause personal injury.

You are working at height includes:

- Work above ground/floor level outside of engineered barricades;
- Potential to fall from an edge, through an opening or fragile surface; or
- Potential to fall from ground level into an opening in a floor or a hole in the ground.

Work at height does not include a slip or a trip on the same level, as a fall from height has to involve a fall from one level to a lower level, nor does it include walking up and down a permanent staircase.

Tools (See Glencore HSEC Intranet)

- Working at Height Work Permit.
- Working at Height Self-Assessment Workbook.
- Working at Height Third Party Audit Workbook
- Working at Height Toolbox Talk.

Note: Application of this Protocol must also comply with the General Mandatory Requirements outlined in Section II of the Glencore Life-Saving Behaviours and Fatal Hazard Protocols publication.

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2.10 References

[1] Glencore; Working at Height Permit.

Team	Accountabilities
Glencore Corporate	<ul style="list-style-type: none"> Maintain the currency of this protocol
Department	<ul style="list-style-type: none"> Oversee the implementation of this protocol within department and apply assurance processes.
Asset management	<ul style="list-style-type: none"> Apply the requirements of this protocol.
All employees/contractors	<ul style="list-style-type: none"> Comply with relevant requirements of the protocol. Report hazards and incidents related to Working at Heights.

Property	Value
Approved by:	Lucy Roberts
Document owner:	David Mellows
Effective date:	15/10/2020

Version	Date Reviewed	Review Team	Nature of Amendment(s)
1-0	29/10/2013	HSEC Corporate Leads	First publication.
2-0	10/11/2019	HSEC Leads, Department and Assets technical experts	Removal of three implementation stages and review against latest standards and with reference to Glencore HPRI's and fatality experience. Inclusion of several updates recommended by department/asset technical experts and aligned to latest industry standards.
2-1	26/09/2020	David Mellow and David Reece (external consultant)	<p>Work basket changed to workbox and EWP changed to Mobile Elevating Work Platform (MEWP) for consistency through the document and with other FHPs.</p> <p>New clauses 2.3.2 new requirement following past incident.</p> <p>New clause 2.3.6 to reinforce the need for approved repairs/repairers following</p>

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			MEWP incidents; and to bring in line with FHP08 Lifting and Cranage.

2.13 Appendix

2.13.1 List of related ISO Standards

ISO 10333-1	Personal fall-arrest systems – Part 1: Full-body harnesses.
ISO 10333-2	Personal fall-arrest systems – Part 2: Lanyards and energy absorbers.
ISO 10333-3	Personal fall-arrest systems – Part 3: Self-retracting lifelines.
ISO 10333-4	Personal fall-arrest systems – Part 4: Vertical rails and vertical lifelines incorporating a sliding-type fall arrester
ISO 10333-5	Personal fall-arrest systems – Part 5: Connectors with self-closing and self-locking gates.
ISO 10333-6	Personal fall-arrest systems – Part 6 System performance test.
ISO 14567	Personal protective equipment for protection against falls from height – Single-point anchor devices.
ISO 16024	Personal protective equipment for protection against falls from height – Flexible horizontal lifeline systems
ISO 22159	Personal equipment for protection against falls – Descending devices.
ISO 22846-1	Personal equipment for protection against falls – Rope access systems – Part 1 Fundamental principles for a system of work
ISO 22846-2	Personal equipment for protection against falls – Rope access systems – Part 2: Code of practice.
ISO 16368	Mobile elevating work platforms – Design, calculations, safety requirements and test methods.
ISO 16369	Elevating work platforms – Mast-climbing work platform.
ISO 16653-1	Mobile elevating platforms – Design, calculations, safety requirements and test methods relative to special features – Part 1: MEWPs with retractable guardrail systems.
ISO 16653-2	Mobile elevating platforms – Design, calculations, safety requirements and test methods relative to special features – Part 2: MEWPs with non-conductive (insulating) components.
ISO 18878	Mobile elevating work platforms – Operator (driver) training.
ISO 18893	Mobile elevating work platform – Safety principles, inspections, maintenance and operation.
ISO 20381	Mobile elevating work platforms – Symbols for operator controls and other display.
ISO 14122-1	Safety of machinery – Permanent means of access to machinery – Part 1: Choice of fixed means and general requirement of access.
ISO 14122-2	Safety of machinery – Permanent means of access to machinery – Part 2: Working platforms and walkways.

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- ISO 14122-3 Safety of machinery – Permanent means of access to machinery – Part 3: Stairs, stepladders and guard-rails.
- ISO 14122-3 Safety of machinery – Permanent means of access to machinery – Part 4: Fixed ladders.

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