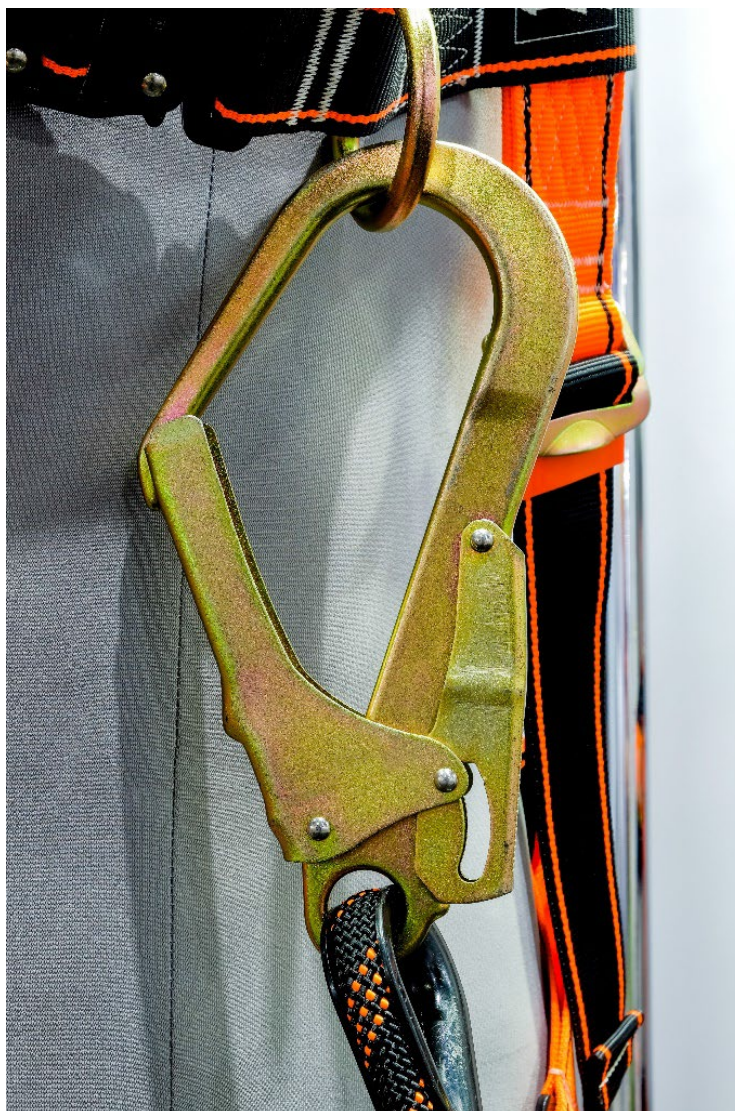


Compliance priority report

Working at heights – small mines

August 2022 to April 2023



Published by the Department of Regional NSW

Title: Compliance priority report

Subtitle: Working at heights – Small Mines -August 2022 to April 2023

First published: August 2023

Department reference number: RDOC23/118594

Amendment schedule		
Date	Version	Amendment
August 2023	1.0	First published

© State of New South Wales through Regional NSW 2023. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute Regional NSW as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a department website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (August 2023) and may not be accurate, current or complete. The State of New South Wales (including Regional NSW), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Table of Contents

Executive summary.....	4
Assessment criteria.....	4
Findings.....	6
Notices issued	10
Recommendations.....	11
Further information.....	12
Appendix A. Legislative requirements and published guidance relating to working at heights.	13

Executive summary

A crucial part of the NSW Resources Regulator’s Incident prevention strategy involves compliance priority programs for mines and petroleum sites. This involves proactively assessing a topic that is an emerging risk across the industry, predominantly determined from incident data or other evolving industry trends. Although these topics may also be contained within the Regulator’s planned inspection programs, the aim of compliance priority programs is to gather further information and knowledge about how the industry manages and controls an issue that may not be related to a specific principal hazard.

This particular program was initiated in response to a survey undertaken on behalf of the Mine Safety Advisory Council (MSAC) on safety of employees working at heights. Also, SafeWork NSW identified that “falls from heights is the number one cause of death on NSW construction sites”. The most serious and fatal falls are from roofs, ladders and scaffolds, and from a height of between 2 and 4 metres. Additionally, it has been proven that a fall from any height can result in serious injury and operations must be doing all that would be considered reasonably practicable to prevent workplace falls.

The intent of this program was to verify that quarries have adequate working at height safety systems in place including consideration of adopting the controls from the Code of practice: Managing the risk of falls at the workplace, and that all working at heights controls have been implemented.

This report summarises the assessment findings from the compliance priority program which targeted working at heights related issues and covered 47 small mines (quarries) between August 2022 and April 2023.

Legislative requirements and published guidance relating to working at heights are listed in Appendix A.

Assessment criteria

Several key elements (referred to as criteria) were assessed as part of this program and included:

Table 1. Compliance priority program criteria working at heights - small mines

Criteria number	Criteria
1	Has the site considered working at heights as a risk?
2	Does the mine have a working at heights procedure?
3	Does the working at heights procedure include a requirement for a risk assessment to be undertaken prior to conducting work at heights?
4	Are workers trained in the working at heights procedure?
5	Are safe access systems fitted for working at heights (eg. walkways, platforms, stairs and handrails)?

Criteria number	Criteria
6	Were fixed ladders were installed, were they fit-for-purpose?
7	Were portable ladders were used onsite, were the appropriate controls in place?
8	Where mobile elevated work platforms (MEWP) were used onsite, were the appropriate controls in place?
9	Where fall restraint and fall arrest equipment was provided, were the appropriate controls in place?
10	Where scaffolding was used, were the appropriate controls in place?
11	Did the site have procedures for emergency rescue when working at heights?
12	Interview worker and/or supervisor to confirm knowledge and training of working at heights procedures.
13	Was a risk assessment conducted for lifting tasks?
14	Confirm lifting equipment was regularly inspected and maintained by a competent person.
15	Confirm lifting equipment was stored correctly.
16	Verify workers were trained and competent in the use of lifting equipment.
17	Were exclusion zones in place when loads were lifted, lowered, or suspended to prevent access?
18	Did lifting plant have the safe working limit clearly marked on it?
19	Was the ground/surface inspected before setting up lifting plant for a job?

Findings

Overall, the findings were:

- 47 site assessments were reviewed for this report (August 2022 to April 2023)
- 772 individual findings
- 79 notices were issued specific to the program to 47 mines, other notices were issued for other matters

The majority of the mines assessed during the program had basic systems of work implemented for working at heights, and evidence was available that the majority of workers surveyed were trained for working at heights and in the use of fall arrest and fall restraints.

However, a significant number of compliance notices were issued during the working at heights program due to issues identified. The number of notices issued by inspectors was indicative of a sector-wide working at heights non-compliance issue requiring improvements at the majority of mine sites.

In summary the findings of the assessed criteria questions were:

Assessed criteria number 1: Has the site considered working at heights as a risk?

Most of the quarries assessed had considered working at heights as a high risk.

Some sites assessed conducted working at height tasks in conjunction with safety systems that included a broad-brush risk assessment, working at heights procedure, a permit system, task specific risk assessment, emergency response plan appropriate working at heights equipment and workers appropriately trained.

At most of the quarries assessed, there was no evidence that the hierarchy of controls had been adequately considered for:

1. work on the ground - elimination
2. use a fall-prevention device- handrails, guarding or barriers - engineering
3. have procedures and permits – administration
4. use a work-positioning device - PPE
5. use a fall-arrest system- PPE

Some quarries had evidence of a documented process but had not implemented their safety systems for working at heights.

Assessed criteria number 2: Does the mine have a working at heights procedure?

Most of the quarries had a working at heights procedure in some form. The procedures varied from detailed comprehensive procedures through to safe work method statements (SWMSs) documents.

Some quarries were required to use company generic working at heights procedures or standards. Some quarries had difficulty accessing the documents on the day of an assessment because of poor internet access at the site.

At sites where internet accessibility was unreliable, an alternative system or hard copy forms should be always available.

Assessed criteria number 3: Does the working at heights procedure include a requirement for a risk assessment to be undertaken before conducting work at heights?

At some quarries working at height procedures require employees to conduct a SWMS/JSA/Risk Assessment/Take 5 before conducting work at heights.

Most of the assessed permits for working at heights, required a risk assessment to be conducted prior the job that must be approved by the supervisor.

Some of the quarries do not undertake a risk assessment prior to conducting working at heights. Some of the risk assessments do not use the hierarchy of controls for working at heights.

Some of the quarries assessed did not verify with contractors if they are working to the sites working at heights procedure or the contractors own working at heights procedures.

Assessed criteria number 4: Are workers trained in the working at heights procedure?

Some of the quarries require employees to be formally trained in safe working at heights (such as the competency training Module RIIWHS204D) and obtain a high-risk work licence.

Some quarries do not have employees trained in working at heights and do not use mobile elevated work platforms (MEWP) on site.

Some quarries induction process for contractors did not identify working at heights qualifications or competencies and licence required to work on the site.

Assessed criteria number 5: Are safe access systems fitted for working at heights (e.g. walkways, platforms, stairs and handrails)?

Some quarries had fixed plant with walkways, ladders and stairs conforming with AS 1657:2018 Fixed Platforms, Walkways, Stairways & Ladders and provided evidence of being audited on regular basis.

Most of the mobile plant assessed had original equipment manufacturer (OEM) designed and supplied fixed walkways, ladders and evidence the access ways were being maintained to a safe condition

Some of the quarries had equipment that could be lowered to ground level to conduct maintenance.

Some sites used track-mounted portable crushing and screening equipment. The standard access ways provided were found to be basic in design and offered poor fall from height protection.

Deficiencies were commonly found with ladders and handrails with this type of equipment.

Assessed criteria number 6: Where fixed ladders were installed, were they fit-for-purpose?

Some quarries assessed had fixed ladders with a cage and safety gates (inward opening self-closing gates) fitted at the top and handrails installed.

The majority of quarries assessed had fixed ladders that did not have appropriate fall from height protections in place.

Fixed ladders do not provide the same level of protection as stairways when designed and installed to Australian Standards. Some sites assessed showed evidence that they had replaced fixed ladders with stairways.

Assessed criteria number 7: Where portable ladders were used onsite, were the appropriate controls in place?

Some quarries assessed had a register of portable ladders that were inspected and tagged by an external competent person on a regular basis, including evidence of an internal training module on the use of portable ladders.

Some quarries assessed used platform ladders for working on mobile plant instead of portable ladders.

A significant number of quarries did not have safe work procedures in place for use of portable ladders.

Some of the quarries assessed prohibited the use of portable ladders on site.

Assessed criteria number 8: Where mobile elevated work platforms (MEWP) were used onsite, were the appropriate controls in place?

A significant number of quarries assessed, hired EWP's to conduct work from heights tasks. The site used the OEM's pre-start documentation pack provided by the hire equipment provider.

At the majority of the sites, the hired EWPs were assessed when introduced to site to ensure that they were safe for use (pre-start check).

Some quarries used external contractors for EWP work tasks. A review of the contractor high-risk work licences and competencies were undertaken by the quarry operator before the contractor attended the site.

Contractors were required to prepare a SWMS to manage site-specific hazards for the task.

Quarries that operated EWPs with a boom length above 11 m had employees that hold the necessary high-risk work licences and competencies to operate specific EWP equipment. The mine operator had a training matrix process that monitored the competencies held by workers and the ongoing training requirements for each worker.

However, there was evidence that some quarries assessed had EWPs present on site that were not being inspected as per the equipment manufacturer's recommended inspection requirements.

Some quarries assessed did not include in risk assessments the review of terms 'level ground' and 'wind'.

Assessed criteria number 9: Where fall restraint and fall arrest equipment was provided, were the appropriate controls in place?

Most of the quarries assessed provided evidence of a register of fall arrest and fall restraint equipment that was inspected under an inspection regime, and the equipment inspectors were appropriately trained and held the requisite inspection qualifications.

Some of the quarries assessed had fall arrest and fall restraint equipment that was not being inspected, not in regular use and not included in the equipment register.

Some of the quarries assessed did not provide appropriate training for employees in the use of fall arrest and fall restraint equipment.

Assessed criteria number 10: Where scaffolding was used, were the appropriate controls in place?

The majority of the quarries assessed did not have scaffolding equipment on site.

At some of the quarries assessed, scaffolding equipment was brought on-site for special projects and on those occasions engaged external scaffolding specialists to erect and inspect the scaffolding equipment as required by before and during use.

Assessed criteria number 11: Did the site have procedures for emergency rescue when working at heights?

Most of the quarries assessed did not have a specific emergency rescue plan for working at heights.

Some of the quarries assessed had emergency procedure included in the working at heights work program documents.

Most of the quarries assessed did not conduct emergency drills for people working at heights.

Some quarries assessed did not have appropriate rescue equipment available to effectively manage emergencies relating to working at heights.

Some quarries assessed did not consider the resources of external agencies in the management of working at height incident emergencies.

Assessed criteria number 12: Interview worker and/or supervisor to confirm knowledge and training of working at heights procedures.

The majority of workers surveyed at quarry sites confirmed their understanding of working at height requirements required by the site safety management system and the training, competency and authorisations required for working at heights.

There was evidence that some employees did not have the requisite training and qualifications in working at heights and an adequate understanding of emergency rescue plans at the site.

Some of the employees surveyed did not consider that working from heights was a critical risk.

Assessed criteria number 13: Was a risk assessment conducted for lifting tasks?

Most of the quarries had procedures for lifting tasks including:

- cranes and lifting operational risk assessments
- cranes and lifting SWMS and SOPs
- cranes and lifting permit to work systems
- individual lift plans (RA) completed by the crane contractor.

The majority of the quarries assessed engaged external crane companies for heavy lifting activities.

Some of the quarries assessed did not have procedures for lifting activities.

Some of the quarries assessed used excavators or front end loaders (FEL) for lifting tasks with no formal procedures, risk assessment and operator training.

Some of the quarries assessed relied on contractors providing appropriate lifting equipment, lifting procedures, lifting risk assessments and competent and qualified crane operators.

There was evidence that some of the contractors used by quarries for lifting activities had generic risk assessments that were not reviewed to take into consideration the site specific risks for the lifting task.

Assessed criteria number 14: Confirm lifting equipment was regularly inspected and maintained by a competent person.

The majority of the quarries assessed provided evidence of undertaking regularly inspection and maintenance of lifting equipment and conducted by a competent person on a regular basis.

Most of the quarries assessed had a documented register with the lifting equipment and dates when the equipment was maintained and or inspected.

Quarries assessed were using colour-coded inspection tag systems to visually identify they had been inspected during a specified time frame and they were fit-for-purpose to be used at the site.

Assessed criteria number 15: Confirm lifting equipment was stored correctly.

The majority of quarries assessed store lifting equipment in an appropriate storage facility. These were in workshops or containers at site.

There was evidence from some site assessments of examples where slings had not been stored correctly. Equipment was observed lying on the ground or left in the work area and still attached to

lifts that had been completed. There was evidence that some lifting equipment was missing appropriate dated inspection tags and some had no inspection tags fitted at all.

Assessed criteria number 16: Verify workers were trained and competent in the use of lifting equipment

Some of the quarries assessed had one or 2 employees with training and qualifications in dogging or rigging that were conducting lifting activities.

A significant number of quarries did not train employees for lifting - dogging or rigging tasks.

There was evidence some of the employees undertaking dogging tasks did not have a current high-risk work licences and their high-risk work licence was out-of-date.

A majority of quarry operators did not have verification of competency (VOC) systems to review worker competencies and qualifications before a worker commenced lifting tasks on site.

Some quarries assessed used contractors with appropriate qualifications on site to conduct all lifting activities.

Assessed criteria number 17: Were exclusion zones in place when loads were lifted, lowered, or suspended to prevent access?

The majority of quarries assessed had documented procedures (SWMS/JSA/permit to work) to ensure exclusion zones were identified and controlled when loads were lifted, lowered or suspended to prevent access of unauthorised people into the work area.

Some quarries assessed did not have formal documented procedures to establish exclusion zones for lifting activities. The exclusion zone was observed to be implemented informally during the lifting task.

Assessed criteria number 18: Did lifting plant have the safe working limit clearly marked on it?

The majority of the quarries assessed lifting plant had appropriate safe working limits clearly identified.

There was evidence that some quarries assessed tele-handlers did not have any safe working limits marking on the equipment.

Assessed criteria number 19: Was the ground/surface inspected before setting up lifting plant for a job?

The majority of the quarries assessed had documented references in the procedures (SWMS/JSA) to check the ground and surface area before setting up for a lifting task.

A significant number of quarries assessed did not have documentation readily available to ensure that the ground and surface area is inspected before setting up for a lifting task. Evidence was provided that workers confirmed they checked the ground surface area and wind speeds before setting up for lifting activities in an informal process.

Notices issued

All 47 small mines were issued a notice, with a total of 79 notices issued relating to working at heights, with some mines given notices in relation to other matters not included in this report. Table 2 lists the notices issued relevant to this report.

Table 2: Notices issued for the compliance priority program – working at heights – small quarries

NOTICE TYPE	TOTAL ISSUED	NUMBER OF MINES
s.195 prohibition notice	3	2
s.191 improvement notice	47	33
s.23 notice of concerns	29	29
Total	79	47*

Note: *there were 16 small mines that were issued multiple notices.

Recommendations

Based on the findings outlined in this report, mine operators of quarries should consider the following recommendations:

- Mine operators must conduct a broad-brush risk assessment to identify working at heights activity conducted on site.
- Mine operators must ensure that before conducting working at heights tasks, a safe system of work is in place that includes documented risk assessments and safe work procedures, work permits, supervisory arrangements and working at heights rescue and recovery plans.
- Mine operators must, so far as is reasonably practicable, eliminate or minimise risks associated with working at heights by considering the hierarchy of controls such as:
 - work on the ground or on a solid surface where possible
 - prevent workers from falling by using a fall-prevention device, such as: temporary work platforms, guardrails and scaffolding
 - use work-positioning systems, such as: a restraint system and industrial rope access
 - if it is not possible to use a fall prevention device or a work positioning system, use a fall arrest system, such as: industrial safety nets, catch platforms and harness-based fall-arrest used with lifelines or individual anchors.
- Where fall restraint and fall arrest equipment is provided by the quarry operator:
 - workers are to be trained and competent in the equipment use
 - suitably load rated attachment points are nominated and identified as fit-for-purpose
 - the equipment is subject of an inspection regime during its life cycle and before each use
 - the equipment is inspected at appropriate time intervals by a competent person and suitably marked as having been inspected for a specified time duration of use
 - the equipment is stored in an appropriate storage facility
 - any equipment identified by inspection as ‘not passing inspection’ is to be appropriately disposed from ongoing use at site.
- Quarry operators must provide a system of worker verification of competency (VOC) for all workers undertaking working at heights tasks to confirm the worker is appropriately trained and competent for the working at height equipment in use for the task.
- Worker training and verification of competency (VOC) records are to be stored and maintained by a system that provides easy access at site for worker verification of competency (VOC) by quarry management, quarry supervisors and regulatory inspection.

- Quarry operators must provide safe access ways to enter and exit from a workplace, including any areas with a risk of a fall. Avoiding the use of fixed ladders where a stairway could be installed.
- Quarry operators must ensure compliance with appropriate inspection time periods for mobile elevated work platforms (MEWP) and are maintained in safe operating condition.
- Quarries must ensure exclusion zones are in place when loads are lifted, lowered, or suspended to prevent unauthorised access by persons. Assign the role of an exclusion zone spotter during lifting tasks.
- Quarries must ensure they have procedures for emergency rescue and recovery when workers are working at heights with emergency drills conducted with workers and contractors on a regular basis.

Further information

For more information on safety assessment programs, the findings outlined in this report, or other mine safety information, please contact the Regulator:

Contact type	Contact details
Email	cau@regional.nsw.gov.au
Incident reporting	To report an incident or injury call 1300 814 609 or log in to the Regulator Portal
Website	www.resourcesregulator.nsw.gov.au/
Address	NSW Resources Regulator 516 High Street Maitland NSW 2320

Appendix A. Legislative requirements and published guidance relating to working at heights.

The following is a list of certain legislative requirements for the working at heights referred to in this report:

- Work Health and Safety Regulation 2017 [NSW] clauses 78-80
- Code of practice - Managing the risk of falls at workplaces NSW
- AS 1657 Fixed platforms, walkways, stairways and ladders - Design, construction and installation
- AS/NZS 4994.1 Temporary edge protection – General requirements
- AS/NZS 4994.3 Temporary edge protection – Installation and dismantling other than roof edge
- AS/NZS 1891.4 Industrial fall-arrest systems and devices
- AS 5327 Earth-moving machinery – access systems