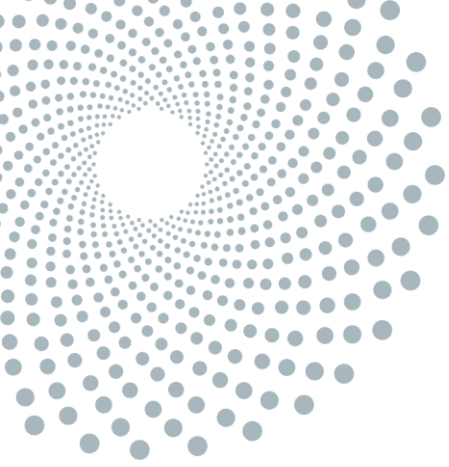




Health & Safety Standard

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Version	Description
1.50	Updates to: • 3.6: Clarified two independent safeguard requirements, including application during scaffold erection and dismantling activities. • 3.6.2: Clarified that tool and equipment restraint systems, passive dropped object prevention systems, or a combination of both may be used based on the hazard and risk assessment. • 3.6.3: Revised passive dropped object prevention system requirements to align with tool and equipment restraint systems and two independent safeguard expectations • 3.6.4: Added lifting rope requirements for manual material lifting activities, unless the worker is trained and competent in appropriate knot tying methods.

For interim version details see section 5 Revision history.

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1 Purpose

This standard defines **Cenovus dropped object** prevention requirements, and provides the operational framework to identify and eliminate or **mitigate** the potential **risks** associated with dropped objects.

2 Application

This standard applies to all **staff** and **suppliers** performing work at a Cenovus site, covering all work activities with the potential to expose workers to dropped objects. Any site level or supplier programs shall meet or exceed the minimum requirements outlined in this standard.

3 Requirements

Entities shall eliminate the risk or implement controls to reduce the potential for dropped objects, in accordance with the **hierarchy of controls** shown in the **Risk Management** standard.

3.1 Introduction

3.1.1 Dropped object definition

A dropped object is any item that falls from its previous position. This covers all items, materials, or objects of any mass/density. If an object falls from height and either causes or has the potential to cause an injury, asset damage, or a spill or release, it shall be reported, and the incident management process shall be followed.

Cenovus employs a system of **safeguards** designed to prevent or minimize serious incidents. This concept is known as the “capacity to fail safely.”

When an incident involving a dropped object occurs, the investigation will assess the effectiveness of the existing safeguards to determine the incident’s significance classification. If the investigation has determined the system of safeguards has proven to be effective, the incident shall not be classified as a **potential serious injury or fatality** (PSIF).

When a dropped object deflects from or contacts objects (pipes, etc.) enroute to grade, the potential consequence of the dropped object is always measured from the initial drop point.

3.1.2 Dropped object classifications

Dropped objects are classified as either:

- **static** – any dropped object whose failure may be attributed to gravitational or natural forces, i.e., without an applied force, unsecured items, or failure of fixings;
- **dynamic** – any object that falls from its previous fixed position due to the application of applied forces, i.e., from the impact of equipment, severe weather, manual handling.

3.2 Training

Drops awareness training shall be completed by all personnel identified by the entity who are:

- working at heights;

- performing hands-on tasks with potential exposure to risks from dropped objects.

Training can be accessed through both the internal and external Learning Management Systems.

3.3 Engineering design and equipment selection

Dropped object risks shall be assessed and addressed during design reviews, procurement decisions, and management of change to ensure risks are minimized before reaching operations.

Design of equipment to eliminate dropped object exposures shall be considered in the process of equipment selection. Exposure is eliminated by minimizing the number of parts used in the design, encapsulating parts within the assembly where possible, and incorporating recognized secondary retention methodology (see section 3.6.1.2). Equipment and equipment systems should be designed to allow safe access for maintenance, inspections, and condition-based monitoring.

Design considerations include but are not limited to:

- equipment system interaction and anti-collision measures, e.g., anti 2 block system, anti-collision sensors, etc.;
- inherent reliable securing;
- safety factors of equipment and reliable securing methods;
- effects of corrosion, vibration and environmental factors;
- limiting equipment mass where feasible.

3.4 Hazard and risk assessment

As part of the scope of work and field-level hazard assessment process, personnel shall assess the risk of potential dropped objects in alignment with the **Safe Control of Work standard**.

Before starting work, consider the potential for static and dynamic dropped object hazards. Even if the scope of work does not involve working at heights, evaluate the worksite and surrounding activities to:

- conduct a visual inspection of the area to identify pre-existing dropped object hazards;
- verify the proper securement of all equipment and structures in the vicinity, including fastenings, bolts, covers, panels, hatches, removable guardrails, etc.

Any affected workers shall be included in the hazard assessment process and fully participate in identifying, assessing, eliminating, or controlling the hazards.

Scopes of work shall be risk-ranked by utilizing the **Dropped Object Calculator** and the **Cenovus Risk Matrix** or supplier equivalent. The Dropped Object Calculator includes a list of all additional information for how to use the calculator.

3.5 Dropped object potential

Identifying potential dropped objects is crucial for assessing the associated risks and implementing control and mitigation measures. This shall be accomplished through a variety of pre-work planning activities and prevention programs.

3.5.1 Planning

When preparing a scope of work whereby the hazard identification process has identified the potential for dropped objects to occur, the tools and activities in Table 1 may be used to mitigate the risks of dropped objects. Any tools or checklists completed during planning activities shall be made available to workers performing the scope of work.

Table 1: Dropped object planning tools

Tools	Descriptions
Pre-job planning checklist	• standardized checklist used to identify risks and hazards associated with potential dropped objects.
Equipment and structure reliable securing guideline	• permanent, temporary, or third-party equipment that is not an integral (welded) part of the structure on which it is mounted, should be assessed for proper securing methods based on Reliable Securing best practices.
Dropped object calculator	• used to determine the potential severity of dropped objects; • the potential outcome is always measured from the initial height from which the object fell to grade level; • used during work planning/risk assessment to determine potential severity rating, and in reporting processes to determine potential outcome of an actual dropped object incident; • measure to solid deck/ground level; do not subtract the height of an individual, or measure to the height of an individual; • may also be utilized during design and manufacture to address requirements for positioning, fixtures, and fittings for items to be secured at height.
Dropped object exclusion zone tool	• used to predict the horizontal distance (radius) and associated probability where a dropped object will strike the ground following a static drop and deflection.

3.5.2 Prevention programs

The programs in Table 2 assist with dropped objects prevention and control. Entities shall utilize the following programs as part of their routine maintenance and operational activities as defined by their program.

Table 2: Programs to assist in the prevention of dropped objects

Programs	Descriptions
Equipment and structural integrity program	- entities shall have a reliability and integrity program to verify the integrity of their equipment and structures as they pertain to dropped object risks; - e.g., light fixtures, valves, monitors, fireproofing material, etc.
Winterization program	- entities shall inspect and maintain facilities to prevent the buildup of overhead snow/ice hazards; - mitigations and controls shall be put in place where overhead snow/ice hazards are found.

3.5.3 Cranes, hoisting, and lifting

Lifting activities such as the use of cranes, hoists, rigging, etc. can create opportunities for potential dropped objects. The **Cranes, Hoists, and Lifting standard** sets requirements to manage risk associated with performing lifts with cranes, hoists, and rigging.

3.6 Safeguarding against dropped objects

When dropped object potential has been identified, safeguards shall be implemented in alignment with the hierarchy of controls. Objects that could fall to a lower level due to gravity, motion, vibration, impact, or other forces shall be secured using controls appropriate to the hazard and risk assessment.

Where there is potential to impact people or property, a minimum of two independent safeguards shall be maintained to prevent dropped object incidents. Examples include, but are not limited to:

- primary fixing and secondary retention;
- tool tethering and an **exclusion zone**;
- a passive dropped object prevention system and an exclusion zone;
- two passive dropped object prevention systems;
- tool tethering and a passive dropped object prevention system.

Where two independent safeguards may not be practicable for specific scopes of work, such as scaffold erection and dismantling, dropped object risks shall be managed through the hazard assessment process using appropriate controls. These may include exclusion zones, work sequencing, material handling controls, tool tethering, and supervision. Required securing methods shall be applied as soon as practicable once components are positioned or installed.

Securement methods identified during planning shall be communicated to workers before work begins. Workers shall verify objects are secure before starting work, and supervision shall verify the effectiveness of controls during execution. Mitigating controls shall be implemented to reduce consequences where preventive controls could fail.

3.6.1 Reliable securing methods

Where **original equipment manufacturer (OEM)** securing recommendations are not available, **Reliable Securing** best practices are recommended to mitigate and control identified PSIF risks associated with dropped objects.

3.6.1.1 Primary fixing

Primary fixing is the method used to install, mount, or secure an item to prevent it from falling. Examples include bolted connections, screws, pins, buckles, clips, welds, and other methods that mate or unite surfaces.

3.6.1.2 Secondary retention

Secondary retention is an engineered method used to secure a primary fixing and prevent loss of clamping force or displacement of fastening components. Examples include locking washers, locking wire, split pins, cotter pins, and similar devices.

Equipment installed at heights, or in locations where components could fall to a lower level, should be secured using secondary retention wherever practicable. Reliable secondary retention shall be used in dynamic operating conditions where flexing, vibration, shock loading, thermal cycling, or similar forces may cause component disengagement, material fatigue, or failure.

Where paint marking is used after applying the required torque to a bolted connection, the mark should show the position of the bolt head relative to its counterpart to support quick visual inspection. Paint marking is a verification aid and does not replace required secondary retention or connection integrity checks.

3.6.1.3 Safety securing

Safety securing is a mechanism selected to restrain an item or its components from falling in case the primary fixing fails. This includes rated steel or synthetic nets, lanyards, baskets, chains, slings, etc.

Some equipment items may feature “keeper wires” to prevent smaller components such as pins from being dropped during assembly or removal.

3.6.2 Tools tethering and equipment restraint systems

Tools and portable equipment with the potential to fall to a lower level shall be controlled through tool tethering, equipment restraint systems, passive dropped object prevention systems, or a combination of controls, as determined by the hazard and risk assessment.

Where tool tethering or equipment restraint is used, tools shall be securely attached using an approved lanyard system to one of the following:

- a designated tool bag;
- the waist or wrist of the person;
- a secure point on the structure.

The following tool tethering criteria apply:

- tools with removable attachments, e.g., ratchets with sockets, shall have a positive-locking system to prevent dropped objects;
- lanyards, tethers, carabiners, tethering tape, and/or shackles used for tethering shall be adequately rated to support the weight of the object, used according to manufacturer specification, and prevent the object from dropping if released during work at heights;
- carabiners or snap hook-type connectors used for securing portable tools and equipment shall have locking gates;
- radios and gas detectors shall be secured when working at heights;
- when securing to structures, applicable OEM requirements shall be followed, e.g., securing to mobile elevated work platforms;
- hardhats shall be secured by the wearer using a chinstrap, tether, or engaged earmuffs in the following situations:
 - when working at heights of 40 feet or more;
 - when a dropped hardhat could generate more than 40 joules of impact energy;
 - when there is a significant risk that a dropped hardhat could cause injury to workers below.

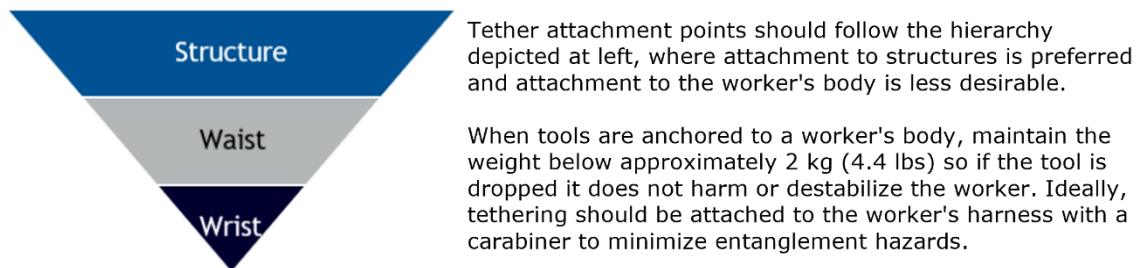


Figure 1: Tether attachment point hierarchy



Figure 2: Tool fall prevention system

3.6.3 Passive dropped object prevention systems

Passive dropped object prevention systems are engineered controls designed to eliminate or reduce the potential for objects to fall to a lower level without relying on continuous worker action once properly installed and maintained. These systems may be built into equipment, structures, or temporary work areas and may include netting, dropped object barriers, safety blankets, enclosed tool storage, barricades, or other fit-for-purpose containment methods.

Passive dropped object prevention systems may be used as an alternative to, or in combination with, tool and portable equipment restraint systems where they effectively prevent objects from

falling to a lower level, contain dropped objects, or protect people and property below. They may also be used as one or more independent safeguards where the requirements of section 3.6 apply.

The selected system shall be appropriate to the task, work environment, and dropped object risk, including work on scaffolds, permanent platforms with handrails, stairs, grating, confined spaces, and any other work associated with heights, concurrent work, or SIMOPS. Passive dropped object prevention systems shall be installed, inspected, and maintained in accordance with manufacturer requirements or other approved specifications.

3.6.4 Lifting ropes

Where lifting ropes are used for manual material lifting activities, they shall be selected and used to reduce the potential for dropped objects. Properly rated braided nylon pull rope with a proper eye splice and thimble eye on one end, used with compatible locking connectors, such as carabiners, shall be used to provide a secure connection point and reduce reliance on knots, unless the worker performing the lift is trained and competent in appropriate knot tying methods.



Figure 3: Lifting rope with eye splice and thimble eye



Figure 4: Complete connection setup

Where a lifting rope with an eye splice and thimble eye is not used, the selected knot and connection method shall be suitable for the load, task, and work environment, and applied by a trained and **competent worker**.

The use of lifting ropes does not replace other dropped object prevention requirements. All other required safeguards and mitigating controls shall remain in place, including exclusion zones where dropped object potential has been identified.

3.6.5 Mobile elevated work platforms

Mobile elevated work platforms shall be equipped with toe boards. Additional controls, such as protective screens around platform rails, shall be used when performing SIMOPS or over/under work.

Protective screens shall be inspected before use and on completion of the task for openings, gaps, or damage that may affect integrity. Screens shall be affixed in accordance with OEM requirements to prevent objects from slipping through, be fit for purpose, and not create unacceptable risk. Reliable Securing provides additional guidance on mobile-elevated work platforms.

3.6.6 Exclusion zones

An exclusion zone shall be established whenever an area is identified as having potential for dropped objects. The outputs of the hazard and risk assessment, supported by the [Energy Wheel](#) and SPACE approach, shall be used to determine the appropriate exclusion zone classification, boundaries, communication methods, and access controls.

For additional information and requirements on exclusion zones, refer to the [Exclusion Zone standard](#).

3.7 Monitoring and review

Performing verification activities is vital to ensuring the risks associated with dropped objects are controlled and mitigated. Ongoing reviews of the effectiveness of control measures are necessary as part of a successful dropped object prevention program. Corrective actions shall be entered into Intelex and tracked to completion.

Examples of verification activities include but are not limited to:

- dropped object inspection:
 - shall be performed following any event which may cause a change in the structure or securing of equipment at height, e.g., excessive vibration, impact, or a severe storm;
 - conduct worksite field verifications at regular frequencies to eliminate or mitigate dropped objects exposure risks;
 - periodic review of inspection results to determine systemic trends;
 - implement action plans to address negative trends.
- on-going equipment and structural integrity inspections.

4 References

Table 3: Internal governing references

Document title or link	Relevance
Cenovus Risk Matrix	
Cenovus Supplier Policies	
Dropped Object Calculator	
Dropped Object Exclusion Zone Tool	
Energy Wheel	
Exclusion Zone Standard	COMIS Standard – COIMS-000147
Safe Control of Work Standard	COIMS Standard - COIMS-000006
Cranes, Hoists, and Lifting Standard	Health and Safety Standard - 0003-000055
Incident Management Process	COIMS Process - COIMS-000013
Exemption and Deviation Process	Health and Safety Process - 0003-000110
Risk Management Standard	COIMS Standard - COIMS-000003

Table 4: Other references

Document title or link	Relevance
Recommended Practice Rev 02 › DROPS Online	DROPS Online recommended practices
Energy Safety Canada - ESC	Energy Safety Canada dropped objects
DROPS Reliable Securing	DROPS Online Reliable Securing
DROPS Online Resources	Drops Online Resource Page

5 Revision history

Table 5: Revision history

Version	Date	Description
1.00	September 26, 2024	Issued for use
1.10	January 13, 2025	Updates to: 3.6.1 reliable securing methods changed from required to recommended in the absence of OEM recommendations for securing 3.6.2 exclusion zones shall be used anytime there is an area where dropped object potential has been recognized 3.6.1.3.1 hard hat tethering requirements updated to 40ft 3.6.1.3.3 mobile elevated work platform netting requirements updated to when SIMOPS or over/under work are being performed
1.20	September 10, 2025	Updates to tool tethering requirements and exclusion zone requirements
1.30	October 22, 2025	Added clarification on hardhat securement
1.40	April 13, 2026	Updates to: 3.3 added a shall statement for the assessment of dropped object risks during design review, procurement decisions and MOC's 3.6 moved requirement for two independent safeguards to this section and provided examples of two independent safeguards 3.6.2 exclusion zones for determining the type of exclusion zone to be used
1.41	June 25, 2026	Updates to: 3.6.3: Clarified passive dropped object prevention systems and how they may be used. 3.6.5: Added reference to the Exclusion Zone standard.
1.50	July 24, 2026	Updates to: 3.6: Clarified two independent safeguard requirements, including application during scaffold erection and dismantling activities. 3.6.2: Clarified that tool and equipment restraint systems, passive dropped object prevention systems, or a combination of both may be used based on the hazard and risk assessment.

		• 3.6.3: Revised passive dropped object prevention system requirements to align with tool and equipment restraint systems and two independent safeguard expectations • 3.6.4: Added lifting rope requirements for manual material lifting activities, unless the worker is trained and competent in appropriate knot tying methods. • General: Updated punctuation, terminology, and revision history for consistency.
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