



Rigging and Hoisting Procedure

Viking Reinforcing Ltd. – Fabrication Yard and Jobsite Operational Procedure
Rigging, Slings, and Hoisting of Reinforcing Steel – Parksville, British Columbia

Document Control

Document Number	SOP-FAB-16
Activity	Rigging and Hoisting of Reinforcing Steel
Standard	ISO 45001:2018 Clause 8.1 – Operational Control; WorkSafeBC OHS Regulation Part 15 (Rigging) and Part 14 (Cranes and Hoists)
Prepared By	Derek Sanderson, MBA, CISSP
Revision	1.0
Effective Date	2026-04-14

1. Purpose

This procedure establishes requirements for the safe rigging, slinging, and hoisting of reinforcing steel (rebar), rebar bundles, fabricated cages, and associated materials at the Viking Reinforcing fabrication yard in Parksville and at construction jobsites. Rigging and hoisting are identified on the Critical Task Register as higher-risk activities. This procedure reduces the risk of dropped loads, struck-by incidents, crush injuries, sling failure, and equipment overload, and supports compliance with ISO 45001:2018 and the WorkSafeBC Occupational Health and Safety Regulation. This SOP complements SOP-FAB-12 (Material Handling and Rigging Procedure) by providing the detailed technical and operational requirements for lifting.

2. Scope

This procedure applies to all Viking Reinforcing employees, supervisors, and contractors engaged in rigging or hoisting activities using forklifts, telehandlers, mobile cranes (operated by others), overhead hoists, or any other lifting device while handling reinforcing steel or associated materials within the Parksville fabrication yard and on construction project sites where Viking workers participate in or direct lifts.



SOP-FAB-16 – Rigging and Hoisting Procedure

3. Regulatory References

- WorkSafeBC OHS Regulation Part 14 – Cranes and Hoists
- WorkSafeBC OHS Regulation Part 15 – Rigging
- WorkSafeBC OHS Regulation Part 16 – Mobile Equipment
- WorkSafeBC OHS Regulation Part 8 – Personal Protective Clothing and Equipment
- CSA Z150 – Safety Code on Mobile Cranes
- CSA B335 – Safety Standard for Lift Trucks
- ASME B30.9 – Slings
- ASME B30.26 – Rigging Hardware
- ISO 45001:2018 – Occupational Health and Safety Management Systems

4. Responsibilities

Yard Foreman – Matt Warawa

Plans daily lifting activities, confirms equipment and rigging are suitable for the load, verifies operator and rigger certifications, and stops any lift that is unsafe.

Chief Safety Officer – Dan Ansell

Audits rigging and hoisting activities, reviews rigging inspection logs, investigates rigging-related incidents, and ensures training currency.

Qualified Rigger / Signaller

A worker trained and designated by Viking Reinforcing who assesses loads, selects rigging, directs the operator, and remains in visual or radio contact throughout the lift. A qualified rigger is required for any lift that is not a routine repetitive pick (e.g., standard rebar bundle on a forklift).

Equipment Operator

A worker holding the appropriate ticket or certification (forklift, telehandler, crane) who operates the lifting equipment, completes the daily pre-use inspection on FORM-OHS-12 Equipment Pre-Use Inspection Form, and follows signals from the designated signaller.

Workers

Stay clear of the fall zone under suspended loads, wear required PPE, report damaged rigging immediately, and do not engage in rigging tasks without current training.

5. Training and Competency

The following training is required before a worker may perform the listed task. Records are maintained on FORM-OHS-11 Worker Training Record and REGISTER-OHS-04 Worker Training and Competency Register.

- Forklift operation – current CSA B335-compliant forklift ticket (3-year renewal).
- Telehandler operation – manufacturer-recognized telehandler training (3-year renewal).



SOP-FAB-16 – Rigging and Hoisting Procedure

- Mobile crane operation – Red Seal crane operator certification (operated by general contractor or subcontractor; Viking does not operate mobile cranes).
- Rigging and signalling – documented rigging and signalling training, refreshed every 3 years.
- Load charts and capacity – reviewed annually during worker safety meetings.
- Site-specific training on lifting plans when required by the general contractor.

6. Required Personal Protective Equipment

- CSA-approved hard hat
- CSA-approved safety footwear with steel toe and puncture-resistant sole
- High-visibility safety vest or clothing
- Safety glasses with side shields
- Cut-resistant gloves (rigger gloves) when handling rebar, slings, or shackles
- Hearing protection where required by noise exposure
- Fall protection harness and lanyard when rigging from an elevated work platform

7. Hazards Associated with Rigging and Hoisting

- Dropped loads from rigging failure, overload, or improper attachment
- Struck-by the load, the rigging, or the equipment during lift
- Crush injuries from swinging or shifting loads
- Pinch points between slings, rebar, and hard surfaces
- Sling damage from sharp rebar edges without softeners
- Load shift caused by uneven pick points or unbalanced bundles
- Equipment tipping from exceeding rated capacity or using equipment on unstable ground
- Overhead powerline contact (minimum approach distance per OHS Reg Part 19)
- Wind loading on large cages or bundles
- Inadequate communication between operator and signaller
- Working at heights during rigging of elevated cages or columns

8. Rigging Equipment – Types and Use

Viking Reinforcing uses the following rigging equipment. All items are inspected before each use and removed from service if any defect is identified (see Section 11).

- Nylon and polyester web slings (synthetic) – primary slings for rebar bundles; colour-coded by capacity.
- Wire rope slings – used for heavier or longer loads where abrasion resistance is required.
- Alloy steel chain slings – used for heavy fabricated cages and where sharp edges would damage synthetic slings.
- Shackles (screw-pin and bolt-type) – ASME B30.26 rated; load capacity stamped on body.
- Eye bolts, hooks, and swivels – load-rated and stamped.



SOP-FAB-16 – Rigging and Hoisting Procedure

- Spreader bars – used for long loads to keep sling angles safe and prevent load deflection.
- Edge protectors / softeners – required whenever a sling contacts the sharp edge of rebar or a fabricated cage.
- Tag lines – non-conductive rope used to control load rotation; minimum one tag line per suspended load.

9. Sling Selection and Load Calculation

Before every lift the rigger must confirm three things: the weight of the load, the sling configuration, and the rated capacity of every component in the rigging.

Load weight – calculated from the rebar weight table (e.g., 10M = 0.785 kg/m; 15M = 1.570 kg/m; 20M = 2.355 kg/m; 25M = 3.925 kg/m; 30M = 5.495 kg/m; 35M = 7.850 kg/m). Multiply linear metres by bars-per-bundle to estimate bundle weight.

Sling angle – the angle of the sling from horizontal reduces the working load limit. A vertical lift is 100 percent capacity. At 60 degrees: 87 percent. At 45 degrees: 71 percent. At 30 degrees: 50 percent. Sling angles below 30 degrees are prohibited at Viking Reinforcing.

Working Load Limit (WLL) – every sling, shackle, and fitting has a WLL stamped or tagged on it. The capacity of the lift is limited by the WEAKEST component in the rigging.

Safety factor – synthetic web slings have a minimum design factor of 5:1. Wire rope and chain slings have a minimum of 5:1 (wire rope) and 4:1 (alloy chain) per ASME B30.9.

10. Pre-Lift Planning and Lift Plan

Every lift must be planned. Routine repetitive lifts (e.g., standard rebar bundles on a forklift within the yard) are covered by this SOP and the daily Field Level Hazard Assessment (FLHA). Non-routine or critical lifts require a written Lift Plan documented on FORM-OHS-15 Lift Plan.

A written Lift Plan is required when any of the following conditions apply:

- The load exceeds 75 percent of the lifting equipment rated capacity.
- A mobile crane is used.
- The lift is a tandem (two-piece-of-equipment) lift.
- The load will pass over workers, active roadways, or public areas.
- The lift is within the minimum approach distance of an energized powerline.
- The load is over 2,000 kg.
- The load is unusually shaped, suspended cages, or engineered lifting lugs are used.
- The lift is at height greater than 6 metres above the workers below.



SOP-FAB-16 – Rigging and Hoisting Procedure

The Lift Plan must identify load weight, rigging configuration, equipment and operator, signaller, exclusion zone, communication method, weather limits, and emergency response. The Lift Plan is signed by the Yard Foreman or Site Supervisor before the lift begins.

11. Rigging Inspection

Rigging is inspected before each use and, in addition, formally inspected on a documented schedule. Any defective rigging is removed from service and tagged using FORM-OHS-14 Red Out-of-Service Tag.

Synthetic (web / round) slings – remove from service if any of the following are present:

- Missing or illegible capacity tag
- Acid or caustic burns
- Melting, charring, or weld spatter damage
- Holes, tears, cuts, snags, or broken stitching
- Knots (a knot reduces capacity by 50 percent or more)
- Excessive abrasive wear or discolouration from UV exposure
- Damaged end fittings

Wire rope slings – remove from service if any of the following are present:

- Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay
- Wear or scraping of one-third of the original diameter of outside individual wires
- Kinking, crushing, bird-caging, or other distortion
- Evidence of heat damage
- End attachments that are cracked, deformed, or worn
- Hooks that are opened more than 15 percent of the normal throat opening, or twisted more than 10 degrees
- Corrosion of the rope or end attachments

Chain slings – remove from service if any of the following are present:

- Cracked, bent, stretched, or gouged links
- Wear exceeding manufacturer specifications
- Missing identification tag
- Damaged, cracked, or deformed master links, hooks, or attachments

Shackles – remove from service if the pin is bent, the body is stretched or deformed, threads are damaged, or the capacity marking is illegible.

Documented rigging inspections are recorded monthly on REGISTER-OHS-11 Specialized PPE and Rigging Register.



SOP-FAB-16 – Rigging and Hoisting Procedure

12. Forklift and Telehandler Hoisting

Forklifts and telehandlers are the primary hoisting equipment at the Viking Reinforcing yard. Operators must hold a current ticket and must complete FORM-OHS-12 Equipment Pre-Use Inspection Form before use.

- Never exceed the rated capacity of the equipment. The load chart is posted in each operator cab.
- Position forks fully under the load with the load centred between the forks.
- Tilt the mast slightly back before lifting to stabilize the load.
- Travel with the load as low as practical (150 to 300 mm above the ground surface).
- Do not lift loads above personnel. Enforce a five-metre exclusion zone around the load.
- Do not use a forklift as a personnel lift unless equipped with an approved work platform and secondary safety device.
- When using a telehandler with a lifting hook attachment, the attachment must be rated and the load chart for the hook attachment used (not the fork load chart).
- Synthetic slings used on forklift tines must have edge protectors where the sling contacts the tine or rebar edge.
- Stop operations in winds that cause the load to swing or rotate beyond operator control (generally sustained winds above 40 km/h, or as stated on the equipment load chart).

13. Mobile Crane Operations (General Contractor)

Viking Reinforcing does not own or operate mobile cranes. When mobile cranes are used to place fabricated cages or bundles on a construction project, the crane is operated by the general contractor or a subcontractor. Viking Reinforcing workers involved in the lift must:

- Review the general contractor lift plan before the lift begins.
- Confirm Viking Reinforcing riggers and signallers are certified and authorized by the general contractor.
- Follow the designated signaller only. A signaller gives hand signals or radio commands; the operator responds only to the designated signaller, except that a stop signal may be given by any worker.
- Remain outside the swing radius of the crane.
- Do not work, travel, or stand under a suspended load.
- Confirm minimum approach distance to energized powerlines per OHS Regulation Part 19.
- Stop the lift if wind, visibility, or any other condition makes the lift unsafe.

14. Signals and Communication

A single designated signaller is assigned to every lift. Standard crane hand signals (per ASME B30 series) are used. When line-of-sight is not possible, two-way radios are used and the communication channel is confirmed before the lift. The universal STOP signal may be given by any worker at any time and must be obeyed immediately.



SOP-FAB-16 – Rigging and Hoisting Procedure

15. Exclusion Zone and Load Control

- A minimum five-metre exclusion zone is established around and beneath every suspended load at the yard; larger on jobsites where the general contractor sets a greater distance.
- Tag lines are used to control rotation. Workers handling tag lines remain outside the exclusion zone wherever possible.
- No worker rides on the load or the rigging at any time.
- Loads are not left suspended unattended.

16. Environmental Limits

- Wind – suspend lifts when sustained winds or gusts exceed equipment manufacturer limits or the limits stated in the Lift Plan.
- Visibility – suspend lifts when visibility between operator and signaller is lost and radio communication is not functional.
- Lightning – cease lifts immediately upon thunder or lightning activity within 10 km; resume 30 minutes after last activity.
- Ground conditions – verify outrigger mats or ground bearing capacity before mobile crane set-up.
- Night work – lifts at night require adequate task lighting and written authorization in the Lift Plan.

17. Prohibited Practices

- Exceeding the Working Load Limit of any rigging component or the rated capacity of lifting equipment.
- Shortening slings by tying knots in them.
- Using damaged, untagged, or unrated rigging equipment.
- Placing workers under a suspended load.
- Riding on loads, forks, hooks, or rigging.
- Lifting with only one leg of a multi-leg sling unless specifically rated for single-leg use.
- Dragging loads sideways with lifting equipment.
- Operating lifting equipment without a current ticket or certification.
- Operating lifting equipment under the influence of drugs, alcohol, or impairing medication.
- Modifying rigging components (welding, heat-treating, grinding).

18. Emergency Procedures

In the event of a rigging or hoisting incident (dropped load, sling failure, struck-by, equipment tip-over, powerline contact, or near-miss):

- STOP all work and secure the area. Establish a no-entry zone.
- If a worker is injured, render first aid and call 911 if required.



SOP-FAB-16 – Rigging and Hoisting Procedure

- If a load is suspended and unstable, clear the area and do not approach until the load is stabilized by qualified personnel.
- For powerline contact, the operator stays on the equipment and directs all workers to stay at least 10 metres away until the utility confirms the line is de-energized.
- Report the incident immediately to the supervisor and the Chief Safety Officer.
- Complete FORM-OHS-02 Incident Report Form and initiate an investigation using FORM-OHS-04 Incident Investigation Report.
- Retain the failed rigging or equipment as evidence. Do not discard.
- Notify WorkSafeBC per OHS Regulation Section 3.4 when the incident meets the notifiable criteria (serious injury, major structural or equipment failure, or dangerous incident).

19. Records and Documentation

- FORM-OHS-01 – Hazard / Near Miss Report Form
- FORM-OHS-02 – Incident Report Form
- FORM-OHS-04 – Incident Investigation Report
- FORM-OHS-11 – Worker Training Record
- FORM-OHS-12 – Equipment Pre-Use Inspection Form
- FORM-OHS-14 – Red Out-of-Service Tag
- FORM-OHS-15 – Lift Plan (critical / non-routine lifts)
- LOG-OHS-01 – Workplace Inspection Log
- LOG-OHS-02 – Equipment Inspection Log
- REGISTER-OHS-02 – Corrective Action Register
- REGISTER-OHS-04 – Worker Training and Competency Register
- REGISTER-OHS-10 – Critical Task Register
- REGISTER-OHS-11 – Specialized PPE and Rigging Register

20. Continuous Improvement

Rigging inspection results, near-miss reports, incident findings, and worker feedback are reviewed quarterly by the Chief Safety Officer and annually during Management Review. Lessons learned are communicated at safety meetings and drive revisions to this procedure, the Lift Plan template, and the Critical Task Register.

21. Revision History

Revision	Description
1.0 – 2026-04-14	Initial release. New SOP added to close COR audit gap identified in April 2026 (critical task register vs SOP count).