

CONTRACTOR TOOLBOXES

Contractor toolboxes are sets of tools and resources that employers and drivers can use to address the risk of injury from load securement activities based on their operational needs and preferences. These toolboxes include descriptions, musculoskeletal injury (MSI) risk reduction measures, time requirements, costs, safe work procedures, risk exposure, risk controls and other implementation resources.

As per WorkSafeBC OHS regulation section 4.46 to 4.53, employers must identify the factors that may expose workers to the risk of MSI in their workplace. Employers can refer to [BCFSC's load securement risk assessment tool for risk identification \(reg 4.47\) and risk assessment \(reg 4.48\) related to load securement](#) (BCFSC 2021).

It should be noted that the tools or methods identified in the contractor toolboxes reduce but do not eliminate the risk of MSI.

To use the toolboxes effectively, the employers and drivers must:

- Make sure that they become familiar with the tools and resources provided, and understand how to use these tools in their operations;
- Ensure users are trained on safety procedures;
- Be aware of risk exposures and controls;
- Conduct regular safety inspections and stay current with new safety regulations and best practices.

For all toolboxes, there are general risk reduction considerations for drivers that need to be followed:

- Train or refresher training to increase effectiveness and the confidence of workers.
- Remember the importance of stretching throughout the day / during breaks to reset muscles and avoid further strain, targeting especially the shoulders and back before and after load securement activities.
- Consult supervisor or health & safety reps for considering the most appropriate toolbox for drivers with previous injuries, low fitness level or restricted mobility.
- Assess the condition of the load and the work area available on both sides of the truck before using any tool or method.
- Where possible, practice the throwing motion using both dominant and non-dominant hands so that they may alternate and spread the load between both arms throughout the day.
- Avoid throwing multiple wrappers in one throw.

Toolbox E – Lightweight Wrappers/ Tiedowns

Descriptions

Synthetic ropes (Figure 32) are much lighter than steel cable for equivalent strength with most of the throw weight coming from the chain portion.



Figure 32. Driver throwing a synthetic wrapper.

Table 15 presents the wrapper portion throw weight for different chain lengths, rope size and wrapper material.

Table 15. Throwing weight for different chain lengths, rope size and wrapper material type

Rope	Weight for the portion of the wrapper being thrown (kg)
Synthetic 5/8" wrapper with short links (3") at both ends	0.5
Synthetic 1/2" tiedown with 1 ft chain and hook	0.9

Figure 33 shows the throwing length of some of these lightweight wrappers.



Synthetic wrapper



Synthetic tiedown

Figure 33. Lightweight synthetic wrapper/tiedown used for throwing.

MRS and MRS Risk Level

The MRS with safe work procedures for synthetic wrapper/tiedowns is around 14 to 22 (Table 16).

Table 16. MRS and MRS risk level for synthetic wrapper/tiedown

Movement Risk Score	Risk Level
14-22	Low to moderate

Safe Work Procedure

The safe work procedures for the use of lightweight wrappers/tiedowns are as follows:

1. Stand 8 to 10 ft away from the load if the ground conditions allow it.
2. Use an underhand throw to reduce overhead movements that cause increased strain on the shoulders.
3. Use the lightest throw weight. Using the chain itself is generally enough to get the wrapper over the load.
4. Step one foot back and move the hand holding the chain back (Figure 34a)
5. Bend knees and push with the stronger lower leg muscles to generate the force required to throw the wrapper as you return to a standing position, avoiding body twist (Figure 34b).
6. Stride forward with the momentum generated (Figure 34c).
7. Release the wrapper prior to elevating the arm above shoulder level and follow through (Figure 34d).



a) Step back a bit



b) Bending (leg work) with minimal twist



c) Stride forward with built momentum



d) Release and follow through

Figure 34. Steps for throwing lightweight wrapper.

Time

The time required for synthetic wrappers is similar to that of the traditional throwing method. Wrapping time using both conventional and lightweight wrappers for a three bundle loads will be around 3.5 minutes.

Cost

Synthetic wrapper or tiedown - \$200 to \$300, depending on diameter and length.

Risk Exposure

Even with lightweight wrappers, drivers are exposed to risk of musculoskeletal related injury (MSI) because of factors such as repetitive motions and non-ideal posture. Other factors such as previous injuries, age, fitness level, throwing multiple wrappers in one throw can also increase risk. Other risks are falling logs or debris and slips, trips and falls on uneven or poor ground conditions.

ADDITIONAL RESOURCES

Other resources on wrapper throwing method, training and injury management that employers and drivers can refer to:

- BC Forest Safety Council: Throwing Wrappers – Method for Reducing Injuries
<https://www.youtube.com/watch?v=hDD5gzrjFJM>
- BC Forest Safety Council: Shoulder Injury Management for Log Truck Drivers
<https://www.youtube.com/watch?v=emmPSSL3aDE>
- BCFSC and Total Physiotherapy (2018) Throwing procedure
https://www2.bcforestsafe.org/files/BCFSC_Logging_Poster_Method_Throwing_Wrappers_0.pdf

There are additional resources from BCFSC and FPIInnovations that can be used in risk assessments for loader assist methods:

- BC Forest Council: Loader Assist Procedure
 - https://www.bcforestsafe.org/wp-content/uploads/2021/10/Risk-Assessment-Tool-MSI-Load-Securement_14-Oct-21_FINAL.pdf
 - <https://www.youtube.com/watch?app=desktop&v=QhORC4T7ABc>
- FPIInnovations: Reducing Repetitive Strain Injuries Resulting from Installing Log Load Wrappers
<https://www.youtube.com/watch?v=WX2nWni4FOI>