

Hand Safety in Wood Products

Preventing workplace injuries in wood
production facilities



Hand injuries are a leader in workers' compensation claims rates across all industries. In 2020, over 30% of all workplace injuries were attributable to hands, wrists and arms. Likewise, in 2019, over 20% of Canadian lost time claims were tied to upper extremities. These statistics are likely conservative for industries that require significant amounts of material handling, such as wood products. In fact, a study in Alberta found that actual incident rates of hand, wrist and arm injuries in sawmills account for upwards of 45% of all injuries incurred, making it the most injured region of the body within the industry. This is important, because even if a hand injury doesn't result in a trip to a medical facility, it can still have a significant impact on the worker's functionality and well-being, as well as overall workplace morale and productivity. Despite these sobering statistics and considerations, hand injuries are also among the most preventable workplace injuries, when appropriately assessed and controlled.

COMMON TYPES OF HAND INJURIES WITHIN WOOD PRODUCTS

Before diving into the details of identifying and mitigating hand injuries within the wood products industry, it is important to understand the diversity of injuries the work poses. Because of the highly varied activities that take place within both primary and secondary wood manufacturing facilities, the resulting injuries are also wide-ranging. Among the most common are crushing/fractures, lacerations, amputations, contusions, punctures, repetitive motion, avulsions/degloving and burns. With so many unique injury outcomes, treatment requirements and recovery time and capacity are similarly varied, making effective identification of potential mechanism of injury for effective management even more essential.



HAZARD ASSESSMENTS

To holistically address hand injury exposures that employees face within the wood products industry, the potential sources of those injuries must be recognized and assessed. Moreover, from a regulatory perspective, employers are required by law to protect employees from recognized hazards, which can only be accomplished if an identification process has been employed. There is a wide array of methodologies that can be used to perform hazard assessments, but here are some best practices to consider:

- **Evaluate each task and work area independently.**

Hazard assessments cannot be performed on an organizational, operational or even product-line basis. Each job employees perform and each environment they complete those tasks in is unique and therefore must be looked at specifically to fully appreciate the hazards posed. For example, depending on the product being handled (i.e., dried lumber or veneer), the likelihood of sustaining a sliver or splinter injury may increase over the same activity being performed with a different product variety.

- **Involve employees in the assessment.**

The workers who spend their days in the job you are evaluating will almost always have additional insight into the hazards posed by it, in comparison to an outside observer. Partnering with experienced employees will provide organizations with a more comprehensive evaluation than assessing independently. An example within the wood industry would be an employee knowing that a certain dimension or species of wood has higher rates of becoming hung up during production, requiring additional manual handling, thus increasing the potential for hand injury.

- **Look at organization near misses and incident trends.**

Although proactivity should always be the goal, that does not preclude learning from past information. Previous injuries or potential injuries provide invaluable insight into what hazards exist in that job or environment. For instance, if there has been a pattern of puncture wounds at a specific door or pallet assembly station, it may be worth taking a closer look at what makes this work area more hazardous.

- **Use a hazard identification checklist.**

A general, pre-created checklist can be helpful in pushing the assessor to consider potential sources of injuries they may have overlooked otherwise. For example, in the wood products industry, moving equipment and pinch point hazards may immediately come to mind as common hazards, but perhaps a specific piece of equipment has intense vibration that could pose an ergonomic hazard to employees. Use the checklist as a guide to help identify overlooked hazards, but don't allow it to limit consideration of additional hazards that may not be listed.

Hazards can vary widely based on the specifics of the wood products operation. Here are some of the most commonly encountered exposures across the industry:

- Caught in or between hazards from moving equipment or material
- Laceration and puncture hazards from tools, equipment and material
- Repetitive motion from material handling or equipment usage
- Strain or sprain hazards from overexertion when handling materials, tools or equipment
- Burns or dermatitis from contact with hazardous materials or surfaces

HAZARD CONTROLS

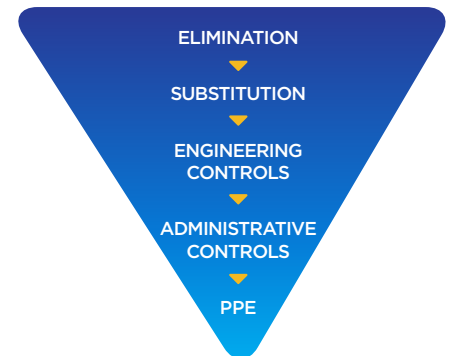
Once a comprehensive list of hazards has been established, wood products employers can then evaluate and implement effective control measures. However, not all controls are created equal! To maximize the benefits of a potential means of mitigation, one must understand the Hierarchy of Controls. In order of decreasing effectiveness, the hierarchy is as follows:

- **Elimination:** Ideally, eliminating the hazard to the employee is the best control option. This is of course not always possible but should always be considered as a first option in the control identification process. An example of this within wood products would be purchasing a new piece of equipment that eliminates the need for employees to ever handle lumber manually.
- **Substitution:** The second-best control method is to replace the hazardous element with something less hazardous. The most common example of this is swapping one chemical, perhaps one that has resulted in contact dermatitis for employees, with another that presents fewer potential hazards to those working with it.
- **Engineering Controls:** One of the most popular forms of hazard mitigation in the wood products industry is engineering controls. This isolates the hazard away from the workers as a means of protection. Machine guarding is a classic example of this form of hazard control within wood products, as it prevents employees from coming in contact with moving pieces of equipment during operation.
- **Administrative Controls:** Next is administrative controls, which are protective measures created by the work practices employees use to accomplish their jobs. One example is developing and applying a job rotation to prevent repetitive use injuries from activities like flipping lumber or applying putty to veneer boards for long periods of time.
- **Personal Protective Equipment:** Last, and in many ways, least, is personal protective equipment. Although an essential part of the hierarchy of controls, it should always be viewed as the last resort, as it provides the least effective means of keeping workers safe. When considering hand safety, gloves most often come to mind in this control category. This can come in the form of leather gloves to provide protection when handling rough wood surfaces, Kevlar gloves to prevent lacerations and punctures from saws and blades, or chemical resistant rubber gloves for working with hazardous materials.

It is worth noting that the desirability and effectiveness of each level of the hierarchy is inversely related to the level of worker responsibility related to that control. If a hazard is eliminated or isolated from the employee, there is a much lower reliance on worker action to ensure the success of the control. On the other hand, ensuring the effectiveness of gloves depends on the worker: wearing the appropriate equipment, in the appropriate way, replacing it in a timely manner, and avoiding new hazards that may be created by the PPE. That said, due to both financial and functional feasibility, every level has a role to play in creating a safe work environment. These considerations are important to keep in mind for the next section, which will review some hand safety best practices for the wood product industry and will range the full gamut of possible controls.

Hierarchy of Controls

**MOST
EFFECTIVE**



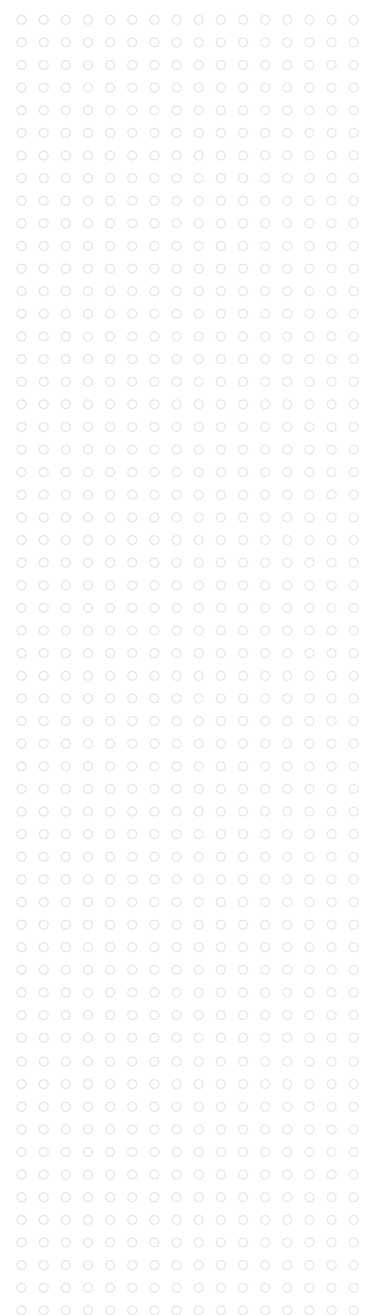
**LEAST
EFFECTIVE**



Hand Safety Best Practices for the Wood Products Industry

The expansive types of hazards and controls for hand safety in the wood products industry has resulted in a wide array of different protective practices by employers. Although many of these solutions are carefully curated for the specific work environment and task, consistent trends do arise. Below are some best practices that have been developed within the industry to protect workers' hands:

- Redesign workstations to eliminate hazards whenever possible.
 - For example, if a guardrail creates a struck-by hazard when the employee is handling material or dealing with a cross-up, consider relocating the railing or reorienting the worker.
- If material hang-ups, spillage or jamming is consistently requiring employees to manually handle additional material or place their hands in potentially hazardous areas, involve maintenance teams or the manufacturer to identify and eliminate equipment issues causing these challenges.
- Invest in equipment and tools that pose less risk than current options.
 - For example, provide auto-retracting utility knives instead of those that lock in an extended position to decrease the likelihood of lacerations.
- Install area or point-of-operation guarding wherever there is potential of employees coming in contact with hazards created by equipment or material.
- Consider incorporating protective elements like light curtains, interlocks and pressure sensing pads on your equipment to provide additional risk mitigation.
- Re-evaluate work areas regularly to identify new or emerging hazards due to changes in the operation, work practices or other variables.
 - Safety committees can be a great means of accomplishing this.
 - An effective Management of Change (MOC) can help with proactively identifying the impact of operational changes.
- Encourage, and potentially incentivize, employees to report hazard observations and near misses so proactive action can be taken to avoid an injury.
 - Hazard identification training can aid in ensuring employees are equipped to effectively identify factors that may pose risks.
- Provide consistent hand safety training to employees that consists of hand awareness and placement strategies, PPE inspection methods, appropriate equipment usage, etc.



- Implement a hand stretching and strengthening practice for employees that are consistently handling materials, tools or equipment that could result in ergonomic injuries.
- As ergonomic discomfort arises with an employee, take quick action to mitigate the severity of a potential injury through an early intervention program.
- Engage with reliable information sources to learn about new technological advancements or work practices that may provide additional protection to employees.
- Monitor injury trends and perform thorough incident investigations for clues on actions that can be taken to prevent recurrence.
- If you are struggling to find an effective solution, reach out to similar operations, consultants or other resources for insight and assistance in identifying a viable solution.
- Require employees to inspect their PPE prior to each use; regular spot checks by supervisors can ensure compliance with this expectation.
- Ensure new PPE is readily available to prevent inaccessibility from becoming a deterrent to replacing inadequate equipment.
 - Equipment vending machines are becoming a popular method of achieving this. Many leading suppliers now offer this as part of their servicing.
- Provide a wide variety of equally protective equipment to allow employees to select the version that works best for their anatomy, task and preferences.

Conclusion

Hand injuries may present a pressing risk for the wood products industry, both in terms of frequency and severity, but there are many avenues available to employers to combat the hazards their employees face. Through an understanding of the nature of the hand injuries that can occur, how to identify the mechanisms causing those injuries, and how to effectively evaluate potential controls, organizations can confidently take proactive and preventative actions. Indeed, many already have, providing best practices to serve as a blueprint for jumpstarting and initiating an effective hand safety program. Take advantage of your newfound knowledge and gain the upper hand in protecting your employees' hands.

Sources

Holcroft, C. A., & Punnett, L. (2009). Work environment risk factors for injuries in wood processing. *Journal of Safety Research*, 40(4), 247–255.
<https://doi.org/10.1016/j.jsr.2009.05.001>

McDonald, P. (2023). Hand Safety in Sawmills [Review of Hand Safety in Sawmills]. Canadian Forest Industries.

Superior Glove Works LTD. (2022). Sawmill Safety Guide [Review of Sawmill Safety Guide].

We're HUB

When you partner with us, you're at the center of a vast network of experts. We advise you on how to confidently identify, quantify and reduce risk through tailored solutions, so that you can protect what matters most: your people, your property, and your profitability.

Contact a HUB Advisor today at:

hubinternational.com

Ready for tomorrow.

Risk & Insurance | Employee Benefits | Retirement & Private Wealth



Neither Hub International Limited nor any of its affiliated companies is a law or accounting firm, and therefore they cannot provide legal or tax advice. The information herein is provided for general information only and is not intended to constitute legal or tax advice as to an organization's specific circumstances. It is based on Hub International's understanding of the law as it exists on the date of this publication. Subsequent developments may result in this information becoming outdated or incorrect and Hub International does not have an obligation to update this information. You should consult an attorney, accountant, or other legal or tax professional regarding the application of the general information provided here to your organization's specific situation in light of your organization's particular needs.

© 2023 HUB International Limited. All rights reserved.

