



The consequences of an injury can be severe when workers are handling heavy stone slabs. Planning ahead and using automation technology can help reduce the risk.

Rock-solid injury prevention

By Sarah Ripplinger

Onyx Stones and Custom Cabinets invested in safety by integrating automation technology in its shop to minimize manual handling of heavy stone slabs. This automation, combined with careful project installation planning, goes a long way to reduce the risks of musculoskeletal injuries for workers.

“Lifting stone countertops that weigh a couple hundred pounds is no joke,” asserts Bikram Sahi, owner of Onyx Stones and Custom Cabinets. Having worked in the stone fabrication industry since 2012, Sahi has heard his fair share of horror stories about improper handling of large quartz, granite, or marble countertops during installation or when they are being cut and ground down at the shop.

“The consequences can be severe,” says Sahi. “Every time a slab falls on someone, the outcome can be very bad.”

Onyx fabricates and installs stone countertops and manufactures cabinetry and closets, mostly for new construction projects or home renovations. Onyx has tripled its capacity and doubled its revenue since opening the shop in 2015 in Prince George, B.C. It also recently expanded its operations into Kamloops — an achievement largely attributed to the company’s focus on automation and the careful planning that goes into each installation.

Since opening its doors, Onyx has had only one injury claim, which involved a worker sustaining a cut on their hand. Onyx’s secret, says Sahi, is to bake safety into every part of its operations, from using the right equipment to minimize manual handling of heavy

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slabs, to visualizing and planning an installation before a worker arrives at a jobsite.

Onyx’s investment in the automation technology is also paying off with a history of zero musculoskeletal injury (MSI) claims — a rare feat in this industry.

Risky business

Workers in the stone fabrication industry are at risk of MSIs when lifting, moving, and unloading stone countertops from trucks or containers. These work tasks can lead to injuries to the back or joints, and impact injuries from falling materials.

“MSI risks are present in every industry, but they are even greater when lifting materials that are heavy and awkward to maneuver,” notes Chelsea Wilson, an occupational safety officer at WorkSafeBC based in Prince George. “The human body is not designed to lift heavy materials that are awkwardly shaped like countertops, which is why we want employers to look at tools that can help reduce back and shoulder injury risks.”

In the stone fabrication industry, the average time a worker is away from work to recover from an MSI is more than 48 days. Some workers may be assigned to modified duties, but others may need to recover off the job for six weeks and up to a year, says Wilson.

Measure twice, cut once

While workers are trained on how to properly lift countertops, machines perform a lot of the manual work at Onyx. Forklifts and booms move larger uncut slabs that can weigh in at more than 159 kilograms (350 pounds) and stretch to 3.2 metres long (10.5 feet) and 1.6 metres wide (5.25 feet).

A computer numerical control (CNC) machine automatically cuts stone countertops to a specified size using digital templates, avoiding the need for workers to cut materials with saws and hand grinders.

The high precision of the CNC machine also virtually eliminates the need to make adjustments to the

countertop during installation, when awkward angles and tight spaces can increase the risk of injury should an edge need to be shaved down, says Sahi.

In addition to the automated machinery, Sahi purchased a long ramp to allow countertops to be rolled into the company’s cube van and onto the worksite, avoiding the need for any manual lifting.

“What Onyx has done is exactly what we hope other employers will do to reduce their MSI injuries,” says Sylvie Stekelenburg, a WorkSafeBC Prevention Field Services manager in Prince George. “It’s a good example of what we’re hoping to see as we move forward with our manufacturing high risk strategy.”

The three-year strategy will focus on high-risk activities in the manufacturing industry, including those that can lead to MSIs. WorkSafeBC officers will guide employers through steps to address tasks that have a high risk of resulting in MSIs — “teaching them how to fish in a sense,” says Wilson. Workers will also be involved in this collaborative process, she adds.

WorkSafeBC’s MSI Initiative, which is happening in tandem with the high-risk strategy, focuses on MSI risks in industries that are not represented by other strategies or initiatives, such as large retailers and supermarkets.

“These initiatives are going to be game-changers,” says Wilson. “Educating employers and workers on MSI risks will help create an overall healthier, safer working environment for everybody.”

A well-made plan

Hazard identification and risk assessment are a big part of Onyx’s planning process. Each job is mapped out in advance, including doing a dry run of the install.

Workers are trained to visualize how the countertop will be carried through the space and where it will be set down. Measurements are taken of all doorways, hallways, and rooms the finished countertop may need to go through to reach its final destination. Appliances,

furniture, and decorations that could catch on the stone or get knocked over are moved out of the way.

“It’s often when a worker tries to save a slab that injuries happen,” says Sahi. “I always say: ‘no body part under the slab, ever.’”

A manager, or more senior employee, who is trained in all safety procedures is always on site to oversee jobs with juniors and new hires. If the team is dealing with a particularly large or awkward stone, more workers are brought in to lend a hand.

“Even if it only takes 10 or 15 minutes, it’s better to have more workers there than to have something go wrong,” asserts Sahi.

The sales team is instructed to manage workloads so workers don’t feel pressured and aren’t overly rushed on the job, Sahi adds, because it’s ultimately the business that loses if an injury occurs.

“You lose so much when a worker is injured, and the harm they experienced can stay in the back of your mind,” he says. “Workers can be very hard to replace. You basically need to train up another person, which can take a couple of months to a year because there is no formal training for what some of my workers do in this trade.”

Cutting-edge equipment

Always on the lookout for the latest and greatest tools for his team, Sahi visits trade shows in search of new equipment. He found a stone lifter that automatically locks and unlocks based on whether or not it’s carrying

a load. “This saves us a step by no longer having to do this manually,” Sahi notes. “It is also much safer than the other type of lifter where workers sometimes need to squeeze into tight spaces to undo a latch.”

While leasing or purchasing equipment does add up, Sahi says the cost-savings from greater efficiency and safer and happier employees far exceeds those upfront costs. It has allowed him to keep costs down while growing his business and hiring more workers.

“These are my dream machines,” says Sahi. “They make it so easy for my workers, and much less risky.”

For more information

- To learn more about the risks in stone cutting and production and how to prevent injuries, visit worksafebc.com/stoneshops.
- To learn more about how to prevent MSIs, visit worksafebc.com/ergonomics.
- WorkSafeBC’s 2021–2023 manufacturing high risk strategy is designed to reduce injuries in manufacturing by helping employers implement their safety programs and control risks at the workplace. Search for “high risk strategy” on worksafebc.com to learn more. 🗣️

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