

SUPERVISOR

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6 Steps to Protect Workers from Welding Hazards

Welding is used to join materials and is a common practice in many industries. Because of the nature of this activity, however, welding exposes workers to various hazards, such as radiation, toxic fumes and excessive heat. To ensure your workers are protected from welding hazards while welding or working near welders and you are in compliance with OHS laws take these six basic steps.

Step #1: Inspect Welding Equipment

Before workers use any welding equipment, require them to inspect it to ensure it all works properly and that there are no leaks or defects. If a worker finds any defects, they must be repaired or the defective parts replaced before the equipment is used for welding. In addition, workers should confirm that the welding equipment has all required safety

devices, such as those designed to prevent flashbacks or reverse gas flow, and that such devices are functioning as designed. Failure to have required safety devices can have tragic consequences.

Step #2: Inspect Area for Flammable & Explosive Materials

Before welding starts, ensure the area around the welding work is inspected to identify any combustible, flammable and explosive material, dust, gases, or vapours present or likely to be present in that area. Then take steps to ensure that such materials aren't exposed to ignition from welding work.

Step #3: Ventilate Work Area, If Necessary

Welders are at the highest risk for exposure to welding gases and fumes. But anyone who works near a welder can

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IWH Study Says OHS Inspections with Penalties Reduce Workplace Injuries

Ever wonder if the carrot or the stick is more effective in getting employers to comply with the OHS laws and take the necessary steps to protect their workers? Well, the results of a new study support the stick approach.

Government OHS inspections that result in citations or penalties effectively motivate employers to make improvements that reduce work-related injuries, says the study by a researcher from the **Institute for Work & Health** (IWH). The systematic review of research, led by IWH Senior Scientist Dr. Emile Tompa, was published online in June in the *American Journal of Industrial Medicine*.

The research team set out to determine the strength of the evidence on the effectiveness of OHS policy levers in creating incentives for organizations to improve OHS processes and outcomes.

Besides finding strong evidence that inspections with penalties reduce work-related injuries, the team also found strong evidence that inspections without penalties don't reduce injuries, which confirms that specific deterrence—inspections resulting in

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Ontario MOL Alert: Meat Mixer/Grinder

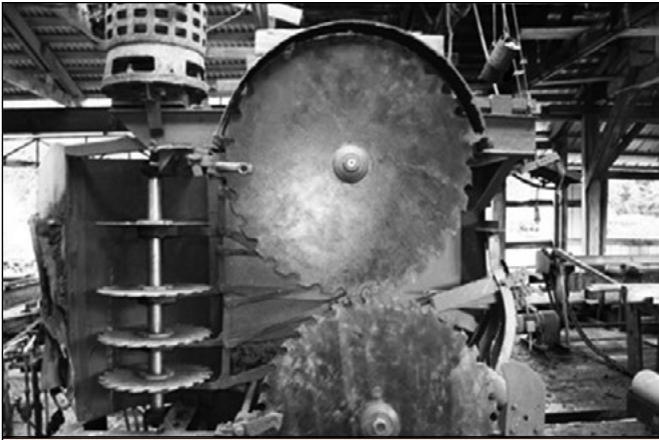
A worker in the meat department of a grocery store was injured while processing meat using a meat mixer/grinder machine. The worker opened the lid/guard of the machine while it was still running and reached inside. The worker's arm became entangled with the moving parts.

Access to moving parts that can crush, cut, burn, and shock, cause hundreds of serious injuries and multiple deaths each year. Following lockout/tagout procedures and ensuring proper guards are in place is fundamental to protecting workers.

OHS regulations across Canada require:

- ❖ Machines and power transmission equipment with exposed moving parts must be equipped with and guarded by a guard or device that prevents access to the moving parts.
- ❖ All pinch points must be equipped with and guarded by a guard or device that prevents access to an in-running nip hazard.
- ❖ During maintenance, cleaning, adjustment and repair, work must only be performed when all motion has been stopped and blocked to prevent movement.

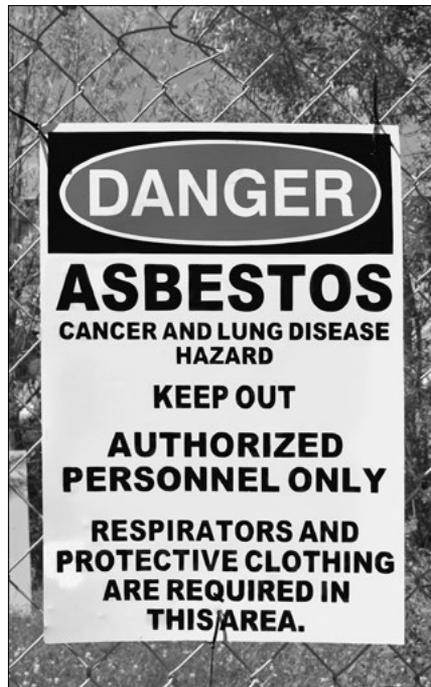
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Picture This! Open Up and Say Ahh!

The sharp steel teeth on these massive seven-foot saws would eat you alive in their current state. Regulations require the saws such as these to have a substantial hood or guard. The upper saw does have a hood but it sure doesn't look "substantial." And what about those vertical blades? They don't appear to be guarded at all; at least not from this angle. The other problem is there's no screen or other device in place to protect workers from flying particles, also required by machine guarding regulations.

SEVEN STATISTICS: ASBESTOS



Here are seven statistics about asbestos that you may not know:

1. Canada's first asbestos mine opened in Quebec in **1879**. In the late 19th century and early 20th century, an increasing number of asbestos mines opened, taking advantage of the large deposits of the mineral found in the provinces of Quebec, Newfoundland, BC and the Yukon.
2. By 1966, Canada produced **40 percent** of the world's chrysotile asbestos and by the 1970s, doctors had declared the asbestos mining towns in Canada to be among the most dangerous in the world, with rates of mesothelioma and other asbestos diseases increasing.
3. After climbing steadily over the past two decades, Canada's mesothelioma cancer rate is now one of the highest in the world. In fact, asbestos exposure is the **No. 1 cause of occupational death in Canada**.
4. In recent years, Canada's domestic production and consumption of asbestos declined, so fewer mining and manufacturing workers were exposed. However, because of the renovation and demolition of the country's aging buildings, especially in Quebec and British Columbia from the **1950s through the 1980s**, the mesothelioma rate has been rising among construction and maintenance workers.
5. About **2.1** of every 100,000 Canadians are diagnosed annually with the aggressive disease.
6. In 1984, **153** Canadian men were diagnosed with mesothelioma throughout all the country's provinces. By 2003, **344** cases were reported among men, and **78** among women.
7. Deaths from mesothelioma totaled **515** in 2010. The latency period for asbestos exposure ranges from 20 to 50 years. This means the death rate will likely not level off for several more years.

SAFE SUPERVISOR

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Safety Consultant: Pamela Walaski, CSP, CHMM, JC Safety & Environmental, Inc.
Sales: 1-800-667-9300 • sales@safetynow.com • www.SafeSupervisor.com
Email: editorial@safetynow.com
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ONTARIO MOL ALERT: MEAT MIXER/GRINDER CONTINUED FROM PAGE 2

- ✳ Where the starting of a machine may endanger a worker, all control switches and mechanisms must be locked and tagged out.

Ontario Changes WHMIS Requirements

Ontario has amended its WHMIS requirements to adopt new global standards for classifying hazardous workplace chemicals, chemical labeling and safety data sheets.

The new international standards are part of the Globally Harmonized System of Classification and Labelling of Chemicals, or GHS.

The new requirements in Ontario's Occupational Health and Safety Act and WHMIS Regulation came into effect July 1, 2016.

To give workplaces time to adjust to the new requirements, there will be a transition period to phase out the old requirements:

- ✳ Employers have until May 31, 2018, to continue to receive and use hazardous products with either the old WHMIS labels and safety data sheets or the new ones.
- ✳ Employers have from June 1, 2018, to November 30, 2018, to bring any hazardous products still in the workplace with the old WHMIS labels and safety data sheets into compliance with the new requirements.
- ✳ By December 1, 2018, the transition to the new WHMIS labels and safety data sheets must be complete.
- ✳ During the transition, employers must ensure workers are trained on both the old and new labels and safety data sheets for as long as both are present in the workplace.
- ✳ For information on WHMIS changes and transition timelines for each jurisdiction go to WHMIS.org.

Targeted Inspections to Protect Vulnerable Workers

The Government of Alberta is helping protect workers by conducting OHS inspections at workplaces that typically employ at-risk workers. These include hotels, arenas, department stores, restaurants, catering companies and couriers.

Worksites across the province will be inspected and the campaign will run until November 30th.

Vulnerable workers are those who may be at greater risk of having their rights violated and who may lack the ability or resources to understand their rights, and include:

- ✳ Young or inexperienced workers.
- ✳ Recent immigrants or temporary foreign workers.
- ✳ Indigenous workers.
- ✳ Older workers.

- ✳ Workers with several jobs or part-time jobs.
- ✳ Contract workers, temporary workers or workers employed by staffing services.
- ✳ Low-skilled workers.
- ✳ Female workers in male-dominated industries.
- ✳ Workers with disabilities.

OHS officers will be looking to ensure OHS legislation is being followed, including rules around:

- ✳ Hazard assessment document.
- ✳ First-aid training.
- ✳ Working alone; and
- ✳ Workplace violence.

Officers will also be looking for potential violations of employment standards, including those related to hours of work, payment of wages, overtime and holiday pay.

New Video on Combustible Wood Dust Explosions Available

A [new video](#) from Work Safe BC explains why combustible wood dust poses such a hazard in sawmills and woodworking shops. There is also a [discussion guide](#) posted on Work Safe BC that provides background information and suggestions for discussions about the video.

FROM THE FATALITY FILES

First Day on the Job Would Be His Last

A 34-year old day laborer was killed after being hit in the head by the bucket of a backhoe loader. The incident occurred in the parking lot of a health care facility. On the day of the incident, the victim was helping two other workers build a concrete retaining wall. It was his first day on the job, he was filling in for his brother.



A backhoe loader was being used to transport concrete blocks from a staging pile to the wall by connecting blocks to the bucket of the backhoe with a chain. The victim was standing near the backhoe loader preparing to connect a block to the bucket when the operator, not realizing the victim was there, rotated the boom. The bucket struck the victim's head and pinned him against the stack of blocks. The victim suffered blunt force head injuries and was pronounced dead at the scene a few minutes later. ✳

The Benefits of Switching to Safer Chemicals



OHS laws, public opinion, and market pressures are key drivers towards safer chemical use in Canadian workplaces. Understanding the benefits

of using safer chemicals and knowing *how* to transition to safer chemicals can help your organization not only comply with OHS laws, but also create a safer environment for workers and protect the public and the environment.

According to *Transitioning to Safer Chemicals: A Toolkit for Employers and Workers*, eliminating or reducing chemical hazards at the source, when coupled with a thoughtful, systematic evaluation of alternatives and the adoption of safer chemicals, materials, products and processes, can provide substantial benefits by:

Improving worker health and safety. Exposure to toxic chemicals on the job can make workers sick, causing cancer and other serious illnesses. And because there's often long latency periods between exposure to a chemical and the onset of a disease, the number of workers impacted by hazardous substances is likely underestimated.

Creating safer products for the environment and consumers. Transitioning to safer chemicals can also contribute to creating products that are less hazardous for the environment and the consumers who ultimately use the products.

Reducing costs. Using hazardous chemicals in the workplace results in substantial direct and indirect costs. Transitioning to safer alternatives can reduce these costs, as well as improving performance efficiency, industry leadership and corporate stewardship.

Enabling compliance with laws and regulations. The environmental and OHS laws both address hazardous substances and impose requirements for dealing with them. Transitioning to safer chemicals may help you comply with these requirements or make such compliance less burdensome.

Although [Transitioning to Safer Chemicals: A Toolkit for Employers and Workers](#) was written from a US perspective and references OSHA regulations, it's still a useful and applicable resource for Canadian companies. For a purely Canadian approach see the [Reference Tool for Assessing Safer Chemical Alternatives](#). 🍁

NEWS you can USE...

Poll Finds Just 22% of Workplaces Have Policies to Protect LGBTQ Employees

Canadian jurisdictions bar discrimination in the workplace on various grounds, including gender, sexual orientation, race, religion and disability. And more jurisdictions are adding gender identity—each person's internal and individual experience of gender—and gender expression—how people publicly express their gender—to the list of protected categories in an effort to protect transgendered individuals from discrimination.

For example, in May 2016, Nova Scotia released Guidelines to Support Trans and Gender Variant Employees for government workers to provide clarity on how trans and gender variant employees are to be supported and included in the workplace. But when we recently asked if your workplace has policies to protect lesbian, gay, bisexual, transgender and queer (LGBTQ) employees, only 22% said yes. Most respondents (61%) said no, while 17% said they didn't know.

Our poll results are consistent with the results of a new study commissioned by Telus, which found that one third of respondents don't agree that their workplace is safe and inclusive for LGBTQ employees and that 45% don't agree their workplace is safe and inclusive for transgender employees.

MARU/VR&C conducted the survey of 814 Canadians (half of which identified as LGBTQ) in July 2016. Other survey findings include:

- 🍁 30% of LGBTQ respondents said they've experienced or witnessed homophobic or transphobic discrimination or harassment at work, with nearly half of the incidents going unreported to employers.
- 🍁 57% of LGBTQ Canadians weren't fully "out" at work—22% of those were worried about a hostile or unfriendly work environment, 15% said they were worried it may limit their career opportunities and 10% were concerned with their personal safety.

LGBTQ respondents agreed that the following actions and activities would have a positive effect on diversity and inclusiveness in Canadian workplaces:

- 🍁 Anti-harassment/discrimination policy (81%)
- 🍁 Diversity and inclusiveness training (66%)
- 🍁 Supporting/taking part in Pride celebrations (51%)
- 🍁 LGBTQ employee support/resource groups (50%)
- 🍁 Senior leaders supporting LGBTQ causes and events (50%).

So it's important to ensure that your workplace's anti-discrimination and anti-harassment policies and practices reflect *all the groups* protected in the human rights, labour standards and/or OHS laws, including members of the LGBTQ community. 🍁

Dealing with a Workplace Injury or Death

WHAT'S AT STAKE?

Witnessing or being involved in a horrible situation at work—such as a fall from heights, machinery entanglement or extreme workplace violence—can haunt an individual for years. The stress of not dealing with emotional trauma can seriously harm your career, relationships and mental and physical health.

WHAT'S THE DANGER?

Many people require professional help to prevent short-term shock from turning into something more serious and longer lasting - post-traumatic stress disorder (PTSD).

Consider this story. A construction crew was caught in a building collapse. Only one worker survived. After the incident, she experienced extreme survivor's guilt and PTSD. She didn't want to appear weak or helpless so she did not seek or receive help, and, sadly, a month after the incident she committed suicide.

HOW TO PROTECT YOURSELF

Be on the lookout for signs of trauma:

- ✦ Re-living the event through unwanted thoughts, images, memories, hallucinations, or dreams.
- ✦ Feelings of intense stress when faced with a reminder of the event.
- ✦ Avoidance of anything associated with the event.
- ✦ Emotional disturbances such as difficulty with expressing feelings, depression and withdrawal.
- ✦ Sleep problems, rage, inability to concentrate and anxiety.
- ✦ Increased blood pressure, hyperventilation, muscle tension or spasms, nausea, or diarrhea.

Tools for coping with traumatic incidents:

- ✦ Take advantage of company programs and procedures for dealing with a fatality.

- Feelings such as grief, guilt and anger can make it hard for you to do your job, so take advantage of crisis counseling.
- In fact, mental health experts strongly recommend that workers involved in a traumatic incident talk to a professional within a day or two of the event.
- ✦ Seek support from your co-workers and offer support to them.
 - Often you will find it easiest to talk to fellow employees who were present at the time of the incident.
 - Remember, seeking support of co-workers or mental health professionals is not a sign of weakness.
- ✦ Finally, keep yourself informed of the facts of the case. Staying up-to-date on details will give you a better understanding of the event, and therefore, a greater sense of control.

FINAL WORD

Know that resources are available to you for dealing with a traumatic event. It will be easier to cope if you know where to start. Doing nothing is not a healthy option. ✦

Meeting material to go: Safety meeting materials such as presentation tips, PowerPoint presentations, quiz answers and more are downloadable at www.SafetySmart.com

TEST YOUR KNOWLEDGE

1. Seeking emotional help from co-workers or from a professional is a sign of weakness.
 True False
2. Symptoms of trauma include increased blood pressure, rage and anxiety.
 True False
3. Tools for coping with traumatic incidents include:
 - a. Seeking support from colleagues.
 - b. Staying informed on the facts of the case.
 - c. Paying attention for signs of trauma.
 - d. All of the above
4. Attempting to ignore or avoid distressing feelings regarding witnessing or experiencing a traumatic workplace incident can lead to PTSD.
 True False

What Would You Do?

After a traumatic incident at work, you notice that your co-worker is exhibiting one or more symptoms of traumatic stress or PTSD. What should you do?

Quiz Answers: 1. False, 2. True, 3. D, 4. True

Crane's Fall Leads to \$150K Fine for Canadian Firm

Sept. 23 — An Ontario crane contractor has been fined C\$150,000 (\$114,000) for safety violations that led to serious injuries to a worker struck by a crane.

The Ontario Court of Justice Sept. 21 fined Procrane Inc.'s Sterling Crane division after finding the company guilty at trial of failing to provide adequate information, instruction and/or supervision to a worker, a violation of Section 25(2) (a) of the province's Occupational Health and Safety Act, the Ontario Ministry of Labour said Sept. 22.

Charges were filed after a May 7, 2012, incident in which a Sterling Crane employee operating an 1100 National Crane boom-type truck at a worksite was struck when a jib attached to the crane's boom fell, causing unspecified "critical" and "permanent" injuries, the ministry said in a statement.

The previous day, two other Sterling Crane employees had stowed the jib alongside the crane's boom at the company's yard in Corunna, Ontario, it said. Ministry investigators found that the company failed to ensure that its employees stowed the jib properly based on the manufacturer's operating manual, it said. 🍁

OHSA conviction, \$48,000 fine upheld on appeal: "blocking" of machine required physical block

An Ontario Appeal judge has upheld an employer's conviction under the *Occupational Health and Safety Act* for failure to "block" a machine, after the trial justice held that "blocking" required a physical block, not simply shutting off the hydraulic power.

The Ontario Ministry of Labour had charged the company with failing to ensure that a "part of a machine, transmission machinery, device or thing shall be cleaned, oiled, adjusted, repaired or have maintenance work performed on it only when... any part that has been stopped and that may subsequently move and endanger a worker has been blocked to prevent its movement", contrary to section 75(b) of the Industrial Establishments regulation under the OHSA.

A maintenance worker with the company, which operated a sawmill, suffered crushing injuries to his arm as he reached in between the "side heads" of a saw while performing maintenance. Another employee, not knowing that the maintenance worker had gone into the area between the side heads, had used the control box for the machine to close the side heads.

The machine had been shut down for maintenance and its electrical system had been locked out. However, the maintenance worker left the hydraulics on, which was required in order to move the side heads for maintenance.

The appeal court held that the trial justice had not erred in deciding that "blocking" required a physical block be used

to restrain movement of the side heads. It was reasonable to interpret "blocking" to require that a physical block, a "large solid piece of hard material" be used.

The conviction was therefore upheld. The appeal judge also held that the \$48,000 fine was reasonable, despite the fact that the company had only 25 workers and no previous convictions under the OHSA.

Ontario (Ministry of Labour) v. McKenzie Lumber Inc., 2016 ONCJ 533 (CanLII). 🍁

Employer establishes due diligence, not guilty in workplace fatality

A Saskatchewan employer has been found not guilty of six occupational health and safety charges after a worker died of suffocation when he became engulfed in a grain receiving pit. The employer's extensive safety program had emphasized, not buried, the relevant training.

The charges alleged that the employer failed to properly train and instruct the employee regarding safety.

The employer showed that the employee had received computer based training on various topics including confined space safety. He had completed 12 such training modules, 4 of which dealt with the "dangers of engulfment". At the end of each module, he took a test on which he received a grade of at least 80% which was the pass rate. He also took 5 hands-on training courses including one relating to safe-work permits.

The training materials were replete with references to the dangers of entering a confined space such as a receiving pit. The materials were extensive. The court rejected the prosecutor's argument that the confined space training was "buried in dozens of [computer based training modules] in hundreds of power point slides" and therefore would have been "lost" on the worker. Instead, the court found that the "mass of material emphasized the dangers, and the importance of following safety procedures, rather than burying them."

Also, there was not a "culture of paying lip service" to safety that would have "detracted" from his safety training.

In this case, the worker was not directed to do anything involving a receiving pit. Instead, he had been given an "innocuous" task which he had also done an hour earlier – to simply take a flashlight and look into the pit to see whether it was empty or there was grain in it. There was no reason for the employer to think that he would enter the receiving pit. In any event, the employee was properly trained for the work that he was directed to do. The employer had successfully shown due diligence. All six charges were dismissed.

R v Viterra Inc., 2016 SKQB 269 (CanLII). 🍁

POLICIES AND PRACTICES

MACHINE GUARDING CHECKLIST

Adapt this checklist for your workplace and its equipment and the requirements of the OHS laws in your jurisdiction, including any special requirements for the specific type of machinery. Use the checklist to inspect machinery and equipment in your workplace and review your related training and procedures to ensure they meet all of the safety requirements under the OHS laws, particularly the guarding requirements.

Machine Guards: Basic Requirements	YES	NO	Comments
Do the guards provided meet the minimum requirements under OHS law?			
Do the guards prevent workers' hands, arms and other body parts from making contact with dangerous moving parts?			
Are the guards firmly secured and not easily removable?			
Do the guards ensure no objects will fall into the moving parts?			
Do the guards permit safe, comfortable and relatively easy operation of the machine?			
Can the machinery be oiled without removing the guard?			
Is there a system for shutting down the machinery and locking/tagging out before guards are removed?			
Can the existing guards be improved?			
Mechanical Hazards: Point of Operation	YES	NO	Comments
Is there a point-of-operation guard on machine?			
If so, does this guard keep the operator's hands, fingers, body, etc. out of the danger area?			
Is there evidence the guards have been tampered with or removed?			
Is it possible to use a more practical, effective guard?			
Could changes be made on the machinery to eliminate the point-of-operation hazard entirely?			
Mechanical Hazards: Power Transmission Apparatus	YES	NO	Comments
Are there any unguarded gears, sprockets, pulleys or flywheels on the apparatus?			
Are there any exposed belts or chain drives?			
Are there any exposed set screws, key ways, collars, etc.?			
Are starting and stopping controls within easy reach of the operator?			
If there is more than one operator, are separate controls provided for each?			
Are guards provided for all other hazardous moving parts of the machinery, including auxiliary parts?			
Non-Mechanical Hazards: Electrical	YES	NO	Comments
Is the machinery installed in compliance with all applicable fire protection and electrical requirements included in the OHS and/or other laws?			
Are there loose conduit fittings?			
Is the machinery properly grounded?			
Is the power supply correctly fused and protected?			
Do workers ever receive minor shocks while operating the machinery?			
Training	YES	NO	Comments
Do workers, including machine operators and maintenance workers, have the necessary training on how to use the guards and why?			
Have workers been trained on where the guards are located, how they provide protection and what hazards they protect against?			
Have workers been trained on how and under what circumstances guards can be removed?			
Have workers been trained on the procedures to follow if they notice guards that are damaged, missing, or inadequate?			
Have workers been trained on how to safely dress when operating the machinery, i.e., no loose-fitting clothing, unrestrained long hair, jewelry, etc.?			
Maintenance and Repair	YES	NO	Comments
Have maintenance workers received up-to-date instruction on the machines they service?			
Do maintenance workers lock out the machinery from its power sources before beginning repairs and routine maintenance work?			
Where several maintenance workers work on the same machinery, are multiple lockout devices used?			
Do maintenance workers use appropriate and safe equipment in their repair and maintenance work?			
Is the maintenance equipment itself properly guarded, if necessary?			
Inspector Name (s)			Date

Stopping a Silent Killer: Asbestos

Asbestos is a naturally occurring mineral that was historically used in many building materials due to its strength, insulating properties, and resistance to heat, fire and chemicals. But, asbestos is also a known cancer-causing agent and exposure can result in serious health problems such as lung cancer, asbestosis and mesothelioma.

The risk of exposure occurs when the asbestos containing materials are disturbed and the fibers become airborne. Asbestos fibers are very fine, and once airborne, can remain suspended for hours or even days.

Some common ACMs are linoleum (vinyl sheet flooring), floor tiles, drywall taping compound, textured decorative finishes on ceilings and walls, spray-in fire protection, cement pipes, and insulation (vermiculite).

Small asbestos fibers can be released into the air when:

- ✦ Disturbing or removing insulation that contains asbestos, including insulation around hot water pipes and tanks.
- ✦ Removing or disturbing roofing shingles and felt or siding containing asbestos.
- ✦ Sanding, breaking apart or scraping vinyl asbestos floor tiles.
- ✦ Breaking apart soundproofing ceiling tiles containing asbestos.
- ✦ Sanding or disturbing plaster containing asbestos, including acoustical plaster.
- ✦ Sawing, drilling or smoothing rough edges of asbestos materials.
- ✦ Sanding or scraping older surface treatments containing asbestos.

To protect workers and the public, an **Asbestos Control Program** is necessary when handling or using asbestos-containing material to prevent or minimize the release of airborne asbestos fibers. An employer must ensure the control plan is developed and implemented according to local government regulations and guidelines.

Lack of an asbestos exposure plan will cost you – just recently in Manitoba, a company was fined \$13,050 for exposing workers to asbestos containing material and failing to have an asbestos exposure control plan. (*EcoLogic Spray Foam Insulation*, Govt. News Release, July 14, 2016).

In Ontario, a contractor was convicted of nine violations of the OHS Act and the Asbestos Regulation after they exposed workers and the occupants of a home they were working on to asbestos-containing insulation. The court found the contractor had shown a total disregard not only for the health and safety of his workers but also for the public. So it imposed a 30-day jail sentence and a \$45,000 fine (*Daniel Lane*, Govt. News Release, Jan. 15, 2016).

In general, an **Asbestos Control Program** should cover:

- ✦ Containment and control of asbestos and asbestos fibers.
- ✦ Engineering controls, safe work practices, hygiene practices, and facilities needed to control exposure.
- ✦ Providing, using and maintaining appropriate personal protective equipment and clothing.
- ✦ The methods and procedures needed to monitor the concentration of airborne asbestos and the exposure of a worker.
- ✦ The methods needed to decontaminate workers' clothes and equipment.
- ✦ The removal and clean-up of asbestos waste and related material; and
- ✦ Providing workers with task-specific work instructions and training that covers both the hazards and hazard controls. Anyone working with asbestos must be trained, at a minimum, on:
 - The hazards of asbestos exposure.
 - How to identify asbestos containing material.
 - Personal hygiene and safe work practices.
 - How to safely and effectively use all required engineering controls.
 - The safe and proper use, cleaning, maintenance and disposal of PPE and clothing.
 - Disposal procedures; and finally
 - The purpose and importance of all required health monitoring.

It is your responsibility to check with your local jurisdiction for exact requirements. ✦

Sources:

- ✦ <http://cvrd.bc.ca/Faq.aspx?QID=172>
- ✦ <http://www.ccohs.ca/oshanswers/chemicals/asbestos/control.html>

IWH STUDY SAYS OHS INSPECTIONS WITH PENALTIES REDUCE WORKPLACE INJURIES CONTINUED FROM COVER

penalties—is much more effective than general deterrence—the possibility of being inspected, says IWH President Dr. Cam Mustard.

These findings reinforce the importance of regulators being out in the field and identifying, citing and penalizing non-compliant organizations, says Tompa.

But Tompa acknowledges that no regulator has the resources to inspect all workplaces and to levy penalties for all violations. So regulators may need to heighten awareness by actively communicating the consequences of non-compliance and possibly make information about non-compliers easily available to the general public, he adds. ✦

also inhale welding fumes, especially when welding is done indoors or in a confined space.

The airborne gases and fumes produced or present during welding can include:

- ✦ Nitrous oxide;
- ✦ Carbon dioxide;
- ✦ Carbon monoxide;
- ✦ Shielding gases such as argon or helium;
- ✦ Ozone; and
- ✦ Metal fumes such as manganese and chromium.

And there are health effects for both short-term and long-term exposure to these gases and fumes. Exposure to welding fumes can be controlled through the use of proper ventilation or PPE. That's why the OHS laws may require you to ventilate the work area to remove hazardous fumes, generally using local exhaust ventilation in the areas or at the work stations where welding is being performed (as opposed to general ventilation for the entire workplace).

Step #4: Require Use of Appropriate PPE

The key types of PPE for this work are:

- ✦ Respirators that are an approved type and suitable for use when welding;
- ✦ Appropriate face and eye protection, such as welding helmets;
- ✦ Protective gloves, ideally leather gauntlet type gloves with arm protection;
- ✦ Adequate body covering that includes an apron of leather or of other material offering equivalent protection; and
- ✦ Appropriate safety footwear.

You may also need to use non-reflective screens, partitions or curtains to shield welding activities and minimize the risk of exposing other workers to arc light.

Step #5: Require Workers to Follow Safe Work Procedures

Develop and require workers to follow safe work procedures when welding. Consult the manufacturer's instructions for its welding equipment and incorporate those instructions into your safe work procedures. At a minimum, include safe work rules such as:

- ✦ Don't leave welding equipment unattended unless proper safety measures are taken, such as removal of the electrodes from an electric welding machine;

- ✦ Workers should remove any coating on metal that could emit harmful contaminants before welding on such metal;
- ✦ Provide and require the use of tables, jigs or work benches made of non-flammable material when needed for support during welding;
- ✦ Keep passageways, ladders and stairs clear of hoses, cables and other welding equipment;
- ✦ Where it's necessary to catch falling sparks and slag, use glass-fibre blankets or fire-retardant welding tarpaulins;
- ✦ If welding is performed above an area where other workers may be present, ensure that adequate means are taken to protect any workers below the operation from sparks, debris and other falling hazards; and
- ✦ When possible, mark recently welded or flame cut work "HOT" to prevent other workers from being burned by it.

You may also need specific safe work procedures for welding in confined spaces and welding on containers, especially as to proper cleaning and testing of containers.

Step #6: Ensure Only Properly Trained Workers Do Welding Work

You should always ensure workers are properly trained to do their jobs (and to do them safely). But because of the hazards posed by welding, the OHS laws may go a step further and require employers to ensure that only "competent" workers or workers who've earned welding certificates engage in welding work. Welding training should cover, at a minimum:

- ✦ Your welding safe work rules;
- ✦ The requirements in your jurisdiction on welding work;
- ✦ The selection, use and maintenance of welding equipment;
- ✦ How to inspect such equipment and what to do when leaks or defects are identified;
- ✦ Selection and use of appropriate PPE when welding; and
- ✦ Protections for other workers who may be near welding work.

Failing to take adequate steps to protect workers when welding can have serious and often tragic consequences. So ensure that your OHS program complies with the welding requirements in your jurisdiction's OHS laws and adequately protects workers—both welders and their co-workers—from the various hazards posed by such work. ✦



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