

Occupational Health and Safety Branch

Construction Sector Plan

2009-2010

Safe At Work Ontario
Enforcement > Compliance > Partnership >

Ministry of Labour

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Introduction

Introduced in the spring of 2008, *Safe At Work Ontario* is the Ministry of Labour's occupational health and safety compliance strategy. *Safe At Work Ontario* seeks to improve the health and safety culture of Ontario's workplaces, leading to a reduction of injuries and avoidance of associated costs for employers, the Workplace Safety and Insurance Board (WSIB) and the health care system. Through proactive enforcement, *Safe At Work Ontario* strives to provide a level playing field for compliant employers.

Safe At Work Ontario encourages stakeholder involvement in the planning process, introduces broader selection criteria to identify workplaces for proactive inspections and involves integrated planning with system partners. The focus of *Safe At Work Ontario* is to facilitate proactive enforcement of the Occupational Health and Safety Act (OHSA) on the top hazards in each sector and promote compliance and the development of a strong health and safety culture in the workplace.

Safe At Work Ontario has turned MOL's enforcement direction around, moving it from a traditional reactive, enforcement based program to a modern, proactive, flexible, compliance-based program. It is innovative, transparent and inclusive of stakeholder concerns, while continuing to protect the public interest.

Safe At Work Ontario expands the factors that the MOL uses to identify a firm for a proactive inspection beyond the firm's injury history. Additional factors include regional information, compliance history, and/or hazards inherent in the work or work processes. It includes hazard-based inspections, and actively engages health and safety system partners (such as the WSIB and Health and Safety Associations) in building a safety culture in workplaces across the province. Under *Safe At Work Ontario*, the ministry aims to be into workplaces before injuries occur.

The level of engagement with the workplace depends on factors such as the employer's commitment to a strong health and safety culture, and a well-defined, suitable and sustainable Internal Responsibility System (IRS). Other factors affecting the level of engagement include the number of lost-time injuries (LTIs) and no-lost-time injuries (NLTIs), nature and extent of any past non-compliance identified, and corrective actions required of the employer to achieve compliance.

The *Safe At Work Ontario* strategy is administered by five specialized sector programs: construction, industrial, mining, health care and specialized and professional services. Sector plans are developed on an annual basis for each program area. These documents outline the enforcement focus for each year and identify planned blitzes. They are posted on the ministry's website to encourage voluntary compliance. The sector plans also provide basic information about each sector and a brief overview of health and safety hazards and non-compliance concerns.

The following is the Construction Health and Safety Program sector plan for the 2009-2010 year. Other sector plans can be found at www.labour.gov.on.ca.

Ontario's construction and diving industries

The Ministry of Labour's Construction Health and Safety Program (CHSP) monitors health and safety in two distinct industries:

- Ontario's construction industry; and
- Ontario's diving industry.

Each industry is unique and presents a number of challenges and opportunities for the ministry with its ongoing efforts to keep all workers employed in these industries safe.

Ontario's construction industry

In the Ontario construction industry, there were approximately 35,000 employers/contractors employing up to 411,000¹ workers and tradespersons.

Construction is a dynamic industry characterized by workplaces and workforces that change constantly. Through the course of a typical project, 10 or more different employers may be involved, with as many as 10 different trades and trade unions on site as well. These multiple-employer and multiple-union workplaces are quite different from those in other industries. Moreover, "construction" may describe all of the work being done, but the individual activities are quite diverse.

Under the Occupational Health and Safety Act (OHSA), "construction" includes the erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting, or concreting, the installation of any machinery or plant, and any work or undertaking in connection with a project but does not include any work or undertaking underground in a mine.

Most of the approximately 35,000 construction contractors in Ontario are small to mid-size employers. Almost 90 per cent of construction employers have less than eight employees. About one per cent employ more than 50 workers; however, these personnel are deployed across several projects. In addition, the mobile workforce makes consistent, uniform instruction difficult.

Although Ontario's construction industry is one of the safest in the world and has the lowest incident frequency in all of Canada there is a high potential for incidents that may lead to an injury, given the nature and conditions of the work. The Ministry of Labour (MOL) continues to work actively with its health and safety partners and external stakeholders to control and, where possible, eliminate the top hazards in each sector and promote compliance and the development of a strong health and safety culture in the workplace.

Another unique feature of the construction sector in Ontario is the special relationship between labour and management, since many construction managers and owners are often former trades-people. Ontario's construction industry includes both unionized and non-unionized employers and, on some sites, they work side-by-side with employees.

Over the years, the unique needs of construction have been recognized and entrenched in Ontario legislation. A significant portion of the Labour Relations Act is written specifically for construction in

1 Source(s): Ontario's Labour Market Employment by Industry; unadjusted January 2009, Construction Safety Association of Ontario (CSAO) Annual Report and Statistics Canada, Labour Force Survey.

distinction to other industries. The Employment Standards Act also contains provisions to cover construction's unique aspects. Similarly, the Workplace Safety and Insurance Act and, notably, the Occupational Health and Safety Act include distinct requirements for construction.

Construction looking forward 2009-2017

The Construction Sector Council report "Looking Forward 2009-2017 Key Highlights" has identified that while the recession has weakened housing and industrial construction in Ontario, the balance of the construction industry is expected to see important employment gains in 2009 and 2010. Government-related construction, especially with strong stimulus programs announced in new budgets, is providing most of the jobs.

Significant federal government stimulus to renovations during 2009 is briefly offsetting lower housing starts from 2009 to 2011. Non-residential projects, especially in civil engineering, are helping to mitigate housing-related losses in 2009 and provide gains in 2010.

From 2012 to 2017, growth in construction employment will average 2.7 per cent annually². These additions to the workforce will come as the overall growth in the Ontario labour force slows to one per cent or less. Construction employers will be competing for a steadily growing share of the Provincial workforce³.

Ontario's diving industry

Overview of Ontario's diving industry

There are approximately 97 diving contractors and 400 workers employed in Ontario's diving industry. The ministry receives between 1,000 and 1,200 notices of diving operations every year.

Ontario diving contractors carry out business across all regions of the province and compete with inter-provincial contractors.

Construction Health and Safety Program sectors

For the purpose of administering the Act and Regulations in the Construction Industry, the Construction Health and Safety Program (CHSP) within the MOL refers to the following sectors:

Asbestos removal

- Includes work carried out prior to the start of demolition or renovation of buildings, structures and ships.
- Most prominent hazards include exposures to: occupational disease; electrical hazards; excavations; falls and confined space and restricted space entry.
- MOL conducted 744 field visits from 2006 to 2008 and issued 570 orders regarding asbestos removal.

Industrial commercial institutional (ICI)

- Made up of projects: both high rise and low rise industrial, commercial and institutional buildings, and mining plants above ground.

² Source: Construction Sector Council: Construction Looking Forward 2009-2017 Key Highlights

³ Source: Construction Sector Council: Construction Looking Forward 2009-2017 Key Highlights

- Occupational diseases (exposures to hazardous chemicals and substances) noise, ergonomics, falls, electrical hazards, ladder use, use of tower cranes, and formwork hazards are hazards of particular importance.
- MOL conducted 36,200 field visits from 2006 to 2008 and issued 78,423 orders in this sector.

Residential

- Made up of both high rise and low rise residential projects, including “in-fill” housing, single homes, multiple housing (e.g. townhouses) and renovations and additions. The sector is characterized by multiple contractors and independent operators.
- Most prominent hazards include falls, moving of equipment and materials, electrical hazards, occupational disease and excavations.
- MOL conducted 40,961 field visits from 2006 to 2008 and issued 112,166 orders in this sector.

Roads

- Includes projects on roads and highways, both new and rehabilitation of existing, bridge work, and paving operations.
- The most prominent hazards in this sector include falls, moving of equipment and materials, electrical hazards, occupational disease, excavation and traffic protection.
- MOL conducted 15,886 field visits from 2006 to 2008 and issued 41,539 orders in this sector.

Underground

- Mostly sewer and water main construction, trenching, caisson construction, water drilling and tunnelling.
- The most prominent hazards in this sector include falls, moving of equipment and materials, electrical hazards, confined space, excavation, traffic protection and occupational disease.
- MOL conducted 17,422 field visits from 2006 to 2008 and issued 24,782 orders in this sector.

Utilities

- Includes the construction of both underground utilities (gas, power, telephone, cable, gateways etc.) and above ground power and distribution lines, transmission and electrical towers.
- The most prominent hazards in this sector include falls, moving of equipment and materials, electrical hazards, occupational disease, excavation, traffic protection and confined space.
- MOL conducted 1,898 field visits from 2006 to 2008 and issued 1,930 orders in this sector.

Window cleaning

- Consists of window cleaning services for buildings and the cleaning of windows where a worker may fall a vertical distance of three metres or more (e.g. retail store-fronts).
- The most prominent hazards in this sector include falls, maintenance of equipment and electrical hazards.
- MOL conducted 357 field visits from 2006 to 2008 and issued 577 orders in this sector.

Other construction

- Includes the construction of subways, marine construction, moving buildings and structures, and projects not captured in other sectors.
- The most prominent hazards in this sector include falls, moving of equipment and materials, electrical hazards, drowning, excavation, traffic protection and confined space.

- MOL conducted 1,210 field visits from 2006 to 2008 and issued 2,132 orders in this sector.

Diving

- Work performed underwater by divers or work performed on the surface in support of divers, and includes underwater inspection, investigation, excavation, construction, alteration, repair or maintenance of equipment, machinery, structures or ships and the salvage of sunken property.
- The most prominent hazards in this sector include poorly trained divers, underground economy, working in close proximity to differential pressure, decompression profiles, confined spaces, inadequate air quality and quantity, contaminated environments, ice, unsafe vessels and unexploded ordinance diving operations.
- In 2008 there were 949 registered operations. Between 2007 and 2008, MOL conducted 562 field visits, and issued 114 orders in this sector.

Health and safety characteristics of the construction industry

The number of fatalities in workplaces in this sector declined from 27 people in 2006 to 20 in 2008. Between 2006 and 2008, residential construction was responsible for the largest number of fatalities with 20 of the 62 in residential construction.

Critical injuries in the construction industry reported to the ministry declined from 208 events in 2006 to 153 in 2008. In line with the fatal injury statistics, residential construction had the most reported critical injuries with 250 over the three-year period or 43 per cent of the total of critical injuries reported over the same time frame.

Ontario has the best construction safety record in Canada. Over the last 35 years, the industry has shown a 75 per cent reduction in lost-time injuries, medical aid injuries, and all injuries. In 1998, for instance, the lost-time injury (LTIs) incidence in Ontario construction was 1.9 per 100 workers. Total LTIs were 5,309 with an average claim cost of \$34,000 each. Investment in prevention has paid off in construction, with benefits not only to the industry but to the provincial economy.

While these results are impressive, additional improvement is still possible and desirable. Continued investment in health and safety will be needed to maintain the advances already achieved.

Health and safety hazards inherent in construction work

Musculoskeletal disorder (MSD):

MSD continues to be the top cause of injury in the construction industry where residential work has the greatest number of MSD claims.

Falls:

Falls continue to be the major cause of traumatic fatalities and critical injuries. In 2008, 11 of the 20 fatalities in this sector were due to falls. In many of these cases, the victim was wearing a fall-arrest harness but it was not secured. Falls accounted for 28 of the 62 traumatic fatalities between 2006 and 2008. In addition, the number of critical injuries caused by falls in 2008 was 99 of the 153 injuries: 28 were falls from ladders, 14 falls from scaffolds and work platforms, and 57 from roofs and floors. “Zero tolerance” enforcement is expected when dealing with non-compliance and lack of adequate fall

protection at construction projects. An enhanced enforcement initiative for ladder use will be the focus for most of the year.

Electrical contact:

This continues to be one of the top ranking causes of fatalities among construction workers. In 2008, electrocutions accounted for one of 20 construction fatalities. Electrocutions accounted for eight of the 62 fatalities that occurred between 2006 and 2008. There were five critical injuries in 2008 as a result of workers contacting live equipment.

Excavations and trenches:

Excavation collapses are a major hazard in the construction industry. Through regulation amendment and advanced technology, there has been a decline in the number of fatalities in this sector; however, there were still two fatalities caused by the collapse of excavations and trenches.

Occupational illness and disease:

In the construction sector, occupational illness and disease from workplace exposures continue to be a significant hazard. According to WSIB statistics, there are more deaths on average from occupational disease than injury. In 2007, the number of deaths from occupational disease (40) exceeded the number of deaths from injuries (30). Based on the available data for fatalities, mesothelioma and lung cancer are the top occupational diseases, accounting for 82 per cent of all occupational disease fatalities for 1998-2007.

Struck by construction vehicles/equipment and non-equipment vehicles:

Moving vehicles and equipment on construction projects accounted for six of the 62 traumatic fatalities in the construction sector between 2006 and 2008. Two of those workers were fatally injured in 2008 as a result of being struck by or crushed by heavy equipment.

Construction Compliance Focus for 2009-2010

Partnerships: a key success factor

The Ministry of Labour is one of several partners in the health and safety system in Ontario focused on preventing and reducing injuries and illnesses. The CHSP of the Ministry of Labour works collaboratively with a number of partners both within and outside the ministry to improve workplace health and safety at Ontario construction sites.

Our goals are achieved by working co-operatively with our system's partners:

[Workplace Safety & Insurance Board](#) (WSIB)
[Ministry of Training Colleges and Universities](#) (TCU)

The Health and Safety Associations, including:

[Construction Safety Association of Ontario](#) (CSAO)
[Electrical & Utilities Safety Association](#) (E&USA)
[Council of Ontario Construction Associations](#) (COCA)
[Electrical Safety Authority](#) (ESA)

Ontario Formwork Association

Ontario Home Builders Association (OHBA)

Technical Standards and Safety Authority (TSSA)

Working with these system partners, the CHSP will continue to increase the provision of information to employers and workers while ensuring that the workplace parties comply with the law. Along with our system partners, the CHSP will focus the efforts of construction inspectors in ways that minimize overlap of system resources and put the right system partner in the right workplace. All Health and Safety Associations (HSAs) and the CHSP's industry partners have been active in supporting the construction blitzes by providing information related to the blitz topics as well as offering support to workplaces that need additional assistance to be in compliance.

In 2009-2010, working with our system partners, the construction program will be engaged in a number of key partnership projects/initiatives that involve the three sector inter-agency groups (SIGs).

The goal for the Construction Inter-Agency Group (CONSIG) has been to reduce injuries by improving education about how work can be carried out safely and increasing awareness of workplace hazards and how they can be avoided. MOL is working with CSAO and WSIB on a number of initiatives for 2009-2010, including: inviting construction firms that sustain a lost-time injury this year to a presentation by MOL, WSIB and CSAO on accident prevention, company duties and responsibilities regarding worker injuries ("Emerging Firms").

The Electrical Inter-Agency Group (EUSIG) identifies and monitors injury, illness and performance trends and other emerging issues within the sector. Planned activities for 2009-2010 will concentrate on "Firms of Opportunity." E&USA consultants will engage 246 firms for this year. Senior level E&USA staff will visit all highest ranked firms and work with them to obtain an engagement goal to get all firms to the commitment level of "Zero Quest."

The Municipal Inter-Agency Group (MUNSIG) is a forum for coordinating prevention plans and activities to advance health and safety in the municipal sector. MUNSIG planned activities for 2009/10 will concentrate on "Firms of Opportunity" in the municipal sector. MHSA consultants will engage 79 firms in accordance with WSIB criteria. This constitutes 10 to 11 per cent of this sector.

Compliance: intervention based on need

Some projects in the construction industry require targeted and focused enforcement intervention up to and including prosecution to deter non-compliance. Due to the nature of construction activities and associated high-risk work, the MOL will continue to pay particular attention to employers who repeatedly violate the Act and have poor health and safety records.

Other construction industry firms require tools, information, and education on how to comply. The HSAs are the system partners tasked with the role of providing educational services to workplace parties. The HSAs also use information from the system partners, such as trends seen by inspectors, to develop material to keep workplaces current.

There are firms that have best practices to share with others. Our system partners are especially interested in spreading these best practices to other firms. In the construction industry, the labour-management networks established by the CSAO and the sector-interagency groups are the primary method of outreach.

The Internal Responsibility System – fostering a culture of safety

The Ministry of Labour has a primary responsibility to ensure that workplaces comply with Ontario's [Occupational Health and Safety Act](#) and related legislation. This means ensuring that a strong Internal Responsibility System (IRS) is in place. A strong IRS implies, in part, a well-functioning Joint Health and Safety Committee (JHSC), where required, that fosters a strong, sustainable culture of workplace health and safety.

A strong health and safety workplace culture consists of:

- **Competence** (appropriate knowledge and training, systems for responding to events, properly functioning JHSC and other IRS components);
- **Commitment** (demonstration by the employer of leadership on safety, appropriate policies and procedures to protect workers, low tolerance for poor health and safety practices, insistence upon full compliance); and
- **Capacity** (adequate resources for preventing injuries, a good system for obtaining assistance from HSAs and the WSIB).

A strong IRS produces a strong culture of health and safety. Strong leadership by senior executives and other managers sets the tone and establishes a corporate culture that nurtures the IRS. A health and safety culture requires all workers to pay constant, appropriate attention to workplace health and safety.

A sustainable workplace health and safety culture needs a strong commitment by everyone to prevent injuries and illness and to reduce risk.

The functioning of the IRS in the construction sector will continue to be the key focus of inspections this year.

Enforcement: Focused enforcement to maximize impact

MOL health and safety inspectors will inspect the following in addition to their general inspection duties:

1. Injury rates and chronic violators

Working with data supplied by the Workplace Safety and Insurance Board (WSIB), CHSP inspectors will focus their proactive inspections on workplaces that have higher than average LTI, are chronic violators or serious repeat violators. For the 2009/2010 fiscal year, the construction program (including the Diving Health and Safety Program) has planned some 30,500 inspections throughout the province.

Inspections will include provincial and regionally planned inspections, specific hazard focus and provincial and regional blitzes.

Inspectors will focus their attention during field visits to the functioning of the IRS on the projects and the sector specific hazards known to the ministry. Inspectors will pay particular attention to the following hazards: falls, electrocution, trenching/excavations, occupational illness and disease, and “struck by” construction vehicles/equipment and non-construction vehicles. The MOL will rigorously

enforce where priority hazards are found, including prosecuting those found to be in non-compliance with the law.

In addition, MOL inspectors have been directed to pay attention to construction activity with trade specific hazards for the top seven trades that have the highest injury rate. These are: formwork and demolition, siding and outside finishing, masonry, residential, roofing, heavy civil, and millwrighting and welding. These operations all have a LTI rate above the industry's average of 1.9 (2006).

2. Construction health and safety blitzes

Provincial blitzes are intended to raise the level of compliance at construction projects, and diving and window cleaning operations and focus on specific hazards either inherent in the work process or contributing to significant injuries or illness. In addition, the ministry seeks to raise the workplace parties' awareness of the issues addressed by the blitz by the communication efforts surrounding the blitz and by the efforts of the HSAs.

In 2009-2010, the Construction Program will conduct four blitzes based on hazardous industry work practices known to the ministry and based on MOL injury data (i.e. fatalities and critical injuries) and WSIB LTI data.

MSD – April 2009

Construction inspectors were part of a multi-industry blitz focusing on musculoskeletal disorders. Inspectors focused on selected issues in the homebuilding industry that lead to MSD injuries.

Formwork (“Building a Foundation for Safety”) – August 2009

MOL inspectors inspected formwork installations ensuring that they are built in compliance with the design, and comply with the inspection requirements in the Construction Regulation. During inspections, inspectors reviewed site drawings and ensured pre-pour inspections were completed. The Ontario Formwork Association worked co-operatively with the MOL to ensure that its members know how to comply with the law and were aware of this blitz.

Safe ladder use initiative – year-long focus

Inspectors are focusing on compliance with Sections 78-84 of the Construction Regulation, the safe use of ladders for access and egress, and short duration work.

Electrical hazards (“Shocked into Safety”) – October 2009

Inspectors are examining the measures and procedures put in place by constructors and various employers so that electrical hazards such as working on or near energized exposed parts of electrical equipment, or an electrical installation or conductor (namely in proximity to overhead power lines) are minimized and prevented.

MOL inspectors are ensuring that:

- Locates and markings for underground utilities are done;
- Written measures and procedures established by the Constructor with respect to electrical hazards exist and are implemented;
- Lock out procedures by employers carrying out electrical work are present at the project; and
- Workers are authorized to carry out electrical work by the Trades Qualification and Apprenticeship Act (TQAA).

Inspectors will also be checking electrical devices and equipment and that personal protective equipment (PPE) such as rubber gloves are used as needed when working live. The ESA continues to work collaboratively with MOL when investigating fatalities and injuries due to electrical work. The CSAO, the Ontario Provincial Labour-Management Health and Safety Committee, the ESA, the Electrical Contractors Association of Ontario, the International Brotherhood of Electrical Workers and other partners and affiliates continue their outreach and education programs on electrical safety.

3. Small contractors – enhanced enforcement focus

The majority of construction firms registered with the WSIB are considered small businesses (fewer than 20 employers). MOL inspectors should refer employers to CSAO for training information and to WSIB for information on claims management and the firm's obligations under the Workplace Safety and Insurance Act (WSIA).

Due to the transient nature of construction, small contractors are not easy to locate; they may be sub-trades on a larger project, or be involved in non-notifiable projects. These projects may consist of re-roofing, siding replacement and other renovation projects.

MOL inspectors will ensure that the small contractors they visit have the following:

- A health and safety policy with a program to implement that policy;
- Appropriate legislated training, such as WHMIS, traffic control, fall arrest and other personal protective equipment, in addition to specific equipment training, and emergency procedures;
- A safety representative as prescribed;
- An understanding of roles and responsibilities as outlined in the OHSA and O. Reg. 213/91; and
- An understanding of notification requirements.

Inspectors may distribute CSAO brochures such as “Small Contractor Guide to Health and Safety” and “What Contractors Need to Know”. Inspectors will further advise contractors of resources available through WSIB, CSAO and Health & Safety Associations, and Trade Associations.

4. Supervisors

At Ontario projects where there are five or more workers working at the same time, constructors are required to appoint a supervisor. The supervisor must supervise the work at all times either personally or by having an assistant, who is a competent person, do so personally.

Site supervisors are part of the construction industry's internal responsibility system for health and safety. The site superintendent is also the primary, first-line contact when Ministry of Labour inspectors arrive at a construction project.

The construction program will monitor compliance with section 14 of the Construction Regulation (O. Reg. 213/91) to ensure that constructors appoint a supervisor at projects of five or more workers in all cases and at all times. Inspectors will also ensure that the supervisors are competent and trained to recognize and control hazards at a construction project and to organize the work in a safe manner so that all construction workers, contractors, tradespersons, other occupations and visitors remain safe while at the construction site.

5. The underground economy

In recent years, governments and the WSIB have taken important steps to address the “underground economy,” businesses that operate without properly reporting to government and that do not comply with the law. These steps have included increased resources for audits, more site inspections, and involvement of the Canada Revenue Agency’s (CRA) Contract Payment Reporting System (CPRS). Although these steps have slowed the advance of the underground economy, there is still much to do to ensure fair business competition and protection for workers and others on these worksites.

The Ministry of Labour continues to work collaboratively with other partners in the Ontario government, agencies, municipal and federal governments to target underground activities in the construction sector.

For example, the MOL works with the Ministry of Training Colleges and Universities to enforce trade qualification requirements ensuring construction trades people are properly trained. This helps protect the public and reduce workplace injuries.

6. Enforcement of the “Training Requirements for Certain Skill Sets and Trades”

Ontario Regulation 572/99 outlines the skill sets and trades which require authorization under the Trades Qualifications and Apprenticeship Act (TQAA) or Apprenticeship Certification Act (ACA). Ministry of Labour health and safety inspectors enforce the authorization made under TQAA and ACA as they are reflected in O. Reg. 572/99, which is made under the OHSA. Certification requirements are stipulated for the following trades: electricians, hoisting engineers, plumbers, refrigeration and air conditioning mechanics, sheet metal workers and steamfitters.

Employers and workers in these trades need to be authorized to carry out work in accordance to the TQAA and its regulations. When on a construction site, inspectors will verify Certificate of Qualification (C of Q) and licensing information and get confirmation from MTCU to effectively enforce O. Reg. 572/99. The following trades are included:

- Electrician, branch 1: construction and maintenance electrician
- Electrician, branch 2: domestic and rural electrician
- Hoisting engineer, branch 1: mobile crane operator
- Hoisting engineer, branch 2: mobile crane operator
- Hoisting engineer, branch 3: tower crane operator
- Plumber
- Refrigeration and air-conditioning mechanic, branch 1: refrigeration and air-conditioning systems mechanic
- Refrigeration and air-conditioning mechanic, branch 1: residential air-conditioning systems mechanic
- Sheet metal worker
- Steamfitter.

From October 2008 to August 2009, approximately 20,000 field visits addressing TQAA requirements were conducted. Currently the ministry is averaging 425 TQAA field visits per week.

Specific hazards

In the following sections additional detail is provided on the specific hazards, cause of injuries/illnesses and enforcement focus of the Construction Health and Safety Program for each of the construction sectors.

Asbestos removal

Includes work carried out prior to the start of demolition or renovation of buildings, structures and ships.

Health and safety characteristics

The asbestos removal sector is high risk where asbestos removal workers and others may be exposed to health hazards (biological, physical (including ergonomic hazards) and chemical).

One critical injury related to asbestos removal was reported to the Ministry of Labour over a three-year period (2006-2008). There were two traumatic fatalities related to asbestos removal reported to the Ministry of Labour over a three-year period (2006-2008).

According to WSIB data, the most costly injuries in this sector were related to occupational illnesses and diseases. Based on the available data for fatalities from occupational disease in the construction sector, mesothelioma and lung cancer are the top occupational diseases, accounting for 82 per cent of all occupational disease fatalities for 1998-2007. Mesothelioma usually results from exposure to asbestos. Lung cancer may be attributed to exposure to asbestos and other carcinogens, such as lead and silica.

Major hazards and inspection focus

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
WHMIS. Exposure to hazardous chemicals and substances	Routine inspections proactive and reactive, including regional initiatives.
Occupational diseases and noise	It is recommended that during inspections involving asbestos, other designated substances or toxic substances inspectors are to focus on: Ensuring compliance with O. Reg. 278/05 (Asbestos on Construction Projects and in Buildings and Repair Operations). If controlled products are used at the project, ensure WHMIS requirements and training requirements are met. Reviewing datasheets to ensure that they are up to date. Ensuring that adequate personal protective equipment is used e.g. glasses, face shields, respirators. Ensuring that adequate measures and procedures are in place to control exposure to substances such as lead, silica, mould and man-made vitreous fibres.

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Falls	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Ergonomic issues	Multi-sector program MSD blitz. Also, routine, proactive and reactive inspections.
Electrical Hazards	Electrical blitz. Also routine inspections proactive and reactive, including Electrical Safety Authority partnering during investigations.

Industrial, Commercial and Institutional (ICI) sector

The ICI sector is made up of projects both high rise and low rise industrial, commercial and institutional buildings, and mining plant construction (above ground).

Health and safety characteristics

The ICI sector is a highly unionized sector with multiple contractors, trades and other occupations at times working simultaneously. The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 202. The number of fatalities reported to the Ministry of Labour over a three-year period (2006-2008) was 17. The WSIB injury profile for this sector is drawn from nine different rate groups. The average sector lost-time injury rate (LTI per 100 workers) is 2.60 (2008).

According to the WSIB data, the most costly injuries in this sector were related to: falls, moving of equipment and materials (ergonomic hazards), electrical hazards and occupational disease.

Major hazards and inspection focus

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
WHMIS. Exposure to hazardous chemicals and substances	Routine inspections proactive and reactive, including regional initiatives.
Falls between levels and slips and falls	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Ergonomic issues and initiatives	Multi-sector MSD blitz.
Electrical Hazards	Electrical blitz. Also routine inspections proactive and reactive, including ESA partnering during investigations.
Occupational diseases (exposures to hazardous chemicals and substances) noise	Routine inspections both proactive and reactive.
Unsafe ladder use.	Ladder blitz – August, 2009 to March 31, 2010. This year-long blitz will focus on appropriate and safe use, ergonomic issues, access/egress, and equipment condition.
Tower cranes	Throughout 2009-2010, CHSP inspectors will be inspecting crane use at Ontario construction projects, especially safe set-up, erection and dismantling procedures, P. Eng. design and requirements for on-site inspections. Compliance and enforcement of O. Reg. 213/91, s. 157-165.
Formwork hazards	Formwork blitz – summer 2009. This blitz focused on excavations, ergonomic issues, and materials handling and storage.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csao.org

Residential

The residential sector is made up of both high-rise and low-rise residential projects, including “in-fill” housing, single homes, multiple housing (e.g. townhouses) and renovations and additions.

Health and safety characteristics

The residential sector has multiple unionized and non-unionized contractors, trades, independent operators and other occupations working at these types of projects. The workforce is highly transient with a large number of employers having less than five workers. The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 250. The number of fatalities reported to the Ministry of Labour over a three-year period (2006-2008) was 20. The average sector lost-time injury rate (LTI per 100 workers) is 2.88 (2008).

According to WSIB data, the most costly injuries in this sector were related to: falls, moving of equipment and materials (ergonomic hazards), electrical hazards and occupational disease.

Major hazards and inspection focus

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
WHMIS. Exposure to hazardous chemicals and substances	Routine inspections proactive and reactive, including regional initiatives.
Falls between levels & slips and falls.	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Moving equipment and material handling. Ergonomic issues and initiatives	Cross-program MSD blitz. Also, routine, proactive and reactive inspections.
Electrical hazards	Electrical blitz. Also routine, proactive and reactive inspections.
Occupational diseases (exposures to hazardous chemicals and substances), noise	Routine inspections both proactive and reactive.
Unsafe Ladder Use	Ladder blitz – August, 2009 to March 31, 2010. This year-long blitz will focus on appropriate and safe use, ergonomic issues, access/egress, and equipment condition.
Excavations	Throughout 2009-2010, CHSP inspectors will be inspecting crane use at Ontario construction projects, especially safe set-up, erection and dismantling procedures, P. Eng. design and requirements for on-site inspections. Compliance and enforcement of O. Reg. 213/91, S. 157-165.
Formwork hazards; design and inspection	Formwork blitz – summer 2009. This blitz focused on excavations, ergonomic issues, and materials handling and storage.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csao.org.

Roads

The roads sector includes new and rehabilitation projects on roads, highways, bridge work and paving operations.

Health and safety characteristics

The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 35. The number of fatalities reported to the Ministry of Labour over a three-year period (2006-2008) was seven.

In 2008, the lost-time injury rate (LTI per 100 workers) was 1.55 (road building) and 1.65 (heavy civil) respectively.

According to WSIB data, the most costly injuries in this sector were related to: falls, moving of equipment and materials (ergonomic hazards), electrical hazards, excavations, traffic protection and occupational disease.

Major hazards and inspection focus:

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Falls into excavation, trenches	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Ergonomic hazards, moving of equipment and materials, overturning of equipment	Multi-sector MSD blitz. Also, routine inspections proactive and reactive. Inspectors will focus on backhoe use and safe use of other material handling devices, equipment and vehicles (e.g. ROPS).
Electrical Hazards, power line contacts	Electrical blitz. Also routine inspections proactive and reactive, including ESA partnering during investigations.
Occupational diseases (exposures to hazardous chemicals and substances), noise	Routine inspections, both proactive and reactive.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csao.org.

Utilities

The utilities sector includes the construction of both underground utilities (gas, power, telephone, cable, etc.) and above-ground power distribution lines. It also includes firms involved in line clearing, telecommunications, utilities, municipal power, private power, water.

Health and safety characteristics

The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 12. The number of fatalities reported to the Ministry of Labour over a three-year period (2006-2008) was three. The lost-time injury rate (LTI per 100 workers) has remained fairly constant at about 1.55.

According to WSIB data, the most costly injuries in this sector were related to: “struck by” incidents including moving of equipment; overhead (falling material); ergonomic injuries; traffic protection; electrical hazards (electrocution, arc flash, fire or explosion, etc); excavation hazards (soil collapse on workers, adjacent structure damage, hazards to traffic and public) falls (slips and trips); fire or explosion due to contact with gas lines; atmospheric hazards associated with confined spaces and restricted spaces.

Major hazards and inspection focus:

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Hazards common to roads and underground sectors.	See inspection focus for roads and underground sectors.

For advice to employers for addressing health and safety issues in this sector contact the Electrical & Utilities Safety Association (E&USA) at: www.eusa.on.ca.

Underground

The underground sector is made up of mostly sewer and watermain construction, trenching, caisson construction, water drilling and tunnelling.

Health and safety characteristics

The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 22. The number of fatalities reported to the Ministry of Labour over a three-year period (2006-2008) was five.

In 2008, the WSIB lost-time injury rate (LTI per 100 workers) was 1.65 (heavy civil). According to WSIB data, the most costly injuries in this sector were related to: moving of equipment and materials (ergonomic issues); power-line contacts; excavations; overturning of equipment; falls; and occupational disease (exposure to hazardous chemical and substances, noise and ergonomics).

Major hazards and inspection focus:

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Confined space entry	Inspectors will enforce O. Reg. 213/91 Part II.1 (Confined Spaces) requirements, including but not limited to ensuring that the constructor prepares a co-ordination document; that the employer prepares a written program and adequate hazard assessment and that an adequate written plan is developed and is in place at the project. Inspectors will also ensure that workers are fully trained; entry permits are present before a worker enters a confined space, and adequate rescue procedures, personal protective equipment (PPE) and other forms of protection are in place. Additional regulatory requirements also will be routinely audited.
Falls into excavation, trenches	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Ergonomic hazards, moving of equipment and materials, overturning of equipment	Multi-sector MSD blitz. Also, routine inspections proactive and reactive. Inspectors will focus on backhoe use and safe use of other material handling devices, equipment and vehicles (e.g. ROPS).
Electrical hazards, power line contacts	Electrical Blitz. Also routine inspections proactive and reactive, including ESA partnering during investigations.
Occupational diseases (exposures to hazardous chemicals and substances), noise	Routine inspections both proactive and reactive.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csao.org.

Window cleaning

Consists of window cleaning services for buildings and the cleaning of windows where a worker may fall a vertical distance of three metres or more (e.g. retail store-fronts).

Health and safety characteristics:

The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was two. One fatality was reported to the Ministry of Labour over a three-year period (2006-2008).

In 2008, the WSIB lost-time injury rate (LTI per 100 workers) was 5.57. According to WSIB data, the most costly injuries in this sector were related to: falls, use of suspended access equipment, electrical hazards and power line contacts; maintenance of equipment; exposures to occupational disease and ergonomics.

Major hazards and inspection focus:

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Falls	Routine inspections proactive and reactive, including regional initiatives. Rigorous enforcement of requirements and referrals to CSAO educational programs and industry outreach.
Use of suspended access equipment and maintenance of equipment, including personal equipment, anchorage, suspension lines, entanglement of safety lines.	Inspectors will focus on non-compliance with the Window Cleaning Regulation, Regulation 859.
Electrical hazards and power-line contacts	Electrical blitz. Also routine inspections proactive and reactive, including ESA partnering during investigations.
Exposures to occupational disease. Ergonomics and work practices	Multi-sector MSD blitz. Also, routine inspections proactive and reactive according to CHSP prevention strategy.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csa.org.

Other construction

“Other construction” includes the construction of subways, marine construction, moving buildings and structures, and projects not captured in other sectors. Major hazards include: occupational disease; moving of equipment and materials; overturning of vehicles; traffic control and protection; electrical hazards; excavations; falls; confined space entry; and drowning.

Health and safety characteristics

The number of critical injuries reported to the Ministry of Labour over a three-year period (2006-2008) was 50. The number of fatalities reported to the Ministry of Labour over a 3-year period (2006-2008) was five.

According to the WSIB data the most costly injuries in this sector were: moving of equipment and materials; traffic protection; electrical hazards; excavations; falls and drowning.

Major hazards and inspection focus

Major hazards and key health and safety issues	MOL Construction Health and Safety Program inspection focus
Traffic protection	Routine inspections proactive and reactive, especially O. Reg. 213/91 traffic control requirements and best practice MTO Book 7.
Ergonomic issues and initiatives, including moving of equipment and materials	MSD blitz. Routine inspections proactive and regional initiatives.
Electrical hazards	Electrical blitz. Routine inspections proactive and reactive.
Confined space, excavation construction and drowning	Routine inspections proactive and reactive, especially O. Reg. 213/91, Part II.1 (Confined Spaces); Part III (Excavation). Diving Program involvement as appropriate.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csao.org.

Diving

Work performed underwater by divers or work performed on the surface in support of divers, and includes underwater inspection, investigation, excavation, construction, alteration, repair or maintenance of equipment, machinery, structures or ships and the salvage of sunken property. Major hazards include work around water control structures, work in contaminated environments, pipeline penetrations, unexploded ordinance and general construction projects.

Health and safety characteristics

All diving operations are hazardous to some degree but some are much more hazardous than others. The risks are minimized by employers and workers who are committed to safe working practices that are required through legislation.

There were no fatalities reported to the Ministry of Labour from 2007 to 2008. One fatality has been reported to the MOL for 2009.

The MOL has identified the potential of a diving accident occurring based on the hazards that are associated with the type of diving operation. Factors such as the scope of work, adequacy of crew (in numbers and competencies) compliance history, location and environment contribute to the potential risks to worker safety. The lost-time injury rate (LTI per 100 workers) for workers employed in the diving industry is the lowest in the construction sector (less than 0.05).

Major hazards and inspection focus

Major hazards and key health and safety issues	MOL Diving Health and Safety inspection focus
Work around water control structures; work in contaminated environments, pipeline penetrations, unexploded ordinance and general construction projects.	Routine inspections proactive and reactive, checking for evidence of competency of all diving personnel, as required by section 4.1 of the Regulation for Diving Operations.
Unsafe diving operations from unsafe operation of small commercial vessels and salvage work	Prevention strategies involve the assistance of effective communication from our partners in Spills Action Centre (SAC) and the Police Services about the sinking of vehicles, vessels, aircraft and equipment in Ontario's water ways.
Drowning	Routine investigative work with SAC and Police Services. Public education with HSAs and Diving Provincial Labour-Management Health and Safety Committee, affiliates and industry networks.
Contaminated compressed breathing air	The MOL will be carrying out the second phase of the air quality initiative to ensure that all sources of diver's compressed breathing air, used by occupational divers, are in compliance with the requirements that are set out in the CSA Z180.1-05 Standard. The diving inspectors will be looking for evidence of: a current air test certificate from an accredited laboratory, real time carbon monoxide analysis and maintenance records.

For advice to employers for addressing health and safety issues in this sector contact the Construction Safety Association of Ontario (CSAO) at: www.csaao.org.

Summary and highlights

The Ministry of Labour's Construction Health and Safety Program is focusing on activities in the workplaces that most need our intervention. The proactive selection of workplace visits at Ontario construction projects focuses on key hazards. As part of the *Safe At Work Ontario* strategy, workplaces may be selected for inspections based on factors that extend beyond injury statistics, such as past ministry interactions or the hazard profile of the industrial sector.

Working with its system partners, the HSAs and the WSIB, the Construction Health and Safety Program is integrating the activities of inspectors with the staff of our partners through an enhanced integrated planning process.

The program continues to consult internally with our inspectors, with the other health and safety programs and through contact with workplaces on ways to improve and help reduce workplace injuries.