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BULLETIN

SAFETY IN THE CONSTRUCTION INDUSTRY

March 2025

- The number of deaths and injuries in the construction industry is high compared to most other industries and significantly higher than in other similar countries.
- This bulletin reviews common causes of injury, illness and death in the construction industry and avenues for reducing them.
- Health and safety is not just the job of the business owner or manager. By law, everyone on a building site has a responsibility.

1 INTRODUCTION

1.0.1 The construction industry has some of the highest rates of fatality, serious injury and long-term harm of all industries in Aotearoa New Zealand. Everyone has a role to play in turning the statistics around and making building sites much safer working environments.

1.0.2 The figures give a very clear picture of what is happening:

- WorkSafe data shows 47 work-related fatalities caused by injury in the construction industry in the 5 years ending 31 March 2024. On average, that works out to one person killed on the job approximately every 6 weeks.
- Incidents resulting in serious injury are more than a daily event in construction – WorkSafe receives around 45–50 notifications per month on average. These are significant events – amputations, skull fractures, loss of consciousness, spinal injury and so on. They do not include sprains or back strains or minor burns or cuts even if they require a doctor's attention.
- ACC figures show that trades workers had the highest number of claims by occupation in 2023 with 39,000 claims.
- The number of serious injuries is high even taking account of the size of the workforce. While construction makes up around 10.7% of the country's total workforce, it accounts for around 15% of all work-related fatalities and serious injuries.
- The construction fatality rate in New Zealand is significantly higher than the rate in Australia and more than double that of the United Kingdom.

1.0.3 There are different levels of risk in different parts of the industry. For example, one research study published in 2024 found a significant difference between off-site and on-site construction. It found far fewer accidents in off-site construction overall (about a quarter of those on site), but that is because the off-site construction workforce is much smaller. When accounting for the sizes of the different workforces, the accident frequency rate off site was found to be almost double that of on site.

1.0.4 New risks are occasionally recognised. Accelerated silicosis has been identified as a serious risk in the engineered stone benchtop industry (at the manufacturing stage rather than installation stage). This irreversible lung disease can develop over 3–10 years as a result of breathing in high concentrations of respirable crystalline silica.

1.0.5 Some measures of health and safety incidents have improved over recent years or decades while a few have stayed the same or even got worse. ACC reports that overall injury claims in construction per 1,000 full-time employees have fallen from 159 in 2017 to 127 in 2023. The total for all industries in 2023 was 86 per 1,000 full-time employees.

1.0.6 A considerable amount of work is going into trying to bring the numbers down. In its priority plan for the construction sector for 2024–2026, WorkSafe says that it expects to allocate around a third of its targeted frontline activity to construction – a disproportionately large amount for a sector that makes up around 10.7% of the country's workforce.

1.0.7 Having a safer construction site has benefits far beyond the physical and mental health and wellbeing of individual workers and their families. It can result in reduced costs and inconvenience, higher productivity, higher levels of satisfaction and morale in the whole site workforce and better relations with subcontractors and clients.

2 THE HEALTH AND SAFETY AT WORK FRAMEWORK

2.0.1 The main law covering building site safety is the Health and Safety at Work Act 2015 and its regulations. All businesses, regardless of size, must engage their staff in safety issues. The law stresses that everyone at work has health and safety responsibilities. You can't contract out.

2.0.2 Under the law, a person conducting a business or undertaking (PCBU) – which can be an individual or a company – must ensure, as far as is reasonably practicable, the health and safety of employees, contractors, subcontractors and other workers they engage.

2.0.3 Workers also have a responsibility under the law to take reasonable care to keep themselves and others healthy and safe. The definition of worker is broad – it includes employees, contractors or subcontractors, employees of contractors or subcontractors, employees of a labour hire company, outworkers, apprentices and trainees, people gaining work experience or on a work trial and volunteer workers.

2.0.4 Regulations have been developed to cover areas that include:

- risk and workplace management – Health and Safety at Work (General Risk and Workplace Management) Regulations 2016
- asbestos – Health and Safety at Work (Asbestos) Regulations 2016
- hazardous substances – Health and Safety at Work (Hazardous Substances) Regulations 2017
- worker participation – Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016.

2.0.5 The main government agency and independent regulator of workplace safety is WorkSafe New Zealand, which comes under the Ministry for Workplace Relations and Safety. It develops guidance and codes, carries out workplace assessments and investigations and enforces compliance with the law, including through prosecutions for serious safety failures at work. It is a legal requirement to notify WorkSafe of workplace deaths and serious injuries.

2.0.6 In general terms, anyone injured in an accident in New Zealand is covered by the government ACC scheme regardless of whether the injury happened at work, at home or elsewhere. However there are some exceptions to this and legal disputes over ACC cover are not

uncommon. Only 10% of injury claims in 2023 happened at work. Claimants may have some of their medical and rehabilitation costs reimbursed from the scheme. Employees, self-employed and shareholder employees are eligible for weekly compensation.

2.0.7 Established in 1999, Site Safe is a nationwide not-for-profit membership organisation that provides education, tools, resources, advice and advocacy to improve the culture and practice of health and safety in the construction industry in New Zealand. Over 6,200 businesses are Site Safe members. Site Safe issues Site Safety Cards to individuals after completing one of its courses. Valid for 2 years, a Site Safety Card is required by most major New Zealand contractors before entering a construction site. The card is renewed by completing another course.

2.0.8 Construction Health and Safety New Zealand (CHASNZ) is an industry-led charitable trust that was formed in 2018 to raise the standard of health, safety and wellbeing in construction. ACC entered into a 5-year partnership with CHASNZ in 2020 to deliver guidance, standards and resources to the industry and extended this for another 3 years in 2023.

3 BREAKING THE LAW

3.0.1 In addition to the physical and emotional pain, discomfort and disability resulting from fatalities or serious harm, there can be other significant costs for failing to comply with a duty under the law. These depend on whether the failure was by an individual, company officer or company but can be a fine of up to $1.5 million or $3 million for a company engaged in reckless conduct. Imprisonment of up to 5 years is also possible for individual people charged. These are a few examples of court findings in recent years:

- A 19-year-old Bay of Plenty apprentice was killed when timber framing fell on him in 2022. One of the companies involved was fined $210,000 plus reparations of $130,000 to be paid to the apprentice's family and $15,072 to a co-worker.
- A 21-year-old Aucklander was killed when a 500 kg steel beam fell and killed him at a Newmarket construction site in 2021. A fine of $180,000 was imposed plus reparations of $110,000.
- In 2021, a worker not licensed to do the job removed asbestos-backed vinyl flooring, releasing asbestos fibres into the air. Nearby workers were exposed to asbestos fibres over 4 days. The starting point for the fine of $120,000 was reduced to $66,000 following discounts for cooperation, previous good character and remorse and an early guilty plea.
- In March 2024, the Auckland High Court confirmed a fine of $255,000 against a company involved in unsafe demolition work, including the removal of material containing asbestos.

3.0.2 Although no prosecution has yet been brought around mental health, and bullying in particular, experts in the field believe this will come – "a matter of when, not if".

4 MAJOR CAUSES OF FATALITIES AND SERIOUS INJURIES AND ILLNESS

4.1 PHYSICAL INJURY AND ILLNESS

4.1.1 WorkSafe data shows the primary causes of fatalities from injury in the construction industry:

- Incidents involving vehicles and mobile plant – vehicles used primarily for transport account for many more deaths than vehicles primarily used off road.
- Being hit or trapped – this includes being hit by falling or moving objects, being caught or trapped in machinery or being trapped between stationary and moving objects.
- Falls – this includes falls from height and slips or falls on the same level.

4.1.2 WorkSafe statistics also show that cancers and respiratory diseases from airborne substances account for an estimated 31% of work-related harm in New Zealand and cause an estimated 650 deaths per year in the total workforce. Construction workers and manufacturing staff working on construction elements such as benchtops and timber joinery are much more exposed than other workers to airborne risks such as crystalline silica and wood dust. It can take many years for the symptoms of illness to appear.

4.1.3 Exposure to asbestos is the number one work-related cause of death in New Zealand. Around 220

people die each year from asbestos-related disease, most of them men from the construction and manufacturing industries. While the deaths are generally the result of exposure many years ago and asbestos is not used in new building materials, a large amount of asbestos remains in older buildings, placing workers at risk from poorly planned demolition, maintenance, refurbishment and renovation work.

4.1.4 Because of the nature of the job, construction workers face significantly higher risks than most other workers:

- Musculoskeletal issues as a result of working in awkward or cramped positions, carrying, lifting or moving heavy loads and being exposed to vibration.
- Exposure to loud noise. In one survey, workers in the construction industry were twice as likely to report hearing problems as the survey average.
- Exposure to solar radiation while working outside. One study estimates that construction has the highest number of workers exposed. A result of high exposure to solar radiation can be the skin cancer melanoma, which kills almost 300 New Zealanders every year.

4.2 MENTAL HEALTH AND WELLBEING

4.2.1 Physical injuries and illnesses are not the only concern in the industry – mental health and wellbeing are also important. The data shows that, in 2023, 80 men in the construction industry took their own lives – a suicide rate around 1.4 times higher than that of men outside this industry. Construction workers are six times more likely to die by suicide than in a workplace accident.

4.2.2 There are many mental stresses on building sites that are often not addressed:

- Long hours of work with pressure to get a job completed by a tight deadline.
- Financial pressures for businesses in a boom/bust industry.
- Personal financial stresses and job insecurity for individual workers.
- Poor communication and old-school attitudes around masculinity.
- In some instances, bullying or threats of violence.

4.3 REDUCING RISKS FOR VULNERABLE PEOPLE

4.3.1 Some people working in the construction industry may face a higher risk of harm through limited experience and training/education or for some other reason. Particular care should be taken to ensure that these workers understand the risks of the work they are undertaking and understand the safety procedures and protocols in place. People in these groups are more likely to be injured at work. Research has found that vulnerable groups such as migrant labourers are also more likely to face bullying and the threat of violence. Groups that fall into the category of vulnerability include:

- low-paid unskilled or low-skilled labour
- subcontractors
- Māori and Pasifika workers
- migrant labourers – in some years, migrant workers on short-term visas and permanent migrants in New Zealand for less than 5 years have made up over 10% of the construction workforce nationally and almost 25% in Auckland.

5 ELIMINATING OR MANAGING RISK

5.1 THE HIERARCHY OF CONTROLS

5.1.1 The overall approach to addressing safety on site is to identify and assess all the risks and then to work out the best approach to dealing with each of them by using the hierarchy of controls (Figure 1). This approach is a legal requirement for airborne substances under the Health and Safety at Work (General Risk and Workplace Management) Regulations.

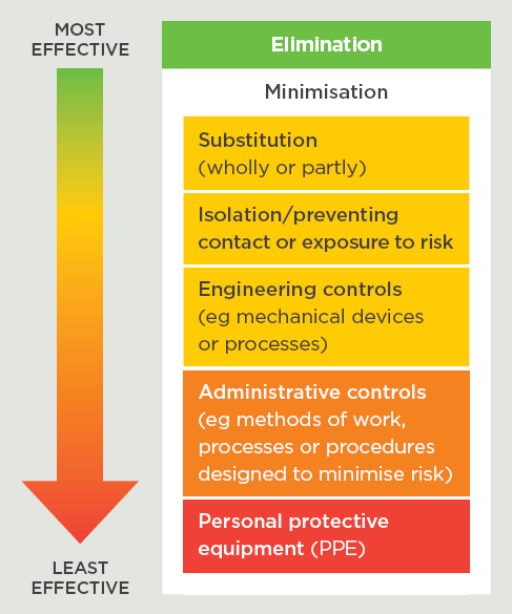

Figure 1. Hierachy of controls.

5.1.2 The hierarchy of controls ranks risk controls from the most effective and reliable – eliminating the risk altogether – down to the least reliable and effective – personal protective equipment (PPE). This isn't to downplay the importance of PPE. PPE provides crucial protection in many situations but its effectiveness only applies to the person using it, not others nearby, and it relies on the right equipment being used the right way in a consistent manner. Eliminating a risk altogether is clearly a much better option where it is possible.

5.2 PLANNING AND SITE MANAGEMENT

5.2.1 Building site safety requires:

- developing a site-specific health and safety plan for every building site
- having regular toolbox meetings on safety
- ensuring there are appropriate site inductions for new workers and visitors and that they are aware of all the site hazards
- ensuring there is a site hazard safety board identifying all the hazards
- erecting warning signs and fencing that are appropriate to the level of risk
- ensuring PPE is appropriate to the job, fits the worker correctly and is worn or used.

5.2.2 Providing staff with rewards such as a very generous shout at the end of an injury-free build has proved an effective incentive for staff engagement on some sites.

5.2.3 You can find more information on the websites of WorkSafe, Site Safe and CHASNZ and in the Health and Safety at Work Act and its regulations.

6 ADVICE FOR SPECIFIC AREAS

6.0.1 For some of the principal causes of construction fatalities – incidents involving vehicles or being struck by a moving object – make use of resources such as the WorkSafe guidance Site traffic management.

6.0.2 Identifying the risk of being struck by a falling object is crucial, following the hierarchy of controls in Figure 1. WorkSafe has resources such as Working at height.

6.1 FALLS FROM HEIGHT

6.1.1 There are very specific legal requirements for working at height:

- Anyone who carries out scaffolding work, including erection, alteration, repair or dismantling of a scaffold, of which any part is 5 metres or more above the ground must hold the appropriate class of certificate of competence for that type of scaffold.
- Any scaffold from which someone could fall 5 metres or more must be notified to WorkSafe. You can find more information and an online notification form on the WorkSafe website.
- Under section 21 of the Health and Safety in Employment Regulations 1995, where an employee may fall more than 3 metres, suitable means must be provided to prevent the employee from falling such as barriers or safety nets. WorkSafe says that, if there is a potential for a person at work to fall from any height, reasonable and practicable steps must be taken to prevent harm from resulting.

6.1.2 There is a lot of specific guidance available around working at height, including Best practice guidelines for working at height in New Zealand, Scaffolding in New Zealand and Working on roofs – good practice guidelines.

6.2 AIRBORNE RISKS

6.2.1 PPE should be used in conjunction with other control methods that reduce the amount of airborne substances. As there are different types and sizes of masks and different levels of protection offered, the appropriate type must be used. Some come with exhalation valves to stop hot air build-up against the face and may be more comfortable to use.

6.2.2 Another key approach to reducing on-site risks from construction dusts is on-tool extraction. Very basic models of on-tool extraction have a disposable bag that can be directly attached to a sander or other power tool. Other models have an inlet in the tool and a hose that carries the dust to a purpose-designed vacuum device. Local exhaust ventilation (LEV) systems may also be an option. Some manufacturers design entire systems that fit together. The hood or inlet must always be designed for the tool or the LEV and be as close as possible to the source of the dust.

6.2.3 There is good information about airborne risks in Silica dust in the workplace, Wood dust: controlling the risks and Working with asbestos (Figure 2).

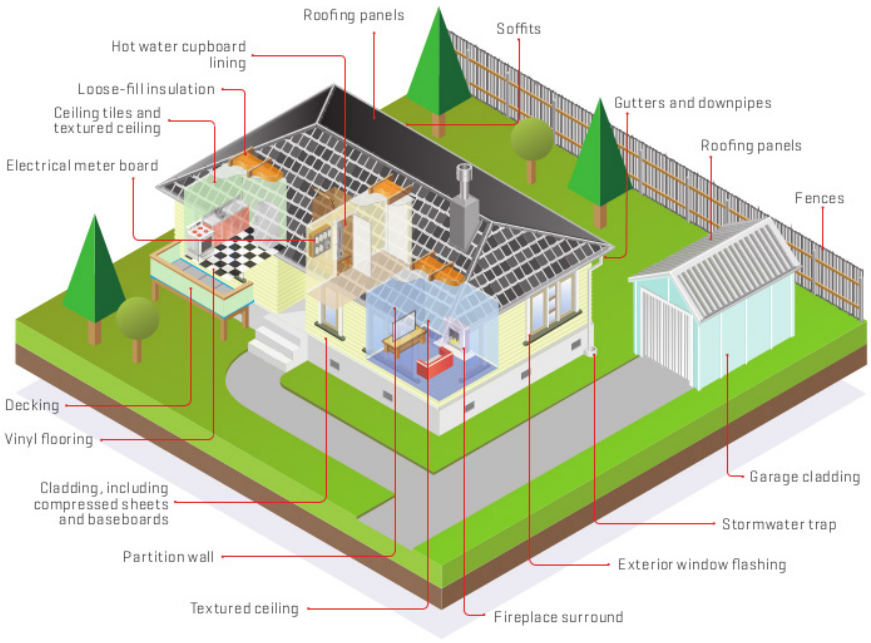

Figure 2. A surprising number of materials in older homes can contain asbestos. Handling these materials is highly regulated. WorkSafe has guidance on its website.

6.3 MUSCULOSKELETAL DISORDERS

6.3.1 Musculoskeletal disorders might first appear as minor aches or pains but can develop into serious conditions. They include strains or sprains, chronic pain, soft tissue injuries and joint injuries. There is an extremely wide range of causes for these disorders, including repetitive movements, working with heavy loads, vibrations (from machinery), working in an awkward position or with an awkward posture and so on.

6.3.2 Given the wide range of causes, there is no single overriding way of reducing the risk. The best approach is to identify the risks and then follow the hierarchy of controls (Figure 1) to eliminate or mitigate them.

6.3.3 You can find more information in Work-related musculoskeletal disorders and risk factors.

6.4 LOUD NOISE

6.4.1 Actions to prevent noise-induced hearing loss:

- When buying tools or equipment, look for quieter models.
- Keep tools and equipment maintained – some equipment is noisier when not kept in good order.
- Use barriers or enclosures to reduce noise for workers or those nearby.
- Wear proper hearing protection (earmuffs or plugs) in noisy environments or when doing noisy jobs. Wear earmuffs directly on the head – not over a beanie or other clothing.
- Choose protection that fits and feels comfortable for long periods of wear.
- Choose protection that gives the right level of protection for the level of noise from class 1 (the least noise) to class 5 (the loudest noise). Talk to a safety equipment supplier about what is most appropriate for a specific type of work.

6.5 SOLAR RADIATION

6.5.1 The best advice is slip, slop, slap, seek and slide:

- Slip into clothing that covers shoulders, arms and legs.
- Slop on an SPF50 or higher broad-spectrum water-resistant sunscreen early in the day and reapply during the day.
- Slap on a broad-brim hat that protects face, ears and neck.
- Seek shade when possible – shade reduces UV exposure by up to 75%.
- Slide on a pair of sunglasses.

6.6 MENTAL HEALTH AND WELLBEING

6.6.1 Mental and emotional wellbeing at work has been taken much more seriously in recent years. MATES in Construction,an evidence-based programme introduced to New Zealand in 2019 at industry request, provides suicide prevention training, direct support services and workforce capacity building to strengthen peer support and improve mental health outcomes. WorkSafe established a Mentally Healthy Work team of subject matter experts in 2020. Another small team of specialist health inspectors considering mentally healthy work, Kaimahi Hauora, was also set up.

7 RESOURCES

WORKSAFE

www.worksafe.govt.nz

You can report an incident to WorkSafe by phone (0800 030 040) or notify WorkSafe online.

The absolutely essential health and safety toolkit for small construction sites

Introduction to the Health and Safety at Work Act 2015 – special guide

SITE SAFE

www.sitesafe.org.nz

CHASNZ

www.chasnz.org

ACC

www.acc.co.nz

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External Research Report ER93 Workplace psychosocial stressors in the construction industry

External Research Report ER65 Construction industry suicides: numbers, characteristics, and rates

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