

Construction initiative: Evaluation of the 2005 – 2007 ACC injury and claim descriptions for house construction workers

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When there has been a workplace injury claims are made to ACC for reimbursement of medical fees or, for more serious injuries, earnings compensation. A detailed analysis of two years of data collected between 2005 – 2007 reveal that there were just over 10,400 claims made by house construction workers such as carpenters and joiners, building and related workers, and labourers. There were six main injury types that accounted for at least 93% of all claims. These were musculoskeletal disorders, lacerations, fractures or dislocation, bruising, foreign body in the eye and industrial deafness.

Many claims also included a description of the event. This was spontaneous and the level of detail varied – some were a word or two, whereas others offered more information. The information range covered aspects such as the work task, events or actions associated with the injury, or products and conditions involved. In spite of inconsistencies in the volume, detail and quality of information provided, it has been possible to draw out key information about the types of activities reported and how frequently they were described. These findings are presented below:-

Profile of injuries reported

The largest proportion of injuries were **musculoskeletal** (42% of all reports for the 2 year period); 17% of these were compensation claims. The lower back was the single body area most commonly affected, closely followed by injuries affecting the shoulders, upper back, and neck. The highest number of claims were in the 45-49 year age group, closely followed by 35-39 years (13.5% and 13% of all musculoskeletal reports respectively). Claims were greatest in August, November and March.

Musculoskeletal injuries (4343 cases)

Products conditions or materials	<ol style="list-style-type: none"> 1. Wood or timber (12.5% of the 4343 reports for the two year period) 2. Gib / plaster related (including plaster board & associated equipment) (7.5%) 3. Exterior ground (foundations, surfaces that are uneven or potholed) (5.8%) 4. Ladder / step-ladder (5.1%) 5. Concrete (4.7%) 6. Roof related (ridges, trusses, waterproofing, skylight, purlin, rafters) (4.5%) 7. Scaffold related (including trestle, tower, platform) (4.4%) 8. Sheet products (4.4%) (as gib in 47% of these cases and as plywood in 10.5%) 9. Frame related (framing, nog, stud(s), dwang, top plate) (4.4%) 10. Vehicle related (truck, utility, van, car, ATV or constituent products) (3.9%) 	
Task, events or actions associated with injury:-		
Manual handling	Lifting (39.6%) Carrying (7.4 %) Bending / leaning (3.5%)	Twisting or rotated posture (2.3%) Pulling, Reaching overhead, Kneeling, Pushing (6.3%, when combined)
Walking, slip, fall, misstep	Slips and falls (17.3%) Descending (6%)	Treading / tripping on (4.8%)
Uncontrolled conditions	Brace or torque against external force (2.7%) Struck by something (2.2%) Striking on / against something (1.8%)	Unexpected behaviour of an object (1.7%) Loss of manual control (1.7%)
Trade activity	Loading and unloading (4.1% – mostly lifting to/from vehicles) Digging (3.6%)	

Injury causation –claimant descriptions of what happened

There are many features of the work that are common to a number of the injury types and these are explored below:-

Delivery of materials to site : transit around site : movement of materials around site

- The greatest source of musculoskeletal injuries reported are associated with lifting and carrying activities. Lifting and carrying, although the terms most commonly used, are often undertaken concurrently with other postures such as twisting, bending and reaching overhead.
- Where products are described most commonly these concern wood or timber, gib, products in sheet form (almost half of which are gib), beams, framing, steel, roofing products and concrete.
- Getting products or materials on and off vehicles or trailers, ie lifting activities while loading or unloading, is described by many as a source of injury
- Some injuries experienced through lifting and carrying are also associated with slipping during handling. Further injuries are described in reports of slipping, tripping, falling and treading on things and these are often linked to poor ground conditions (such as uneven or potholed surfaces, mud, or debris).
- Treading on things is also associated with lacerations to the feet, mainly as a result of standing on nails. Striking on or against wood or timber splinters and chips during handling is also a cause of splinters and lacerations.

“Lifting heavy beams into position and strained my back”

“I was lifting a bag of cement and twisted to put into the van injuring my lower back”

“unloading concrete blocks from truck, jarred lower back when slipped”

“walking then stood on nail”

Preparation : installation : destruction

- There were also a large number of unforeseen events or unplanned activities resulting in musculoskeletal disorders. In the first instance these arose through having to suddenly respond by bracing against, catching hold of or counterbalancing to avert an adverse event. Typically these were situations such as equipment kickback / jamming, or breakage, collapse or loss of stability of equipment used for working at height.
- Further incidents involve either accidental striking against objects (such as the metal or roofing products) or being struck by uncontrolled items, such as unsecured objects (such as pieces of wood or timber). Being struck by uncontrolled objects is also associated with the occurrence of bruising and fractures or dislocations.

“Caught a falling piece of timber - wrenched R shoulder”

“Drilling concrete, drill jammed and twisted lower right arm”

“Working on a step ladder, ladder gave way, fell and landed on left side”

Working at height

- There are many cases where incidents have arisen as a consequence of working at height and these result in all injury types such as musculoskeletal disorders, lacerations, bruising and fractures or dislocation.
- Typically the incidents involve some sort of fall (often as a result of slipping), loss of balance or bracing the body to protect against an adverse event when equipment used to work at height has failed (loss of stability, broken, collapsed) in some way.
- Equipment types most commonly described are ladders or step-ladders, scaffolds, saw horses or activities related to roof work.
- Many reports describe incidents occurring during descent from a higher to a lower level and injuries in a number of these also involved some form of a jump or hop; in comparison there are relatively few cases where injury occurred during ascent.

“walking on roof trusses - left leg slipped - achilles tendon sore since”

“while climbing a ladder it slipped out from under me, I fell and caught my leg in the ladder injuring left knee”

“Stepped off a saw horse and rolled R ankle”

Use of hand tools – manual and powered

- Working with hand tools involved in cutting, sawing and nailing is a major source of lacerations or puncture wounds.
- Most commonly injury arises through some sort of 'loss of manual control', such as accidental operation through nailgun misfires, or hand slipping whilst using a tool.
- Frequently injuries arising from these types of loss of manual control result from either striking against something (such as the products being worked upon) or being struck by something (perhaps the cutting or sawing implement itself or a self-shooting).

"cutting gib board, slipped and cut (L) arm"

"prying off a beam and crowbar slipped hitting me in face"

"using nail gun slipped shot nail into thumb"

"drill jammed in timber and twisted arm"

- Although less common musculoskeletal injuries also arise from these types of incidents or where the user has had to brace (torque) when the tool has jammed or behaved unexpectedly.
- By trade activity, digging is also reported in the development of musculoskeletal injury. Additionally there are reasonably high numbers of bruising arising during hammering tasks.
- Dust, debris and chips generated during use of

hand tools using in sawing, cutting, nailing and drilling is the primary source of foreign body in orifice/ eyes. Most commonly this involves some form of wood waste, although such injuries also occurred as a result of working with products that are inherently more dangerous to the eye, such as metal, steel and concrete.

- Where products are listed it is the exposure to tools and machinery that are associated with industrial deafness.

"Using skillsaw. Sawdust in eye"

"Holding up rafter above head, wind blew metal shavings into L eye"

Conclusion

Musculoskeletal injuries tend to gradually develop over time and result in sprains, strains or localised discomfort. They are more prevalent in older age groups which is concerning in terms of the health status, work ability and skill retention of the experienced workforce. With a greater volume of claims during August, any impact from adverse weather conditions on the safety of the worksite and undertaking physically demanding work must also be considered. In comparison lacerations are greatest amongst younger workers and this draws attention the jobs they are doing and their relative training.

As would be expected the more serious compensation claims are highest as a result of industrial deafness or fractures or dislocation. However those resulting in musculoskeletal disorders are also high – more so than those sustained from bruising, or lacerations or puncture wounds. In contrast foreign body in the eye seems to be generally minor, although the resulting discomfort and loss of productivity that can arise from leaving site to get help should not be overlooked.

ACC Worksafe - Construction details a range of measures to reduce hazards and risk of exposure. The guidance concerning the use of plant (such as machinery, tools and vehicles), locations (such as delivery and ground conditions), people (such as new and young workers, manual handling, housekeeping and noise) and tasks (such as roofing) are all especially relevant here.

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Reference

ACC Worksafe – Construction - <http://www.acc.co.nz/preventing-injuries/at-work/industry-specific-safety/PI00086>

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