

# Work Health & Safety Perceptions

Construction Industry



**SAFE WORK AUSTRALIA**

**Work Health and Safety  
Perceptions: Construction  
Industry**

December 2014



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## Preface

The Australian Work Health and Safety Strategy 2012-2022 (the Strategy) describes the construction industry as a priority industry for work health and safety. While much is known about work-related injuries and illnesses in this industry from the national workers' compensation dataset (NDS), we also need to know about disease-causing hazard exposures, work health and safety attitudes and perceptions and work health and safety activities in this industry. This information will help to identify issues requiring prevention action and will ensure that resources and prevention efforts can be targeted appropriately.

This report summarises findings from construction employers and workers from six existing Safe Work Australia data sources. The report presents areas where the construction industry is doing well and areas for improvement in relation to:

- disease-causing hazard exposures and workplace control measures
- work health and safety activities, and
- work health and safety perceptions and attitudes that may act as barriers or enablers to work health and safety.

Conducting and publishing research to inform the development and evaluation of work health and safety policies is a function of Safe Work Australia as specified in the Safe Work Australia Act 2008. This research report was written to inform the development of policies in relation to work health and safety in the construction industry. The views and conclusions expressed in this report do not necessarily reflect the views of Safe Work Australia Members.

### **Perceptions of Work Health and Safety Survey: Employers and workers**

This report presents findings from a nation-wide survey of employers and workers. Responses to the survey questionnaire were weighted to reflect the size, primary location and main industry of businesses in Australia. As is often the case with large surveys, the response rate was low. This increases the risk that the views and experiences of the study sample are biased and affects the extent to which those views and experiences can be generalised to the population of interest. In short, the survey provides potentially valuable information from 1052 employers and 1311 workers but we cannot be confident that the information is representative of the whole population. It is therefore important that estimates or comparisons, particularly those based on the relatively small number of medium-sized and large businesses, are seen as indicative or suggestive rather than representative or definitive.

As with all statistical reports, the potential exists for minor revisions over time.

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# Executive Summary

## Background

The construction industry is designated as a priority industry for work health and safety due to the high number and rate of work-related injuries and illnesses and inherent risks associated with working in the industry. The other priority industries are Manufacturing, Agriculture, Road transport, Accommodation & food services, Health care & social assistance and Public administration & safety. Other than work-related injury and illness data and the findings from relevant Heads of Workplace Safety Authorities (HWSA) audit and education campaigns, little information on work health and safety in the Australian construction industry is available.

This report attempts to address this information gap by summarising findings from six existing Safe Work Australia data sources and one Australian Bureau of Statistics (ABS) data source. A concise report such as this cannot cover all topics in these data sources. Therefore, this report focuses on exposure to hazards in construction, provision of control measures, other work health and safety practices and work health and safety attitudes and perceptions that may be relevant to work health and safety practices in the industry.

## Main findings

Construction workers reported a substantially higher proportion of work-related cuts and open wounds compared to workers in the other priority industries. Construction workers also experienced a greater proportion of injuries due to falls from height compared to workers in other priority industries. In terms of disease-causing hazards, construction workers reported that the most common hazards in their workplace they were exposed to were airborne hazards, vibration and noise.

The utilisation of work health and safety practices was very high among construction employers with almost all reporting that they make work practices safe, remove hazards as much as possible and use personal protective equipment in the workplace. Workers had high levels of agreement that these safety practices were used in their workplace. However, this level of agreement was less than that of their employers. Of some concern was the finding that only four in 10 employers indicated that their workplace reviewed incident reports and statistics.

Construction businesses spent much more time per week preparing Safe Work Method Statements (SWMS) than businesses in the other priority industries. In 2012 the most costly compliance activities for construction businesses were the replacement of plant and equipment in order to ensure compliance with work health and safety laws, the employment of an additional worker or engaging an expert with skills specific to handling work health and safety matters and the hiring of a lawyer for work health and safety matters.

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Thirty nine percent of construction employers did not provide any work health and safety training to their employees during 2012. This was lower than the proportion of employers in other priority industries who reported they provided training. While employers in medium and large construction businesses appeared to provide their employees with some training, 45% of employers in small businesses did not provide any training. A much higher proportion of construction employers included contractors in their induction training for new employees than employers in other priority industries.

Ninety percent of construction employers felt that there was good communication in their workplace about safety issues and that safety information is always brought to the attention of workers. While there were also generally high levels of agreement among workers, the proportion who agreed with these statements was lower. In terms of consultation, construction workers generally had lower levels of agreement that various consultation activities occurred in construction workplaces compared to employers.

Almost one third of construction workers agreed that conditions in their workplace stopped them from working safely, which was much higher than reported by employers. While workers and employers were equally likely to agree that risks are unavoidable in their workplace, employers were much more likely than workers to agree that they never accept risk taking even if the work schedule is tight. One quarter of construction employees indicated that they accepted risk taking at work.

## Conclusions

This report examines the work health and safety practices, motivations, attitudes and perceptions of employers and workers in the construction industry. The aim is to provide a summary of the current state of knowledge on this industry from existing data sources held by Safe Work Australia. By doing so, the report also aims to provide information on where the industry is doing well, areas for improvement and where the knowledge gaps are to inform prevention activities and future research.

Examination of the perceived causes of work-related injuries in the construction industry revealed some surprising findings. One quarter of construction employers felt that risk taking was a main cause of injury. Perhaps more concerning, one in five employers felt that not having the right equipment was a main cause of injury, while 17% of employers felt that the use of alcohol or drugs was a main cause of injury. These causes of injury were perceived to be more common in the construction industry than they were in the other priority industries.

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The implementation and use of work health and safety practices and compliance activities is high within the construction industry and has been over the past few years. Employers were more likely than workers to indicate that health and safety practices are followed in the workplace either all or most of the time. Nearly all employers indicated that they knew when to report incidents to their work health and safety inspectorate. Only four in 10 agreed that the business acts decisively when a safety concern is raised and that the workplace reviews incident reports and statistics. Despite this, almost all agreed that corrective action is undertaken when they are told about unsafe practices and that safety improvements are implemented within a reasonable time frame. This suggests that while construction employers are working to ensure their workplaces are safe and that they are complying with work health and safety requirements, employers may be lacking in terms of responsive actions following work health and safety incidents.

Findings in this report suggest that about half of employers in small construction businesses did not provide their workers with work health and safety training. This appears to be echoed by workers in small construction workplaces and is clearly an issue with one third of workers in small workplaces indicating that a lack of training and education is a main cause of work-related injury in their workplace. Findings from the 2012 regulatory burden survey confirm this issue where just over half of small business indicated that they provided internal staff training over the past twelve months. This suggests that small business employers may be struggling to provide training to their workers and may require assistance to fulfil this obligation.

Approximately 70% of construction employers provided work health and safety information to contractors and subcontractors, which was a much higher level than observed in the other priority industries. Provision of work health and safety information to contractors appeared to be high across all business sizes suggesting that construction employers are particularly in tune with the needs of contractors and subcontractors in terms of work health and safety information.

Construction employers generally had high expectations of workers in terms of following company policies, organisational rules and management directives about how to work safely and these were generally met by workers. Workers were more likely to work safely even when they didn't think it was important compared to employer expectations, while workers were less likely to follow safety rules without questioning them compared to employer expectations. This could indicate that employers believe safety rules should be adhered to regardless of circumstance, while workers feel that questioning safety rules in some instances is appropriate. Rule following is important but so is the need to be mindful about what we are doing, to think about the way we are working and to alert the employer to a potential problem.

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About half of construction employers and workers agreed that risks are unavoidable in construction workplaces. In general, workers were more accepting of risk taking than employers. Workers were also more likely to indicate that conditions in their workplace prevent them from following safety rules. This could indicate differences in expectations between employers and workers in terms of accepting risk in the workplace. This may be supported by the finding that less than one third of workers agreed that they never accept risk taking even if the work schedule is tight, compared to almost three quarters of employers.

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### **Disclaimer**

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# 1. Context

## **Background**

In order to achieve the 2012-22 Australian Work Health and Safety Strategy's outcome of reduced incidence of work-related death, injury and disease, there needs to be a reduction in exposure to hazards through improved use of control measures, especially in high risk industries.

The priority industries identified in the Australian Strategy for prevention activities are Agriculture, Road transport, Manufacturing, Construction, Accommodation & food services, Public administration & safety, and Health care & social assistance. The Strategy also encourages attention on the specific sub sectors of these industries requiring the greatest improvement.

The construction industry has been designated as a priority industry due to the high number and rate of work-related injuries and illnesses and fatalities. The construction industry consistently has had the fifth highest incidence rate of serious claims of all industries. In 2011-12 (preliminary) the construction industry recorded an incidence rate of 18.7 serious claims per 1000 employees. This compares to the national all industries rate of 12.2 serious claims per 1000 employees. The construction industry is inherently hazardous due to the nature of the work carried out.

This report is one of a series produced by Safe Work Australia on priority industries. These reports are intended to provide an overview of Safe Work Australia's current state of knowledge about work health and safety in priority industries. Other than work-related injury and illness data and the findings from relevant Heads of Workplace Safety Authorities (HWSA) audit and education campaigns, little information on work health and safety in the Australian construction industry is currently available. This report attempts to address this information gap.

### **Aim and structure of the report**

The main aim of this report is to provide a summary of what is currently known about work health and safety in the construction industry from existing Safe Work Australia data sources. The report focuses on four main areas:

1. work-related injuries in the construction industry and their perceived causes
2. disease-causing hazard exposure and the provision of control measures in the construction industry
3. work health and safety practices, and
4. work health and safety motivations, attitudes and perceptions.

The report also highlights some differences by business/ workplace size and industry (construction vs other priority industries).

The next section presents the conclusions drawn from the findings. Part 2 contains a brief overview of the data sources used in this report. Part 3 contains main findings. Appendix A provides a brief description of each data source and sample profile. Appendix B highlights the limitations of this report.

It is important to note that any findings in relation to business size are indicative only. Due to small numbers in some of the business size groupings, we cannot have confidence that these findings hold true for the population of construction employers and workers. The findings in this report in relation to business size do provide a flavor of the attitudes, perceptions and behaviours of employers and workers in the construction industry.

### Results preamble

Due to the qualitative nature of the findings, there are no accompanying statistics such as confidence intervals to indicate the reliability of estimates or inferences.

## 2. Approach

The findings presented in this report stem from descriptive analyses of six existing Safe Work Australia data sources and one data source held by the Australian Bureau of Statistics (ABS). All data sources are survey data. All seven data sources are briefly described in Table 1. Descriptions of each data source and profiles of respondents are provided in Appendix A.

**Table 1: Data sources used in this report**

No.	Data source	Sample population	Design	Comments
1	ABS Work-related injuries survey, 2009-10	28 554 workers in scope for the Labour Force Survey and Work-related injuries topic.	Personal interviews by either telephone or at selected dwellings. Information was collected using Computer Assisted Interviewing.	Weighted against population benchmarks – state, age, sex, household composition.
2	CEOs and Supervisors Telephone Survey 2000	962 CEOs and supervisors (153 construction workers) across Australia	CATI, samples drawn from work health and safety/work cover authorities and Dun and Bradstreet list of employers	Data weighted by business size within state/territory.
3	National Hazard Exposure Worker Surveillance Survey (NHEWS) 2008	4500 workers aged 18–64 years (655 construction workers) across Australia	CATI, random digit dialling, oversampling of priority industries	Unweighted
4	Motivations, Attitudes, Perceptions and Skills Survey 2009	762 workers over 18 years old working in one of the five priority industries (176 construction workers) across Australia	CATI, random digit dialling, quotas set by industry, age groups and state/territory	Unweighted
5	Work Health and Safety Perceptions Survey of Workers 2012	1311 workers over 18 years of age (90 construction workers) across Australia	CATI, dual frame (mobile and landline) sample from SampleWorx	Data weighted by state/territory, sex, age and occupation.
6	Work Health and Safety Perceptions Survey of Employers 2013	1052 employers (87 construction employers) across Australia	Paper based, drawn from a random sample of 10 000 businesses from the ABS Australian Business Register	Data weighted by business size, industry and state/territory.
7	Work Health and Safety Cost of Compliance (Regulatory Burden) Survey 2013	1504 employers (118 construction employers) across Australia	Paper based, drawn from a random sample of 10 000 businesses from the ABS Australian Business Register (this is a different sample from the one above)	Data weighted by industry, business size and state/territory and accounted for low response rates.

### 3. Main findings

#### Work-related injuries

To establish a context for this report work-related injuries as reported in the ABS Work-Related Injuries Survey 2009-10 (WRIS, ABS Cat No: 6324.0) will be briefly examined. Because it is administrative data workers' compensation data is a reliable source of work-related injury information. However it only provides information on the accepted claims of employees who are covered for workers' compensation, excluding self-employed workers. The WRIS survey provides information on all work-related injuries and illnesses experienced by all Australian workers and as such provides a clearer picture of the injuries that are occurring in construction workplaces.

The WRIS found that of the 12 million workers in Australia in 2009-10, 8.7% (962 000) worked in the construction industry. In that same year 56 900 construction workers experienced a work-related injury or illness. These injuries accounted for 8.9% of the injuries incurred by all Australian workers in 2009-10. On a per worker basis, the construction industry experienced 59.2 work-related injuries per 1000 workers, an incidence rate slightly higher than the rate recorded for all industries (57.5 injuries per 1000 workers) but the lowest of the priority industries.

Table 2 shows that the most common types of work-related injuries experienced in the construction industry were cut/ open wounds (31%), sprain/ strains (21%) and chronic joint or muscle conditions (16%). Compared to the other priority industries construction had a substantially higher proportion of cut/ open wounds as well as a higher proportion of fractures (10%). This information indicates that construction workers are particularly vulnerable to injuries involving sharp objects, such as tools or materials used in the construction process.

**Table 2: Type of most recent work-related injury: Proportion of injuries within the construction industry, other priority industries and non-priority industries, 2009-10**

Most recent work-related injury	Construction %	Other priority industries %	Other non-priority industries %	All industries %
Sprain/strain	21*	31	31	30
Chronic joint or muscle condition	16*	18	17	18
Cut/open wound	31	13	15	16
Fracture	10*	6	9	7
Crushing injury/internal organ damage	**	7	8	7
Burns	**	8	**	5
Stress or other mental condition	**	3*	7	5
Superficial injury	**	6	2*	4
Other	**	5	5*	5
No further information	**	3*	3*	3
Total	100	100	100	100

Note: \* these estimates have RSEs between 25% and 50% and should be used with caution.  
 \*\* These estimates are not shown as RSEs are higher than 50%.

Almost one third of all work-related injuries in the construction industry were caused by hitting or being hit or cut by an object followed closely by lifting, pushing or pulling objects (31% and 30%, respectively) (Table 3). Compared to the other priority and non-priority industries these causes of injury tended to occur slightly more often in the construction industry.

**Table 3: How the most recent work-related injury occurred: Proportion of injuries within the construction industry, other priority industries and non-priority industries, 2009-10**

How the most recent injury occurred	Construction %	Other priority industries %	Other non-priority industries %	All industries %
Lifting, pushing or pulling object	30	27	27	27
Hitting or being hit by an object	31	24	23	25
Fall on same level (including slip or fall)	**	12*	16	13
Repetitive movement	**	8	7	8
Exposure to mental stress	**	4*	7	5
Contact with chemical or substance	**	6	3*	5
Fall from height	15*	3*	3*	4
Vehicle accident	**	4*	5*	4
Prolonged standing, working in cramped or unchanging position	**	4*	3*	3
Long term exposure to sound	**	**	**	**
Other	**	2*	**	2*
No further information	**	5	5*	5
Total	100	100	100	100

Note: \* these estimates have RSEs between 25% and 50% and should be used with caution.  
 \*\* These estimates are not shown as RSEs are higher than 50%.

**Table 4: Number of days or shifts absent from work following a work-related injury: Proportion of injuries within the construction industry, other priority industries and non-priority industries, 2009-10**

Days or shifts absent from work in the last 12 months	Construction %	Other priority industries %	Other non-priority industries %	All industries %
None	37	47	43	45
Part of a day/shift	10*	6	7	7
1 – 4 days	13*	21	25	22
5 – 10 days	14*	9	12	11
11 days or more	15*	14	12	13
Had not returned to work since illness or injury occurred	12	3*	**	3
Total	100	100	100	100

Note: \* these estimates have RSEs between 25% and 50% and should be used with caution.  
 \*\* These estimates are not shown as RSEs are higher than 50%.

#### The construction industry had the highest proportion of workers who had not returned to work since their illness or injury occurred

Following their injury, just under two thirds (63%) of construction workers who experienced a work-related injury required some time off work (Table 4). Of those that required time off following their injury, 11 days or more was the most frequent length of time required (15%), followed closely by 5 - 10 days and 1 - 4 days (14% and 13%, respectively).

In comparison with the other priority industries the construction industry had a smaller proportion of workers that required no time off following their injury (37%). In addition, the construction industry had a much larger proportion of workers who had not returned to work since their injury or illness compared to the other priority industries (12%).

### Perceived causes of work-related injuries

The WHS Perceptions survey provides insights into the perceived causes of injury by employers and workers in the construction industry. Table 5 shows that over two thirds (69%) of construction employers felt that the main cause of work-related injury was the worker being careless. This was followed by the worker just not thinking and the nature of manual tasks (41% and 33% respectively). Risk taking was also identified by one quarter of construction employers and 21% indicated unsafe work practices or procedures were causes of work-related injury. The top four main causes of work-related injury were similar for the other priority industries however lack of education or training and pressure or stress were nominated in the other priority industries as notable causes (17% each).

**Table 5: Main possible causes of work-related injury in the workplace by industry nominated by employers\***

Perceived causes of injuries	Construction %	Other priority industries %	Non-priority industries %
The worker being careless	69	56	53
Just not thinking	41	48	43
Manual tasks	33	34	18
Risk taking	24	19	11
Unsafe work practices or procedures	21	11	8
Not having the right equipment	18	2	2
Dangerous equipment or machinery	18	15	8
Alcohol or drugs	17	2	5
Lack of training or education	13	17	16
Pressure or stress	7	17	21
Repetitive work	7	11	10
Long hours of work	6	7	12
Poor decisions by management	2	1	2
Dangerous chemicals and substances	1	7	6
Lack of supervision	1	3	4
Not having enough time to do the work	0	6	11
Boring work	0	3	5
Shift work	0	2	0
None/ nothing	3	3	10
Other	0	4	2

\* Each respondent selected three possible causes.

Construction industry employers indicated not having the right equipment, dangerous equipment and machinery (18% each) and alcohol or drugs (17%) were causes of work-related injury to a greater extent than the other priority and non-priority industries. This indicates that these potential causes of work-related injury are specific to the construction industry.

### Alcohol and drugs were perceived to be a more common cause of injury among small businesses than medium or large businesses

There appeared to be differences in the perceived causes of injuries among construction employers by business size. While 71% of employers in small businesses and 59% in medium businesses indicated that the worker being careless was one of the main causes of injury, only 19% of construction employers in large businesses indicated that this was the case. Eighty percent of employers in medium businesses felt that manual tasks were the main cause of injury, while employers in large businesses indicated that just not thinking and unsafe work practices were the main causes of injury (72% and 44%, respectively). Forty eight percent of employers in medium businesses indicated that risk taking was the main source of injury, compared to 20% of employers in small businesses and 13% in large businesses. A larger proportion of employers in small businesses reported alcohol or drugs as a main cause of injury (19%) than employers in medium and large workplaces (5% each)<sup>1</sup>.

### Three in 10 workers in the construction industry felt that pressure and stress and dangerous equipment and machinery were main causes of work-related injury

There are some differences between construction employers and workers in terms of perceived causes of injury (Table 6). Forty percent of workers reported that being careless was the main cause of injury followed by 34% indicating a lack of training or education and 32% not thinking. Twenty nine percent reported that pressure and stress and 28% reported dangerous equipment and machinery were also main causes of injury. Earlier findings from the 2009 Motivations, Attitudes, Perceptions and Skills (MAPS) survey echo these top three perceived causes of injury among workers in the construction industry, although in a different order: the worker being careless (47%), just not thinking (38%) and lack of training or education (30%).

While causes of injury identified by workers in small workplaces tended to be similar to those identified by workers overall, there appeared to be differences among medium and large workplaces. Four in 10 employees in medium workplaces identified a lack of training and education as the main cause of injury, followed by just not thinking (36%), being careless (33%) and risk taking (29%). For workers in large construction workplaces being careless was again identified as the main cause of injury by more than half (57%), followed by 43% of workers nominating dangerous equipment and machinery and 40% nominating pressure or stress as the main causes of injury in the construction industry.

<sup>1</sup> In the WHS Perceptions Survey the construction industry comprised 86% of small businesses employers (employed 1–19 employees), 14% of medium business employers (20–199 employees) and less than 1% of large business employers. These proportions will have an effect on the findings observed throughout this report. Thus, findings in relation to business size are indicative only.

**Table 6: Main possible causes of work-related injury in the workplace in the construction industry nominated by employers and workers\***

Perceived causes of injury	Employers %	Workers %
The worker being careless	69	42
Just not thinking	41	32
Manual tasks**	33	-
Risk taking	24	19
Unsafe work practices or procedures	21	22
Not having the right equipment**	18	-
Dangerous equipment or machinery	18	28
Alcohol or drugs	17	11
Lack of training or education	13	34
Pressure or stress	7	29
Repetitive work	7	4
Long hours of work**	6	-
Poor decisions by management**	2	-
Dangerous chemicals and substances	1	10
Lack of supervision	1	18
Not having enough time to do the work**	0	-
Boring work**	0	-
Shift work**	0	-
None/ nothing	3	1
Other	0	3

\* Each respondent selected three possible causes.

\*\* Not asked of workers

## Self-reported exposure to disease-causing hazards

This section presents information regarding the disease-causing hazards that construction workers are exposed to in their workplace as well as the controls that are provided to counteract these hazards. Comparisons are made with the other priority industries identified in the National Occupational Health and Safety Strategy 2002-2012 (National OHS Strategy)<sup>2</sup>. The hazards that will be examined in this section of the report are explained in more detail in Appendix A and C.

The most common disease-causing hazard exposure reported by workers in the construction industry was airborne hazards (69%). Types of airborne hazards reported by workers included dust (66%) and gases, vapours or fumes (24%). Types of dust reported by construction workers included acrylic materials, dust from machinery, alumina/ aluminum dust, brake dust, bricks, concrete, dirt, plaster, sand and timber. Gases, vapours and fumes reported by construction workers included exhaust fumes, paint fumes and petrol/ diesel fumes. The main tasks undertaken by workers exposed to airborne hazards were building, installing and supervising various works. The main occupations exposed to airborne hazards were technicians and trades workers (56%), labourers (14%), machinery operators and drivers and managers (11%). The main occupation groups were builders and managers.

<sup>2</sup> The National OHS Strategy was in place at the time of the NHEWS Survey. For more information on the National OHS Strategy see: <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/sp200208nationalohsstrategy2002to2012>

The second most common disease-causing hazard reported was exposure to vibration (55%). Of those who reported vibration exposure 58% reported hand-arm vibration, 19% reported whole body vibration and 21% reported both hand-arm and whole body vibration. Sources of vibration reported by construction workers included grinders, drills, pneumatic tools, air tools, excavating machinery, sanders and saws, tractors, trucks and utility vehicles. The main tasks reported by workers exposed to vibration were building, installing and performing carpentry work. The main occupations exposed to vibration were technicians and trades workers (58%), labourers (16%) and machinery operators and drivers (13%). The main occupation groups were builders and carpenters.

Loud noise was the third most common disease-causing hazard that construction workers reported being exposed to (53%). The main task performed by workers exposed to loud noise was building. The main occupations who reported exposure to loud noise were technicians and trades workers (54%), labourers (16%) and machinery operators and drivers (12%). The main occupation groups were builders and carpenters<sup>3</sup>.

Almost half of workers in the construction industry were exposed to high job demands (see Appendix C for detailed explanation of job demands). The majority of construction workers exposed to high job demands reported that their work needs their undivided attention and they have to keep track of more than one thing at a time either often or all of the time (88% each). Fifty percent indicated that they have to work very fast most or all of the time. The main tasks at work reported by construction workers exposed to high job demands were office-based work and supervision of staff and projects. The main occupations exposed to high job demands were technicians and trades workers (51%) and managers (16%). No clear main occupation groups were evident.

Just under half of construction workers were exposed to chemicals (45%). The types of chemicals reported by construction workers included alcohol (i.e. cleaning agents), antiseptics and antibacterial solutions, cement, cleaning agents, degreasers and detergents, disinfectant, herbicides, paint and solvents. The main tasks reported by those exposed to chemicals were building and painting. The main occupations exposed to chemicals were technicians and trades workers (59%) and labourers (17%). The main occupation group was builders.

<sup>3</sup> Occupation is derived from a self-report response variable that is classified into the Australian and New Zealand Standard Classification of Occupations (ANZSCO) at the top digit level. More information on ANZSCO can be found here: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1220.0> Occupation group refers to these unclassified self-report responses.

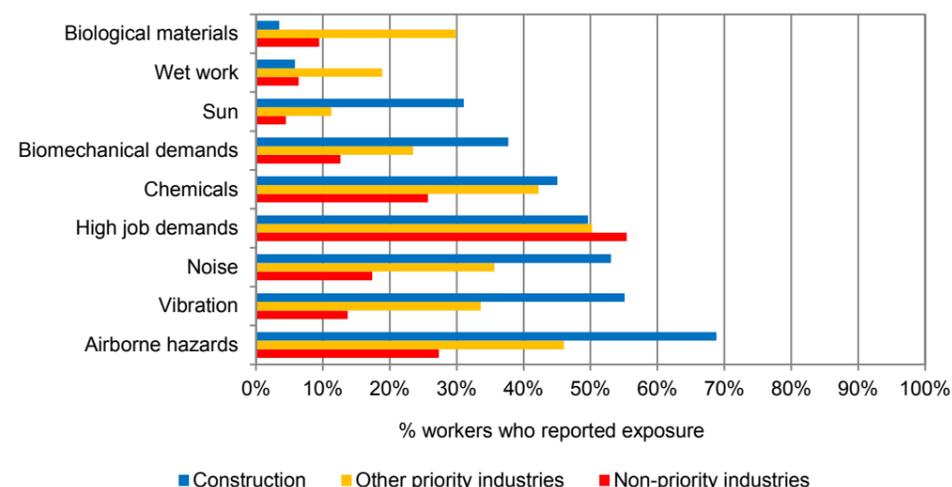
Around one third of construction workers also reported exposure to high biomechanical demands (38%) (see Appendix C for a detailed description of biomechanical demands). The majority of construction workers exposed to high biomechanical demands reported that they made the same hand or arm movements over and over again (repetitive movements)<sup>4</sup> (83%), carried or lifted heavy loads (72%), pushed or pulled using some force (71%), worked with their body bent forward and squatted or kneeled while they worked often or all of the time (70% each). Half of construction workers exposed to high biomechanical demands reported tiredness often or all of the time as consequences of physical demands, while around one third reported pain in their back or neck (32%), pain in their shoulders or arms, wrists or hands (31%) and pain in their hips, legs, knees or feet (30%). The main tasks reported by workers exposed to high biomechanical demands were building, installing and laying materials. The main occupation groups exposed to high biomechanical demands were technicians and trades workers (69%) and labourers (16%). The main occupation groups were carpenters and builders.

Just under one third reported high sun exposure (31%). The main tasks reported by workers exposed to high levels of sun were laying bricks and other materials and building. The main occupation groups exposed to high levels of sun were technicians and trades workers (52%) and labourers (21%). There were no clear main occupation groups.

The two least common types of hazards reported by construction workers were wet work (6%) and biological materials (4%).

Figure 1 presents the proportion of workers with self-reported exposure to the nine different hazards covered in the NHEWS survey for three groups: construction workers, workers in other priority industries and workers in non-priority industries. Exposure to airborne hazards was more likely in the construction industry than the other priority and non-priority industries as was vibration, noise, chemicals, biomechanical demands and sun exposure.

**Figure 1: Construction worker hazard exposures compared with workers from other industries**



<sup>4</sup> Examples of repetitive movement include working on an assembly line or supermarket checkout – fast repetitive movements. These tasks are common in the manufacturing industry.

**Construction workers were more likely to be exposed to airborne hazards, vibration, noise, chemicals, biomechanical demands and sun**

**Just over half of workers in the construction industry who were exposed to airborne hazards were provided both PPE and administrative controls**

### Provision of control measures

Each worker who reported exposure to a particular hazard was asked about the provision of control measures in the workplace for the hazard. A description of control measures for each of the nine hazards included in this report is shown at Appendix A.

For airborne hazards, 16% of workers in the construction industry who were exposed reported that they were not provided with any control measures. A further 22% reported that they were provided with personal protective equipment (PPE) (e.g. masks, goggles), with a further 6% provided with engineering controls (e.g. extractors) or administrative controls (e.g. cleaning) but no PPE measures. Just over half (55%) of workers in the construction industry with exposure to airborne hazards were provided with both PPE measures and engineering or administrative controls.

Almost one quarter of workers (22%) in the construction industry that were exposed to vibration reported that they were not provided with any control measures. Another quarter (24%) was provided with PPE (gloves). Another 10% of all exposed workers were provided with other types of controls such as vibration dampeners and vibration absorbing seats with just under half of exposed workers (44%) provided with both PPE and other types of controls.

Almost two thirds (65%) of construction workers with self-reported exposure to noise were provided with PPE (e.g. ear muffs and ear plugs) as well as other types of controls. One quarter of workers (25%) were provided with PPE only, while only 3% were provided with no PPE but were provided with other types of control measures. The proportion of exposed workers with no control measures was 8%.

For construction workers who reported exposure to high job demands, 16% reported that there were anti-stress or anti-bullying policies in their workplace. A further 11% reported that they had access to training or counselling services but no anti-stress or anti-bullying policies. Just over one third (37%) of workers reported that they had access to both training/counselling and anti-stress or anti-bullying policies. A similar proportion (36%) reported that they did not have access to any control measure for high job demands.

Among the construction workers who reported exposure to chemicals, 68% were provided with both PPE and other types of control measures. In addition, 11% were provided with PPE only and 9% were provided with other control measures but no PPE. A small proportion of construction workers (12%) reported not being provided with any control measures.

## Work health and safety practices

### Work health and safety activities

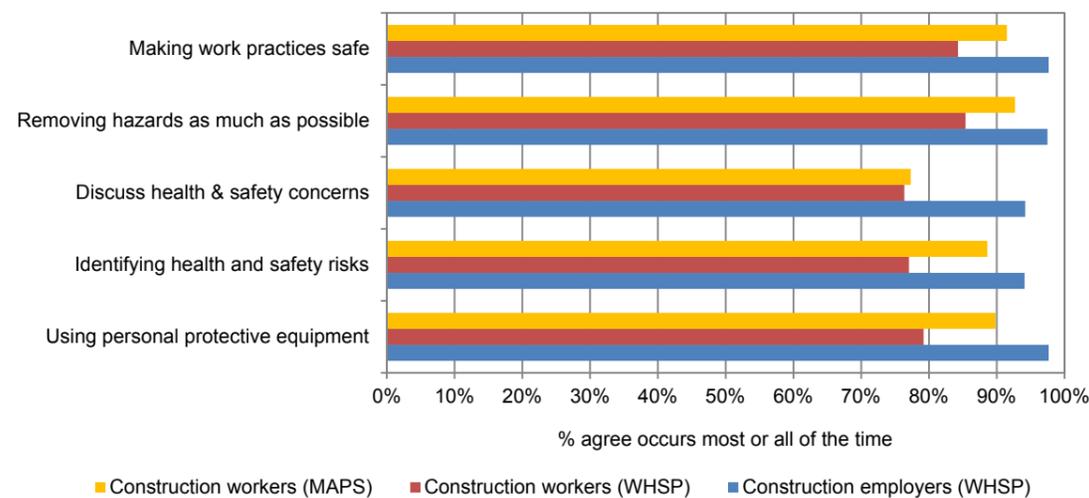
The 2009 MAPS survey measured how consistently specific safety practices were undertaken in the workplace. Almost 90% of workers in the construction industry reported that particular safety practices were followed in their workplace most of the time or always. These included removing hazards as much as possible (93%), making work practices safe (92%), using PPE (90%) and identifying health and safety risks (89%). More than three quarters of construction workers indicated that the reporting of accidents and near misses (78%) and discussing health and safety concerns (77%) occurred in their workplace either most of the time or always.

The same questions were asked of workers who participated in the WHS Perceptions survey 2012. The results were somewhat different particularly for the use of PPE (90% in MAPS compared to 79% in WHS Perceptions), removing hazards as much as possible (93% in MAPS compared to 85% in WHS Perceptions) and making work practices safe (92% in MAPS compared to 84% in WHS Perceptions).

The WHS Perceptions survey showed that construction employers were more likely than workers to indicate that safety practices are followed within the workplace either most of the time or always. Almost all employers indicated that PPE is used most of the time or always in their workplace as well as making work practices safe (98% each). Over 90% of employers indicated that in their workplace, hazards are removed as much as possible, health and safety risks are identified and health and safety concerns are discussed either most of the time or always.

Figure 2 shows the level of agreement across the three surveys for safety practice activities.

**Figure 2: Safety practices in construction workplaces**



**Construction employers were more likely to indicate that safety practices are followed in the workplace than construction workers**

**Small and medium construction businesses tended to be less likely to review incident reports and statistics compared to large construction businesses**

Other safety activities were examined in the WHS Perceptions survey. Almost all construction employers indicated that their workplace provided first aid kits or equipment and had procedures for controlling hazards (94% and 93%, respectively). The majority of employers had procedures for reporting work-related injuries and ill health (83%) and a work health and safety policy (81%). Almost three quarters of employers indicated that they kept records of risk assessments. Small business employers were less likely to report these safety activities compared to medium and large businesses. All large businesses and almost all medium businesses undertook these activities.

Table 7 shows that three quarters of construction employers indicated that their business collects accurate information about accident investigations either most or all of the time which was higher than that for the other priority and non-priority industries (61% and 54%, respectively). Almost all (94%) construction businesses also knew when to report incidents to the health and safety inspectorate either most or all of the time which was higher than that for the other priority and non-priority industries (76% and 69%, respectively).

Compared to the other priority industries construction employers were more likely to indicate that PPE is used in the workplace most of the time or always (98% compared to 90%). In addition, construction employers were more likely to report accidents (95% compared to 85%), discuss health and safety concerns with managers, supervisors and co-workers (94% compared to 84%) and identify health and safety risks (94% compared to 86%) in comparison to the other priority industries.

Almost all employers indicated that their workplace provided a safe and appropriate environment (98%), actively identified potential hazards and that equipment was maintained and repaired as needed (97% each). Only four in 10 employers indicated that their workplace reviewed incident reports and statistics. Small and medium businesses tended to be much less likely to review incident reports and statistics compared to large businesses (42% and 55% compared to 100% respectively).

**Table 7: Work health and safety practices by industry**

Work health and safety practices	Construction %	Other priority industries %	non-priority industries %
<b>Responding to incidents (most of the time/ always)</b>			
The business collects accurate information in accident investigations	75	61	55
The business knows when to report incidents to the health and safety inspectorate	94	76	69
<b>Work health and safety policies and procedures (agree)</b>			
The business acts decisively when a safety concern is raised	96	88	86
Corrective action is always taken when I am told about unsafe practices	97	82	79
Safety improvements are implemented within a reasonable period of time	90	78	71
Safe and appropriate equipment	98	88	91
Actively identify potential hazards	97	76	76
Maintain and repair equipment as needed	97	92	90
A policy on risk management, assessment and control of work health and safety hazards	80	59	64
Consider work health and safety in purchasing decisions	80	80	75
Regular assessment and reviews of the way workers work	56	56	48
Review incident reports and statistics	44	46	47
<b>Work health and safety actions (most of the time/ always)</b>			
Using personal protective equipment provided	98	90	71
Making work practices safe	98	93	97
Removing hazards as much as possible	97	92	88
Reporting accidents	95	85	81
Discussing health and safety concerns with managers, supervisors and co-workers	94	86	84
Identifying health and safety risks	94	84	76
Accessing work health and safety information	88	81	72
Reporting near misses	89	62	67
Avoiding cutting corners to get the job done faster	72	80	77
Attending work health and safety training courses	48	34	35

**Costs and time associated with work health and safety activities**

The 2013 Regulatory Burden Survey provides information on the time spent on and the cost of specific work health and safety activities undertaken to comply with work health and safety laws by employing businesses.

**Administrative activities**

Employers were asked to indicate the amount of time per week spent on a number of safety administration activities including keeping records required for compliance and preparing Safe Work Method Statements. Table 8 shows that some compliance activities required more hours per week in the construction industry than in other industries.

**Table 8: Time spent per week on compliance activities in the past 12 months**

Time spent on compliance activities	Construction %	Other priority industries %	Non-priority industries %
<b>Keeping records required for compliance</b>			
Less than 30 minutes per week	49	74	77
30 minutes to 1 hour per week	36	13	13
More than 1 hour per week	15	13	10
<b>Applying to your work health and safety authority for licences, etc.</b>			
Less than 30 minutes per week	83	84	89
30 minutes to 1 hour per week	13	7	7
More than 1 hour per week	3	10	
<b>Checking worker competency for tasks, e.g. licences</b>			
Less than 30 minutes per week	64	66	78
30 minutes to 1 hour per week	25	22	12
More than 1 hour per week	10	12	10
<b>Notifying the work health and safety authority when required</b>			
Less than 30 minutes per week	99	94	91
30 minutes to 1 hour per week	0	4	8
More than 1 hour per week	1	2	1
<b>Preparing Safe Work Method Statements</b>			
Less than 30 minutes per week	33	81	87
30 minutes to 1 hour per week	39	11	6
More than 1 hour per week	28	8	8
<b>Finding information about your work health and safety obligations</b>			
Less than 30 minutes per week	74	82	80
30 minutes to 1 hour per week	12	11	10
More than 1 hour per week	14	7	11

**Construction businesses spent more time preparing Safe Work Method Statements compared to the other priority industries**

Construction businesses spent more time on keeping records for compliance, with 36% of construction businesses spending 30 minutes to one hour per week on record keeping for compliance compared to 13% for the other priority and non-priority industries.

Construction businesses also spent more time preparing SWMS, with 39% of construction businesses spending 30 minutes to an hour per week and a further 28% of businesses spending over one hour per week preparing these statements. In comparison the majority of businesses in the other priority and non-priority industries spent less than 30 minutes per week preparing SWMS (81% and 87%, respectively).

Across businesses sizes employers in small construction businesses tended to spend less time on these activities than employers in medium and large businesses with the majority of large businesses spending more than one hour per week on these activities.

**Sixty four percent of construction businesses ran toolbox sessions for their staff compared to 19% of businesses in the other priority industries**

**Other compliance activities**

Employers were asked to indicate the work health and safety compliance activities they had undertaken over the past 12 months. As Table 9 shows, construction businesses generally tended to report undertaking compliance activities more often than businesses in other priority and non-priority industries. All construction businesses reported that they provided protective clothing or equipment to their workers, a higher proportion than reported by the other priority and non-priority industries (73% and 67% respectively). The majority of construction businesses (84%) also identified safety issues, again a higher proportion than reported by the other priority and non-priority industries (71% each). The majority of construction businesses (82%) also talked with their workers (including contractors) which was much higher than reported by the other priority and non-priority industries (52% and 53%, respectively).

For the top six compliance activities reported to be undertaken in the construction industry, the proportions of employers undertaking these activities tended to be similar across business sizes albeit with slightly higher proportions of large businesses reporting participation in these activities.

**Table 9: Compliance activities undertaken by businesses in the 12 months ending December 2012**

Compliance activities	Construction %	Other priority industries %	Non-priority industries %
<b>Provide protective clothing or equipment</b>	<b>100</b>	<b>73</b>	<b>67</b>
<b>Identify safety issues</b>	<b>84</b>	<b>71</b>	<b>71</b>
<b>Talk with workers including contractors</b>	<b>82</b>	<b>57</b>	<b>53</b>
<b>Implement safety measures</b>	<b>79</b>	<b>72</b>	<b>74</b>
<b>Talk with other businesses</b>	<b>70</b>	<b>28</b>	<b>43</b>
<b>Run toolbox sessions</b>	<b>64</b>	<b>19</b>	<b>22</b>
Undertake internal staff training	53	49	58
Replace plant and equipment to ensure compliance	50	36	22
Run information sessions	43	31	22
Purchase staff training externally	37	23	18
Accompany inspector on workplace inspection	25	14	20
Change contracts to ensure compliance	23	15	16
Implement procedures dealing with fatigue	23	30	21
Employ an additional worker or engage an expert	19	13	6
Implement procedures to address bullying	14	24	24
Undertake training on bullying	7*	13	15
Enlist lawyer for health and safety matters	1	4	5
None	0	14	9

\* Since new anti-bullying laws have taken effect from 1 January 2014, Master Builders and other industry associations have noted an upturn in training on anti-bullying.

Table 10 shows that 62% of construction businesses spent less than \$1000 on providing protective clothing over the 12 month period while 38% of construction businesses spent between \$1000 to \$10 000. In comparison, a lower proportion of businesses in the other priority and non-priority industries spent this higher amount (27% and 28% respectively). In terms of time spent per week providing this equipment the majority of construction businesses (84%) spent less than 1 hour, which was similar to the other priority but not the non-priority industries (81% and 68% respectively).

Just over one third (35%) of construction businesses spent between \$1000 and \$10 000 on identifying safety issues over the 12 month period which was a higher proportion than that in the other priority and non-priority industries (24% and 17% respectively). In addition 42% of construction businesses spent between 1 and 10 hours per week identifying safety issues which was again a larger proportion than the other priority and non-priority industries (25% and 34% respectively).

**Table 10: Cost and time spent on top six compliance activities undertaken by businesses in the 12 months ending December 2012**

Cost and time spent on top six compliance activities	Construction %	Other priority industries %	Non-priority industries %
<b>Provide protective clothing</b>			
Cost			
Less than \$1,000	62	72	70
\$1,000 to \$10,000*	38	27	28
Time			
Less than 1 hour	84	81	68
1 to 10 hours**	16	19	32
<b>Identify safety issues</b>			
Cost			
Less than \$1,000	65	76	78
\$1,000 to \$10,000	35	24	17
Time			
Less than 1 hour	58	75	66
1 to 10 hours	42	25	34
<b>Talk with workers including contractors</b>			
Cost			
Less than \$1,000	95	84	89
\$1,000 to \$10,000	5	16	11
Time			
Less than 1 hour	82	83	82
1 to 10 hours	17	17	15
<b>Implement safety measures</b>			
Cost			
Less than \$1,000	71	77	86
\$1,000 to \$10,000	28	22	14
Time			
Less than 1 hour	64	74	71
1 to 10 hours	36	26	26
<b>Talk with other businesses</b>			
Cost			
Less than \$1,000	98	97	87
\$1,000 to \$10,000	2	3	8
Time			
Less than 1 hour	88	89	78
1 to 10 hours	12	10	22
<b>Run toolbox sessions</b>			
Cost			
Less than \$1,000	78	78	88
\$1,000 to \$10,000	21	21	7
Time			
Less than 1 hour	70	52	73
1 to 10 hours	30	48	26

\* More than \$10 000 not shown due to small proportions.  
 \*\* More than 10 hours not shown due to small proportions.

**The most costly compliance activities for construction businesses were replacing plant and equipment to ensure compliance, employing an additional worker and hiring a lawyer for work health and safety matters**

**Thirty-nine percent of construction employers did not provide their workers with health and safety training over the past 12 months**

For these top six compliance activities employers in small businesses tended to indicate that less money was spent and less time taken per week to undertake these activities than medium/ large businesses. Large businesses tended to spend the most time and money on health and safety compliance activities.

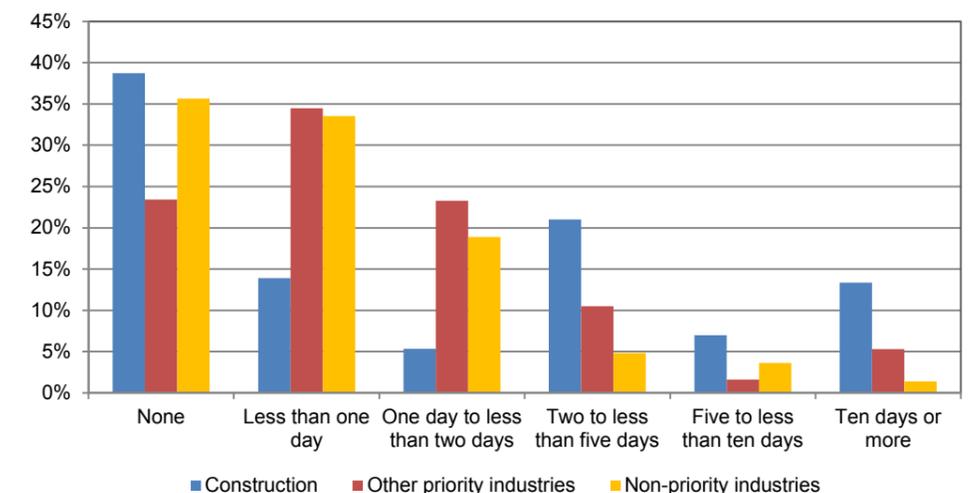
Some compliance activities proved to be expensive and time consuming for construction businesses (not shown in Table 10). In terms of cost 65% of construction businesses spent between \$1000 and \$10 000 and 6% spent more than \$10 000 to replace plant and equipment in order to ensure compliance with work health and safety laws. Almost three quarters (73%) of construction businesses spent between \$1000 and \$10 000 and 3% spent more than \$10 000 on employing an additional worker or engaging an expert with skills specific to handling work health and safety matters.

The most time consuming compliance activities were the undertaking of staff training on bullying where almost three quarters (73%) of construction businesses spent between 1 and 10 hours per week on this task (not shown in Table 10). The purchase of external staff also consumed a great deal of time per week with 56% of construction businesses spending 1 to 10 hours doing this.

### Work Health and Safety Training

The WHS Perceptions survey provides information on the amount of training provided to workers. Figure 3 shows that construction employers provided the least amount of health and safety training to their workers during the past 12 months. Sixty one percent indicated that they provided some training to their workers compared to 75% for the other priority industries and 62% for the non-priority industries. Training was typically less than one day in length in the other priority and non-priority industries but in the construction industry 41% of training took two or more days.

**Figure 3: Health and safety training provided to workers in the past 12 months by industry**



Just under half of construction employers provided safety induction training for new workers and of these, three in 10 employers indicated that contractors were included in this induction training. Other priority industries had a slightly higher level of safety induction training for new workers (55%). Only one quarter indicated that this included contractors.

There appeared to be differences in the amount of training provided to workers by business size. Forty five percent of employers in small construction businesses did not provide their workers with any safety training over the 12 month period while employers in medium and large businesses provided their workers with some duration of safety training over this period. Of those small businesses that did provide training, almost one third provided workers with two to less than five days training. This was also the most common amount provided by employers in medium and large businesses (47% and 40% respectively).

Construction workers had slightly different views on the amount of training provided to them by their employer. One quarter indicated that they received no health and safety training over the 12 month period which was lower than indicated by employers. Of those who did receive training, two to less than five days was the most common amount (25%), followed closely by 10 days or more, five to less than 10 days and less than one day (21%, 20% and 19% respectively).

There also appeared to be differences in the amount of training received by workers in the construction industry across workplace sizes. Thirty nine percent of workers in small workplaces indicated that they did not receive any health and safety training over the 12 month period. Twenty six percent of workers in small workplaces who did receive training received between five to less than 10 days. In contrast to their employers, 15% of workers in medium construction workplaces indicated that they did not receive any health and safety training. Twenty seven percent of those who did receive training received two to less than five days in the 12 month period. Only 6% of workers in large workplaces indicated that they did not receive training. Of those who did, 53% received 10 days or more training.

### Sources of work health and safety information

The WHS Perceptions survey provides insights into where employers and workers get their work health and safety information. Table 11 shows the sources of information used by employers in the construction industry compared to other industries.

Almost half the employers in the construction industry got at least some of their work health and safety information from Employer/ Industry associations, followed by Industry Pamphlets/ Newsletters (41%), Health and Safety Representatives (37%) and Government Health and Safety Inspectorates (23%). While Industry Pamphlets/ Newsletters were used to a similar extent in the other priority and the non-priority industries (36% and 37% respectively) the similarities end here. The main source of work health and safety information for the other priority industries was the Internet (38%), followed by Industry Pamphlets/ Newsletters, the Media (36%) and Experience/ Doing the job itself (34%).

**Almost half of construction employers got their work health and safety information from employer/ industry associations**

**Table 11: Main sources of work health and safety information by industry**

Sources of information	Construction %	Other priority industries %	Non-priority industries %
Employer / Industry associations	49	21	29
Industry Pamphlets / Newsletters	41	36	37
Health and Safety Representatives	37	9	8
Government Health and Safety Inspectorates (e.g. website, office, inspector)	23	8	10
Media (e.g. magazines, newspapers, television, radio)	20	36	41
Meetings at work	19	16	12
Training courses (e.g. work, TAFE, apprenticeship, university)	19	15	12
Internet	18	38	32
Email at work	16	12	22
Supervisors / Managers	16	12	5
Government Acts / Regulations / Publications	15	12	17
Suppliers	10	1	6
Other	6	4	2
Workmates	5	4	3
Unions	5	1	1
Posters / Signs / Notices at work	3	13	10
Friends	1	3	9
Experience / Doing the job itself	1	34	27
Family	0	5	2
None / nothing	0	1	3
Don't know	0	2	2

**Almost half of construction workers got their work health and safety information from training courses**

As shown in Table 12, almost half of construction employees sourced their work health and safety information from Training courses, followed by Meetings at work and Supervisors/ Managers. This is broadly consistent with construction workers in the MAPS survey, with the exception of the Media being the second most common source of work health and safety information.

There may also be differences by business size for employers in the construction industry. For small businesses, 45% of employers used Industry Pamphlets/ Newsletters, 43% Employer/ Industry associations and 41% Health and Safety Representatives. In contrast, in medium businesses 88% of employers relied on Employer/ Industry associations while 70% relied on Government Health and Safety Inspectorates. Employers in large businesses tended to rely on Government Acts/ Regulations/ Publications (65%), Employer/ Industry associations, Health and Safety Representatives and Government Health and Safety Inspectorates (49% and 48% respectively).

Construction workers in small and medium workplaces tended to rely on Training courses to a similar extent (54% and 49% respectively) as well as Meetings at work (22% and 36% respectively) and Supervisors/ Managers (21% and 35% respectively). Workers in large workplaces appeared to rely more on Meetings at work (64%), Experience/ Doing the job itself (36%) and Supervisors/ Managers (31%).

**Table 12: Main sources of work health and safety information by employers, employees and workers in the construction industry**

Sources of information	2012		2010
	Employers %	Workers** %	Workers %
Employer / Industry associations	49	7	15
Industry Pamphlets / Newsletters	41	13	15
Health and Safety Representatives	37	14	16
Government Health and Safety Inspectorates (e.g. website, office, inspector)	23	10	11
Media (e.g. magazines, newspapers, television, radio)	20	19	26
Meetings at work	19	33	24
Training courses (e.g. work, TAFE, apprenticeship, university)	19	48	30
Internet	18	-	7
Email at work	16	14	3
Supervisors / Managers	16	28	15
Government Acts / Regulations / Publications	15	-	2
Suppliers	10	-	-
Work mates	5	-	-
Unions	5	-	-
Posters / Signs / Notices at work	3	6	14
Friends	1	-	-
Experience / Doing the job itself	1	14	2
Family	0	-	-
Other	6	0	4
Don't know	0	0	8
None	0	4	1
Informal channels*	-	-	9

\* Includes friends, family, workmates and suppliers.

\*\* Employees

## Work health and safety communication and consultation

**Seventy percent of construction employers provided work health and safety information to contractors - much higher than in the other priority industries**

### Who is informed of work health and safety

The WHS perceptions survey provides insights into communication and consultation within the construction industry. Seventy eight percent of construction employers indicated that they provided full time workers with work health and safety information, which was higher than that recorded for the other priority industries (59%). Just under two thirds of construction employers indicated that they provided part time workers with work health and safety information – lower than that recorded by the other priority industries (76%). Of particular note, 70% of construction employers indicated that they provided work health and safety information to contractors and subcontractors while 54% indicated that they also provided this information to apprentices. These proportions were substantially higher than those recorded in the other priority industries (38% and 19% respectively).

There appeared to be differences between business sizes. Employers in small businesses tended to be less likely to provide information to full time and part time employees as well as apprentices compared to employers in large businesses. Employers in large businesses tended to be more likely to provide work health and safety information to contractors (87%) than those in small (70%) and medium businesses (65%).

### How workers are informed of work health and safety

Seventy percent of construction employers indicated that workers were informed through informal communication with work mates about work health and safety, 62% during a walk around the workplace alone or with managers and 42% during meetings on work health and safety with management. These proportions were similar to those recorded in the other priority industries.

In small construction businesses, employers tended to indicate that workers were commonly informed of work health and safety through informal communication with work mates about health and safety and during a walk around the workplace by managers (68% and 65% respectively). In medium businesses workers appeared to be informed most commonly through the health and safety information displayed on notice boards, through regular newsletters and staff bulletins and through informal communication with work mates (92%, 83% and 82% respectively). Employers in large businesses indicated that their workers were most commonly informed through regular information sessions to explain work health and safety (95%), during meetings on work health and safety with management (95%), from the work health and safety information displayed on notice boards (95%), during a walk around the workplace by managers (95%) and through work health and safety committees (93%).

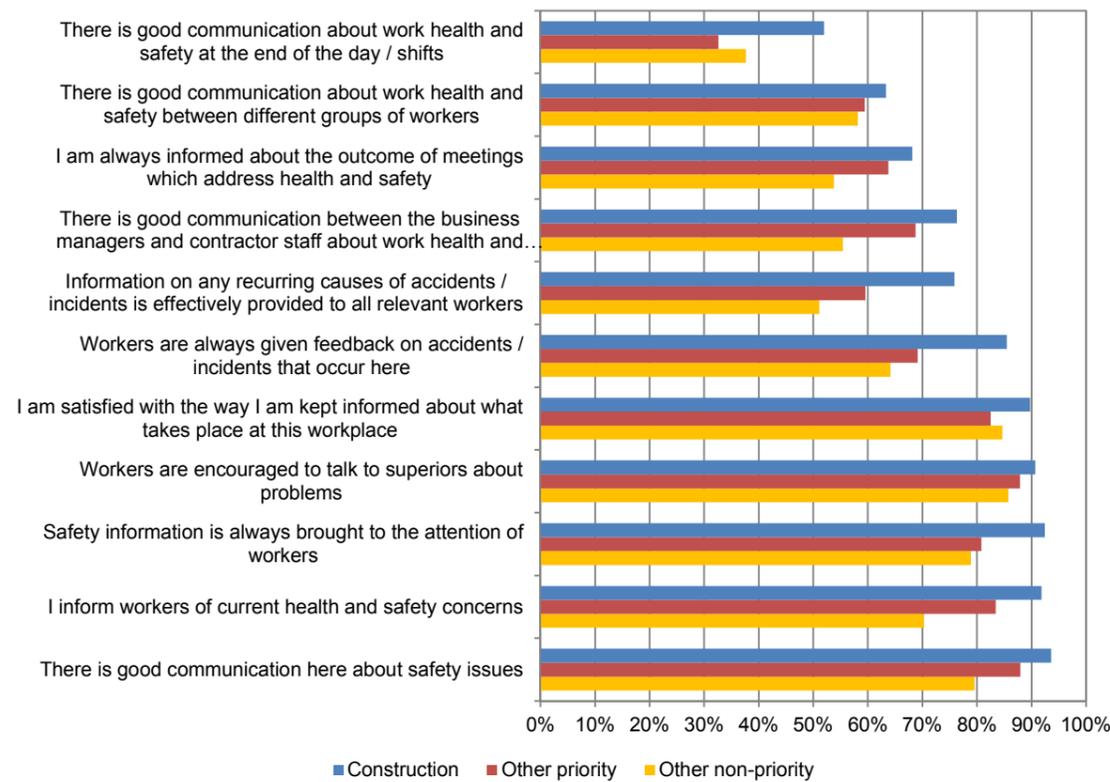
### Work health and safety communication

The MAPS survey asked workers questions about communication in their workplace. Eighty four percent of construction workers agreed that there is good communication in their workplace about health and safety and 90% agreed that workers are encouraged to raise health and safety concerns in their workplace. Eighty six percent of construction workers also agreed that workers often give tips to each other on how to deal with health and safety issues. Levels of agreement were similar in the other priority industries.

Figure 4 shows that for the WHS Perceptions survey construction employers were similar to employers in the other priority industries but were more likely to agree that workers are always given feedback on accidents/ incidents that occur in the workplace (85% and 69%) and information on any recurring accidents/ incidents is provided to all relevant workers (76% and 60% respectively).

**Employers in small construction businesses indicated that workers were commonly informed of work health and safety through informal communication**

**Figure 4: Communication reported by employers by industry**



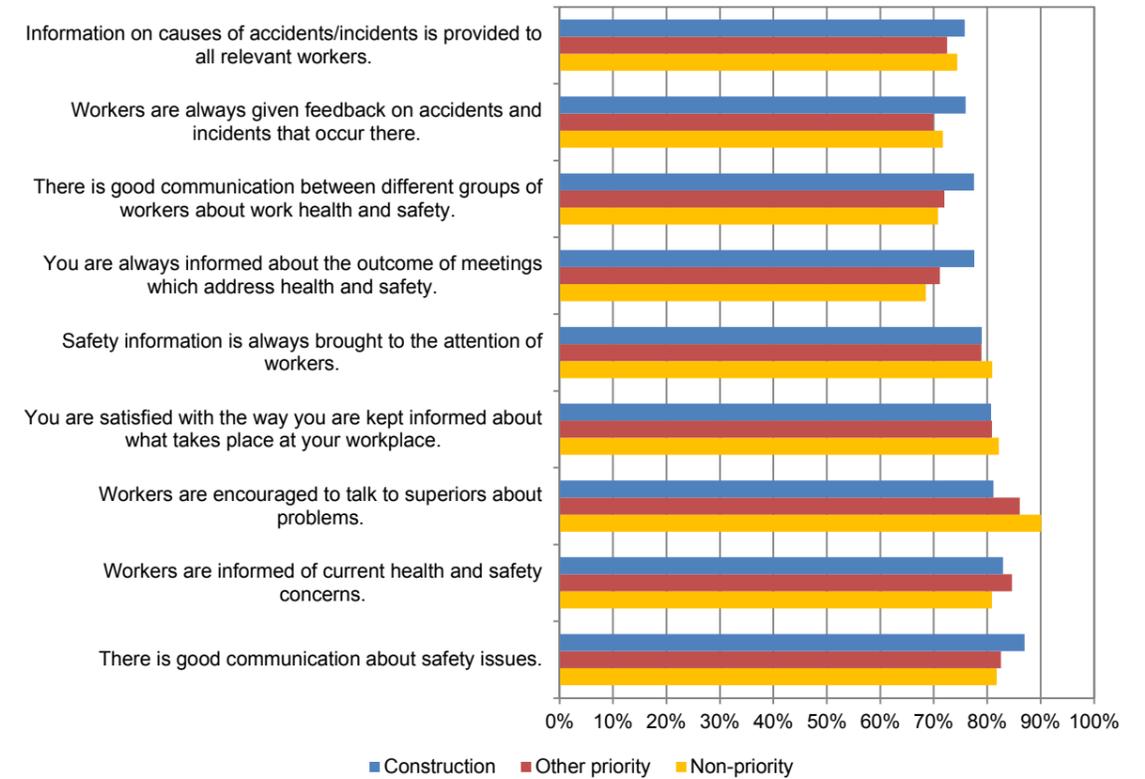
**Workers in small construction workplaces were less likely to agree that workers are always given feedback on incidents that occur in the workplace compared to workers in medium and large workplaces**

Across business sizes employers tended to have high levels of agreement that there is good communication in their workplace about safety issues and that safety information is always brought to the attention of workers. Employers in large and small businesses appeared to be more likely to inform their workers of current health and safety concerns than those in medium businesses (100% and 94% compared to 76%). In contrast, employers in medium businesses tended to be more likely to agree that there is good communication between business managers and contractor staff about work health and safety (98% compared to 73% for small businesses and 75% for large businesses) as well as good communication between different groups of workers (93% compared to 59% for small businesses and 75% for large businesses).

Figure 5 shows that there were similar levels of agreement between workers in the construction, other priority and non-priority industries in terms of various communication activities occurring within their workplaces. Workers in the construction industry were slightly more likely to agree that they are always informed about the outcome of meetings that address work health and safety (78% compared to 71% and 69%) and that there is good communication between different groups of workers about work health and safety (78% compared to 72% and 71%).

There tended to be some differences in workers' opinions of communication in their workplace across workplace sizes. While 69% of employees in small workplaces agreed that safety information is always brought to the attention of workers, 85% of workers in medium workplaces and 94% of workers in large workplaces agreed with this statement. Workers in small workplaces tended to be less likely to agree that workers are always given feedback on incidents that occur and information on causes of incidents is provided to all relevant workers (70% and 74% respectively) compared to workers in large workplaces (85% and 88% respectively).

**Figure 5: Communication reported by workers by industry**

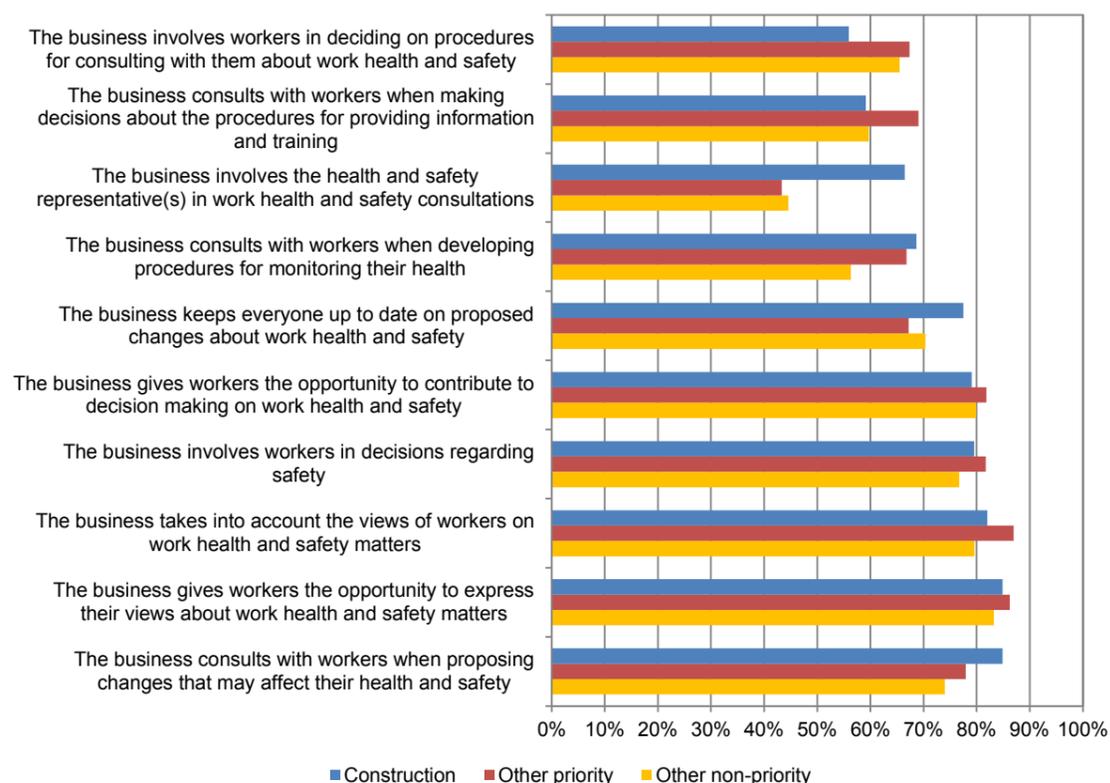


Generally construction worker agreement with various forms of communication occurring within the workplace was slightly lower than agreement observed for employers. Construction workers were slightly more likely to agree that they are always informed about the outcome of meetings that address health and safety than construction employers (77% and 68% respectively), and more likely to agree that there is good communication between different groups of workers about work health and safety (77% and 63% respectively). In contrast, construction employers were more likely to agree that safety information is always brought to the attention of workers (92% and 79% respectively) and workers are encouraged to talk to supervisors about problems (91% and 81% respectively).

### Work health and safety consultation

Figure 6 shows that construction employers described work health and safety consultation in a similar way to employers in the other priority industries. Construction employers were less likely to agree that the business involves workers in deciding on procedures for consultation regarding work health and safety and when making decisions about the procedures for providing information to workers than those in the other priority industries (56% compared to 67% and 59% compared to 69% respectively). Compared to the other priority industries construction employers were more likely to advise workers of the outcomes of consultations on work health and safety matters (85% compared to 68%) and involve Health and Safety Representatives in work health and safety consultations (66% compared to 43%).

Figure 6: Consultation reported by employers by industry



### Small business employers tended to be less likely to agree that consultation occurred within their workplace

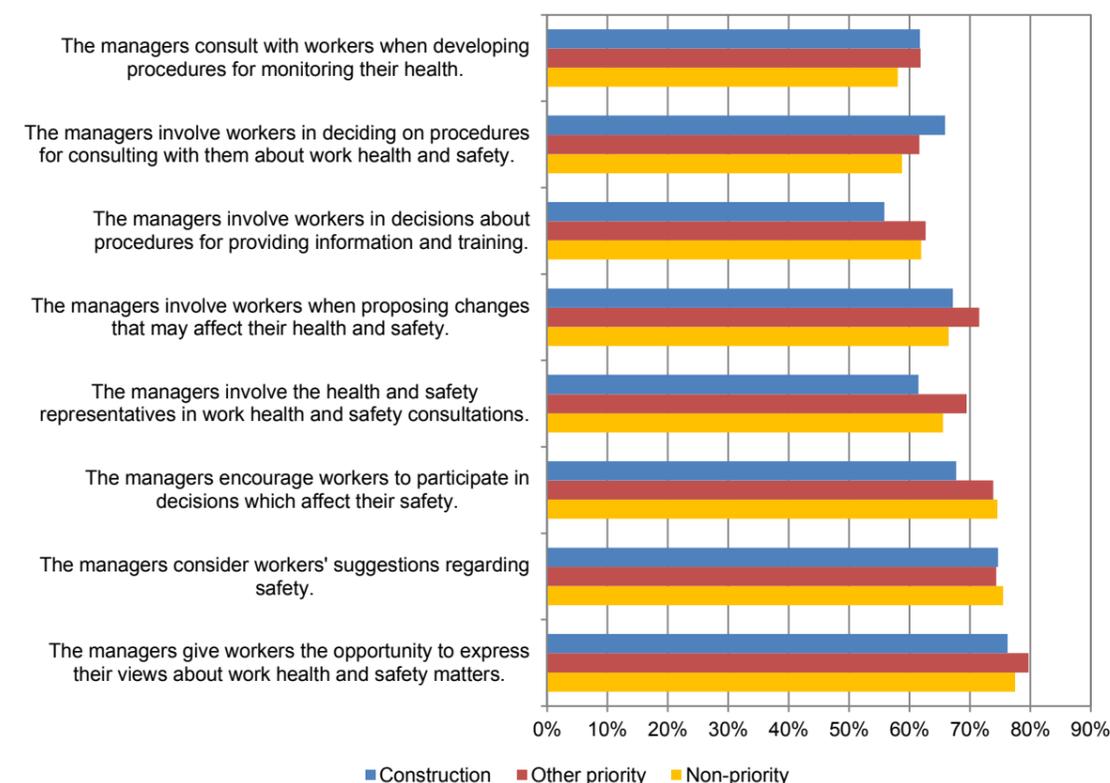
Small business employers tended to have lower levels of agreement that varying kinds of consultation occurred within their workplace. The greatest difference in agreement was observed for whether the business consults with workers when making decisions about the procedures for providing information and training (54% for small businesses compared to 91% for medium and 95% for large). In addition small business employers tended to be less likely to agree that the business keeps everyone up to date about proposed changes about work health and safety (75% compared to 95% for medium businesses and 100% for large) and that the business involves the health and safety representatives in work health and safety consultations (62% compared to 92% for medium businesses and 87% for large businesses) than employers in medium and large workplaces.

Figure 7 shows that workers in the construction industry had similar levels of agreement with the other priority industries with various forms of consultation occurring in their workplaces. Compared to workers in the priority industries, workers in the construction industry were slightly less likely to indicate that the managers involve workers in decisions about procedures for providing information and training all or most of the time (56% compared to 63%) and slightly less likely to indicate that managers involve Health and Safety Representatives in work health and safety consultations all or most of the time (61% compared to 69%).

There was some difference across workplace size. Workers in small workplaces tended to be more likely to agree that managers give workers the opportunity to express their views (81%) compared to those in medium and large workplaces (70% and 72% respectively). Workers in small and medium workplaces were appeared to be more likely to agree that managers involve the Health and Safety Representative in work health and safety consultations compared to workers in large workplaces (64% and 62% compared to 48%).

Generally construction worker agreement with various forms of consultation occurring within the workplace was slightly lower than agreement observed for employers. The greatest difference was observed for consulting with workers when proposing changes that may affect their health and safety, with 85% of construction employers agreeing with this statement compared to 61% of construction workers.

Figure 7: Consultation reported by workers by industry



## Work health and safety motivations, attitudes and perceptions

**The top motivator for ensuring work health and safety for construction workers was 'concern about being personally responsible for someone being injured or made ill through work'**

### Motivations for ensuring health and safety in the workplace

The MAPS survey provides insights into the factors that motivate workers to take action to improve health and safety at work. The top three motivators for workers in the Construction industry were 'concern about being personally responsible for someone being injured or made ill through work' (85%), 'when weighing up the cost, you realise it actually doesn't take too much time or effort to take action' and 'wanting to do the job more easily or efficiently' (81% each). The top three motivators for workers in other priority industries were the same as those for Construction workers. However, they were in a different order with 'wanting to do the job more easily or efficiently' being the top reason for taking action to improve health and safety.

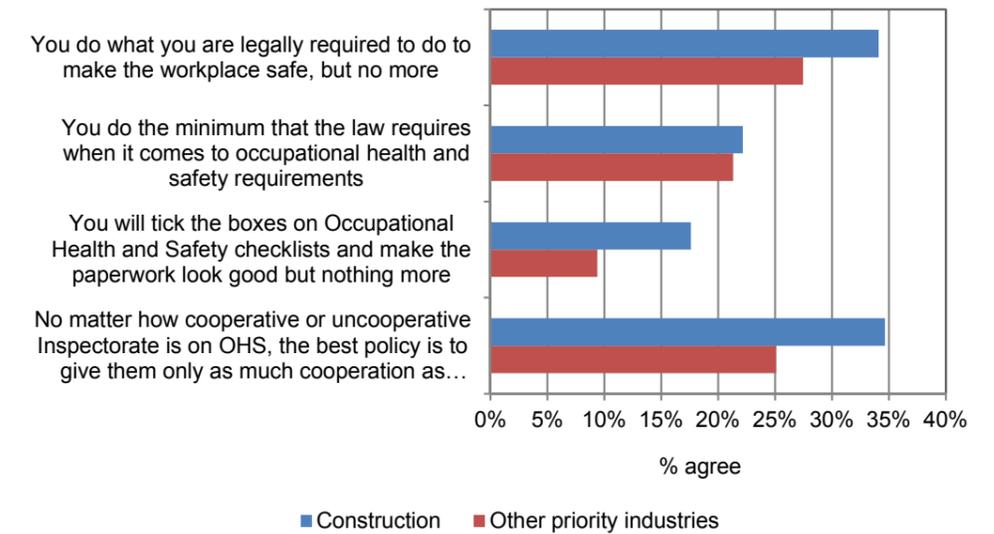
All construction workers felt that making the workplace safe is the right thing to do and almost all felt a moral obligation to ensure workplace safety, ensure the workplace is safe with good will and accept responsibility for ensuring the workplace is safe. Levels of agreement were nearly identical in the other priority industries.

As Figure 8 shows construction workers were more likely to agree that no matter how cooperative or uncooperative the inspectorate is on WHS the best policy is to give them only as much cooperation as the law requires (35% and 25% respectively) and that they will tick the boxes on WHS checklists and make the paperwork look good but nothing more (18% and 9% respectively).

The 2001 CEOs and Supervisors survey provides insights into what motivates managers in the construction industry. When CEOs and supervisors were asked what influences them most strongly to comply with health and safety regulations respondents in the construction industry indicated that their strongest influence was to protect the safety of the worker (55%), followed by having a responsibility to their workers (12%), it being part of their job (11%), compliance being the law (6%) and concerns that they may be prosecuted if they don't comply (5%). Similarly respondents in the other industries were most influenced by protecting the safety of their workers (58%) followed by it being part of their job (10%), feeling responsible for their workers' safety and compliance being the law (7% each) and that it is company policy (4%).

**CEOs and supervisors in the construction industry indicated that the strongest influence in ensuring work health and safety was to protect the safety of the worker**

**Figure 8: Worker motivations for complying with work health and safety directives from WHS inspectorates**



Practically all (97%) construction managers agreed that they were responsible for the safety of those who worked for them. The majority (91%) agreed that enforcing safety was part of their job. These levels of agreement were very similar to the other priority industries.

**The majority of construction managers agreed that improving work health and safety procedures reduces injury-related absenteeism**

Figure 9 shows the majority (87%) of construction managers agreed that improving health and safety procedures reduces injury-related absenteeism with respondents in the other industries having a slightly higher level of agreement (91%). Just over three quarters of construction managers agreed that penalties for non-compliance are higher than the cost of making the workplace safe which was higher than that observed for the other industries (61%).

**Figure 9: Agreement with health and safety practice statements regarding 'safety pays' by industry**

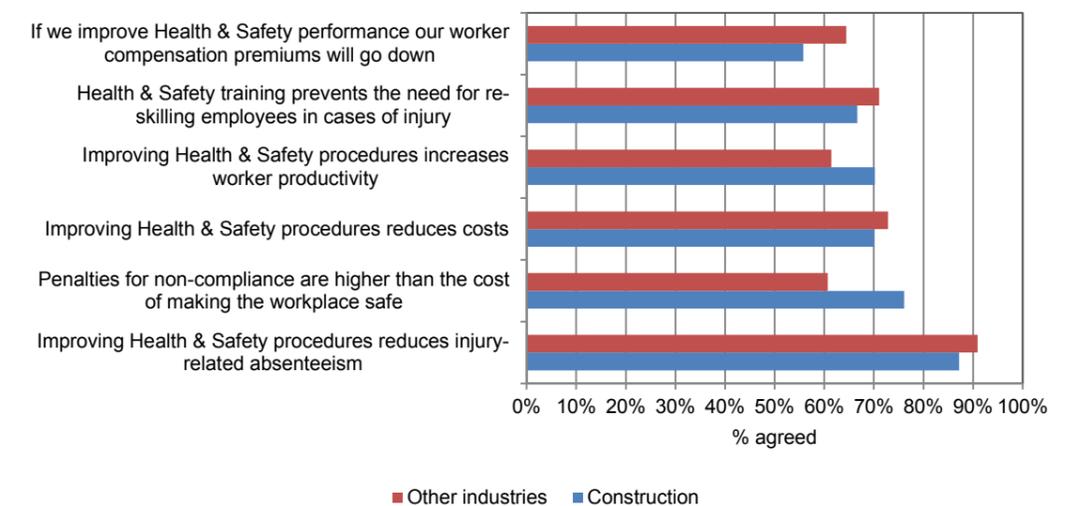
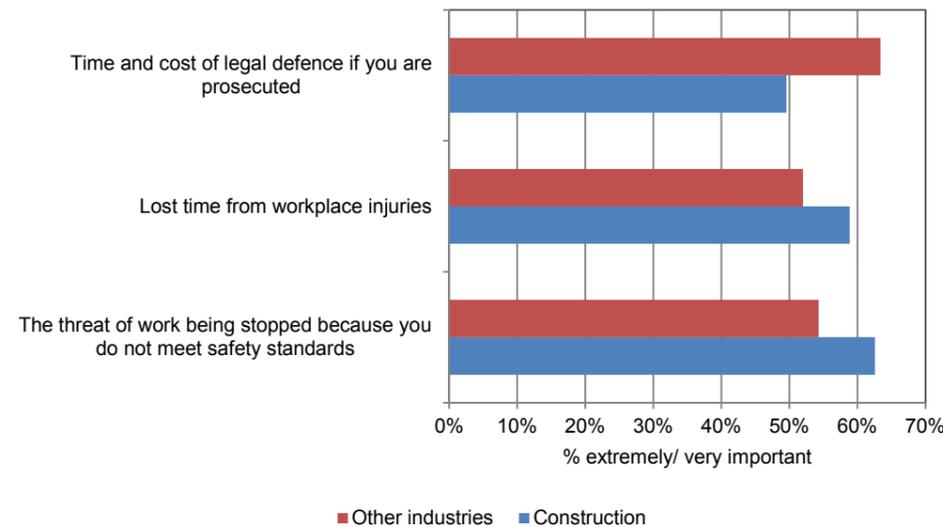


Figure 10 shows that almost two thirds (63%) of construction managers felt that the threat of work being stopped because safety standards were not met was an extremely/ very important influence on their approach to health and safety. Compared with the Construction industry just over half (54%) of managers in other industries felt that this was an extremely/ very important influence.

**Figure 10: Importance of safety pays/ financial incentives to personal approach to health and safety by industry**



### Attitudes and perceptions of health and safety in the workplace

#### Workplace safety

The MAPS survey provides insights into construction workers' attitudes towards work health and safety in the workplace. Ninety one percent of construction workers felt that their workplace was safe, almost identical to the other priority industries (86%). The WHS Perceptions surveys showed that 77% of employers and 87% of workers in the construction industry felt that their workplace was safe, which was slightly lower than that recorded in the MAPS survey.

Workers in the construction industry generally had positive perceptions of their boss' approach to work health and safety. Seventy five percent of construction workers agreed that their bosses are really concerned about safe conditions for their workers and 81% agreed that their bosses work in partnership with their workers to ensure safety. These levels of agreement were similar to that observed in the other priority industries.

Overall construction workers were satisfied with how health and safety was managed in their workplace. Ninety percent of construction workers agreed that management corrects unsafe situations or unsafe practices when they become aware of them and that in their workplace managers and supervisors express concern if an unsafe situation occurs. In addition 85% of construction workers agreed that managers and supervisors express concern if safe work practices are not adhered to. Levels of agreement were similar in the other priority industries.

**Construction workers were satisfied with the management of health and safety in their workplace**

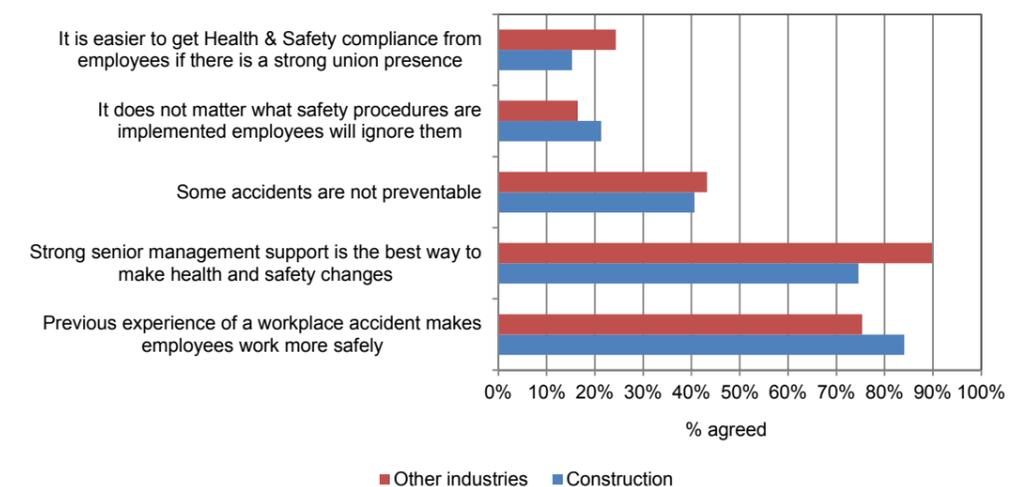
**One in five construction managers felt that it didn't matter what health and safety procedures were implemented because workers will ignore them**

Seventy two percent of construction workers agreed that safety is the number one priority in their mind when completing a job, while 31% agreed that sometimes it is necessary to depart from health and safety requirements. Levels of agreement were similar in the other priority industries. In terms of how construction workers felt about their own health and safety knowledge, almost all (97%) construction workers had thought about and taken on board the safety issues in their workplace - almost identical to that observed in the other priority industries (95%). Ninety four percent of construction workers felt confident acting in accordance with the safety principles in their workplace, were confident that they had the knowledge and skills to protect themselves and others at work and that they could solve most health and safety problems if they try hard enough. These levels of agreement were similar in the other priority industries.

The CEO and Supervisors survey also provides insights into the attitudes and perceptions underlying construction managers' views towards work health and safety. Almost all (95%) construction managers agreed that health and safety requirements are very important in preventing accidents with a slightly lower level of agreement observed for other industries (89%). Just over half of construction managers (56%) agreed that health and safety requirements are easy to implement whereas 64% of managers in other industries agreed with this statement.

Figure 11 shows that 84% of construction managers agreed that previous experience of a workplace incident makes workers work more safely, which was slightly higher than that observed for the other industries (75%). Conversely 75% of construction managers agreed that strong senior management support is the best way to make health and safety changes, whereas managers in the other industries had a much higher level of agreement (90%).

**Figure 11: Agreement with health and safety practice statements regarding workplace culture by industry**



CEOs and supervisors were asked to indicate their agreement to a number of health and safety practice statements related to corporate image. Sixty two percent of construction managers agreed that they would lose customers if their company had a highly publicised workplace incident, with agreement the same in the other industries (63%). The majority (89%) of construction managers agreed that their safety record affects their personal reputation, similar to the other industries (86%).

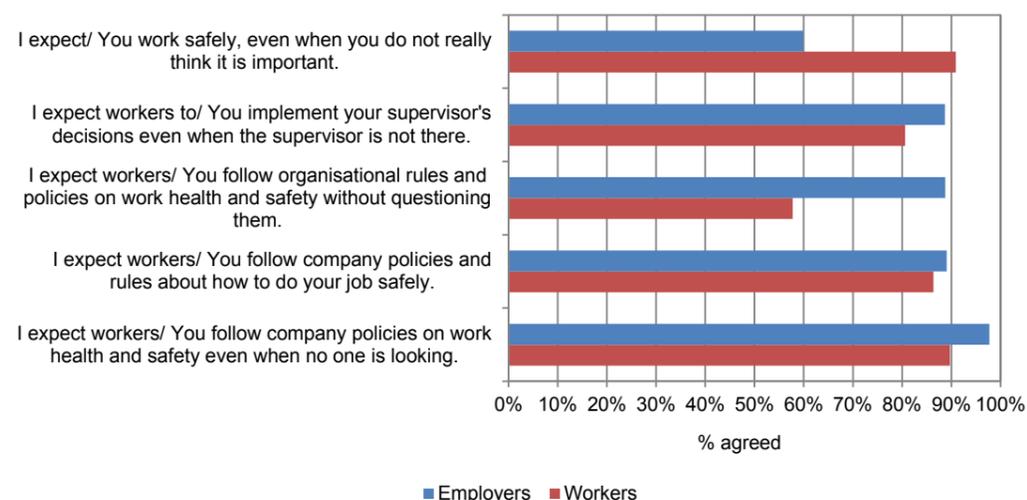
## Work health and safety rules and policies

The WHS Perceptions employer survey showed that basically all construction employers (98%) agreed that they expect workers to follow company policies and rules about how to do their job safely. This level of agreement was similar across the other priority industries. The majority (89%) of construction employers agreed that they expected workers to implement their supervisor's decisions even when the supervisor is not there. Agreement was similar across the other priority and non-priority industries. The same proportion of construction employers (89%) agreed that they expected their workers to work safely even when they do not really think it is important which was slightly lower than the other priority industries (95%). Under two thirds (60%) of construction employers agreed that they expected workers to follow organisational rules and policies on work health and safety without questioning them. This was a lower level of agreement than that recorded in the other priority and non-priority industries (70%).

### Construction workers were less likely to follow organisational rules and policies on work health and safety without questioning them compared to employers expectations

As can be seen from Figure 12 construction workers were less likely to follow organisational rules and policies on work health and safety without questioning them compared to employers' expectations (58% compared to 89% respectively). Contrary to employers' expectations the majority of construction workers agreed that they worked safely even when they didn't think it was important (91% compared to 60% respectively).

**Figure 12: Agreement with health and safety practice statements for construction employers and workers**



There were some differences by business size for employers. Generally all employers in large businesses tended to indicate that they expected workers to fulfill company policies and procedures all or most of the time. Only 26% of employers in large businesses expected workers to follow organisational rules on work health and safety without questioning them compared to 47% in medium and 62% in small businesses.

## Work health and safety self-efficacy

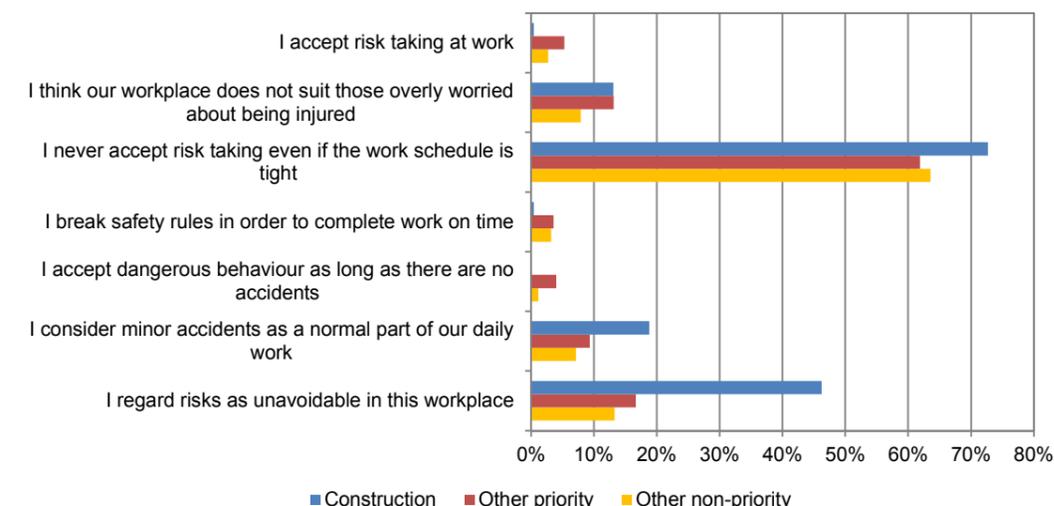
Construction employers had high levels of agreement that they have thought about and taken on board the health and safety issues in their workplace (93%), that they feel confident acting in accordance with safety principles in their workplace (97%), that they are confident that they have the knowledge and skills to protect themselves and others at work (88%) and that they can solve most health and safety issues if they try hard enough (82%). These levels of agreement were similar to those seen in the other priority industries. Construction workers also had high levels of agreement with these statements. While no employers indicated that they have difficulty handling health and safety issues that come their way, 12% of workers indicated that they did experience difficulty. For employers and workers there appeared to be similar levels of agreement across business and workplace sizes.

## Risk taking

### Construction employers were more likely to regard risks as unavoidable in the workplace compared to the other priority industries

Figure 13 shows that construction employers were much more likely to regard risks as unavoidable in the workplace (46%) than employers in the other and non-priority industries (17% and 13% respectively). Seventy five percent of construction employers agreed that they never accept risk taking even if the schedule is tight compared to the other (62%) and non-priority industries (64%).

**Figure 13: Agreement with risk taking statements for employers by industry**

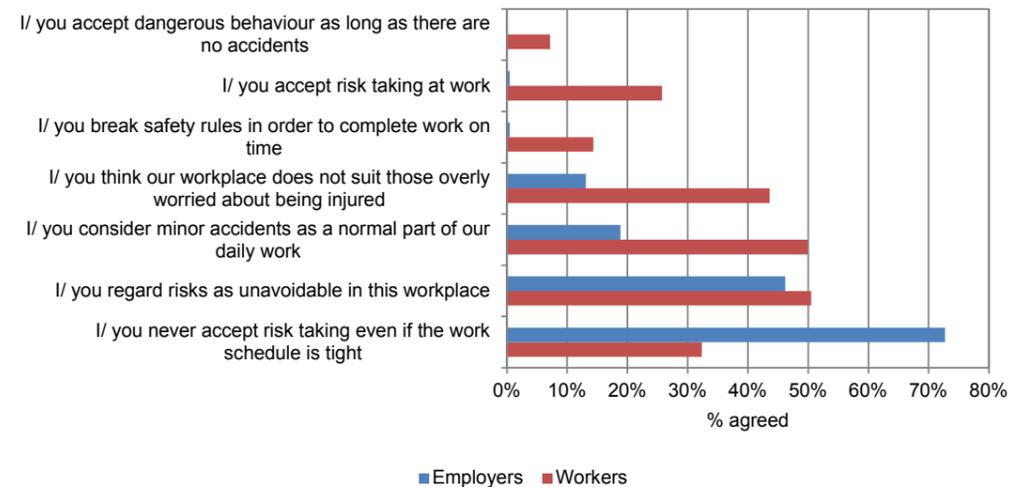


### One quarter of construction workers agreed that they accept risk taking at work

Figure 14 shows that while almost three quarters of employers agreed that they would never accept risk taking if the work schedule was tight only 32% of workers agreed with this statement.

Construction workers were much more likely than employers to agree that minor incidents were a normal part of their daily work (50% compared to 19% respectively) and that their workplace does not suit those overly concerned about being injured (44% compared to 13% respectively). Twenty six percent of workers agreed that they accept risk taking at work and 14% agreed that they would break safety rules to complete work on time. No employers agreed with these statements.

**Figure 14: Agreement with risk taking statements for construction employers and workers**



Across business sizes employers in medium businesses tended to be more likely than those in small and large businesses to agree that risks are unavoidable in their workplace (76% compared to 41% and 28%) and that they consider minor incidents as a normal part of their daily work (50% compared to 14% and 0%).

For workers, those in small workplaces were more likely to agree that their workplace doesn't suit those overly worried about being injured than workers in medium and large workplaces (56% compared to 35% and 27%). Across workplace sizes workers tended to have similar levels of agreement in terms of accepting risk taking at work (26%, 24% and 27% respectively).

### Rule breaking

**Construction employers were more likely to agree that workers ignore safety rules to get the job done than employers in the other priority industries**

Figure 15 shows that construction employers were more likely to agree than employers in the other priority and non-priority industries that workers ignore safety rules to get the job done (17% compared to 8% and 2% respectively), workers bend rules to achieve a target (17% compared to 8% and 2% respectively) and workers take short cuts that involve little or no risk (17% compared to 9% and 4% respectively). In terms of incentives to break rules, construction employers were more likely to agree that workers get financial rewards for breaking rules (15%) compared to the other priority and non-priority industries (2% each).

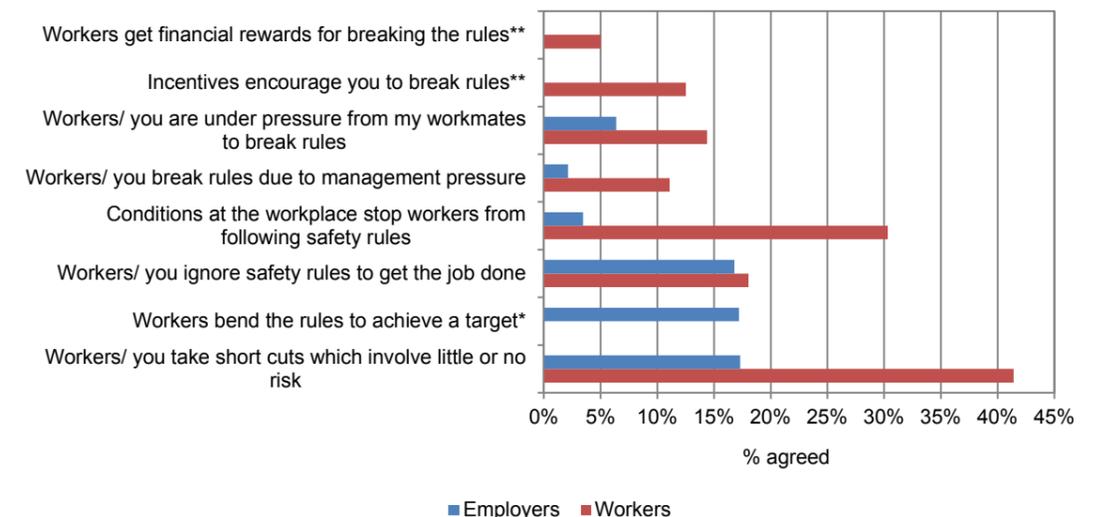
**Figure 15: Agreement with rule breaking statements for employers by industry**



**Construction workers were more likely than employers to agree that conditions at the workplace stop them from working safely**

Figure 16 shows that workers were generally more likely to agree with rule breaking statements compared to employers. Workers were more likely than employers to agree that workers take short cuts that involve little or no risk. Workers were also much more likely than employers to indicate that conditions at the workplace stop workers from working safely. One in 10 construction workers agreed that they were under pressure to break rules from their colleagues and management with one in 10 also agreeing that incentives encourage them to break rules.

**Figure 16: Agreement with rule breaking statements for construction employers and workers**



\* Not asked of workers  
\*\* Not asked of employers

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Across business sizes employers in medium businesses tended to be more likely to agree with rule breaking statements compared to those in large and small businesses. The exception was workers breaking rules due to management pressure where employers in large businesses had the highest level of agreement (23% compared to 1% and 2%).

Across workplace sizes workers in large workplaces tended to be generally less likely to agree with rule breaking statements than those in medium and small workplaces. However, workers in large workplaces appeared to be more likely to agree that workers break rules due to management pressure (23%) compared to those in medium (2%) and small (1%) workplaces.

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## Appendix A- Description of data sources used in this report

### Work-Related Injuries Survey, 2009-10

The Australian Bureau of Statistics (ABS) as part of its Multi-purpose Household survey (MPHS) collected data on work-related injuries from July 2009 to June 2010. Statistics from this topic were published in Work-related Injuries (Cat No. 6324.0). The publication presented information about persons aged 15 years or over who worked at some time in the last 12 months and experienced their most recent work-related injury or illness in that period. ABS interviewers conducted personal interviews by either telephone or at selected dwellings during the 2009–10 financial year. Each month a sample of approximately 1300 dwellings were selected for the main MPHS sample, and approximately 1300 to 1400 additional dwellings were selected for the extra MPHS sample. In these dwellings, after the Labour Force Survey (LFS) had been fully completed for each person in the household, a usual resident aged 15 years and over was selected at random and asked the additional MPHS questions in a personal interview. Information for this survey was collected using Computer Assisted Interviewing (CAI), whereby responses are recorded directly onto an electronic questionnaire in a notebook computer.

The initial total sample for the Work-Related Injuries topic included in the MPHS 2009–10 consisted of approximately 38 655 private dwelling households, which is approximately double the standard MPHS sample. Of the 32 760 private dwelling households that remained in the survey after sample loss (e.g. households with LFS non-response, no residents in scope for the LFS or work-related injuries topic, vacant or derelict dwellings and dwellings under construction), approximately 88% were fully responding to the MPHS. The number of completed interviews obtained from these private dwelling households (after taking into account the scope, coverage and sub-sampling exclusions) was 28 554 (14 205 for the main sample and 14 349 for the extra sample).

#### Profile of respondents

Construction workers aged 35 to 44 years accounted for over one quarter (28%) of all work-related injuries experienced in the Construction industry followed by workers aged 25 to 34 years (23%) and 45 to 54 years (22%). Almost all (98%) injured workers in the construction industry were male. Eight in 10 injured workers in the construction industry were employees.

More information on the WRIS Survey can be found on the [ABS website](#).

## CEOs and Supervisors Telephone Survey, 2000

In the late 1990s, a large, multiphase project was commissioned by the National Occupational Health and Safety Commission (NOHSC) to examine factors which motivate CEOs and supervisors to be interested in health and safety and promote it in their workplace. CEOs and supervisors were targeted as they were considered to be influencing health and safety outcomes in the workplace. A component of the project was telephone interviews with 962 CEOs and supervisors across Australia. The sample base of prospective employers for the survey was drawn primarily by each Work Health Authority / WorkCover jurisdiction from their registration or inspection database. When jurisdictions were unable to provide the sample, a list of employers was purchased from Dun and Bradstreet. The sample was stratified by business size. For micro (1-4 employees) and small (5-19 employees) data were collected from CEOs or owner managers. For medium sized businesses (20-99 employees) data were collected from CEOs and supervisors. For large businesses (100 or more) only supervisors were interviewed. The survey focused on nine industries which were considered to be priority industries for health and safety at the time of this project: Agriculture, forestry and fishing, Manufacturing, Electricity, gas and water supply, Construction, Retail trade, Transport and storage, Communication services, Government administration and defence and Cultural and recreation services.

Information presented in this report is from this third phase of the study. Analyses focused on 153 CEOs and supervisors from the Construction industry. The analyses are weighted by business size within states/territories.

### Profile of respondents

Based on weighted data, 48% of construction managers were owner/directors and 15% were CEOs with the remainder being supervisors. About 81% were male. Seventy eight percent were responsible for final decisions on work health and safety. Most (96%) were from micro and small businesses.

A final report on the survey component of this project is available at the [National Library of Australia](#).

## National Hazard Exposure Worker Surveillance Survey 2008

The 2008 National Hazard Exposure Worker Surveillance (NHEWS) Survey was a telephone survey (N = 4500). The survey aimed to estimate the prevalence of occupational disease causing hazards in Australian workers. The NHEWS survey asked workers about whether they worked with specific hazards (e.g. whether they worked in direct sunlight). It also collected information on the provision of control measures for each hazard. Descriptions of hazards and controls are provided in Tables 14 and 15, with additional details on hazards provided in Appendix C.

The NHEWS survey focussed on the five national priority industries identified in the first Australian National OHS Strategy (2002-2012) and hazards that were associated with priority occupational diseases in Australia at the time.

### Profile of respondents

A total of 655 construction workers across Australia participated in this survey. The most common age group was the 45 – 54 years age group followed by the 35 – 44 years age group (29.7% and 27.6% respectively). Eighty nine percent of workers were male. Almost half of the workers in this industry were Technicians & trades workers, 13% were Managers and 12% were Labourers.

Eight reports from NHEWS-2008 are available on the [Safe Work Australia website](#).

### Supplementary tables for NHEWS-2008

Table 13: Definition of exposure for hazards covered in this report

Hazard	Definition of exposed worker
<b>High exposure</b>	
Sun	Self-reported exposure to sun for 4 or more hours a day during the week preceding the survey
Wet work	Self-reported exposure to hand washing 20 or more times a day and/or hands immersed in liquids for more than two hours per day during the week preceding the survey
Biomechanical demands	Self-reported exposure to eight measures of biomechanical demands whose combined exposure score was at the upper 25th percentile
Job demands	Self-reported exposure to eight measures of psychological job demands whose average score was at the median for the sample or above
<b>Any exposure</b>	
Noise	Self-reported exposure to loud noise <sup>1</sup> the week preceding the survey
Vibration	Self-reported exposure to hand/arm and/or whole body vibration the week preceding the survey
Biological hazards	Self-reported exposure to biological materials the week preceding the survey
Chemical hazards (dermal)	Self-reported exposure to working with chemicals in the week preceding the survey
Airborne hazards	Self-reported exposure to dusts and/ or gases, vapors or fumes the week preceding the survey

<sup>1</sup> defined as noise so loud that you would have to raise your voice to be heard to speak to people who are at one arm's length away from you. This has been reported to be roughly equivalent to 85 dB(A).

**Table 14: Description of control measures for each hazard**

Variable	Description
Control measures for sun exposure	Whether PPE and/or administrative controls are provided for sun protection. Administrative controls for sun exposure were reorganising work outside peak UV hours, providing covered areas and reorganising tasks/timing/location. PPE control measures for sun included provision of sunscreen, protective clothing, hat or sunglasses.
Control measures for noise	Whether PPE and/or other control measures for noise are provided. PPE measures for noise were provision of ear muffs or ear plugs. Other control measures for noise were training on how to prevent hearing damage, rotating jobs, placing noisy equipment in an isolated room, purchasing quieter machinery whenever possible and signage.
Control measures for vibration	Whether PPE and/or other control measures for vibration are provided. The PPE measure for vibration was provision of gloves. Other control measures for vibration were provision of vibration dampeners, vibration absorbing seats, purchasing products with less vibration and training.
Control measures for airborne hazards	Whether PPE or administrative/engineering controls are provided. PPE measures for airborne hazards were provision of masks and respirators. Administrative/engineering control measures for airborne hazards were providing ventilation systems and reducing time spent in places with airborne hazards.
Control measures for chemicals	Whether PPE or other control measures for chemicals are provided. PPE measures for chemicals were provision of gloves and protective clothing. Other control measures for chemicals were labelling and warning signs, washing facilities, training on safe handling of chemical products or substances.
Control measures for biomechanical demands	Whether training or engineering/redesign controls are provided. Training for biomechanical demands was provision of manual handling training. Engineering/redesign controls included provision of lifting equipment, provision of trolleys, changing layout of the job, and changing the size and shape of loads.
Control measures for job demands	Whether training/counselling was provided or whether their workplace had an anti-stress/anti bullying policy. Training was on how to manage stress.
Control measures for wet work	Whether PPE or other control measures were provided for wet work. PPE measures for wet work include provision of gloves, barrier cream or moisturisers. Other control measures include limit the time spent with hands immersed in water or liquids, provide labelling and warning signs, and provide OHS training on working with water or other liquids.
Control measures for biological materials	Whether PPE or other control measures are provided for biological materials. PPE include provision of gloves, masks, protective clothing and safety goggles. Other control measures include labelling and warning signs, safety cabinets, ventilation systems, sharps containers, biohazard bags, isolation and providing training on safe handling of biological materials
Airborne hazards	Self-reported exposure to dusts and/ or gases, vapors or fumes the week preceding the survey

## Motivations, Attitudes, Perceptions and Skills (MAPS) Survey 2009

The Motivations, Attitudes, Perceptions and Skills (MAPS) Survey was conducted in 2009-10 using a telephone survey. Those who were eligible to participate in the study were people over 18 years of age who were in paid work or had been at some time in the past six months and worked in one of the five priority industries at the time – Construction, Agriculture, forestry and fishing, Manufacturing, Transport and storage and Health and community services. There were quotas set by industry, age groups and by state or territory.

This analysis focussed specifically on workers in the construction industry. The analyses were undertaken with two questions in mind:

- 1) What were the motivations, attitudes and perceptions of construction workers in relation to work health and safety?
- 2) Were they different from those of workers in other priority industries?

It is noted that the sample is not representative and therefore the results cannot be generalised. However the sample was obtained randomly and covered all states and territories.

### Profile of respondents

A total of 176 construction workers participated in the MAPS survey. The majority (83%) of workers in construction were males and were 35 to 44 years of age. The majority (70%) worked for an employer and 27% were self-employed. The majority (76%) had been in the industry for more than five years.

The final report from this study is available on the [Safe Work Australia website](#).

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## Work Health and Safety Perceptions Worker and Employer Surveys 2012

The Perceptions of Work Health and Safety Surveys aimed to provide a baseline measure of work health and safety attitudes, beliefs and actions shortly after the model WHS laws were introduced. The survey targeted four types of respondents: employers, sole traders, health and safety representatives and workers. There were four separate questionnaires tailored for the four types of respondents. All four questionnaires covered similar themes and questions. This report presents findings from the worker and employer surveys.

### Work Health and Safety Perceptions Worker Survey 2012

The worker survey was conducted using Computer Assisted Telephone Interviews (CATI) during September to October 2012. The survey used a dual frame approach (both landline and mobile). A sample for random digit dialling was purchased from the commercial sample provider SampleWorx with an aim of completing 650 interviews from landline numbers and 650 interviews from mobiles. For the landline sample the qualifying respondent was chosen by asking to speak with the person who had the most recent birthday of all those in the household who were at least 18 years of age and had worked in paid employment (for an employer) in the past 6 months. For the mobile sample the person who answered was qualified to answer the survey if they were at least 18 years and had worked in paid employment (for an employer) in the past 6 months. A total of 1311 interviews (construction N = 90) were completed out of 5618 in scope contacts, giving a response rate of 23%. The worker survey data were weighted by state/territory, sex, age and occupation to match population proportions obtained from the August 2012 quarter of the ABS LFS. This report presents findings from this weighted dataset.

### Profile of respondents

Based on the weighted data 90% of construction workers were male and the most common age range was 25-39 years old (30%). About half (48%) of workers were from small workplaces (1-19 employees at respondent's workplace), 36% of workers were from medium workplaces (20-199 employees at workplace) and 15% were from large workplaces (200 or more employees at workplace).

### Work Health and Safety Perceptions Employer Survey 2012

The employer survey was a paper based survey, conducted from October 2012 to January 2013. A random sample of 10 000 employing businesses were drawn by the ABS for this survey and the same sample was used for the survey of sole traders. The sample took into account the number of businesses in each industry. A total of 1052 employers completed the survey of which 87 were in construction. Taking into account the completed interviews by sole traders (N = 520, not presented in this report) the response rate was about 16%. The data were weighted by business size, industry and state/territory. The data presented in this report are limited to employers.

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### Profile of respondents

Based on the weighted data, 86% were small businesses (employed 1–19 employees) and 14% employed 20-199 employees. The small proportion of large business employers in the sample may have an influence on proportions of agreement observed for this group. The majority (74%) of the businesses have been in existence for 6 or more years. Eighty one percent of construction respondents were male and the most common age range was 45-54 years.

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## Work Health and Safety Cost of Compliance (Regulatory Burden) Survey 2013

The Regulatory Burden Survey (RBS) was conducted to collect information from businesses on the cost and other impacts of complying with the model work health and safety laws. The survey was conducted from April to June 2013 and examined cost incurred by businesses in 2012. The RBS was a postal survey using a random sample of 10 000 Australian businesses from the Australian Business Register drawn by the ABS. There were two different survey forms: the sole trader survey and the employer survey. The data presented in this report are limited to employers. A total of 1504 employers completed the survey and 118 were in construction.

### Profile of respondents

Based on weighted data, almost all construction businesses (98%) were small businesses (1-19 employees). Most (91%) construction businesses had been in operation for five or more years. Four in 10 had a turnover of \$200 000 to \$1 999 999 in 2012.

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## Appendix B. Strengths and limitations

This report summarises findings from a number of Safe Work Australia data sources. Although most data sources included in this report are national, are based on random sampling and cover a wide range of issues some caveats must be noted.

Due to differences in the study design and the availability of survey weights various data sources are not directly comparable. The report does not provide a reliable source of trends across time in the construction industry. Those two reasons are also why comparisons of workers and employers are limited to findings from the two more comparable Work Health and Safety Perceptions Surveys.

Information on exposures and control measures provided for specific hazards are all self-reported. It is possible that workers may not be aware of the higher order control measures in the workplace such as ventilation. Information on hazard exposures was also limited to the hazards that were included in the NHEWS survey which focussed solely on disease causing hazards. Common safety hazards in construction such as falls from heights, being hit by moving objects and hazards associated with the use of machinery were not included in the NHEWS survey.

The report covered a large amount of information available from seven data sources while attempting to be as concise as possible. Some of the findings and conclusions may appear too simplistic without adequate evidence to back them up. Interested readers are referred to original project reports in Appendix A for further information. It is noted that the original project reports from the six surveys are general and are not focused on the construction industry alone.

# Appendix C. Further detail on NHEWS exposure variables

## How exposure is defined

In addition to the brief descriptions of exposure provide in Table 1, further details for how exposure was defined for each hazard are described below.

### Sun exposure

Exposure to sun generally refers to people who work outside in direct sunlight. However, the definition used in the NHEWS survey also included transport workers and office workers if the sun shone directly on them even though they were indoors or were inside a vehicle. Exposure to direct sunlight was assessed by the NHEWS survey using the following question:

“On a typical day at work last week, how long (hours per day or hours per week) did you work in direct sunlight, with or without protective lotions or clothing?”

In this report, if a worker reported four or more hours of exposure to sunlight per day, they were

classified having sun exposure.

For further details, please see the report on sun exposure from the [NHEWS survey](#).

### Wet work

Exposure to wet work was assessed by two items in the NHEWS survey:

- On a typical day at work last week, how many times did you wash your hands with water, including when using the bathroom?
- On a typical day at work last week, excluding time spent hand-washing, how long (hours per day or hours per week) did you have your hands immersed in or covered by any liquid (including water) with or without gloves?

Those who reported that they washed their hands more than 20 times a day and/or those who reported that they had their hands immersed or covered by any liquid for more than two hours a day were classified as having exposure to wet work in this study.

For further details, please see the report on wet work exposure from the [NHEWS survey](#).

### High biomechanical demands

Worker exposure to individual biomechanical demands was measured in the NHEWS survey by asking respondents about the specific biomechanical demands involved in their work. Responses were on a five point frequency scale (1= Never, 2= Rarely, 3= Sometimes, 4= Often, 5= All the time). Respondents were asked about nine biomechanical demands. These were:

- lifting or carrying heavy loads
- making the same hand or arm movements over and over again (repetitive hand movements)
- work with the body bent forward
- work in a twisted or awkward posture
- work with the hands raised above the head
- work while sitting down
- squatting or kneeling while working
- pushing or pulling using some force, and
- work while standing in one place.

A composite measure reflecting both the intensity and the number of concurrent biomechanical demand exposures was constructed for this report.

This composite measure provides a way of identifying workers with the greatest exposure to a combination of different types of biomechanical demands. The composite exposure score, which was based on a similar analysis conducted for the EU Working Conditions Survey, was created in two steps:

1) The raw composite score for each respondent was calculated by taking the mean of the responses to the nine biomechanical demands. As all the nine biomechanical demand items in the NHEWS survey were measured using the same five point scale (from 5 ‘all of the time’ to 1 ‘never’), the average exposure on a scale of 1–5 is calculated for a composite variable representing combined exposure. The greater the exposure to multiple biomechanical demands and the more intense the exposure, the higher an individual’s composite score would be.

2) For easier interpretation, a standardised score (z-score) was then calculated across the distribution: 0 represents median exposure, a positive score is greater than median exposure and a negative score is less than median exposure, measured in standard deviation units. A positive score indicates higher exposure and can be considered a negative from a worker health and safety perspective. The formula for calculation of z-score is (Gravetter and Wallnau 2009):

The variables in the z-score formula are:

$z$  = z score

$x$  = raw score

$\mu$  = mean of the population

$\sigma$  = standard deviation of the population.

Although it was originally intended to include all nine biomechanical demand items in this composite measure, reliability analysis showed that the Cronbach’s alpha for the 9-item scale was less than ideal (0.653). Generally, an alpha of 0.7 or more is considered acceptable. It was found that removing the item, ‘working while sitting down’, increased the Cronbach’s alpha to 0.809. Therefore, a decision was made to exclude ‘work while sitting down’ from the composite exposure scale. The final composite score contained eight items and excluded ‘sitting down’, a measure of sedentary behaviour.

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It should be noted that this methodology assumes that all biomechanical demands contribute equally to biomechanical hazards and the likelihood of injury. This may not be the case in reality. The presence of multiple biomechanical demands may have a multiplicative effect on injury risk, rather than a summative effect as calculated (by taking the mean) here. Therefore, in terms of the latter assumption, the z score may confer an underestimate of the biomechanical demand exposure health risks of workers.

Workers whose composite z score was in the upper 25th percentile were classified as having exposure to high biomechanical demands.

For further details, please see the report on exposure to biomechanical demands from the [NHEWS survey](#).

### High job demands

Worker exposure to job demands was measured in the NHEWS survey by asking respondents about the specific job demands involved in their work. Responses were on a five point frequency scale (1= Never, 2= Rarely, 3= Sometimes, 4= Often, 5= All the time). Respondents were asked about eight aspects of job demands. These were:

- I am pressured to work long hours
- I have unachievable deadlines
- I have to work very fast
- I am unable to take enough breaks
- I have to neglect some tasks because I have too much to do
- It's hard for me to juggle work requests from different people
- I have to keep track of more than one thing at a time, and
- My work needs my undivided attention.

The job demands score for each respondent was calculated by taking the mean of the responses to the eight items listed above. These items form a job demands scale which has good reliability (Cronbach's alpha= 0.77). Those with the job demands score at the median or higher were classified as having exposure to high job demands.

### Noise

Noise exposure was assessed using the following question:

“On a typical day at work last week, how long did you work in loud noise?”

Loud noise was defined as noise so loud that a person would have to raise their voice to be heard when speaking to people who are at one arm's length away from them. Research suggests that this definition corresponds roughly to an A-weighted background noise level of 85 dB(A) (Ahmed et al. 2004; Neitzel et al. 2009).

In this report, workers who reported exposure to loud noise, regardless of the duration of exposure, were classified as being exposed to noise.

For further details, please see the report on noise exposure from the [NHEWS survey](#).

### Vibration

Exposure to vibration was assessed using the following question:

“On a typical day at work last week, how long did you work with tools, equipment or in vehicles that vibrate?”

Vibration was not defined in the survey. Workers who reported exposure to vibration, regardless of the duration of exposure were classified as being exposed to vibration.

For further details, please see the report on vibration exposure from the [NHEWS survey](#).

### Biological hazards

Exposure to biological hazards was assessed using the following question:

“On a typical day at work last week, how long did you work in places where there were biological materials, such as blood, urine, animal flesh, meat or laboratory cultures?”

Workers who reported that they worked in places where there were biological materials were considered to be exposed to biological hazards in their workplace.

For further details, please see the report on exposure to biological materials from the [NHEWS survey](#).

### Chemical hazards

Exposure to chemicals was assessed using the following question:

“On a typical day at work last week, how long did you work with chemicals such as cement, cleaning products, disinfectants, solvents, resins, paints, pesticides or other chemical substances?”

Workers who reported working with chemicals regardless of the duration of exposure were classified as being exposed to chemical hazards.

For further details, please see the report on chemical exposures from the [NHEWS survey](#).

### Airborne hazards

The specific questions relating to exposure to airborne hazards were as follows:

- On a typical day at work last week, how long (hours per day / hours per week) did you work in a place where your work or other people's work created dust or made the air dusty?
- On a typical day at work last week, how long (hours per day / hours per week) did you work in a place where there were gases, vapours, smoke or fumes?

Workers who reported exposure to either dust or gases, vapours, smoke or fumes, regardless of the duration of exposure, were classified as being exposed to airborne hazards.

For further details, please see the report on airborne hazards from the [NHEWS survey](#).