

# Procedure

## Work Health and Safety

## Fatigue Management

Document number: PRO-00696

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Rev no.	Description	Process Owner			Approved for issue			
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## 1. Purpose

Seqwater is committed to the health and safety of all people at the workplace. The purpose of this procedure is to establish a systematic process to identify and manage work health and safety (WHS) risks associated with fatigue at Seqwater workplaces.

This procedure forms part of the Fit4Work Program established by the Health, Wellbeing and Fitness for Work Procedure ([PRO-01577](#)). It also supports the requirements outlined in Element 12 – Health, wellbeing and fitness for work of Seqwater’s Work Health and Safety Management System Framework ([MAN-00211](#)).

This procedure adopts and is consistent with the requirements of the *Work Health and Safety Act 2011* (Qld)

## 2. Scope

This procedure applies to all Seqwater workers, business groups and work activities.

## 3. Roles and responsibilities

Role	Responsibilities
Managers	<ul style="list-style-type: none"> <li>Utilise a risk assessment process to identify and manage any risks associated with fatigue within their area of responsibility.</li> <li>Consult with workers during the identification and management of risks associated with fatigue.</li> <li>Establish mechanisms to monitor and review controls implemented to manage fatigue within their area of responsibility.</li> <li>Develop a plan for their area of responsibility to manage fatigue during an emergency.</li> <li>Monitor fatigue levels of workers within their area of responsibility.</li> <li>Ensure workers are not placing themselves at risk of injury as result of their levels of fatigue.</li> </ul>
Line Supervisors	<ul style="list-style-type: none"> <li>Support managers to identify fatigue risk factors within their area of responsibility and implement appropriate controls to manage these risks.</li> <li>Monitor fatigue levels of workers within their area of responsibility.</li> <li>Ensure workers are not placing themselves at risk of injury as result of their levels of fatigue.</li> </ul>
WHS Team	<ul style="list-style-type: none"> <li>Support managers with the risk assessment process to identify and manage fatigue related risks.</li> <li>Support managers develop a plan to manage fatigue related risks during an emergency.</li> </ul>

Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Provide tools for managing the identification of fatigue risk factors.</li> <li>• Provide tools to support individuals identify their current fatigue levels.</li> <li>• Undertake activities to support workers identify and manage non-work related fatigue risk factors.</li> </ul>
Workers	<ul style="list-style-type: none"> <li>• Support their manager to identify fatigue risk factors and appropriate controls to manage these risks.</li> <li>• Take responsibility for the management of their own fatigue levels, ensuring they turn up fit for work in a state that enables them to conduct their work in a safe manner.</li> <li>• Notify their line supervisor or manager if they believe their ability to safely undertake their duties is impaired due to fatigue.</li> </ul>

## 4. Procedure

### 4.1 What is fatigue?

Fatigue is a state of mental and/or physical exhaustion which reduces a person's ability to perform work safely and effectively. It can occur because of prolonged mental or physical activity, sleep loss and/or disruption of the internal body clock. Fatigue can be caused by factors which may be work related, non-work related or a combination of both and can accumulate over time.

The following table provides a summary of common causes of fatigue that may need to be considered during the management of risks associated with fatigue.

General causes	Work related causes	Non-work related causes
Inadequate amounts of restorative sleep (less than 7-8 hours)	Poor roster design	Family responsibilities, including sleep disruptions from young babies or ill family members
Long periods of being awake (more than 17 hours)	Extended hours of work and call-out requirements. Second Jobs	Social, community and sporting obligations
Sustained mental or physical effort	Aspect of tasks e.g. greater workload within a standard shift resulting in sustained mental and physical effort, and large amounts of driving	Inappropriate use of alcohol, medication or illicit drugs
Disruption to internal biological clock	Inadequate rest breaks or poor roster design (varies with task)	Stress from financial difficulties or personal relationships

General causes	Work related causes	Non-work related causes
Health and emotional issues	Work environment e.g. noise and temperature extremes, conflict with supervisor, managers or colleagues	Physiological e.g. age, medical or mental health conditions, sleeping disorders

## 4.2 What are the risks associated with fatigue?

Fatigue can adversely affect safety at the workplace. Fatigue reduces alertness, which may lead to errors and an increase in incidents and injuries. As a worker experiences rising fatigue levels, there are corresponding physiological, behavioural and emotional changes that may impact on the ability of a worker to safely undertake work. The following signs or symptoms may indicate a worker is affected by fatigue:

- excessive yawning or falling asleep at work
- short-term memory problems and an inability to concentrate
- noticeably reduced capacity to engage in effective interpersonal communication
- impaired decision-making and judgment
- reduced hand-eye coordination or slow reflexes
- other changes in behaviour, for example repeatedly arriving late for work
- increased rates of unplanned absence.

A fatigued worker may also experience symptoms not obvious to others including:

- feeling drowsy
- headaches
- dizziness
- difficulty concentrating
- blurred vision or impaired visual perception
- a need for extended sleep during days off work.

## 4.3 Management of fatigue

Managers must utilise a risk assessment process in accordance with the Hazard Identification and Risk Management Procedure ([PRO-00657](#)) to identify and manage the risks associated with fatigue. This involves the following steps:

- **STEP 1 – Hazard identification**  
Identify the factors which may cause fatigue in the workplace.
- **STEP 2 – Risk assessment: inherent risk**  
Assess the risks of injury from fatigue.
- **STEP 3 – Control risks**  
Control the risks by implementing the most effective risk control measures reasonably practicable in the circumstances.
- **STEP 4 – Risk assessment with control measures: residual risk**  
Re-assess whether the risks of injury from fatigue are adequately controlled.

- **STEP 5 – Monitor and review control measures**

Review risk control measures to ensure they are working as planned.

When undertaking the risk assessment, it is important for managers to ensure workers are consulted at each of step of the process. This encourages everyone to work together to identify fatigue risk factors and implement effective control measures. Consultation also helps to raise awareness about the risks associated with fatigue.

#### 4.4 Identification of factors that may cause fatigue

The first step in the risk management process is to identify all reasonably foreseeable factors which could contribute to and increase the risk of fatigue. Fatigue is often caused by a number of inter-related factors which can be cumulative. Common factors that may contribute to fatigue are:

- Work schedules which limit the time workers can physically and mentally recover from work. This may include workers who undertake shift work, night work, work extended hours or are not able to take regular breaks.
- Job demands, particularly work that requires extended periods of work that is physically or mentally demanding.
- Sleep, including the length of sleep time, the quality of sleep and the time since sleep.
- Environmental conditions, such as exposure to heat, cold, vibration or noise, can make workers tire quicker and may impair performance.
- Non-work related factors, such as a worker's lifestyle, family responsibilities or health may all increase the risk of fatigue.

Methods that managers may utilise to identify whether there are any of the above risk factors affecting their workers include:

- consulting with workers
- examining work practices and systems of work
- examining human resource records and data such as timesheets, ADO and TOIL balances and overtime payments
- incident data and the findings of incident investigations
- seeking advice and information from the WHS Team or other relevant experts.

#### 4.5 Assessing the risk

Once a manager has identified factors which may cause fatigue, they should undertake an assessment of the risk to consider:

- where, which and how many workers are likely to be at risk of becoming fatigued
- how often fatigue is likely to occur
- the degree of harm which may result from fatigue
- whether existing control measures are effective
- what action should be taken to control the risk of fatigue
- how urgently action to control the risk needs to be taken.

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When assessing risks, contributors to fatigue should not be considered in isolation. For example, job demands, hours of work and environmental conditions may all increase the risk of fatigue in the workplace. The risks of injury from fatigue may increase if workers work long daily hours in a physically or mentally demanding job.

## 4.6 Controlling the risk

The best way to control the health and safety risks arising from fatigue is to eliminate the factors identified as causing fatigue at the source. If elimination is not reasonably practicable, the risks must be minimised. The determination of the most effective controls to manage the risks associated with fatigue should always be identified in consultation with workers where possible.

This section outlines common control measures that may be considered based on the factors identified as contributing to or increasing the risk of fatigue. See Appendix A for a summary of common control measures based on risk factors that may contribute to fatigue.

### 4.6.1 Work scheduling

Control measures for fatigue risks which can be built into the work scheduling may include:

- designing working hours and rosters to allow for good sleep opportunity and enough recovery time between work days or shifts for travelling, eating, washing and sleeping. For employees covered by Seqwater's Enterprise Bargaining Agreement 2016-2019, a minimum nine (9) hour break should be provided between shifts (exclusive of the reasonable travel that is required for the employee to return home)
- ensuring workers have and take adequate and regular breaks to rest, eat and rehydrate
- avoiding scheduling high-risk work during low body clock periods (i.e. between 2am and 6am)
- establishing plans to manage workload change caused by machinery breakdowns or planned and unplanned absences
- managing overtime, shift swapping and on-call duties
- implementing processes to manage accrued leave balances and requests for leave
- considering future rosters and schedules when approving request for leave or shift swaps, and ensuring leave is reflected in rosters
- considering alternative options to face-to-face meetings, for example teleconferencing or video conferencing so workers are not required to spend time travelling to meetings.

### 4.6.2 Shift work and rosters

Consideration should be given to implementing additional specific control measures when planning work schedules and rosters for specific work arrangements, including shift and night work, seasonal, emergencies and on-call arrangements. These may include:

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- structuring shifts and designing work plans so work demands are highest towards the middle of the shift and decrease towards the end
- avoiding morning shifts starting before 6am where possible
- avoiding split shifts or if there is no alternative to split shifts consider their timing, for instance whether they are likely to disrupt sleep
- setting shift rosters ahead of time and avoiding last-minute changes, to allow workers to plan leisure time
- allocating shift and night workers consecutive days off to allow for at least two full nights' sleep
- overlapping consecutive shifts to allow enough time for communication at shift handovers
- minimising overtime allocation after afternoon or night shifts
- consider if night work is necessary and rearrange schedules so non-essential work is not carried out at night
- keeping sequential night shifts to a minimum. If sequential night shifts do need to occur, it is best to group them together in the overall roster cycle, and use a forward rotational shift cycle (mornings – afternoons – evenings – mornings)
- developing plans to manage the risks associated with fatigue during an emergency
- providing information to shift workers including tips for them to prevent and manage the risk of fatigue.

Additional guidance on shift design is available from the *Guide for Managing the Risk of Fatigue at Work* (Safe Work Australia).

### 4.6.3 Job demands

Control measures to prevent or minimise the risk of fatigue associated with job demands can include:

- ensuring fit-for-purpose plant, machinery and equipment is used at the workplace (e.g. ergonomic furniture, lifting equipment)
- redesigning the job to limit periods of excessive mental or physical demands
- considering job rotation to limit a build-up of mental and physical fatigue
- developing contingency plans for potential situations where workers may have to unexpectedly work longer hours, more shifts or a long sequence of shifts
- planning for expected changes in work flow including anticipated peaks and troughs throughout the year.

### 4.6.4 Environmental conditions

Control measures to prevent or minimise the risk of fatigue associated with environment conditions can include:

- avoid working during periods of extreme temperature or minimise exposure time through job rotation
- provide a cool area where workers can take a rest break and rehydrate in hot work environments

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- consider installing ventilation and mechanical cooling devices in hot, small and enclosed spaces
- provide adequate facilities for rest and meal breaks
- install adjustable, low-vibration seats in machinery and vehicles and provide low vibration hand held equipment
- consider the provision of Personal Project Equipment (PPE) such as cool vests
- provide and maintain a workplace which is well lit, safe and secure.

#### 4.6.5 Non-work related factors

Workers have a duty to take reasonable care for their health and safety and this includes enough sleep so they can arrive fit for work. The WHS Team undertake a range of activities to support workers manage non-work related factors that may impact on fatigue. These activities include:

- consulting workers about factors impacting on their personal fatigue levels
- providing education and awareness to workers on the risks associated with fatigue, how it relates to their health and safety duties and strategies to manage their personal fatigue risks
- establishing health and wellbeing programs to address risk factors associated with fatigue.

### 4.7 Review requirements

Once control measures are implemented, managers should establish mechanisms to monitor and review the controls, to ensure they continue to be effective in managing fatigue. Consideration may be given to implementing trial periods for any new work schedules and encouraging workers to provide feedback on their effectiveness.

Managers need to consider the risks associated with fatigue when determining the frequency of reviews, with high-risk hazards needing more frequent assessments. Control measures should also be reviewed when:

- there is any indication risks are not being controlled
- new tasks, equipment, procedures, rosters or schedules are introduced
- changes are proposed to the work environment, working hours, schedules and rosters
- there is an incident due to fatigue at the workplace
- new information regarding fatigue becomes available
- if a health and safety representative requests a review
- every two years.

### 4.8 Call-outs

Should a worker be required to attend call-outs of a volume or duration that prevents their ability to obtain sufficient rest prior to the next shift (i.e. nine (9) hours as per section 4.6.1), their manager should discuss with the worker whether they require a later commencement time for their next shift to allow sufficient time to rest.

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Due consideration should be given by the person requesting the call-out as to the real requirement for the work to be attended to prior to the commencement of the next shift. Consideration should be given to whether there is:

- a health or safety risk to people, plant, property or the environment
- a legislative requirement for the call-out
- a risk to delivering quality water to the community if this work is not undertaken before the following shift.

## 4.9 Fatigue leave

Workers covered by Seqwater's Enterprise Bargaining Agreement 2016-2019 may be entitled to paid leave in circumstances where a nine (9) hour break is not available. Supervisors have the discretionary right to provide additional paid time to an employee, where it is determined that the employee should be given a break from work due to fatigue. Refer to Seqwater's Enterprise Bargaining Agreement 2016-2019 for further information.

## 4.10 Emergencies

### 4.10.1 Planning for an emergency

The nature of Seqwater's business may expose workers to the effects of emergency situations and as such, managers need to plan for the fatigue risks associated with managing these events. This plan should be developed in consultation with workers in their team, along with any other teams that may be involved in managing the event.

The following should be considered when developing this plan:

- establishing an emergency roster which considers the following:
  - numbers of workers
  - skill sets required
  - duration workers are required per day
  - regular rotation of worker to ensure adequate rest and recovery.
- whether people need to be sent home when an emergency is announced to allow sufficient rest time prior to participating in the emergency roster
- whether backfilling arrangements are required for workers that form part of the emergency team
- any transportation requirements, particularly supporting workers to return home following periods of extended work or work that is physically or mentally demanding
- whether facilities should be provided to allow workers to rest or sleep.

### 4.10.2 Management of fatigue during an emergency

At the beginning of an emergency the manager should review their emergency plan with the team to ensure that it will effectively manage the fatigue risk factors

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associated with the emergency. Consideration will also need to be given to the workers who will undertake the roles identified in the emergency roster and whether any workers need to be sent home to participate in the roster at a later time.

In addition, during the emergency the manager should:

- monitor how effective the emergency plan and roster is at managing fatigue levels
- ensure workers participating in the emergency have sufficient food and water to sustain them during the emergency
- instruct workers to take rest breaks during periods where critical work is not required
- ensure workers are not placing themselves at increased risk of injury due to fatigue levels
- encourage workers to speak up about their fatigue levels if they believe there is a risk to the safety of themselves or others
- arrange for alternative methods of transport home for workers at increased risk of injury due to fatigue levels.

## 4.11 Driving and travel

Fatigue slows a driver's reaction time and affects their scanning ability and information processing skills. Driving between the hours of midnight to dawn is especially dangerous, and night shift workers should consider these increased dangers when driving during these times.

Workers driving vehicles to and from work or for long periods of their working day should:

- plan any driving or travel well in advance
- avoid driving after being awake for a continuous period of 17 hours
- avoid driving if they have not accumulated more than five hours sleep in the previous 24 hours or 12 hours sleep in the previous 48 hours
- avoid driving for more than 8-10 hours in any one day
- ensure adequate sleep the night before a long journey
- share driving where possible
- take a rest break from driving of at least 10 minutes every two hours or more frequently if feeling tired
- if concerned about the fatigue risks, consider arranging an alternative method of transport and/or accommodation.

Where work duration reaches 14 hours (including travel time), a worker is to be provided with transport for the return journey to their home, or provided with a suitable place for sleep or rest prior to driving home. Note that manager approval is required prior to any workers undertaking this duration of work.

In addition, Workplace Health and Safety Queensland (WHSQ) provide the following tips to manage fatigue when driving:

- avoid driving when you are tired

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- avoid using the heater as it can make you feel drowsy. In cool conditions direct warmth to your feet, and open the window a little to allow fresh air on your face
- keep your mind active by listening to the radio while driving
- share the drive with other people.

It is important to note that these methods only have an effect for approximately 15 minutes. Therefore, whenever a worker is driving a vehicle and begins to feel fatigued or consider that they are at risk of falling asleep, turning up the radio or relying on cold air should only be used as a method to stay awake until they find a safe place to pull over and rest.

## 5. Training

Training will be provided in accordance with the Training and Competency Management Procedure ([PRO-01574](#)).

## 6. Monitoring and audit

The application of this procedure shall be audited in accordance with the WHS Internal Audit Schedule and the Integrated Management System Internal Audit Procedure ([PRO-00002](#)), however no personal information will be provided to auditors without appropriate authority.

Trend analysis may be reported to management in accordance with the WHS Reporting Procedure ([PRO-01605](#)).

## 7. Record keeping

All records are to be retained, archived and disposed of in accordance with the *Queensland State Archives General Retention and Disposal Schedule for Administrative Records*.

All risk assessments completed to identify and manage fatigue must be stored in TRIM and be accessible to all workers covered by the risk assessment.

## 8. References

### 8.1 Legislation and other requirements

Description	Status	Location
<i>Information Privacy Act 2009 (Qld)</i>	Active	<a href="http://www.legislation.qld.gov.au">www.legislation.qld.gov.au</a>
<i>Guide for Managing the Risk of Fatigue at Work (Safe Work Australia)</i>	Active	<a href="http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/guide-fatigue-at-work">http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/guide-fatigue-at-work</a>

Description	Status	Location
Seqwater Enterprise Agreement 2016-2019	Active	<a href="http://intranet.seqwater.com.au/PageFiles/2989/J006173%20Seqwater%20Enterprise%20Agreement%202016_9.pdf">http://intranet.seqwater.com.au/PageFiles/2989/J006173%20Seqwater%20Enterprise%20Agreement%202016_9.pdf</a>
Work Health and Safety Act 2011 (Qld)	Active	<a href="http://www.legislation.qld.gov.au">www.legislation.qld.gov.au</a>
Work Health and Safety Regulation 2011 (Qld)	Active	<a href="http://www.legislation.qld.gov.au">www.legislation.qld.gov.au</a>

## 8.2 Supporting procedures

Description	Status	Location
<a href="#">PRO-01577</a> Health, Wellbeing and Fitness for Work Procedure	Active	TRIM Ref: D13/70677
<a href="#">PRO-00002</a> Integrated Management System Internal Audit Procedure	Active	TRIM Ref: D13/915
<a href="#">PRO-00657</a> WHS Hazard Identification and Risk Management Procedure	Active	TRIM Ref: D13/61507
<a href="#">MAN-00211</a> WHS Management System Framework	Active	TRIM Ref: D13/43216
<a href="#">PRO-01605</a> WHS Reporting Procedure	Active	TRIM Ref: D13/70792

## 8.3 Supporting documents, forms and templates

Description	Status	Location
WHS Record Keeping Matrix	Active	TRIM Ref: D13/70968

## 9. Definitions

Term	Definitions
Emergency	A situation or occurrence that happens as a consequence of an incident and demands immediate action.
Fatigue	A state of mental and/or physical exhaustion which reduces a person's ability to perform work safely and effectively.
Fit for work	A person is in a state (physical, mental and emotional) that enables them to perform assigned tasks safely, competently and in a manner that does not threaten or compromise the safety or health of themselves or others.
Fit4Work Program	A program that establishes and implements initiatives to address potential risk factors that may cause the impairment of a worker. This includes initiatives such as alcohol and drug monitoring, along with stress and fatigue management strategies.

Term	Definitions
Hazard	A situation that has the potential to harm a person and/or the environment and/or damage property.
Incident	An event or circumstance that could have or did lead to unintended and/or unnecessary harm to a person and/or loss or damage or adverse consequences. This definition of an incident includes near misses.
Line Supervisor	A Line Supervisor is a person with day-to-day supervisory responsibilities for workers within a functional area of the business. A Line Supervisor includes, but is not limited to, Team Leaders, Coordinators and Level 4 or 5 Supervisors. A Line Supervisor is also considered a worker, but has additional responsibilities for the implementation of the WHS Management System as identified in the WHS Management System and/or position description.
Manager	A person with the responsibilities for managing a functional area of the business including the workers within the relevant functional area. This includes, but is not limited to, Level 3 Managers, General Managers and Project Managers. A manager is also considered a worker, however managers may have additional responsibilities for implementation of the WHS Management System as well as any additional responsibilities as an officer of the business.
Risk	Risk is the likelihood and consequence of injury or harm occurring when exposed to a hazard.
Risk control	Means taking action to eliminate health and safety risks so far as is reasonably practicable, and if that is not possible, minimising the risks so far as is reasonably practicable. Eliminating a hazard will also eliminate any risks associated with that hazard.
Worker	Worker means a person who carries out work in any capacity for Seqwater, including work as: <ul style="list-style-type: none"> <li>• a worker</li> <li>• a contractor or subcontractor</li> <li>• a worker of a contractor or subcontractor</li> <li>• a worker of a labour hire company who has been assigned to work at Seqwater</li> <li>• an outworker</li> <li>• an apprentice or trainee</li> <li>• a student gaining work experience</li> <li>• a volunteer</li> <li>• a worker of a prescribed class.</li> </ul>
Workplace	A place where work is carried out by Seqwater and includes any place where a worker goes, or is likely to be, while at work. This includes a vehicle, vessel or other mobile structure.

## Appendix A – Fatigue risk controls

The following table is an extract from the *Guide for Managing the Risk of Fatigue at Work* (Safe Work Australia). It provides additional guidance and support on the identification of risk controls that may be utilised when managing risks associated with fatigue.

Step 1: Hazard identification	Step 2: Risk Assessment	Step 3 Risk Control												
Identify potential hazards and risks at the workplace. Examples of some factors that contribute to fatigue are listed below. Consider these factors in the context of your specific workplace or industry.	To assist risk assessment, a general level of risk for each hazard is indicated along arrow guides. In assessing risk, consider interaction between hazard factors that could influence the level of risk. Also take into account specific workplace/industry circumstances that may influence it.	Where a hazard is assessed as medium/higher risk, consider implementing control measures, such as those outlined in section 2 of this code.												
Factors that contribute to fatigue	General risk indicator for factors that contribute to fatigue	Control measures												
<p><b>Work scheduling and planning hours</b></p> <ul style="list-style-type: none"> <li>▪ Average weekly hours (other than FIFO)</li> <li>▪ Total hours over a three month period (other than FIFO)</li> <li>▪ Daily work hours</li> <li>▪ Daily work hours and work-related travel, including commute</li> <li>▪ Scheduling of work</li> </ul>	<div style="text-align: center; margin-bottom: 10px;"> <span style="margin-right: 100px;">Lower Risk</span> <span style="font-size: 2em;">➔</span> <span>Higher risk</span> </div> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;">35-40 hours (working week)</td> <td style="width: 33%; vertical-align: top;">48 hours (working week)</td> <td style="width: 33%; vertical-align: top;">56 hours (working week)</td> </tr> <tr> <td style="vertical-align: top;">624 working hours</td> <td style="vertical-align: top;">9 working hours</td> <td style="vertical-align: top;">12 working hours</td> </tr> <tr> <td style="vertical-align: top;">10 working hours</td> <td style="vertical-align: top;">13 working hours</td> <td></td> </tr> <tr> <td style="vertical-align: top;">Regular, predictable hours</td> <td colspan="2" style="vertical-align: top;">Irregular and unpredictable hours, short notice of schedule, extended overtime, on call across shift cycle</td> </tr> </table>	35-40 hours (working week)	48 hours (working week)	56 hours (working week)	624 working hours	9 working hours	12 working hours	10 working hours	13 working hours		Regular, predictable hours	Irregular and unpredictable hours, short notice of schedule, extended overtime, on call across shift cycle		<p><b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b></p> <ul style="list-style-type: none"> <li>▪ Scheduling safety critical work outside low body clock periods (i.e. between 2am and 6am)</li> <li>▪ Structure shifts and work plans so that demands are highest towards the middle of the shift and decrease towards the end</li> <li>▪ Use forward rotation roster systems (day-evening-night)</li> <li>▪ Designing working hours and rosters to provide for adequate sleep opportunity (considering time for eating, washing, personal commitments etc.)</li> <li>▪ Monitor actual time worked against the allocated roster and identify if excessive hours are being worked</li> </ul>
35-40 hours (working week)	48 hours (working week)	56 hours (working week)												
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Regular, predictable hours	Irregular and unpredictable hours, short notice of schedule, extended overtime, on call across shift cycle													

Factors that contribute to fatigue	General risk indicator for factors that contribute to fatigue	Control measures															
<p><b>Shift work</b></p> <ul style="list-style-type: none"> <li>▪ Length of shift (other than FIFO)</li> <li>▪ Time of Shift</li> <li>▪ Speed and direction of shift</li> <li>▪ Split shifts and variable shifts</li> </ul>	<p style="text-align: center;">Lower Risk <span style="float: right;">Higher risk</span></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">10 hours</td> <td style="width: 33%; text-align: center;">13 hours</td> </tr> <tr> <td style="text-align: center;">Day Shift</td> <td style="text-align: center;">Afternoon shift</td> <td style="text-align: center;">Night shift</td> </tr> <tr> <td style="text-align: center;">Forward rotation (morning/afternoon/night)</td> <td style="text-align: center;">Backward rotation (night / evening / morning)</td> <td style="text-align: center;">Slower rotation (i.e. weekly / 3-4 weekly rotation)</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">13 hour period</td> </tr> </table>		10 hours	13 hours	Day Shift	Afternoon shift	Night shift	Forward rotation (morning/afternoon/night)	Backward rotation (night / evening / morning)	Slower rotation (i.e. weekly / 3-4 weekly rotation)			13 hour period	<p><b>Additional control measures should be implemented for special work arrangements and include:</b></p> <ul style="list-style-type: none"> <li>▪ Considering sleep opportunity and recovery in instances where workers are required to work on call after a normal shift or on days off</li> <li>▪ Avoiding quick shift changeovers such as finishing at 11am and starting again at 7am</li> <li>▪ Using forward rotation roster systems (day-evening-night)</li> <li>▪ Allocating shift and night workers consecutive days off to allow for at least two full nights rest including some weekends</li> </ul>			
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Day Shift	Afternoon shift	Night shift															
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<p><b>Night work</b></p> <ul style="list-style-type: none"> <li>▪ Shift end (for those working eight hours or more between 10pm and 6am)</li> <li>▪ Sequential night shifts</li> </ul>	<p style="text-align: center;">Lower Risk <span style="float: right;">Higher risk</span></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">After 10pm and before 6am</td> </tr> <tr> <td style="text-align: center;">8 hours</td> <td style="text-align: center;">10 hours</td> <td style="text-align: center;">12 hours</td> </tr> <tr> <td></td> <td style="text-align: center;">6 or more 8 hour shifts</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">5 or more 10 hour shifts</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">4 or more 12 hour shifts</td> <td></td> </tr> </table>			After 10pm and before 6am	8 hours	10 hours	12 hours		6 or more 8 hour shifts			5 or more 10 hour shifts			4 or more 12 hour shifts		<p><b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b></p> <ul style="list-style-type: none"> <li>▪ Planning into work schedules enough workers and other resources to do the job without placing excessive demands on workers</li> <li>▪ Keeping sequential night shifts to a minimum</li> <li>▪ Avoiding overtime allocations after afternoon or night shifts</li> </ul>
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Factors that contribute to fatigue	General risk indicator for factors that contribute to fatigue		Control measures
<b>Breaks</b>			<b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b>
<ul style="list-style-type: none"> <li>▪ Period of non-working following a sequence of night shifts</li> <li>▪ Frequency of breaks during work</li> <li>▪ Recovery time/sleep opportunity between work periods</li> </ul>	<p>48 hours</p> <p>Adequate and regular breaks</p> <p>Adequate time for sleep, travel, meals, etc.</p>	<p>Less than 48 hours</p> <p>Infrequent of no breaks</p> <p>Inadequate time for sleep, travel, meals etc.</p>	<ul style="list-style-type: none"> <li>▪ Ensuring workers have and take adequate and regular breaks so that they can rest, eat and rehydrate</li> <li>▪ Including rest periods in the work schedule and allowing time for controlled sleeping and napping if necessary</li> <li>▪ Designing working hours and rosters to allow for good quality sleep and enough recovery time between work days or shifts for travelling, eating, washing and sleeping</li> </ul>
<b>Job demands</b>			<b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b>
<ul style="list-style-type: none"> <li>▪ Repetition (physical and/or mental)</li> <li>▪ Physical</li> <li>▪ Mental</li> </ul>	<p>Varying task demands</p> <p>Minimal physically demanding work</p>	<p>Highly repetitive work and or high concentration work, with high demands over an extended period of time</p> <p>Highly physically demanding work that results in muscle fatigue</p>	<ul style="list-style-type: none"> <li>▪ Install fit for purpose plant machinery and equipment for use at the workplace</li> <li>▪ Redesign jobs to limit periods of excessive mental or physical demands</li> <li>▪ Introduce job rotation to limit build-up of mental and physical fatigue</li> </ul>
<b>Environmental conditions</b>			<b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b>
<ul style="list-style-type: none"> <li>▪ Exposure to hazardous substances and atmospheric contaminants</li> <li>▪ Exposure to noise</li> <li>▪ Exposure to extreme temperatures</li> <li>▪ Exposure to vibration</li> </ul>	<p>Hazardous substances, low risk calculated using relevant exposure standard</p> <p>- exposure for short duration - low noise levels</p> <p>Short period of exposure</p> <p>Short period of exposure</p>	<p>For hazardous substances, high risk calculated using relevant exposure standard</p> <p>- exposure for long duration - high noise levels</p> <p>Long period of exposure</p> <p>Long period of exposure</p>	<ul style="list-style-type: none"> <li>▪ Avoid working during periods of extreme temperature</li> <li>▪ Install heating devices in cold work environments or provide access to cooled areas</li> <li>▪ Install fit for purpose machinery (low noise)</li> <li>▪ Install cooling devices in hot work environments like truck cabins and ensure shelters for shade are available in hot work environments</li> <li>▪ Install adjustable, low vibration seats in appropriate machinery and vehicles and provide low vibration hand held equipment</li> <li>▪ Taking reasonable steps to ensure the workplace and</li> </ul>

Factors that contribute to fatigue	General risk indicator for factors that contribute to fatigue	Control measures		
		surroundings are well lit, safe and secure		
<b>Individual and lifestyle</b>		<b>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</b>		
<ul style="list-style-type: none"> <li>▪ Sleep (amount and quality)</li> <li>▪ Health and wellbeing</li> <li>▪ Social life</li> <li>▪ Family responsibilities</li> <li>▪ Other work commitments (for example having a second job)</li> </ul>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p> </td> </tr> </table>	<p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p>	<p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p>	<ul style="list-style-type: none"> <li>▪ Consulting with workers and designing shift rosters that enable workers to meet work and personal commitments</li> <li>▪ Developing a fitness for work policy and consider implementing health and fitness programs</li> </ul>
<p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p>	<p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p>			