



Australian Government

Department of Education, Employment and Workplace Relations

PSPSOHS607A Advise on application of safe design principles to control OHS risk

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Modification History

Release	TP Version	Comments
3	PSP12V1	Unit descriptor edited.
2	PSP04V4.2	Layout adjusted. No changes to content.
1	PSP04V4.1	Primary release.

Unit Descriptor

This unit covers the knowledge and skills required of the occupational health and safety (OHS) practitioner to advise on applying safe design principles to control OHS risk during a product's life cycle.

In practice, advising on the application of safe design principles to control OHS risk may overlap with other generalist or specialist public sector work activities such as promoting ethical practice, applying government systems, influencing opinion, fostering leadership, managing resources, managing compliance with legislation.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

The central feature of safe design is the application of relevant information and data about human capabilities and behaviour to the design of objects, facilities, procedures and environments that people use.

Units PSPSOHS504A Apply principles of OHS risk management, and PSPSOHS505A Manage hazards in the work environment, provide useful underpinning knowledge and skills for this unit. Knowledge of systematic approaches to managing OHS also underpins this unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Advise on the OHS requirements of the design process	1.1 Organisation decision makers are made aware of their responsibility for the safety of downstream users and beneficiaries. 1.2 Decision makers are advised of their obligation under law to design and supply a safe designed product by eliminating OHS hazards and controlling for residual OHS risk. 1.3 OHS is promoted within the design requirements and includes an overall risk evaluation of the designed product's life cycle. 1.4 The most current knowledge of OHS principles, materials, technology and systems is sourced and made available for application in the design of the product. 1.5 Required education and training to enable decision makers to have the necessary skills and knowledge to identify and eliminate OHS hazards, and to control OHS risk in the design phase, is identified and made available. 1.6 Relevant sources of information and data are identified and accessed, in particular equipment users. 1.7 Potential users of the equipment are consulted during the design phase. 1.8 Situations are identified where specialist advisers may be required.
2. Develop a systematic hazard identification and OHS risk evaluation system for safe design	2.1 OHS hazards are identified and associated risks are analysed across the <i>life cycle</i> of the designed product. 2.2 A systematic analysis of the likelihood and consequences of injury or illness arising from exposure to identified OHS hazards guides the selection and implementation of the most appropriate OHS risk controls for the designed product. 2.3 Hazard identification and risk analysis includes potential alterations to the designed product during its life. 2.4 Decision making during the OHS risk evaluation process is documented and made accessible to all parties. 2.5 A residual risk register is established, recording OHS hazards not eliminated in the design together with possible control strategies, and distributed to those involved in the downstream or subsequent life cycle stages. 2.6 The design is monitored as it evolves to identify potential new OHS hazards and to manage risks if they become evident.
3. Advise on principles of OHS risk control	3.1 Design to minimise risk is based on the hierarchy of control. 3.2 The designed product includes fail-to-safe action to minimise the impact of possible failure or defect.
4. Advise on	4.1 Decision makers are advised to consider the range of people

ELEMENT	PERFORMANCE CRITERIA
consultation processes between people involved in the life cycle of the designed product	who will use or interact with the designed product. 4.2 Consultation between all parties is arranged during the concept and detailed design phases to identify and eliminate OHS hazards and minimise risk. 4.3 Residual OHS risk in the designed product is communicated appropriately to those who will use or interact with the designed product throughout its life cycle.
5. Advise on contractual arrangements and procurement systems to minimise 'purchased' OHS risk	5.1 Decision makers involved in purchasing and contractual arrangements are advised to include a requirement to eliminate OHS hazards, minimise OHS risks, and provide information and data on residual OHS risk. 5.2 The design brief or draft specifications include an agreement to carry out a Safe Design approach.

Required Skills and Knowledge

This section describes the essential skills and knowledge and their level, required for this unit.

Required skills:

Look for evidence that confirms skills in:

- relating to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- communicating effectively with personnel at all levels of organisation and OHS specialists and, as required, emergency service personnel
- preparing reports for a range of target groups including OHS committee, OHS representatives, managers, supervisors and other stakeholders
- achieving change using project management processes
- managing own tasks within time frame
- using consultation and negotiation skills, particularly in relation to developing plans and implementing and monitoring designated actions
- contributing to the assessment of the resources needed to systematically manage OHS and, where appropriate, access resources
- analysing relevant workplace information and data, make observations including of workplace tasks and interactions between people, their activities, equipment, environment and systems
- using a range of communication media
- conducting effective formal and informal meetings
- using information and data gathering techniques such as brainstorming, polling, interviews
- using language and literacy skills appropriate to the workgroup and the task
- using computer and information technology skills to access internal and external information and data on OHS
- undertaking basic research to access relevant information and data
- paying attention to detail when making observations and recording outcomes.

Required knowledge:

Look for evidence that confirms knowledge and understanding of:

- roles and responsibilities under OHS legislation of employees including supervisors, contractors, OHS inspectors etc
- responsibilities of designers etc under OHS legislation
- principles of duty of care including concepts of causation, foreseeability, preventability
- legislative requirements for OHS information and data, and consultation
- difference between hazard and risk
- risk as a measure of uncertainty and the factors that affect risk
- requirements under hazard-specific OHS legislation and codes of practice
- principles of incident causation and injury processes

- human error and implications for design of equipment, work practices and controlling ergonomic hazards
- the basics of anthropometry and biomechanics
- basic human cognitive and perceptual capabilities relevant to the design of human/machine interfaces
- risk factors for manual handling injury and risk assessment techniques for manual handling
- principles of human behaviour and response to interactions with human, physical and task environment to identify psychosocial hazards
- direct and indirect influences that impact on OHS and the environment in the design of product/s
- interdependent relationships between ergonomics and workplace stressors such as psychosocial factors, occupational violence, shiftwork, repetitive work, awkward postures, lighting, thermal
- hierarchy of control and considerations for choosing between different control measures, such as possible inadequacies of particular control measures
- knowledge of a range of risk analysis/assessment techniques and tools and the application and limitations of those techniques and tools
- standard industry controls for a range of hazards
- strategies for minimising risk through application of ergonomic design and engineering, work layout, work processes, work organisation
- types of hazard identification tools including JSA
- pertinent sections of relevant Australian and other standards such as AS/NZS 4360: Risk management, National Standard for the Storage and Handling Workplace Dangerous Goods [NOHSC: 1015] and National Standard for Manual Handling [NOHSC: 1001]
- principles and practices of a systematic approach to managing OHS
- range of risk analysis/assessment techniques and tools and their application and limitations
- internal and external sources of OHS information and data
- how the characteristics and composition of the workforce impact on risk and the systematic approach to managing OHS e.g.
 - labour market changes
 - structure and organisation of workforce e.g. part-time, casual and contract workers, shift rosters, geographical location
 - language, literacy and numeracy
 - communication skills
 - cultural background/workplace diversity
 - gender
 - workers with special needs
- organisational behaviour and culture as it impacts on OHS and on change

- ethics related to professional practice
- professional liability in relation to providing advice
- key personnel, including identifying 'change agents', within workplace management structure
- formal and informal communication and consultation processes and key personnel related to communication

Evidence Guide

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The Evidence Guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the unit descriptor, performance criteria, The range statement and the Assessment Guidelines for the Public Sector Training Package.

Units to be assessed together

Co-assessed units that may be assessed with this unit to increase the efficiency and realism of the assessment process include:

- PSPETHC601B Maintain and enhance confidence in public service
- PSPGOV605A Persuade and influence opinion
- PSPLEGN601B Manage compliance with legislation in the public sector
- PSPMNGT608B Manage risk
- PSPSOHS603A Analyse and evaluate OHS risk
- PSPSOHS604A Apply ergonomic principles to control OHS risk.

Overview of evidence requirements

In addition to integrated demonstration of the elements and their related performance criteria, look for evidence that confirms:

- knowledge requirements of this unit
- skill requirements of this unit
- application of employability skills as they relate to this unit.

Resources required to carry out assessment

Resources essential for assessment include:

- legislation, policy, procedures and protocols relating to the application of safe design principles to control OHS risk
- workplace documentation, case studies and workplace scenarios to capture the range of situations likely to be encountered when advising on the application of safe design principles to control OHS risk.

Where and how to assess evidence

Valid assessment of this unit requires:

- a workplace environment or one that closely resembles normal work practice and replicates the range of conditions likely to be encountered when advising on the application of safe design principles to control OHS risk, including coping with difficulties, irregularities and breakdowns in routine
- provision of advice on the application of safe design principles in a range of 3 or more contexts or occasions, over time.

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Assessment methods should reflect but not exceed workplace demands, such as literacy, and the needs of individuals who might be disadvantaged.

Assessment methods suitable for valid and reliable assessment of this unit must use authenticated evidence from the workplace and/or training courses and may include a combination of two or more of:

- workplace projects
- simulation or role plays
- case studies and scenarios
- observation.
- portfolios.

The assessment environment should not disadvantage the candidate and where the person has a disability the principle of reasonable adjustment should be applied during assessment.

For consistency of assessment

Evidence must be gathered over time in a range of contexts to ensure the person can achieve the unit outcome and apply the competency in different situations or environments.

Range Statement

• RANGE STATEMENT

The range statement provides information about the context in which the unit of competency is carried out. The variables cater for differences between States and Territories and the Commonwealth, and between organisations and workplaces. They allow for different work requirements, work practices and knowledge. The range statement also provides a focus for assessment. It relates to the unit as a whole. Text in ***bold italics*** in the Performance criteria is explained here.

Decision makers may include

- any party with influence over the specifications of the designed product including but not limited to the designer, client or commissioning agent, financier, manufacturer, supplier, purchaser, installer, user, insurer, importer, erector, maintainer and regulator, and employees of these agents

Design

- is the process of bringing together innovation, aesthetics and functionality to plan and create a product, process or system to meet the artistic, industrial or performance requirement of an individual or group; and
- involves a series of activities where an idea is conceived, shaped, developed, produced and then acted upon to produce a designed product; and
- includes any subsequent alteration of a designed product such as redesign or retrofit

A hazard is

- a source or situation with a potential for harm in terms of human injury or ill health, damage to property or the environment, or a combination of these

Residual OHS risk is

- that risk that is unable to be designed out of the product

Sources of information and data may include

- international and Australian standards, codes of practice and guidance material
- industry advisory bodies
- government and other advisory bodies such as CSIRO, National Health and Medical Research Council, National Occupational Health and Safety Commission (NOHSC), Australian Consumers Association
- Commonwealth, state and territory OHS and other regulatory bodies
- research literature
- NOHSC National Standard for Manual Handling, code of practice and associated guidance material
- Australian and international anthropometric databases
- professional associations such as Ergonomics Society of Australia, Institute of Engineers Australia, Safety Institute of Australia

	• employer groups and unions
Specialist advisers may include	• engineers (such as design, acoustic, safety, mechanical, chemical, civil) • architects, interior designers and builders • design professionals • drafts people, quantity surveyors and surveyors • building surveyors and certifiers • occupational hygienists • specialist ergonomists • health professionals • legal practitioners • insurers • technical professionals • maintenance and trades personnel • manufacturers • suppliers and distributors • workplace trainers and assessors
Risk is	• the chance of something happening that will result in injury or damage • measured in terms of consequences (injury or damage) and likelihood of the consequence
Risk analysis involves	• defining the range of consequences • assessing the effectiveness of existing controls • deciding the likelihood of each consequence • combining these in some way to obtain a level of risk
Life cycle of the product includes	• design, construction/manufacture, supply/installation, use, maintenance/servicing, decommissioning/dismantling and disposal • life cycle cost considerations may also include environmental clean up and redesign/retrofit
Likelihood refers to	• the probability of an event occurring
Consequence refers to	• the injury or damage outcome of an event which may be expressed quantitatively or qualitatively; it should include an estimate of cost of injury or ill health
OHS risk evaluation involves	• comparison of risk with pre-established criteria for tolerance (or as low as reasonably achievable) and the subsequent ranking of risks requiring control
Documentation of risk	• methods used

evaluation should include

- groups involved/consulted
- description of consequences and their likelihood
- information and data used in estimates
- assumptions
- effectiveness of existing controls
- uncertainty in analysis
- factors affecting level of risk
- further information and data, and investigation required

<i>A risk register is</i>	• a list of the risks including: • scenarios or circumstances under which damage or injury may occur • possible consequences or outcomes in terms of injury or damage • an indication of the likelihood of the consequence/s occurring
<i>Hierarchy of control means developing risk controls within the following priority order</i>	• eliminate the hazard • and where this is not practicable, minimise risk by: • substitution • isolating the hazard from personnel • using engineering controls • using administrative controls (eg procedures, training) • using personal protective equipment (PPE)
<i>Fail-to-safe action ensures</i>	• that if there is a failure or defect in the product or another factor such as loss of power, then the product is left in a safe condition
<i>Parties for consultation may include</i>	• user • manufacturer • designer • builder • importer • supplier and/or distributor • installer • maintenance agencies • contractors • commissioning agent • disposer
<i>Purchasing and contractual arrangements may include</i>	• specifications • statement of work • supplier pre-qualification • tender documentation • purchase order
<i>Design brief or draft specifications may include</i>	• form or outline of document for design brief • instructions • technical requirements or specifications for a designed product, structure, item, systems or process
<i>Safe Design is</i>	• a design process that eliminates hazards or minimises

potential risk to health and safety by involving decision makers, and considers OHS risks throughout the life cycle of the designed product

- a Safe Design approach will generate a design option that eliminates OHS hazards or minimises the risks to those that make the product and those that use it

Unit Sector(s)

Not applicable.

Competency field

Competency field

Specialist Occupational Health&Safety