Guide to Standards - Occupational Health & Safety
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Introduction

This guide provides information on Standards, Certification schemes and other industry specific information that can be used by organizations to manage areas relating to Occupational Health and Safety (OHS) including risk management, slip hazards, evacuation of buildings, safety and ergonomics.

The publications recommended in this guide provide a framework for organizations with Occupational Health and Safety (OHS) and related obligations. Using these Standards may help your organization implement robust and compliant systems and processes, based on industry ‘good practice’.

With the new national Work Health & Safety Act (WHS Act) commencing January 2012, harmonising Australia’s OHS legislation, Australian Standards® can also be used as the foundation on which to build a single, unified OHS system across an organization, regardless of the states or territories in which it operates. When it comes to good practice, an Australian Standard® is your ‘industry expert’.

If you want to understand the new WHS Act; the differences between the old and new legislation and the implications for your business, you can refer to our new 'Sheriff's Work Health & Safety Law Guide'. For more information on this service please contact Customer Service on:
Phone: 131 242 (Press 1)
Email: sales@saiglobal.com

Disclaimer: The information contained in these pages is provided by way of indicative guidance only and SAI Global Limited does not represent that it is accurate or complete or suitable for any particular specific purposes. The onus remains with users to satisfy themselves of their requirements and needs for their own particular circumstances.
OHS Management Certification

OHS management Standards can be used to enable organizations to formulate policies and objectives, taking into account legislative requirements and processes used to manage different types of health and safety risks.

The Certification Standard for OHS management systems is AS/NZS 4801:2001, Occupational health and safety management systems – Specification with guidance for use. This Standard assists organizations with:

- clarification and registration of an OHS management system for certification;
- implementation, maintenance and improvement of an OHS management system;
- assurance and conformance with its stated OHS policy; and
- demonstrating compliance to OHS regulations.

Information on procedures that can be followed to develop, manage and implement an OHS management system to AS/NZS 4801:2001 is included in AS/NZS 4804:2001, Occupational health and safety management systems – General guidelines on principles, systems and supporting techniques.


OHS Online Training & Awareness

The SAI Global Online Compliance & Ethics learning to improve compliance provides information on OH&S policies, procedures, values and best practice principles to widely dispersed employees and business partners consistently. Full tracking and reporting gives you proof of completion for audit purposes.

Please contact the Compliance Division for more detailed information on the OH&S training solutions available:
Phone: 1300 513 107
Email: enquiry.asiapac@saiglobal.com

Environmental Management Systems (EMS)

Organizations requiring comprehensive information on environmental management should follow the requirements outlined in AS/NZS 14000 Set (CD):2005, Environmental Management Standards Set on CD. This set provides a powerful set of tools to help establish a successful Environmental Management System and it includes:

- AS/NZS ISO 14001:2004, Environmental management systems – Requirements with guidance for use specifies requirements for an Environmental Management System (EMS) to enable an organization to develop and implement objectives which take into account requirements about significant environmental aspects.
• AS/NZS ISO 14004:2004, Environmental management systems – General guidelines on principles, systems and support techniques provides guidelines and a commentary to the principles outlined in AS/NZS ISO 14001:2004 as well as a table which summarizes the potential environmental impacts of products and services provided by organizations in different types of industries.

• AS/NZS ISO 14015:2003, Environmental management – Environmental assessment of sites and organizations (EASO) summarizes responsibilities for all parties undertaking environmental assessments as well as diagrams outlining recommended environmental assessment procedures.

• AS/NZS ISO 14031:2000, Environmental management – Environmental performance evaluation – Guidelines includes a summary of key indicators used by organizations to assess their environmental performance as well as detailed information on risk assessment and life cycle assessment processes used by organizations to assess their environmental performance.


• AS/NZS ISO 14042:2001, Environmental management – Life cycle assessment – Life cycle impact assessment includes detailed information on impact categories, category indicators and their effects on life cycle assessment systems.


• AS/NZS 19011:2003, Guidelines for quality and/or environmental management systems auditing.

The SAI Global Environment, Health & Safety Software provides a framework for managing EH&S performance as well as a central repository for all of your preventative and reactive data. Please contact the Compliance Division for more more information on this software:
Phone: 1300 513 107
Email: enquiry.asiapac@saiglobal.com

Risk Management

Information on risk management processes and techniques that can be used to control different types of OHS issues are included in:

• AS/NZS ISO 31000:2009, Risk management – Principles and guidelines
• HB 158-2010, Delivering assurance based on ISO 31000-2009 – Risk management – Principles and guidelines
• HB 327-2010, Communicating and consulting about risk (Companion to AS/NZS ISO 31000:2009)
Quality Management

The main quality management Standard is AS/NZ ISO 9001:2008, Quality management systems – Requirements. This Standard reflects an integrated approach to management system Standards. The HB 90 Series are excellent companion guides to AS/NZS ISO 9001:2000. There are also a number of other publications relating to quality management on the SAI Global Infostore.

Planning for Emergencies

AS 3745-2010, Planning for emergencies in facilities outlines the minimum requirements for the establishment, validation and implementation of an emergency plan for a facility to provide for the safety of occupants of that facility and its visitors leading up to, and during an evacuation.

AS 4083-2010, Planning for emergencies - Health care facilities sets out the procedures for health care facilities in the planning for, and responses to, internal and external emergencies. It also specifies response colour codes for use in a specific emergency.

Alarms and Warning Systems

Ergonomic requirements for control rooms used to operate and monitor different types of security systems are covered by the information that is included in the ISO 11064, Ergonomic design of control centres Series.

Closed Circuit Television Systems

Information for operators of Closed Circuit Television (CCTV) systems is included in AS 4806.1-2006, Closed circuit television (CCTV) – Management and operation. Also included in this Standard is information on training and screening requirements for personnel operating these types of systems.

Signalling and performance requirements for different types of CCTV systems are outlined in:

- AS 4806.2-2006, Closed circuit television (CCTV) – Application guidelines
- AS 4806.3-2006, Closed circuit television (CCTV) – PAL signal timings and levels
- AS 4806.4-2008, Closed circuit television (CCTV) – Remote video

The AS 4806, Closed circuit television (CCTV) Series are all also available as AS 4806 Set-2008.
Intruder Alarms

Intruder alarm systems should conform to the requirements that are included in the AS/NZS 2201, Intruder alarm systems Series which are also available as AS/NZS 2201 Set:2008.

Security classification requirements for different types of intruder alarm systems and details on recommended environmental conditions for control rooms operating intruder alarm systems are included in AS/NZS 2201.1-2007, Intruder alarm systems – Clients premises – Design, installation, commissioning and maintenance.

Automatic Fire Detection and Emergency Intercommunication

Automatic fire detection systems located in different types of buildings should be designed, installed, operated and commissioned by following the information that is included in the publications listed below:

- AS 1670.1-2004, Fire detection, warning, control and intercom systems - System design, installation and commissioning – Fire
- AS 1670.3-2004, Fire detection, warning, control and intercom systems – System design, installation and commissioning – Fire alarm monitoring

Sound systems used with fire detection and EWIS systems should conform to the requirements that are outlined in AS 1670.4-2004, Fire detection, warning, control and intercom systems - System design, installation and commissioning - Sound systems and intercom systems for emergency purposes. Recommended noise levels for sound systems used with these types of systems are also included in this Standard.

Control equipment used with automatic fire detection and EWIS systems should be tested to the AS 4428, Fire detection, warning, control and intercom systems Series.

Protection Against Fire

Information on marking and location requirements for the following types of fire protection equipment can be found in:

- Fire Hydrants
  AS 2419.1-2005, Fire hydrant installations – System design, installation and commissioning
- Fire Extinguishers and Fire Blankets
  AS 2444-2001, Portable fire extinguishers and fire blankets – Selection and location
- Automatic Fire Alarms
  AS 1670.1-2004, Fire detection, warning, control and intercom systems – System design, installation and commissioning – Fire
- Pumpsets
  AS 2941-2008, Fixed fire protection installations – Pumpset systems
- Fire Doors
  AS 1905.1-2005, Components for the protection of openings in fire-resistant walls – Fire-resistant doorsets
- Fire extinguishers
  AS/NZS 1841, Portable fire extinguishers Series

Lighting Levels

Lighting levels for tasks undertaken in different types of environments is included in the AS/NZS 1680, Interior lighting Series.
Specifically, information on recommended indoor lighting (lux) levels for different types of tasks is included in AS/NZS 1680.1:2006, Interior and workplace lighting – General principles and recommendations and lighting requirements for stairs and similar types of commonly used access areas are included in AS/NZS 1680.2.1:2008, Interior and workplace lighting – Specific applications – Circulation spaces and other general areas.

Information on recommended floodlighting levels for residential, commercial and industrial areas is included in AS 4282-1997, Control of the obtrusive effects of outdoor lighting.

Information on lighting levels for open-top car parks is included in AS/NZS 1158.3.1:2005, Lighting for roads and public spaces - Pedestrian area (Category P) lighting - Performance and design requirements. Information on recommended lighting levels for roof-top car parks is included in AS/NZS 1680.1:2006.

Outdoor lighting levels for areas where different types of sporting and recreational activities are undertaken are included in the AS 2560, Sports lighting Series and HB 49, Sporting Facilities Manual Series.

**Air Quality**

Indoor air quality and contaminant levels for buildings can be determined by following the engineering methods described in AS 1668.2 -2002, The use of ventilation and airconditioning in buildings - Ventilation design for indoor air contaminant control. This Standard is based on determining airflow levels by using dilution indices.

**Slip Resistance**

Information on pendulum and ramp (R) slip resistance tests for surfaces are included in AS/NZS 4586:2004, Slip resistance classification of new pedestrian surface materials and AS/NZS 4663:2004, Slip resistance measurement of existing pedestrian surfaces. Information on recommended pendulum and ramp slip resistance ratings for areas in different types of is included in b. This Standard also includes a list of recommended pendulum and ramp slip resistance levels for stairs.

**Recording Workplace Injuries**

Workplace injuries can be recorded and coded by the following the information that is included in:

- AS 1885.1-1990, Measurement of occupational health and safety performance – Describing and reporting occupational injuries and diseases (known as the National Standard for workplace injury and disease recording)

Information on methods used to calculate loss-time injuries are also included in these Standards.

**Ergonomics**

Ergonomics can be broadly defined as the ‘study and collection of data relating to people and their interactions with workplace environments’.
Concepts covering anthropometrics (physical sizing of the human body) and ergonomics are covered in HB 59-1994, Ergonomics – The human factor – A practical approach to work systems design. This Handbook deals with human physical capabilities, and physiological and work organizational factors. It also includes tables listing anthropometric estimates for British adults. Detailed information on commonly used display systems used with equipment and machinery located in workplaces is also included in HB 59-1994.

**Office Environments**

Good practices that should be followed when using the following types of equipment is included in:

- **Workstations – Visual Display Units (VPU)**
  AS 3590.1-1990, Screen-based workstations – Visual display units

- **Workstations – Input devices such as keyboards and mouses**
  AS 3590.3-1990, Screen-based workstations – Input devices

- **Workstations – Panel systems**
  AS/NZS 4443:1997, Office-panel systems – Workstations

- **Office Desks**
  AS/NZS 4442:1997, Office desks

- **Office Chairs**
  AS/NZS 4438:1997, Height adjustable swivel chairs

The ISO 9241-300, Ergonomics of human-system interaction Series cover requirements for new types of technologies and tasks that may be undertaken in different types of workstations using light-emitting diodes (LED), organic light-emitting diodes (OLED) and surface-condition electron-emitter displays (SED) technologies. The European editions of these Standards are I.S. EN ISO 9241-300 Series.

Detailed information on methods that can be used to assess visual ergonomic requirements for different types of display systems is included in ISO 9241-304:2008, Ergonomics of human-system interaction – Part 304: User performance test methods for electronic visual displays.

Office environments should also have appropriate lighting levels, please see the [Lighting] section for more information.

**Ventilation Standards**

Information on ventilation levels for computer rooms and examples illustrating methods used to determine airflow levels for offices found in AS 1668.2-2002, The use of ventilation and airconditioning in buildings – Ventilation design for indoor air contaminant control.

**Computer Control Centres**

Unique environmental and ergonomic conditions apply to computer rooms and control centres and information on different environmental classes for these areas is included in AS 2834-1995, Computer accommodation. More recent information on recommended lighting, ventilation and acoustic requirements for different types of control centres is included in I.S. EN ISO 11064-6:2005, Ergonomic design of control centres – Part 6: Environmental requirements for control centres.

**Hot and Cold Environments**

Persons working in hot and cold environments can adopt different types of management strategies described in:

- ISO 11079:2007, Ergonomics of the thermal environment - Determination and interpretation of cold stress when using required clothing insulation (IREQ) and local cooling effects (identical to I.S. EN ISO 11079:2007)
ISO 12894:2001, Ergonomics of the thermal environment – Medical supervision of individuals exposed to extreme hot or cold environments (identical to I.S. EN ISO 12894:2001)


I.S. EN 342:2004, Protective Clothing – Ensembles And Garments For Protection Against Cold

ASTM F2732-09, Standard Practice for Determining the Temperature Ratings for Cold Weather Protective Clothing

ISO 7243:1989, Hot environments – Estimation of the heat stress on working man, based on the WBGT-index (wet bulb globe temperature)

ISO 15265:2004, Ergonomics of the thermal environment – Risk assessment strategy for the prevention of stress or discomfort in thermal working conditions

### Safety Signs

**Workplace Safety Signs**

AS 1319-1994, Safety signs for the occupational environment includes details on requirements for:

- Regulatory Signs
- Hazard Signs
- Emergency Information Signs
- Fire Signs

All signs are required to have colours conforming to the munsell system that is included in **AS 2700-2011, Colour standards for general purposes**. The hard copy edition of this Standard also includes a colour chart. A table listing designations for colours used to create different types of safety signs is included in **AS 1319-1994**.

Reflective properties for colour signs can be determined by following the methods described in **AS/NZS 1906.1:2007, Retroflective materials and devices for road traffic control purposes – Retroflective sheeting**.

ISO 7010:2011, Graphical symbols – Safety colours and safety signs – Registered safety signs includes examples of workplace health and safety symbols that are not included in **AS 1319-1994**. Configurations and colour requirements for the types of colours described in **ISO 7010-2011** are also included in **ISO 3864-1:2011, Graphical symbols – Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings**.

AS 1318-1985, Use of colour for the marking of physical hazards and the identification of certain equipment in industry (known as the SAA Industrial Safety Colour Code) (incorporating Amdt 1) establishes requirements for the use of certain colours for the following:

- Marking of physical hazards
- Identification of equipment and machinery that may cause hazards in workplaces
- General signs

Typically, the principles described in this Standard apply in cases where different types of plant equipment (e.g. industrial trucks) may be used in workplaces. This Standard also includes a table listing different types of safety colours which are included in the colour chart that is supplied with the hard copy edition of **AS 2700-2011**.
Emergency Escape Lighting

Emergency luminaires (also known as exit signs) used in buildings should be designed, installed, located and maintained by following the information that is included in AS 2293.1-2005, Emergency escape lighting and exit signs for buildings - System design, installation and operation and AS/NZS 2293.2:1995, Emergency evacuation lighting for buildings - Inspection and maintenance. An example of the ‘Running Man’ exit sign is included in AS 2293.3-2005, Emergency escape lighting and exit signs for buildings – Emergency escape luminaires and exit signs.

Symbols for Pipelines, Conduits and Ducts

Pipelines, conduits and ducts should be marked by following the practices described in AS 1345-1995, Identification of the contents of pipes, conduits and ducts. The colours described in this Standard are available in the colour chart that is supplied with the hard copy edition of AS 2700-2011.

Symbols for Equipment and Machinery

There are a number of symbols that are used to designate requirements for specific types of equipment and machinery. These symbols can also be used to represent risks associated with the use of different types of equipment and machinery. A comprehensive overview of symbols used to represent requirements for different categories of equipment and machinery is included in AS 60417, Graphical symbols for use on equipment Series.

Electrical Equipment

A summary of common symbols used to represent requirements for different types of electrical equipment is included in AS/NZS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules). A complete list of electrical symbols is included in the AS/NZS 1102, Graphical symbols for electrotechnical documentation Series.

Symbols representing requirements for different types of industrial and related types of electrical equipment are included in AS/NZS 3100:2009, Approval and test specification - General requirements for electrical equipment and AS 60204.1-2005, Safety of machinery – Electrical equipment of machines – General requirements (IEC60204-1, Ed. 5 (FDIS) MOD).

Information on marking and labelling requirements for different types of household and related types of electrical equipment are included in AS/NZS 60335.1:2002, Household and similar electrical appliances – Safety – General requirements (IEC 60335-1 Ed 4.2, MOD) and AS 60417.2.5-2004, Graphical symbols for use on equipment -- Home electric appliances.

Machinery

Machinery used in workplaces that require guarding should be supplied with appropriate marking requirements, symbols and instruction manuals which can be found in AS 4024.1202-2006, Safety of machinery – General principles – Technical principles. Similar information is included in ISO 12100:2010, Safety of machinery – General principles for design – Risk assessment and risk reduction.

Road Safety (including Off-Street Parking) Signs

Detailed information on different types of road safety symbols is included in the AS 1742, Manual of uniform traffic control devices Series. These Standards are also available as AS 1742 Set-2010.

Information on location and sizing details for commonly used road safety signs are included in AS 1742.2-2009, Manual of uniform traffic control devices – Traffic control devices for general use. An index of road safety symbols can be found in AS 1742.1-2003, Manual of uniform traffic control devices – General introduction and index of signs. Lettering and font requirements for these types of symbols are included in AS 1744-1975, Forms of letters and numerals for road signs (known as Standard alphabets for road signs).

Signs used in off-street parks should be located by following the details described in AS/NZS 2890.1-2004, Parking facilities – Off-street car parking. Information on regulatory signs used in off-street car parks can also be found in:

- AS 1742.1-2003
- AS 1742.2-2009
- AS 1742.10-2009, Manual of uniform traffic control devices – Pedestrian control and protection

Public Information Symbols

Public Spaces and Buildings

Standards Australia has not established any Standards for symbols that may be used in public spaces and buildings. However, this information is included in ISO 7001:2007, Graphical symbols – Public information symbols. The types of symbols represented in this Standard can be prepared by following the principles and practices described in ISO 22727:2007, Graphical symbols - Creation and design of public information symbols – Requirements.

Parks

Signs and markers used on walking tracks can be classified by following the methods described in AS 2156.1-2001, Walking tracks – Classification and signage. Colours used to produce these types of signs are listed in this Standard. Examples of these colours are included in the colour chart that is supplied with the hard copy edition of AS 2700-2011.

Symbols used to provide direction to persons used on walking tracks are also included in ISO 7001:2007.

Disabled Access Signs

Signs used to represent facilities used by persons with disabilities are included in AS 1428.1-2009, Design for access and mobility – General requirements for access – New building work and AS 1428.5-2010, Design for access and mobility – Communication for people who are deaf or hearing impaired.

Markings for Warehouses and Distribution Centres

Warehouses and distribution centres should be line marked by following the details that are included in AS 1318-1985, Use of colour for the marking of physical hazards and the identification of certain equipment in industry (known as the SAA Industrial Safety Colour Code) (incorporating Amdt 1).
Personal Protective Equipment

Manufacturers of personal protective equipment may have arranged CE certification to the European Council Directive 89/686/EEC to demonstrate compliance with European Standards.

Hearing Protectors

The manufacturing Standard for hearing protectors is AS/NZS 1270:2002, Acoustics - Hearing protectors. This Standard also includes information on packaging and labelling requirements for different types of hearing protectors.

Hearing protection programs can be prepared, implemented and maintained by following the recommendations described in the AS/NZS 1269, Occupational noise management Series. These Standards are also available as AS/NZS 1269 Set:2005. Hearing protectors can be selected by following the information that is included in AS/NZS 1269.3:2005, Occupational noise management – Hearing protector program.

Respirators and Masks

Air purifying and supplied air respirators used in Australia and New Zealand should be manufactured by following the requirements that are included in AS/NZS 1716:2003, Respiratory protective devices. Respiratory protective devices that have been manufactured to this standard can be selected and maintained by following the recommendations included in AS/NZS 1715:2009, Selection, use and maintenance of respiratory protective equipment.

Disposable masks used by healthcare workers can be manufactured by following the details that are included in AS 4381-2002, Single-use face masks for use in health care.

Full-face types of personal protective equipment can incorporate helmets, eye protectors and respirators. For information on these types of equipment you can refer to Eye and Face Protectors and Head Protection (Helmets).

Eye and Face Protectors

Definitions and diagrams illustrating requirements for different types of eye protectors are included in AS/NZS 1337.0(Int):2010, Personal eye protection - Eye and face protectors - Vocabulary.

Manufacturing requirements for different types of eye protectors are included in the AS/NZS 1337, Personal eye protection Series. Filters used with eye protectors should be tested to:

- AS/NZS 1337.1:2010, Personal eye protection - Eye and face protectors for occupational applications
- AS/NZS 1337.4-2004, Personal eye-protection - Filters and eye-protectors against laser radiation (laser eye-protectors)
- AS/NZS 1337.6:2007, Personal eye-protection - Prescription eye protectors against low and medium impact
- AS/NZS 1338.1:1992, Filters for eye protectors - Filters for protection against radiation generated in welding and allied operations
- AS/NZS 1338.2:1992, Filters for eye protectors - Filters for protection against ultraviolet radiation
- AS/NZS 1338.3:1992, Filters for eye protectors – Filters for protection against infra-red radiation

Eye protectors manufactured to these types of Standards can be selected by following the methods described in AS/NZS 1336:1997, Recommended practices for occupational eye protection.
Head Protection (Helmets)

Information on manufacturing and performance requirements for firefighters' helmets is included in AS/NZS 4067:2004, Firefighters' helmets.

All these Standards refer to tests that are included in the AS/NZS 2512, Methods of testing protective helmets Series.

Personal Flotation Devices (Life Jackets)
Personal flotation devices used in Australia and New Zealand should be tested to the requirements in AS 4758.1-2008, Personal flotation devices – General requirements.

Protective Clothing
Comprehensive information on design and manufacturing requirements for all major types of occupational protective clothing is included in AS/NZS 4501.2:2006, Occupational protective clothing – General requirements. Protective clothing manufactured to this Standard can be selected and maintained by following the information that is included in AS/NZS 4501.1:2008, Occupational protective clothing – Guidelines on the selection, use, care and maintenance of protective clothing. Both these Standards are available as AS/NZS 4501 Set:2008. Persons applying principles described in these Standards may also wish to adopt the techniques in AS/NZS ISO 31000:2009, Risk management – Principles and practices.

Information on methods used to complete radiant heat tests for different types of protective clothing is included in:

- AS/NZS 4502.1:2006, Methods for evaluating clothing for protection against heat and fire – Evaluation of thermal behaviour of materials and material assemblies when exposed to a source of radiant heat
- AS/NZS 4502.2:1997, Methods for evaluating clothing for protection against heat and fire - Evaluation of heat transmission of materials and material assemblies when exposed to flame

Clothing that has been tested to these Standards can be selected by following the recommendations described in AS/NZS ISO 2801:2008, Clothing for protection against heat and flame – General recommendations for selection, care and use of protective clothing.

Laboratory test methods for textiles that may be used to manufacture different types of protective clothing are included in the AS 2001, Methods of test for textiles - Physical tests Series.

Care labelling requirements for protective clothing are covered by the information described in the Standards listed below:

- AS/NZS 1957:1998, Textiles – Care labelling

High Visibility Clothing
Information on manufacturing and performance requirements for high visibility clothing used by employees is included in AS/NZS 1906.4:2010, Retroreflective materials and devices for road traffic
control purposes – High-visibility materials for safety garments. This Standard covers requirements for fluorescent and non-fluorescent high visibility garments. Labeling requirements and design details for garments manufactured to this Standard are included in AS/NZS 4602.1:2011, High visibility safety garments - Garments for high risk applications. This Standard also includes diagrams illustrating location requirements for strips used with high visibility clothing.

Chemical Protective Clothing (Immersion Suits)
Information on manufacturing requirements for immersion suits is included in the ISO 15027, Immersion suits Series. These Standards are identical to the I.S. EN ISO 15027 Series.

Protective Clothing – High Voltage Electrical Work
Persons undertaking high voltage electrical work can select appropriate clothing by following the recommendations described in the AS 5804, High-voltage live working Series. Information on manufacturing requirements for this type of clothing is included in IEC 60895 Ed 2.0, Live working - Conductive clothing for use at nominal voltage up to 800 kV a.c. and +/- 600 kV d.c.

Sun Protective Clothing
Information on recommended ultraviolet protection factors (UPF) for different types of sun protective clothing is included in AS/NZS 4399:1996, Sun protective clothing - Evaluation and classification.

High visibility clothing manufactured with UPF ratings should be manufactured to the requirements described in AS/NZS 4399:1996, AS/NZS 1906.4:2010 and AS/NZS 4602.1:2011.

Clothing for users of Chainsaws
The AS/NZS 4453, Protective clothing for users of hand-held chainsaws Series includes information on requirements for:

- a test rig for testing protective clothing for resistance to cutting by a chainsaw;
- testing protective legwear for dimensional change, protective coverage and resistance to cutting by a chainsaw; and
- the design and performance of protective trousers and leggings (chaps) for users of hand-held chainsaws.

**Protective Gloves**

General Work
Information on requirements for non-disposable protective gloves used by persons not involved with electrical and surgical work is included in the AS/NZS 2161, Occupational protective gloves Series.

Gloves can be selected and maintained by following the practices that are included in AS/NZS 2161.1:2000, Occupational protective gloves – Selection, use and maintenance. Information on methods that can be used to select and evaluate different types of protective gloves is also included in HS 9-1994, Occupational personal protection.

Information on manufacturing requirements for gloves used by employees exposed to different types of risks is included in AS/NZS 2161.2:2005, Occupational protective gloves – General requirements.

Information on performance requirements and tests for gloves providing protection for employees working in the following types of areas can be found in:

- Cold environments
  AS/NZS 2161.5:1998, Occupational protective gloves – Protection against cold
Guide to Standards - Occupational Health & Safety

- Protection against cuts and punctures
  AS/NZS 2161.3-2005, Occupational protective gloves – Protection against mechanical risks

- Protection against chemicals and micro-organisms
  AS/NZS 2161.10, Occupational protective gloves Series

- Protection against heat and fire
  AS/NZS 2161.4:1999, Occupational protective gloves – Protection against thermal risks (heat and fire)

AS/NZS 4011-1997, Single-use examination gloves covers requirements for disposable gloves that are not designed to be used for surgical purposes.

Surgical Work
AS/NZS 4179:1997, Single-use surgical rubber gloves – Specification provides information on manufacturing requirements for disposable gloves that can be used for surgical purposes.

Electrical Work
Information on manufacturing requirements for protective gloves used by persons completing different types of electrical work is included in:

- AS 2225-1994, Insulating gloves for electrical purposes
- AS 5804.2-2010, High-voltage live working – Glove and barrier work
- I.S. EN 60984:1993, Sleeves Of Insulating Material For Live Working

Information on principles and practices that can be followed to select, care and maintain gloves used for electrical work is included in:

- ENA NENS 09-2006, National guidelines for the selection, use and maintenance of personal protective equipment for electrical hazards
- AS 5804.2-2010, High-voltage live working - Glove and barrier work

Footwear
Information on manufacturing requirements for occupational, safety and protective footwear is included in the AS/NZS 2210, Occupational protective footwear Series.


Information on manufacturing of the following types of occupational, protective and safety footwear can be found in:

- Occupational Footwear (not fitted with toecaps)

- Safety Footwear (fitted with toecaps)

- Protective Footwear (fitted with toecaps)
Footwear manufactured and tested to the above Standards can be selected and maintained by following the information that is included in AS/NZS 2210.1:2010, Safety, protective and occupational footwear – Guide to selection, care and use.

Information on manufacturing requirements, descriptions, selection and classification requirements for the types of protective footwear that may be used by firefighters is included in AS/NZS 4821-2006, Protective footwear for firefighters – Requirements and test methods.

**Electrical Equipment**

General information covering safety requirements for electrical equipment is included in AS/NZS 3820:1998, Essential safety requirements for electrical equipment. This Standard is based on information that is included in the European Union Directive 2006/95/EC (also known as the European Low Voltage Directive). Electrical equipment manufactured overseas may have been approved to this European Low Voltage Directive. The European CE scheme is used to arrange approvals to the European Union Low Voltage Directive. A summary of fundamental safety principles for low voltage electrical equipment is also included in AS/NZS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules).

Electrical wiring requirements and safety details for electrical equipment in areas where explosive gases or combustible dusts may be present are not covered by the conventional AS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules). An overview of electrical safety and installation requirements for these types of equipment are included in AS/NZS 2381.1, Electrical equipment for explosive gas atmospheres - Selection, installation and maintenance - General requirements and HB 13-2007, Electrical equipment for hazardous areas.

**Testing and Tagging**

All electrical equipment located in workplaces (excluding Construction and Plant Equipment and Medical Equipment) should be tested and tagged by following the principles and practices described in AS/NZS 3760:2010, In-service inspection and testing of electrical equipment.

Fixed types of electrical equipment can be tested and tagged by following the methods described in AS/NZS 3017:2007, Electrical installations – Verification guidelines.

**Household Electrical Equipment**

Comprehensive information on household electrical equipment (including lighting and electrical accessories for similar areas) can be found in the Standards Guide – Household Electrical Equipment.

Electrical safety Standards for specific types of household and similar types of electrical equipment are primarily covered by the AS/NZS 60335, Household and similar electrical appliances Series. The electrical safety and laboratory tests in these Standards refer to details that are included in AS/NZS 60335:1:2002, Household and similar electrical appliances - Safety - General requirements (IEC 60335-1 Ed 4.2, MOD). This Standard is a modified edition of IEC 60335-1 Ed 4.2 and I.S. EN 60335-1:2003.

AS/NZS 3100:2009, Approval and test specification - General requirements for electrical equipment specifies the general safety requirements for the types of equipment (including fittings, accessories, appliances and apparatus) used for electrical installations in buildings, structures, and premises. Guidelines covering design and testing of electrical equipment to ensure safety and protection against electric shock, including the principles and application of double insulation, are also included in this Standard.

This information may also be of use to people using other types of equipment, please see the section Construction and Plant Equipment and Medical Equipment for more information.
Lighting

Electrical safety, manufacturing and performance tests for lighting products are primarily included in the AS/NZS 60598, Luminaires Series. These Standards are modified editions of the IEC 60598 Series and I.S. EN 60598 Series.

Electrical enclosures supplied with lighting equipment and light fittings may require high levels of protection against the ingress of water and foreign objects (dust) in particular for outdoor lighting. Information on Ingress Protection (IP) tests for light fittings is included in AS/NZS 60598.1:2003, Luminaires - General requirements and tests. IP symbols that should be marked on light fittings are included in this same Standard. IP tests for LED modules are included in AS/NZS 61347.1:2002, Lamp controlgear - General and safety requirements (IEC 61347-1:2000, MOD). Also, recommended IP ratings for electrical equipment which may be in contact with water is included in AS/NZS 3000:2007, Electrical installations (known as the Australian/New Zealand Wiring Rules).

Lighting products supplied and used in Australia and New Zealand should be marked by following the details outlined in AS/NZS 61231:2001, International lamp coding system (ILCOS). This Standard is identical to IEC/TS 61231 Ed 2.0.

Lighting products should be marked by following the methods described in AS/NZS 60598.1:2003.

Circuit-breakers


Detailed descriptions for circuit-breakers are included in AS/NZS 4417.2:2009, Marking of electrical and electronic products to indicate compliance with regulations - Specific requirement for electrical safety regulatory applications.

Electrical safety tests for all types of low voltage circuit-breakers (including integrally fuse circuit-breakers and circuit-breakers not providing overcurrent protection are included in AS 60947.2-2005, Low-voltage switchgear and controlgear- Circuit-breakers. Marking requirements for circuit-breakers are also included in this Standard.


Safety Switches (Residual Current Devices)

Standards for manufacturing, installation and electromagnetic compatibility for safety switches can also be referred to as 'Residual Current Device' or 'RCD'. Residual current devices are designed to detect differential currents between active and neutral which are not supplied with electrical equipment. Residual current devices are switches that are supplied with switchboards. There are three Standards for residual current devices:

• AS/NZS 61009.1:2004, Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - General rules (IEC 61009-1 Ed. 2.1 (2003) MOD) (which is a modified edition of IEC 61009-1 Ed 2.1 and I.S. EN 61009-1:2004)

Residual current devices manufactured in Australia and New Zealand are commonly tested to AS/NZS 3190:2009. Miniature overcurrent circuit-breakers supplied with devices tested to this Standard should meet the requirements in AS/NZS 3111:2009, Approval and test specification - Miniature overcurrent circuit-breakers which is based on tests covered by AS/NZS 3100:2009, Approval and test specification - General requirements for electrical equipment.


A detailed analysis of operational conditions and in-service testing requirements for residual current devices is included in BPS 001-2007, Best Practices in Testing & Tagging of Electrical Equipment to AS/NZS 3760. Information on leakage current and tripping times for residual current devices is also included in this Manual. It is a recommended publication for manufacturers, importers, suppliers and users of residual current devices.

Medical Equipment

Storage Containers

Manufacturing requirements for reusable and non-useable sharps containers are included in:

• AS 4031-1992, Non-reusable containers for the collection of sharp medical items used in health care areas
• AS/NZS 4261:1994, Reusable containers for the collection of sharp items used in human and animal medical applications

Hospital (Theatre) Textiles

Manufacturing and performance requirements for different types of hospital and theatre linen are included in the AS 3789, Textiles for health care facilities and institutions Series.

Medical Electrical Equipment

Electro-medical equipment should be tested and tagged by following the details that are included in AS/NZS 3551:2004, Technical management programs for medical devices. Different types of electro-medical equipment should be tested to the AS/NZS 3200, Medical electrical equipment Series.

Information on safety requirements for different types of medical electrical equipment can be found in:

• AS/NZS 3200, Medical electrical equipment - General requirements for safety Series
• AS/NZS 4513:1995, Medical electrical equipment - Fundamental aspects of safety Standards
• AS 2120.1-1992, Medical suction equipment - Electrically-powered suction equipment - Safety requirements
• AS/NZS 61558.2.15:2001, Safety of power transformers, power supply units and similar - Particular requirements for isolating transformers for the supply of medical locations (IEC 61558-2-15:1999, MOD)
Construction and Plant Equipment

All types of machinery supplied with moving parts should be designed to comply with the requirements covered in the AS 4024, Safety of Machinery Series. Electrical equipment located on construction sites should be tested and tagged by following the information that is included in AS/NZS 3012:2010, Electrical installations – Construction and demolition sites.

Chainsaws

Chainsaws should be operated by following the recommendations described in AS 2727-1997, Chainsaws – Guide to safe working practices. Manufacturing requirements for chainsaws used for general applications are included in AS 2726.1-2004, Chainsaws – Safety requirements – Chainsaws for general use. Chainsaws used to cut trees should be manufactured to the methods described in AS 2726.2-2004, Chainsaws – Safety requirements – Chainsaws for tree service.

Power Tools

Electric hand-held power tools used in the construction industry should be tested to the AS/NZS 60745, Hand-held motor-operated electric tools - Safety Series. Detailed information on marking and basic electrical safety requirements for power tools is included in AS/NZS 60745.1:2009, Hand-held motor-operated electric tools - Safety - General requirements (IEC 60745-1 Ed 4, MOD).

Conveyors

Conveyors should be manufactured and guarded by following the methods described in AS 1755-2000, Conveyors – Safety requirements.

Cranes and Scissor Lifts

Persons responsible for inspection, operating and maintaining different types of cranes (including mobile elevating platforms) should be familiar with the information that is included in the AS 2550, Cranes, hoists and winches - Safe use Series which are also available as AS 2550 Set-2011. General information on safety, inspection, operational and maintenance requirements for all types of cranes is included in AS 2550.1-2011, Cranes, hoists and winches - Safe use - General requirements. This Standard also covers information on the types of hand signals that should be used by crane operators and an example test report that should be completed by persons engaged to inspect and overhaul cranes.

The AS 2550, Cranes, hoists and winches – Safe use Series reference requirements that are covered in the AS 1418, Cranes, hoists and winches Series which provide information on design, manufacturing and marking requirements for different types of cranes. These Standards are all available as a AS 1418 Set-2009 The Standard in this series which covers all design, manufacturing and marking requirements for cranes is AS 1418.1-2002, Cranes, hoists and winches – General requirements.

Lifting devices (e.g. lugs and spreader bars) used with cranes should be manufactured by following the details that are included in AS 4991-2004, Lifting devices. A list of Standards for attachment devices that may be supplied with cranes is included in AS 2550.1-2011. Definitions and detailed diagrams for different types of cranes is included in AS 2549-1996, Cranes (including hoists and winches) – Glossary of terms.

Earth-Moving and Agricultural Machinery

Tractors and machinery used for agricultural, forestry and similar types of industries should be designed to ensure they comply with the requirements described in the AS/NZS 2153, Tractors and machinery for agriculture and forestry - Technical means for ensuring safety Series. Tractors
and machinery should also be designed to comply with the guarding practices described in the **AS 4024, Safety of machinery Series**.

### Protective Structures Standards

Roll-over (ROPS) and Fall-over protective (FOPS) structures that are supplied with earth-moving and agricultural machinery should follow the information included in:

- AS 1636.1-1996, Tractors - Roll-over protective structures - Criteria and tests - Conventional tractors
- AS 1636.2-1996, Tractors - Roll-over protective structures - Criteria and tests - Rear-mounted for narrow-track tractors
- AS 1636.3-1996, Tractors – Roll-over protective structures – Criteria and tests – Mid-mounted for narrow-track tractors
- AS 2294.1 Supp 1-2003, Earth-moving machinery - Protective structures - General - Operator protective structures fitted to plant used in timber industry (forest operations) (Supplement to AS 2294.1-1997)
- ISO 8083:2006, Machinery for forestry – Falling-object protective structures (FOPS) – Laboratory tests and performance requirements

Ladders, grabrails and walkways used to access earth-moving equipment should be designed to conform to the requirements in **AS 3868-1991, Earth-moving machinery – Design guide for access systems**.

### Manufacturing and Safety Standards

Standards Australia has not established any Standards providing information on general safety requirements for earth-moving and agricultural machinery. However, it is common practice for these types of equipment to be manufactured overseas and then imported to Australia and New Zealand. Users and operators of this type of machinery should check to see if equipment has been manufactured to relevant international Standards.

Information on manufacturing requirements (including marking and bibliographic details) for different types of earth-moving and agricultural machinery are included in:

- I.S. EN ISO 4254, Agricultural Machinery - Safety Series (identical to the ISO 4254 Series)
- I.S. EN ISO 14861:2004, Forest machinery - Self propelled machinery - Safety requirements
- I.S. EN 474, Earth-moving Machinery - Safety Series
- ISO 6814:2009, Machinery for forestry – Mobile and self-propelled machinery – Terms, definitions and classification

Manufacturers that have completed tests to European Standards may have also completed **CE** certificates to European Directives. The most commonly used European Directives for earth-moving machinery are **Directive 2006/42/EC on machinery, Electrical Safety: Low Voltage Directive (LVD) and Electromagnetic Compatibility (EMC) Directives**.

### Ergonomic Standards

Owners and operators of earth-moving and agricultural machinery may need to be familiar with the ergonomic information which is included in:
Industrial trucks should be manufactured to conform to the principles governed in the AS 4024, Safety of machinery Series. Lifting devices used with industrial trucks should be manufactured and marked by following the methods described in AS 4991-2004, Lifting devices.

Safety and Operational Standards

Information on recommended safety signs for industrial trucks are included in AS 2359.16-2005, Powered industrial trucks – Safety signs and hazard pictorials – General principles. Persons operating industrial trucks should follow the line marking conventions described in:

- AS 1318-1985, Use of colour for the marking of physical hazards and the identification of certain equipment in industry (known as the SAA Industrial Safety Colour Code) (incorporating Amdt 1)
- AS 2359.2-1985, Industrial trucks (known as the SAA Industrial Truck Code) – Operation
- AS 2359.6-1995, Powered industrial trucks – Safety code

Information on procedures that should be followed by persons responsible for inspecting fork-arms supplied with industrial trucks is included in AS 4973-2001, Industrial trucks – Inspection and repair of fork arms in service on fork-lift vehicles.

There are requirements for battery rooms used to charge industrial trucks with sealed and vented cells. Information on design and ventilation rates for battery rooms used for these applications are included in the AS 3011, Electrical installations - Secondary batteries installed in buildings Series.

Manufacturing Standards

Information on manufacturing requirements and marking details for different types of industrial trucks (including forklifts) is included in AS 2359.1-1995, Powered industrial trucks – General requirements. Fuel systems used with gas forklifts should meet the requirements that are included in AS 4983-2010, Gas fuel systems for forklifts and industrial engines.

It is common practice for industrial trucks to be manufactured overseas and then imported into Australia and New Zealand. Users and operators of these types of industrial trucks should check to see if equipment has been manufactured to relevant international Standards:

- I.S. EN 1726-2:2000, Safety Of Industrial Trucks - Self-propelled Trucks Up To And Including 10,000 Kg Capacity And Tractors With A Drawbar Pull Up To And Including 20,000 N - Part 2: Additional Requirements For Trucks With Elevating Operator Position And Trucks Specifically Designed To Travel With Elevated Loads
- I.S. EN 1551:2000, Safety of Industrial Trucks – Self-Propelled Trucks Over 10,000 Kg Capacity
- I.S. EN 1525:1998, Safety Of Industrial Trucks - Driverless Trucks And Their Systems

Manufacturers that have completed tests to European standards may have completed CE certificates to European Directives. The most commonly used European Directives for industrial trucks are Directive 2006/42/EC on machinery, Electrical Safety: Low Voltage Directive (LVD) and Electromagnetic Compatibility (EMC) Directives.

Machinery Safety

Machinery Design

Machinery should be designed to conform to the safety and guarding principles and practices that are included in the AS 4024 Series:

• AS 4024.3-1998, Safeguarding of machinery - Manufacturing and testing requirements for electro-sensitive systems - Optoelectronic devices (Note: Optoelectronic devices may be also be classified as ‘light curtains’)
• AS 4024.2601-2008, Safety of machinery - Design of controls, interlocks and guarding - Two-hand control devices - Functional aspects and design principles
• AS 4024.2801-2008, Safety of machinery - Safety distances and safety gaps - Positioning of protective equipment with respect to the approach speed of parts of the human body
• AS 4024.3001-2009, Safety of machinery – Materials forming and shearing – Mechanical power presses
• AS 4024.3002-2009, Safety of machinery – Materials forming and shearing – Hydraulic power presses
• AS 4024.3101-2008, Safety of machinery - Materials cutting - Milling machines (including boring machines) - Safety requirements
• AS 4024.3301-2009, Safety of machinery – Robots for industrial environments - Safety aspects

A lot of the Standards within the AS 4024 Series are available as AS 4024.1-2006 Series, Safety of machinery.

Machinery used in Australia and New Zealand is commonly manufactured overseas and manufacturers may have arranged certificates or levels of compliance to the European Machinery Safety Directive 2006/42/EC, which is used to achieve a CE certificate. With this in mind, operators and users of machinery should still ensure that the machinery they are using conforms to the safety and guarding principles that are covered in the AS 4024 Series.

Control systems (e.g. emergency stop buttons) used with machinery are classified under different categories which can be found in AS 4024.1501-2006, Safety of machinery - Design of safety related parts of control systems – General principles for design. AS 4024.1202-2006, Safety of machinery – General principles – Technical principles also describes requirements for control equipment that may be used with different types of machinery. Similar information is also included in the I.S. EN ISO 13849, Safety of machinery - safety-related Parts of Control Systems Series.

Programmable systems used with machinery should be designed to conform with the requirements that are included in AS 62061-2006, Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems and the AS 61508, Functional safety of electrical/electronic/programmable electronic safety-related systems Series.
Risk Assessment


Operating Machinery

Machinery that is not designed and guarded correctly may present entrapment hazards. Diagrams and dimensions indicating distances humans should be from accessible parts of machinery is included in AS 4024.1801-2006, Safety of machinery – Safety distances to prevent danger zones being reached for the upper limbs. Similar information may be included in I.S. EN 349:1993, Safety of machinery – Minimum gaps to avoid crushing of parts of the human body.

Radiation Exposed Environments

Definitions for different types of radiation hazard terms are included in AS 1852.881-1988, International electrotechnical vocabulary – Radiology and radiological physics.

Infrared Radiation

Persons using lasers may be exposed to varying levels of infrared radiation. Emission limits for different classes of lasers are included in the AS/NZS 2211, Safety of laser products Series. Specific requirements for classes of lasers are included in:


Eye protectors may need to be used by persons exposed to high levels of infrared radiation. Eye protectors can be selected by following the methods recommended in AS/NZS 1336:1997, Recommended practices for occupational eye protection. Manufacturing requirements for filters and eye protectors designed to reduce levels of infrared radiation are included in:

- AS/NZS 1337.1:2010, Personal eye protection – Eye and face protectors for occupational applications
- AS/NZS 1337.4:2004, Personal eye protection – Filters and eye-protectors against laser radiation (laser eye-protectors)
- AS/NZS 1337.5:2004, Personal eye protection – Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)

Ionizing Radiation

Information on ionizing radiation levels for different types of workplace environments as well as protection against ionizing radiation is included in:

- AS/NZS 2161.8:2002, Occupational protective gloves – Protection against ionizing radiation and radioactive contamination
- AS/NZS 2243.1:2005, Safety in laboratories – Planning and operational aspects
- AS 2243.4-1998, Safety in laboratories – Ionizing radiations
- AS/NZS 3824:1998, Guidelines on radiotherapy treatment rooms design

Non-Ionizing Radiation

Information on safety in regards to Non-Ionizing radiation in workplace environments is included in:

- AS/NZS 2243.1:2005, Safety in laboratories – Planning and operational aspects
- AS/NZS 2243.5:2004, Safety in laboratories – Non-ionizing radiations – Electromagnetic, sound and ultrasound

Electromagnetic Radiation

Persons working with or near electronic devices or high voltage power lines may be exposed to high levels of electromagnetic radiation. Levels of electromagnetic radiation can be determined by following the methods outlined in:

- AS/NZS 2344:1997, Limits of electromagnetic interference from overhead a.c. powerlines and high voltage equipment installations in the frequency range 0.15 to 1000 MHz
- AS/NZS 2772.2:2011, Radiofrequency fields - Principles and methods of measurement and computation - 3 kHz to 300 GHz

Ultraviolet Radiation

Eye protectors can be used to provide protection to persons working in environments where high levels of ultraviolet radiation may be present. These types of protectors can be selected by following the recommendations described in AS/NZS 1336:1997, Recommended practices for occupational eye protection. The manufacturing Standard for filters designed to protect against ultraviolet radiation should be manufactured to AS/NZS 1338.2:1992, Filters for eye protectors – Filters for protection against ultraviolet radiation. All types of eye protectors should be tested to the requirements described in AS/NZS 1337.1:2010, Personal eye protection – Eye and face protectors for occupational applications.

Sun protective and high visibility clothing may need to be worn by persons that are regularly required to work outdoors. The manufacturing Standard for sun protective clothing is AS/NZS 4399:1996, Sun protective clothing – Evaluation and classification. High visibility clothing may need to conform to the requirements outlined in AS/NZS 1906.4:2010, Retroreflective materials and devices for road traffic control purposes - High-visibility materials for safety garments and AS/NZS 4602.1:2010, High visibility safety garments - Garments for high risk applications.

Welders are commonly exposed to high ultraviolet radiation levels. Welding curtains can be used to reduce radiation hazards for these types of people. The Australian manufacturing Standard for welding curtains is AS/NZS 3957:2006, Light transmitting screens and curtains for welding operations.

Regular users of solariums may also be exposed to high levels of ultraviolet radiation. Solariums should be operated by following the information that is included in AS/NZS 2635:2008, Solaria for cosmetic purposes.

Handling Dangerous Goods

Information on dangerous goods for different types of situations can be found in the Guide to Standards – Dangerous Goods.
Waste Management

Clinical and related types of wastes can be disposed of by following the methods recommended in:


Manufacturing requirements for reusable and non-useable sharps containers are included in:

- AS 4031-1992, Non-reusable containers for the collection of sharp medical items used in health care areas
- AS/NZS 4261:1994, Reusable containers for the collection of sharp items used in human and animal medical applications

Food Management

Cafes, restaurants and other food establishments that are being built or renovated should be designed to meet the requirements that are included in AS 4674-2004, Design, construction and fit-out of food premises. Information on hygiene, lighting, ventilation, equipment and fixtures that should be used in food premises are also included in this Standard.

Food safety management Standards, also known as Hazard Analysis Critical Control Points (HACCP), describe processes and practices used by organizations to manage critical control points in food processes. These food safety management Standards were originally derived from publications that were produced by Codex Alimentarius Commission under the United Nation’s FAO/WHO Food Standards Programme. A list of Codex publications is included in AS ISO 22000-2005, Food safety management systems - Requirements for any organization in the food chain and AS ISO 22004 (Int)-2006, Food safety management systems - Guidance on the application of AS ISO 22000-2005.

For information on certification for food management systems, see the SAI Global Certification Schemes.

Amusement Devices

Information on design, manufacturing, maintenance and operational requirements for different types of amusement devices is included in the AS 3533, Amusement rides and devices Series:

- AS 3533.1-2009, Amusement rides and devices - Design and construction
- AS 3533.2-2009, Amusement rides and devices – Operation and maintenance
- AS 3533.3-2003, Amusement rides and devices – In-service inspection
- AS 3533.4.1-2005, Amusement rides and devices - Specific requirements - Land-borne inflatable devices

All types of machinery supplied with moving parts should be designed to comply with the requirements covered in the AS 4024, Safety of machinery Series.

Lifts and Escalators

Lifts, escalators and moving walkways should be designed to comply with the requirements outlined in the AS 1735, Lifts, escalators and moving walks Series. Lifts should also be designed to conform to the safety requirements covered in the AS 4024, Safety of machinery Series. Information on
safety requirements for different types of passenger lifts are included in **AS 1735.2-2001, Lifts, escalators and moving walks – Passenger and goods lifts – Electric**. This Standard includes detailed information on the following workplace health and safety topics:

- Clearances for liftwells and lift enclosures
- Safety signs and floor marking requirements for liftwells and lift (other information on safety signs is also included in **AS 1319-1994, Safety signs for the occupational environment**)
- Stop-buttons and switches for lifts
- General information on accessibility requirements for lifts

Lifts used by persons with disabilities should be designed to meet the requirements that are included in **AS 1735.12-1999, Lifts, escalators and moving walks – Facilities for persons with disabilities**.

**Scaffolding**

Information on safe work practices that should be followed by persons required to erect, dismantle and install different types of scaffolding systems is included in **AS/NZS 4576-1995, Guidelines for scaffolding**. Information on requirements for fixed ladders, stairs, platforms or walkways is included in **AS 1657-1992, Fixed platforms, walkways, stairways and ladders – Design, construction and installation**.

Scaffolding used in Australia and New Zealand should be tested to meet the requirements described in the **AS/NZS 1576, Scaffolding Series**.

**Temporary Edge Protection Systems**

The Standards listed in this section only provide information on types of temporary protection systems for those who work on roofs slopes no greater than 35° on residential and commercial buildings.

**AS/NZS 4994, Temporary edge protection Series** sets out requirements for the design, manufacture and testing of equipment that is intended to provide protection at the roof edge to workers installing, altering, repairing or removing cladding on housing and residential buildings having roof slopes of not more than 35° to the horizontal.

**Demolition**

**AS 2601-2001, The demolition of structures** sets out requirements and provides guidance to planners, owners, engineers, contractors and interested parties on the planning and procedures for the demolition of a structure.

The Standard also provides advice and guidance on a range of controlled demolition methods so that the risk in the following areas can be minimised:

- health and safety of the public and site personnel and occupiers of an adjoining property;
- damage to the immediate environment; and
- damage to adjoining premises.

**AS 2436-2010, Guide to noise and vibration control on construction, demolition and maintenance sites** provides guidance on noise and vibration control in respect to construction, demolition and maintenance sites.
AS/NZS 3012:2010, Electrical installations – construction and demolition sites sets out minimum requirements for the design, construction and testing of electrical installations that supply electricity to appliances and equipment on construction and demolition sites.

**Asbestos Removal**

AS 4964-2004, Method for the qualitative identification of asbestos in bulk samples specifies a method for the qualitative identification of asbestos in bulk samples using a number of steps, depending on the sample appearance and composition. Polarized light microscopy is described as the primary detection technique.

Standards Australia has not yet established any specific Standards covering the removal of asbestos. However information on this can be found in the BS 8520, Equipment used in the controlled removal of asbestos-containing materials Series.

**Gas Cylinders, Pipelines and Reticulation Systems**

Installation requirements and safe work practices that should be followed by persons installing consumer piping and gas appliances is AS/NZS 5601.1:2010, Gas installations – General installations. Liquefied petroleum (LP) gases used with caravans and boats are included in AS/NZS 5601.2:2010, Gas installations – LP Gas installations in caravans and boats for non-propulsive purposes. Both these Standards are also available as AS/NZS 5601 SET:2010.

Persons responsible for transporting gases should follow the requirements described in HB 76-2004, Dangerous Goods - Initial emergency response guide and:


All vehicles transporting gases should also follow the requirements outlined in AS 1678.0.0.001-2004, Emergency procedure guide - Transport - - Vehicle fire and should attach it to all emergency procedure guides and HB 76:2010.

**Gas and Liquefied Petroleum Pipelines**

Pipelines should be designed, manufactured, welded, maintained and operated by the information included in:

- AS 2885.0-2008, Pipelines – Gas and liquid petroleum – General requirements
- AS 2885.1-2007, Pipelines – Gas and liquid petroleum – Design and construction
- AS 2885.2-2007, Pipelines – Gas and liquid petroleum – Welding
- AS 2885.3-2001, Pipelines – Gas and liquid petroleum – Operation and maintenance

Field testing requirements for these types of pipelines are included in AS/NZS 2885.5:2002, Pipelines – Gas and liquid petroleum – Field pressure testing.
Gas Reticulation Systems (Bottled Gases)

Information on requirements (including welding safe practices) for reticulation systems used to convey and store oxygen and acetylene gases is included in AS 4289-1995, Oxygen and acetylene gas reticulation systems.

More detailed information on OH&S practices for storing gas, gas cylinders, gas distribution networks and pipelines can be found in the Guide to Standards – Dangerous Goods.

Pressure Equipment

Information on inspection, testing, maintenance, hazard levels and operational requirements for pressure equipment (boilers, serially produced pressure vessels and unfired pressure vessels) is included in:

- AS 2593-2004, Boilers – Safety management and supervision systems
- AS/NZS 3788:2006, Pressure equipment – In-service inspection
- AS 3892-2001, Pressure equipment – Installation
- AS 4037-1999, Pressure equipment – Examination and testing
- AS 4343-2005, Pressure equipment – Hazard levels

Information on design, manufacturing and welding for different types of pressure equipment is included in:

- AS/NZS 1200:2000, Pressure equipment
- AS 1210-2010, Pressure vessels
- AS 1228-2006, Pressure equipment – Boilers
- AS 2971-2007, Serially produced pressure vessels
- AS 4041-2006, Pressure piping
- AS 4458-1997, Pressure equipment – Manufacture

Occupational Diving

Information on safety and operational procedures for occupational and recreational divers are included in the AS/NZS 2299, Occupational diving operations Series. Risks encountered by occupational divers can be managed by following the hazard assessment techniques described in AS/NZS 2299.1:2007, Occupational diving operations – Standard operational practice. Air decompression tables used by divers to ascend and descend at different depths are also included in this Standard.

Medical practitioners examining divers should complete the forms that are included in AS/NZS 2299.1 Supp 1:2007, Occupational diving operations - Standard operational practice Supplement 1: AS/NZS 2299 diving medical examination forms (Supplement to AS/NZS 2299.1:2007).

Confined Spaces and Storage Areas

Personnel working in confined spaces (also known as oxygen deficient atmospheres) should follow the types of principles and practices that are included in AS 2865-2009, Confined spaces. Persons working in these areas should wear appropriate types of respirators and information on this can be found in the Personal Protective Equipment section of this guide.
Steel storage racks used in warehouses and distribution centres should be designed, fabricated, operated and maintained by following the details that are included in AS 4084-1993, Steel storage racking.

Information on manufacturing requirements and tolerances for pallets used in warehouses and distribution centres is included in AS 4068-1993, Flat pallets for materials handling.

**Laboratories and Cleanrooms**

General information on safety requirements for different types of laboratories is included in the AS/NZS 2243, Safety in laboratories Series.

Information on safety requirements for cleanrooms is included in the AS/NZS ISO 14644, Cleanrooms and associated controlled environments Series. Different types of operational processes for persons working in cleanrooms can be managed by following the risk assessment techniques described in AS/NZS ISO 14644.5:2006, Cleanrooms and associated controlled environments – Operations.
SAI Global Certification Schemes

SAI Global Limited is the largest provider of third party product certification and testing services within the Asia Pacific, and is accredited against a broad range of Australian and International Standards, via its wholly owned subsidiary SAI Global Certification Services Pty Limited.

Product Certification

The Product Certification Services Group offers a wide range of certification schemes tailored for products related to safety equipment.

StandardsMark

StandardsMark™ is a System 5 certification scheme which is used to certify manufacturers of personal protective equipment and equipment to specific product performance Standards. The '5 ticks' StandardsMark™ certification requirements are:

- Testing of sample products by independent accredited laboratories
- Verification of test reports
- Audit of the manufacturing site for initial and ongoing compliance

Electrical Type Test

Electrical Type Test certification is a System 1 certification scheme. This scheme is recognized as an 'External Approval Scheme' by the Minister of Fair Trading NSW. Through this scheme manufacturers can demonstrate product safety compliance as required by the Electrical Product Regulators in Australia and New Zealand, and the minimum requirements are:

- Testing of product samples by independent accredited laboratories
- Assessment of test reports

IECEE CB Scheme

IECEE CB scheme is an International scheme for mutual recognition of product safety certification between participating countries. Developed by the Worldwide System for Conformity Testing and Certification of Electrical Equipment (IECEE), the CB scheme is the first truly international system for acceptance of test reports dealing with the safety of electrical and electronic products. The main objective is to facilitate trade by promoting harmonisation of the national Standards with international Standards and co-operation among product certifiers worldwide.

SAI Global is the accredited National Certification Body (NCB) for Australia and New Zealand. SAI Global also issues internationally recognized CB Certificates that exporters can use to gain local electrical approval in overseas countries.

CE Programs

CE Program for Low Voltage Directive (LVD)  2006/95/EC (ex-73/23/EEC) is offered for those selling their electrical equipment designed for use with a voltage rating of between 50 and 1000V ac and between 75 and 1500 V DC in the European Union. It seeks to ensure that electrical equipment with certain voltage limits provides a high level of protection to the European community.

CE Program for Electromagnetic Compatibility (EMC) Directive  2004/108/EC is offered to those selling their electrical and electronic appliances and equipment in the European Union. It seeks to ensure that electrical and electronic products do not cause excessive electromagnetic interference and are not overly affected by electromagnetic interference themselves. Please visit CE Program for more information.
Please contact the Product Certification Services Group for more detailed information on the above schemes.
Phone: +61 2 8206 6322
Email: product@saiglobal.com

Management Systems Certification

The Assurance Services Division also offers a wide range of certification schemes tailored for management systems of Occupational Health and Safety.

Occupational Health and Safety (OH&S) Management Systems

The management of Occupational Health and Safety (OHS) risks is a minimum requirement in every workplace. An effective OHS Management System can help to establish the framework of compliance with the two fundamental elements of most OHS legislation:

- That employers provide and maintain a working environment that is safe and without risk
- That employees take reasonable care for the health and safety of themselves and others

Audit and certification through SAI Global is available for several well recognized Standards:

- AS/NZS 4801
- OHSAS 18001
- SafetyMap
- InjuryMap
- National Audit Tool (NAT)

Quality and Excellence in Health

The Excellence in Health Program offers certification against ISO 9001:2008 incorporating the Core Standards for Safety & Quality in Healthcare (to be replaced by the National Safety & Quality Health Service Standards from July 2011), the compliance level.

Excellence in Health offers an additional layer of value for organisations that have reached Tier 1 – Quality in Health level: participation in the internationally recognised Business Excellence Framework, which is exclusive to SAI Global.

Food Safety Management Systems - HACCP, BRC, ISO 22000, Organic Certification and more

These days management systems need to take into account not only basic food regulations and acceptable workplace practices, but also include contingency plans for potential crises such as product recall. Food Safety Programs may need to be implemented to meet regulator requirements, retailer requirements or your own requirements.

SAI Global has extensive experience in auditing, verification and gap audits for:

- HACCP (Hazard Analysis of Critical Control Points)
- FS 22000
- ISO 22000 Food Safety Management Program
- BRC
- SQF
• GFSI - Global Food Safety Initiative
• Supplier Audits - Retailer Brands/Supply Chain
• Clean Green Australian Southern Rocklobster
• Special requirements for food safety
• National Heart Foundation - Australia
• Supply Chain Verification
• Certified Organic

Please contact the Assurance Services Division for more detailed information on Auditing and Certification (including the Five Ticks StandardsMark™. Phone: 1300 360 314 Email: assurance@saiglobal.com

Compliance, Ethics, Risk Management and Governance Solutions

Environment, Health & Safety Software
The SAI Global Environment, Health & Safety Software provides a framework for managing EH&S performance as well as a central repository for all of your preventative and reactive data. Gain visibility and transparency of your EH&S indicators with automation of reporting, incident reviews, effectiveness assessments, auditing and more.

Global Legislative, Regulatory and Compliance & Ethics News
Identifying and understanding the Standards, legislation and regulation that impact your business is key to identifying and managing risk. The following services are available to help your business keep up to date on Australian/New Zealand regulation and compliance news, developments and changes:

• Safety, Health & Environment compliance
• Australian Laws and Regulation Change Updates
• Regulatory Newsfeed - Occupational Health & Safety
• Safety, Health & Environment Risk Management and Compliance News
• Regulatory News – Corporate Law Bulletin
• Health, Safety & Environment Compliance

Occupational Health & Safety Online Training & Awareness Programs
The SAI Global Online compliance & ethics learning to improve compliance provides information on OH&S policies, procedures, values and best practice principles to widely dispersed employees and business partners consistently. Full tracking and reporting gives you proof of completion for audit purposes.

Please contact the Compliance Division for more detailed information on the SAI Global OH&S, governance, compliance & risk management solutions available. Phone: 1300 513 107 Email: enquiry.asiapac@saiglobal.com
Online Resources

From January 1, 2012 all Australian states and territories will move to the new harmonised WHS Act. Find out how you can prepare with Sherriff's Work Health & Safety Law Guide.
www.saiglobal.com/WHS

Do you need online access to the National Construction Code 2011 and all the Australian Standards® referenced within it?
www.saiglobal.com/NCC

Do you need online access to the Building Code of Australia and all the Australian Standards® referenced within it?
www.saiglobal.com/BCA

Do you need online access to the Plumbing Code of Australia 2011 and all the Australian Standards® referenced within it?
www.saiglobal.com/PCA

Do you need guidance on which Australian Standards® or parts thereof are referred to in legislation?
www.saiglobal.com/Newsletters

Would you like to be notified when Standards relevant to you are updated, amended or newly released?
www.saiglobal.com/SW

Do you need online access to the full text of your own customised selection of Australian Standards® as well as optional access to international Standards?
www.saiglobal.com/Select

Do you need to stay current on Australian Legislative, Regulatory and Compliance News?
www.saiglobal.com/compliance/regulatory-news/asiapac

Would you like to drive continued organizational success with results-focused training and professional development?
www.saiglobal.com/training
Regulators

Australian Government
Safe Work Australia
Website: [www.safeworkaustralia.gov.au](http://www.safeworkaustralia.gov.au)

Department of Health and Ageing – NICNAS
Website: [www.nicnas.gov.au](http://www.nicnas.gov.au)

Government of Western Australia
Department of Commerce - Worksafe

Government of South Australia
WorkCover SA
Website: [www.workcover.sa.gov.au](http://www.workcover.sa.gov.au)

SafeWork SA
Website: [www.safework.sa.gov.au](http://www.safework.sa.gov.au)

Tasmanian Government
Department of Justice – Workplace Standards Tasmania
Website: [www.wst.tas.gov.au](http://www.wst.tas.gov.au)

Queensland Government
Department of Justice and Attorney-General – Workplace Health and Safety Queensland

ACT Government
Office of Regulatory Services - WorkSafe ACT

Northern Territory Government
NT WorkSafe
Website: [www.worksafe.nt.gov.au](http://www.worksafe.nt.gov.au)

New South Wales Government
WorkCover Authority of NSW
Website: [www.workcover.nsw.gov.au](http://www.workcover.nsw.gov.au)

NSW Commission for children & young people
Website: [kids.nsw.gov.au](http://kids.nsw.gov.au)
Office of Environment & Heritage  
Website: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

Workers Compensation Commission  
Website: [www.wcc.nsw.gov.au](http://www.wcc.nsw.gov.au)

State Government of Victoria  
WorkSafe Victoria  

Victorian Trades Hall Council  
Occupational Health and Safety Unit – OHS Reps at Work  
Website: [www.ohsrep.org.au](http://www.ohsrep.org.au)

**Useful Websites**

**Australian Government**  
Department of Education, Employment and Workplace Relations - Office of the Federal Safety Commissioner  
Website: [fsc.gov.au](http://fsc.gov.au)

Safety, Rehabilitation and Compensation Commission  
Website: [www.srcc.gov.au](http://www.srcc.gov.au)

Seafarers Safety, Rehabilitation and Compensation Authority  
Website: [www.seacare.gov.au](http://www.seacare.gov.au)

CRS Australia  
Website: [www.crsaustralia.gov.au](http://www.crsaustralia.gov.au)

National Review into Model OHS Laws  
Website: [www.nationalohsreview.gov.au](http://www.nationalohsreview.gov.au)

Comcare  
Website: [www.comcare.gov.au](http://www.comcare.gov.au)

Business.gov.au – Occupational Health & Safety  

OzHelp Foundation  
Website: [www.ozhelp.org.au](http://www.ozhelp.org.au)
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Standards & Technical Information Group
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