



EYE HEALTH IN THE WORKPLACE

A guide for PCBU's
and workers



Australian Government

Comcare

Disclaimer

This guide provides a basic and general overview of its subject matter only. It is not a substitute for independent legal advice and cannot be relied on as a statement of the law relating to the *Work Health and Safety Act 2011* (Cth). Comcare recommends duty holders obtain appropriate independent legal advice relevant to their particular needs and circumstances.

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INTRODUCTION

The purpose of this publication is to assist PCBUs, safety practitioners, managers, supervisors and workers cooperatively manage eye health in the workplace.

This publication provides basic information that will help PCBUs and workers assess risks to eye health, manage eye health in the workplace and deal with safety issues.

Visual impairment can reduce health and wellbeing, affect a person's ability to work, drive and perform normal activities such as reading or watching television. The effects of visual impairment or injury can reduce mobility—increasing the risk of falls and injury—and reduce a person's independence. This can contribute over time to isolation and depression, affecting the worker's work and social relationships (NHMRC 2008).

More than 300 million people worldwide are estimated to live with low vision and blindness from any cause. This imposes social and economic burdens on individuals, families, societies and nations (Yiengprugsawan V 2010, WHO 2004).

During the National Eye Health Initiative of 2006–2010, the most common diagnosis for eye-related injury compensation claims in Australia was a foreign body on the external eye—with eye injuries more common for males than for females, particularly those of working age. This type of injury accounts for 59 per cent of eye-related claims (Comcare data). Median time lost from work because of a foreign body in the eye was 1.5 weeks (AIHW 2009).

Although emerging technologies improve efficiency in everyday life, prolonged use of electronic devices may lead to symptoms of Computer Vision Syndrome (CVS) such as eye strain, dry eyes, headaches, fatigue, blurred vision, and loss of focus. CVS can be a serious problem for people who spend many hours each day in front of a computer or on smaller screens like laptops or handheld electronic devices (Blehm et al 2005, Uchino et al 2008). As an indication of the extent of the problem in developed countries, like Australia, it is estimated that in the USA nearly 46 per cent of the population spend five or more hours per day using a computer or PDA (personal digital assistant) (AOA 2010). Up to 48 per cent of Australian office workers suffer from computer-related eye fatigue, a rate which appears to be increasing. Excessive computer use can cause eye strain and reduce productivity (Optometrists Association Australia 2010).

Commonwealth agencies have a statutory obligation to protect the health and safety of workers. Section 19 of the *Work Health and Safety Act 2011* (Cth) (WHS Act) states a PCBU must ensure—so far as is reasonably practicable—the health and safety of their workers while they are at work.

PURPOSE

This publication provides general advice and guidance for managing eye health. The purpose of this publication is to assist PCBUs and their workers cooperatively ensure safe working environments, without risks to the health of workers, contractors or other persons in or near workplaces.

The intended results are:

- > acceptance of eye health management as an important part of maintaining a healthy and safe workplace
- > workers can comfortably perform visually demanding work
- > workers can demonstrate the eyesight standards necessary for the safe performance of vision-critical tasks
- > controls are in place to eliminate or minimise the risk of eye injury.

SCOPE AND APPLICATION

Under the WHS Act, PCBUs, workers and other persons have responsibilities to ensure the health and safety of people at work.

RISK MANAGEMENT

This guide is not a substitute for undertaking organisational risk management. The WHS Act and regulations use risk management as the primary means for controlling risks. Risk management is a four step process to:

- > **identify** the hazard
- > **assess** the risk associated with the hazard
- > **control** the risk
- > **monitor** and **review** the process.

To be effective, risk management requires the commitment and cooperation of all parties involved and should become an integral part of an organisation's culture, business practices and processes.

IMPLEMENTATION

PCBUs and workers (and/or their representatives) are encouraged to develop a policy based on this guide and to disseminate it for access and reference by all managers, supervisors and workers. This document is not intended to override or replace existing agreements between PCBUs, workers and their representatives.





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DUTY OF CARE AND THE GENERAL MANAGEMENT OF EYE HEALTH

You can apply the following general advice to work that involves demanding visual tasks or has an elevated risk of eye injury.

The effective management of eye health is an important contribution to a healthy and safe workplace.

Workers may experience eye health problems for a variety of reasons where the PCBU does not have any responsibility—for example, permanent eyesight deterioration due to normal ageing. Workers may have a pre-existing eyesight problem that has not been resolved. While not responsible for these eye health issues, PCBUs can encourage workers to look after their eye health and may have a duty to ensure that the problem is not aggravated by work circumstances, or leads to consequential issues.

PCBUs should examine the workplace to assess if there are any hazards that could contribute to eye discomfort for workers. PCBUs could develop checklists for specific work environments—for example, work conducted outdoors, driving or in high risk environments. Such checklists may inform of action to improve the work environment.

PCBU'S ROLE

PCBUs have a duty of care under section 19 of the WHS Act which states that a PCBU must ensure—so far as is reasonably practicable—the health and safety of their workers while at work.

A PCBU must provide personal protective equipment (PPE) to workers where the PPE is for minimising a risk to health and safety (section 44 Model Work Health and Safety Regulations 2011). Under section 273 of the WHS Act, the PCBU must provide PPE at no cost to their workers.

A serious eye injury is a 'serious injury or illness' under section 36 of the WHS Act and any incident resulting in a serious eye injury is a 'notifiable incident' under section 35 of the WHS Act.

PCBUs should:

- > do all that is reasonably practicable to ensure healthy and safe working environments and minimise the risk of eye injury through safe work practices
- > identify work tasks that involve an elevated risk of injury
- > ensure that appropriate PPE is provided to workers at risk of eye injury or damage—for example, safety glasses, goggles and sun protection
- > ensure that workers and first aid personnel are trained in dealing with eye injuries occurring in the workplace
- > ensure that arrangements are in place for emergency treatment or transfer to hospital
- > provide appropriate first aid equipment—for example first aid kits and eyewash stations
- > provide adequate workplace lighting
- > provide optimum workplace ergonomics
- > provide task specific visual displays
- > ensure adequate air conditioning
- > ensure a variety of work practices and tasks, such as appropriate rest breaks or varying work tasks when undertaking prolonged visually demanding work
- > identify and document all job functions that have prescribed standards of vision
- > ensure that all workers with job functions that have prescribed standards of vision undertake necessary eyesight screening and that the results of those tests are recorded

- > ensure that only those workers who have met prescribed standards of vision for performing vision-critical tasks are asked to perform those vision-critical tasks
- > seek professional advice about appropriate eyesight screening to establish a pre-incident and monitoring strategy.

PCBUs should also ensure that workers are aware of their responsibilities to themselves and others by:

- > documenting work practices and communicating these to workers undertaking work with an elevated risk of eye injury
- > revising worker awareness of workplace first aid arrangements and how to access these quickly if an eye injury occurs
- > advising workers with concerns about their eye health or eyesight to seek advice from an optometrist or medical professional
- > promoting general awareness of eye health as a key part of every worker's personal health care arrangements.

WORKER'S ROLE

Workers have a duty to:

- > follow safe work practices to minimise the risk of eye injury
- > manage their eye health at work and outside work
- > use PPE in accordance with any instructions given by the PCBU to ensure safe and proper use—especially for tasks with an elevated risk of eye injury
- > ensure that they know how to appropriately respond to an eye injury and who to contact for first aid in the event of an accident
- > ensure that they satisfy prescribed standards of vision before performing vision-critical tasks
- > advise their PCBU of any concerns, including visual or eye discomfort or injury in the workplace
- > cooperate with their PCBU to identify and correct any factors contributing to visual or eye discomfort strain or the risk of eye injury in their workplace
- > seek advice from an optometrist or medical professional if they have any concerns about their eye health or eyesight
- > set up appropriate personal health care arrangements to manage their own eye health.

COSTS

There are about 50 000 eye injuries per year in Australia, costing around \$60 million. Eight per cent of workplace injuries are eye injuries and each year about seven in 1 000 workers sustain an eye injury (Cole 2003).

An estimated 60 per cent of all eye injuries in Australia occur in the workplace, in the construction, mining, agriculture and forestry and fishing industries (Optometrists Association Australia 2010)

A PCBU and its workers may enter into an arrangement where the PCBU agrees to pay or reimburse workers for part or all of any money paid by them for eyesight screening, lens and spectacle frames required for use at work—for example, through industrial agreements.

Where a PCBU has a legal obligation to guarantee a worker maintains a prescribed vision standard, the PCBU may request that an optometrist or ophthalmologist report directly to them about the worker's vision. Although it is unlikely that a worker could be compelled to attend these appointments, a PCBU may have the right under the worker's conditions of employment to stand the worker down or take other action until their standard of vision has been medically confirmed.

Any request for examination, and the examination itself, can only be made and conducted with the prior knowledge and consent of the worker. The PCBU should cover all expenses associated with obtaining a specialist's report.

PCBUs are responsible for any costs associated with providing PPE for workers undertaking work with an elevated risk of an eye injury—such as safety glasses and sun/UV protection.

Workers are responsible for any costs associated with meeting prescribed and mandatory medical standards which are a prerequisite for their employment. Reasonable costs may be reimbursed by the PCBU with prior agreement, or where conditions of employment allow for some reimbursement.

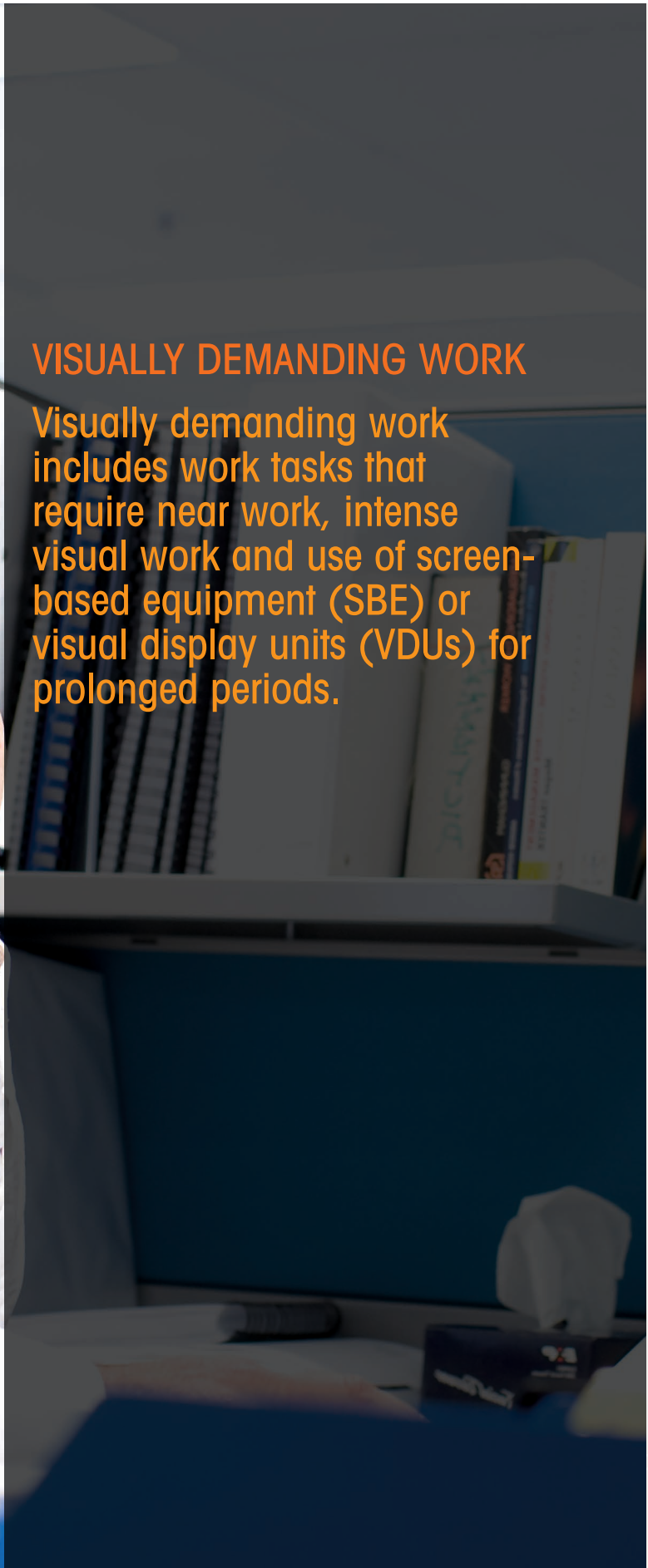
Workers are also responsible for any costs associated with the general management of their own eye health—unless there is an arrangement already in place—and for setting up appropriate personal health care arrangements, including any pre-existing eye sight problems. There is no workplace health and safety requirement for a PCBU to pay costs associated with general eye health. Medicare benefits are payable for certain eye health consultations and there is often no fee charged for eyesight tests.



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VISUALLY DEMANDING WORK

Visually demanding work includes work tasks that require near work, intense visual work and use of screen-based equipment (SBE) or visual display units (VDUs) for prolonged periods.



A visually demanding task involves some or all of the following conditions:

- > near work—distances of less than 500 mm for periods of several hours with few breaks
- > text and graphics less than 3 mm high
- > crowded and complex visual material
- > accuracy, sustained attention, sustained work at speed or sustained cognitive processing
- > less than optimum workplace ergonomics (Cole, 2001).

Workers undertaking visually demanding work may become aware of an eyesight problem they had not noticed before undertaking such tasks (Health and Safety Executive, 2006).

Users of screen technology cannot be expected to stop using computers or PDAs, but should be encouraged to follow simple steps such as those listed below. The American Optometric Association (AOA) suggestions will assist to increase productivity and decrease discomfort while surfing the internet, editing documents, sending emails or using screens and PDAs. These small measures can make big differences to the risk of vision strain.

- i. **Give It A Rest**—Remember the 20-20-20 rule. At least every 20 minutes, take a 20-second break and look at something 20 feet (6 metres) away.
- ii. **Size Up**—Smaller screens on handheld devices and laptops usually favour small fonts that challenge our vision. Instead of bringing the screen closer to the eyes, increase the font size so the device can be used at a distance that is more comfortable for the eyes.
- iii. **Sharpen Up**—Better resolution offers greater clarity and usually more comfort. Adjust the brightness of the screen to a comfortable intensity, neither too bright nor too dim.
- iv. **Reduce Glare**—Handheld devices present challenges in various lighting conditions. Users should try to reduce glare where possible and try to make sure lighting is not directly behind or in front of their heads.
- v. **Look Down**—It's easier on the eyes to focus on reading material that is below eye level, therefore, a computer monitor or handheld device can be positioned slightly below eye level (AOA 2010). Computer Vision Syndrome (CVS) is a collective term from recent research for vision and eye related problems common among computer users—including headaches, dry eyes and blurred vision. An important factor of this syndrome is the angle of eye gaze to the screen (Izquierdo et al 2004).

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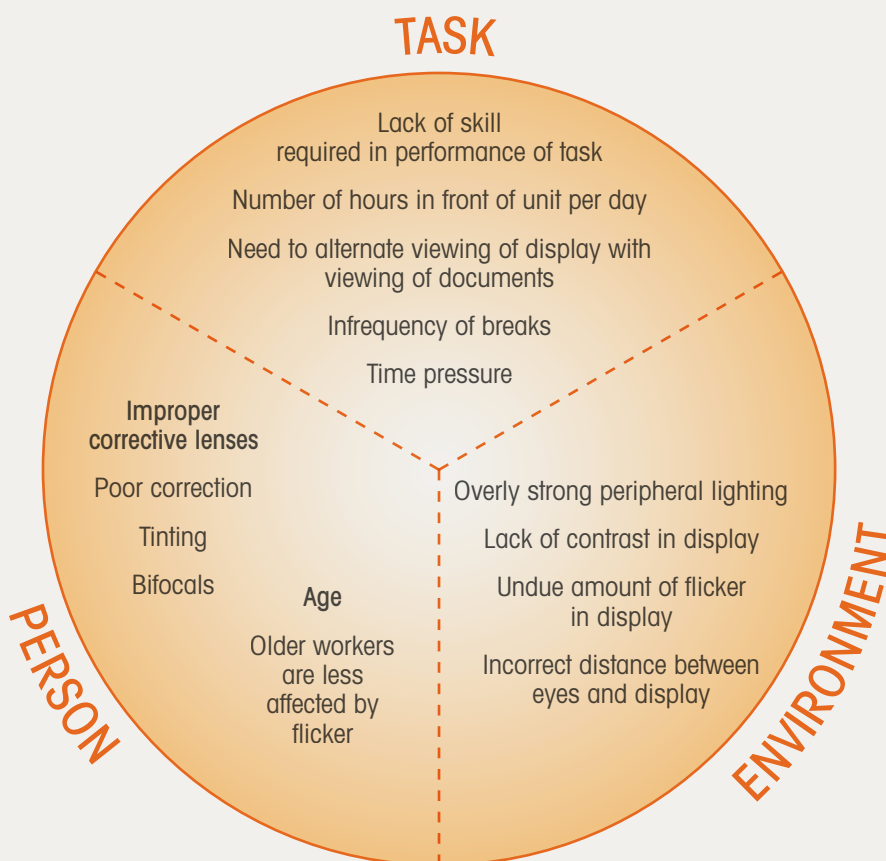
SCREEN WORK

To assess, correct and prevent visual discomfort with screen work, you need to consider many different factors.

Fatigue and eye discomfort can be the result of individual difficulties in normal eye function, from wearing glasses that are poorly corrected, or for example from conjunctivitis. Visual discomfort can be related to the workstation and can also be linked to work organisation factors such as monotony and time spent on the job with and without a break. Inadequate lighting, reflections on screen, flicker and too much light can also increase the risk of eye discomfort.

Figure 1 illustrates some of these points.

Figure 1: Factors that increase the risk of eye fatigue among visual display unit (VDU) workers



Further information on working with visual display units is available from:

- > *Officewise: A guide to health and safety in the office* (Comcare, 2008)—available through the Comcare website at www.comcare.gov.au
- > *Working with VDUs* (Health and Safety Executive, United Kingdom, 2006)—available through the Health and Safety Executive website at www.hse.gov.uk
- > International Labour Organization's Encyclopaedia of Occupational Health and Safety (Chapter 52) *Ocular and Visual Problems*—available at www.ilo.org/safework_bookshelf/
- > Optometrists Association Australia website www.optometrists.asn.au

Source: *Ocular and Visual Problems*, Paule Rey, Jean-Jacques Meyer 2010.



VISION-CRITICAL TASKS

Vision-critical tasks are those with a statutory prescribed standard of vision that must be met by the worker at all times. In most cases this standard is required to safeguard the health of the worker or their co-workers.

The vision standard required is determined by an authorised body or licensing authority under regulation or law. One example is the vision standard required of air traffic controllers as set by the Civil Aviation Safety Authority (CASA) as well as the intervals at which retesting is required. Drivers of certain vehicles, such as those carrying public passengers, dangerous goods or heavy goods, must also meet higher medical standards than drivers of private vehicles (Austroads, 2003).

WORK INVOLVING PHYSICAL RISKS OF EYE INJURY

The majority of workers perform work with little or no threat of eye injury—examples of work with an elevated risk of eye injury include:

- > using lasers
- > handling hazardous chemicals
- > welding
- > soldering
- > grinding.

Proper precautions should be taken to minimise the risk of eye injury. Equally important is the responsibility for both PCBUs and workers to respond appropriately in the event of eye injury.

Although risks can be minimised by the strategies of hazard elimination, hazard control and personal protection, accidents and eye injuries may still happen.

Controls need to be in place to eliminate or minimise the risk of physical eye injury. Eye injuries can occur from:

- > sudden impacts on the eye by external objects
- > penetration of foreign bodies—for example, splinters, dust, ash, bits of wood, metal, glass or other materials
- > exposure to high intensity light, radiation—for example, microwave, infrared, ionising/non-ionising and ultraviolet radiation
- > hazardous substances of a type or intensity that can cause damage to the eye—such as chemicals and infectious substances.

Eyesight screening and periodic monitoring can assist in establishing a worker's pre-incident vision and monitor any changes in vision over time. PCBUs may choose to establish a worker's pre-incident vision in line with relevant standards.

The level of vision prior to an accident should be the basis for evaluating any loss of sight. Determining impairment after an accident is much more efficient and certain if vision prior to the accident is known. The Australian Standard AS/NZS 2211.1:1997: Laser Safety recommends that the vision of workers should be documented before commencement of work with lasers (AS/NZ, 2004). This principle could be extended to all workers whose occupation exposes them to the risk of eye injury (Cole, 2003).

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GLOSSARY OF TERMS

Accident

An undesirable or unfortunate happening; casualty; mishap. Anything that happens unexpectedly, without design, or by chance... (Macquarie dictionary).

Computer Vision Syndrome (CVS)

A collection of ocular symptoms related to computer use, such as eyestrain, tired eyes, redness, blurred or double vision and eye irritation. Dry eye is a major contributing factor.

Ergonomic

The scientific study of the relationship between people, the equipment they use, and their work environment.

Exposure

Exposure occurs when a person comes into contact with a hazard. The exposure can be to hazardous plant, such as to moving machinery like saw blades or to hazardous substances by contact with the skin or eyes, or working with VDUs.

Hazard

Hazard is a source or potential source for harm, or adverse effect on a human for injury, ill-health, or disease, or anything that may cause injury or ill health to anyone at or near a workplace.

Injury

Workplace injuries are identifiable events, for example, cuts, bruises, crushed feet and hands, broken bones, amputations. They are commonly referred to as acute trauma and are caused by

- > slips, trips and falls
- > falling objects
- > being struck by an object
- > accidents with machinery.

Investigations

A way of identifying and assessing hazards and of recommending solutions so that recurrences are prevented.

Workplace illness

Caused by exposure to energies, materials or processes beyond our bodies' tolerance limits e.g. asbestosis, liver damage, chronic back pain caused by continuous lifting, white-finger disease from excessive vibration, occupational overuse syndrome or repetitive strain injury. Occupational illnesses sometimes take a long time to develop and it is not always easy to lay the blame solely with the PCBU as many illnesses are caused by more than one event - for example, cancer, loss of sight.

Risk

Risk is the likelihood that a hazard will cause injury or ill health to anyone at or near a workplace. The level of risk increases with the severity of the hazard and the duration and frequency of exposure.

Risk assessment

The process of estimating the probability of occurrence of an undesirable event and the magnitude of its consequences over a specified time period.

Risk control

Taking actions to eliminate or reduce the likelihood that exposure to a hazard will result in injury or disease.

Risk management

The systematic application of management policies, procedures and practices to identify, assess, control and monitor risk.

Safety audit

A regular, systematic inspection of the workplace to evaluate the implementation and effectiveness of the organisation's health and safety system.

Safe working methods

Systems and organisation of work (including hazard procedures identification and control procedures, the appropriate training, tools and equipment) to ensure the safety, and absence of risk to health, of all persons involved in doing the work.

Serious eye injury

A serious eye injury; that results in, or is likely to result in, the loss of the eye or total or partial loss of vision; an injury that involves an object penetrating the eye (eg, metal fragment, wood chip); exposure of the eye to a substance for which the risk phrase of the relevant material safety data sheet or label states 'risk of serious eye damage', ie, notification is not required where the risk phrase states 'irritating to the eye'

Screen Based equipment (SBE)

See Visual Display Units

Visual Display Units (VDUs)

A visual display unit, also called a monitor or display screen, usually forms part of a computer and shows text, numbers or graphics. A VDU includes TV-style screens and flat panel screens.

Workplace inspections

Planned systematic appraisals of the workplace which can help identify hazards, assess and control risks, ensure a safe and health environment and assist in complying with WHS legislation.



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