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1 introduction

This booklet is designed to provide guidance for employers and for their employees who regularly work with Display Screen Equipment (dse). By law, and in accordance with the Health and Safety (Display Screen Equipment) Regulations 1992 (as amended in 2002), employers must seek to protect health by reducing the risks associated with dse work.

The main risks associated with dse are musculoskeletal disorders of the back and upper limbs (arm, hand, shoulder and neck), visual fatigue and mental stress. Although individual risks are often low, risks may become more significant if good practices are not followed. The purpose of this booklet is to give advice on a risk reduction strategy, helping to prevent ill health associated with dse.

Advice will be given on ‘the workstation’ which not only refers to the equipment and furniture you use but your complete working environment. The workstation will be discussed in more detail in section 3.

Under the Regulations the requirements of employers are;

- Workstations must be assessed to reduce risk.
- Workstations must meet minimum requirements and be suitable for the user.
- Breaks and changes in activity must be ensured.
- Eye and eyesight tests must be provided on request.
- Provision of adequate training and information.

The Regulations also encourage employees to play an important role to help reduce risks. Employees are encouraged to participate in their workstation assessment and are urged to report any ill health or discomfort that may be due to their workstation. Early reporting to an appointed official, Health and Safety Executive or Environmental Health Officer will allow appropriate corrective measures to be implemented.
2 who is a display screen user?

It is important to understand who is at risk. The frequency, duration and intensity of dse work needs to be given consideration. The Regulations describe a user as ‘somebody who habitually uses their dse for a significant part of their normal work.’ This relates to employees who use dse continuously or near continuously on a regular basis. It also includes those who transfer information quickly to or from their dse or require high levels of concentration or attention.

3 analysis of workstations

It is a legal requirement for an employer to ensure every user’s workstation is assessed. As previously mentioned, the main risks relate to musculoskeletal disorders, visual fatigue and mental stress. The aim is to lower risk by implementing appropriate precautions. A workstation assessment should consider the ergonomic design of equipment, furniture, organisation of work, working environment, job design and posture. As an employee you should receive adequate training to identify the risks.

Different users will have different needs as tasks may differ. Individual workstations will need to be assessed and individuals should be notified of the assessment in advance. Users are advised to report any ill health or discomfort that may be related to their dse at the earliest opportunity.

An ergonomic checklist is a useful tool for completing a workstation assessment, requiring essential input from the user. The assessment should identify risks, steps to reduce risk and provide a clear record of findings. Details of the assessment should be reported to both the user and a designated official of the employer.

Workstation assessments should be reviewed if there are any user changes, changes to equipment, furniture and working environment or if the nature of tasks are changed.

All assessors should be trained to an adequate level of competence and should be familiar with the minimum requirements of the dse Regulations.
4 training and information

Employers should ensure that all 'users' receive adequate dse Health and Safety training relating to their workstation including when their workstation is modified. The objective of the training is to reduce the risk of musculoskeletal problems, visual fatigue and mental stress. Training should be provided on the following:

- The causes of risk and what to look for.
- The importance of good posture.
- Workstation organisation and adjusting equipment and furniture.
- The need for breaks and changes in activity.
- Eye and eyesight test regulations.
- User contribution to the assessment and the need to report problems/symptoms.

Employers must ensure that all dse users are given adequate information about all aspects of workstation health and safety and to measures taken as a consequence of the workstation assessment.

Following a workstation assessment it is advised that the information recorded is made available for individual dse users and also be retained by the employer.

This booklet provides employers and employees with a basic understanding of the Regulations, highlighting measures to reduce risk.

4.1 software

Badly designed software which is inappropriate for a task can impede efficiency and may cause stress affecting the health of the user. The employer must account for the following:

- Software must be suitable for the task.
- Software must be easy to use, after appropriate training.
- No qualitative or quantitative method of monitoring performance should be used without the knowledge of the user.
5 daily work routines

An employer is required to plan activities of dse users to allow for breaks or changes in activity. Ideally work should consist of a mix of screen-based and non screen-based work. The key message is not to work too intensively for too long.

Many workers will have natural breaks away from dse due to their varied tasks, for example, telephone calls, filing or photocopying. Where intensive dse work is unavoidable breaks or pauses should be incorporated in the work routine.

The regulations do not lay down requirements for breaks but the general guidance is listed below;

• Breaks should be included in work time.
• Breaks should be taken away from the dse and allow for body movement and posture change.
• Changes in activities that do not include screen-based work (e.g. telephone work) are also classed as breaks. According to study evidence, such breaks have proven effective in relieving visual fatigue.
• Timing is more important than duration of a break. Take a break before fatigue sets in.
• Shorter, more frequent breaks are more suitable e.g. 5-10 minutes following 50-60 minutes continuous screen/keyboard work.
• Blink often and look into the distance from time to time.
6 eyes and eyesight

There is no evidence that dse work causes any permanent damage to the eyes or eyesight. However, users with pre-existing vision defects may become more aware of them. Uncorrected vision defects can make dse work more tiring and stressful. The purpose of correcting defects is to enhance comfort, improve efficiency and help to prevent temporary eye strain, visual fatigue and headaches.

The regulations require employers to provide users with an eye and eyesight test if requested. If a user requests a test then the employer must pay for it. The examination must be carried out by a registered optician or a registered doctor. The test should be carried out as soon as is practicable after the request. The employee must inform the optician that they use dse as consideration must be given to the viewing distances specific to the dse work (generally 50-70cm).

If it is concluded that appliances are needed specifically for dse work, the employer has to pay for the basic frames and lenses. If a user chooses more expensive appliances the employer is not obliged to pay for these. The employer may choose to contribute the equivalent cost of the basic appliances.

Employers are not responsible for any corrections for vision defects or examinations for eye complaints not related to dse work.

The Regulations do not specify the frequency of repeat testing and this may vary with individuals. Employers should take guidance from the optician or doctor.

As a user you are not obliged to have an eye test but you must be aware of the procedures for requesting such a test. It is the responsibility of the employer to ensure that all dse users are notified of the company policy for requesting an eye or eyesight test.
7 posture

When sitting at a workstation the aim is to minimise strain by maintaining the natural contours of the back. Poor posture rounds the spine, more commonly referred to as 'slouching'. It is also recommended that you sit directly in-line with your keyboard and monitor. Before undertaking work at your workstation you must make sure that you have made the necessary adjustments to your equipment and furniture. This is particularly important if you share a workstation with another user.

If a document holder is necessary for copy typing or transfer of information, it should be positioned at a similar visual plane and viewing distance to that of the display screen to encourage good posture.

Although not mandatory, using a footrest may help to encourage good posture.

The following sections have been designed to advise on workstation set up, ensuring compliance with the dse regulations and helping to minimise personal risk.
8 workstation equipment

8.1 chair

- The work chair should allow a comfortable posture but also needs consideration for the correct use of your screen, keyboard, mouse and work desk.
- The user must be trained on how to adjust their chair.
- The chair should be adjustable in height.
- The seat back should be adjustable in height and tilt.
- If a user is unable to rest their feet flat on the floor, a footrest must be made available to ensure correct posture.
- The chair should be on castors to allow movement.
- Chair arms should not affect the freedom of movement.

8.2 display screen

- The screen should be positioned at approximately arms length.
- The top of the screen should be just below eye level. It should be possible to use a separate base for the screen or an adjustable table. Solid blocks or a monitor arm can help adjust the display screen height to minimise head and neck movement.
- The characters on the screen should be well-defined and clearly formed. They should also be of adequate size with sufficient spacing between the characters and lines.
- The screen image should be stable, with no flickering or other forms of instability.
- The brightness and contrast between the characters and the background should be easily adjustable by the user.
- The screen must swivel and tilt freely to suit the needs of the user.
- Ensure you sit face-on to the display screen.
8.3 keyboard

- The keyboard should be stable when in use.
- The keyboard should be tiltable and separate from the screen. This will allow the user to find a comfortable position avoiding fatigue in the arms and hands.
- The aim is to keep your forearms as horizontal as possible.
- The symbols on the keys should be adequately contrasted and legible from the working position.
- All keys should function correctly.
- The space in front of the keyboard should allow support for the hands and arms.
- Hand support may be incorporated into the keyboard or a separate hand/wrist support may be attached to the work surface.
- Ergonomic keyboards are not necessary for all users but may be useful for those suffering from upper limb pain.

- Find a safe and comfortable working position, avoiding stretching and reaching out from the shoulder.
- The mouse should be placed fairly close to the midline of the user’s body and not out to one side.
- The upper arm should be close to the side of the body with the elbow bent almost at a right-angle.
- The arm should feel reasonably relaxed.
- Use the work surface to support your forearm or wrist and use the chair arms to support your elbow.
- A mouse should be used on a suitable surface offering sufficient space.
- Mouse mats should have a smooth surface and be of suitable size. Sharp edges add pressure to the wrist and forearm soft-tissue and should therefore be excluded.

8.4 mouse

- A mouse should be the right size and shape for the user and should be suitable for right and left-handed users where appropriate.

8.5 work desk

- The work surface should be large enough to allow all tasks to be performed e.g. accommodating the screen, keyboard, input devices, writing paper and telephone.
- Sufficient space is needed to allow for correct positioning of hands, allowing for a comfortable position (See section 8.2, 8.3 and 8.4).
- Storage for work materials should be provided.
9 summary of equipment set up

- Eyes looking down slightly from horizontal
- Forearms as horizontal and wrists as straight as possible
- Aim to keep knees slightly lower than hips
- Feet flat on floor or on footrest
- Adjust chair height
- Try to keep elbow angle at 90°
- Adjust backrest to maintain curve in lower back
- Upright posture
10 workstation environment

10.1 space

- Adequate space should be provided under the work surface and between items of furniture. Clearance is needed for the thighs, knees, lower legs and feet, allowing legs to move freely.
- The working environment should be free from tripping hazards.
- The workstation should provide sufficient space for the user to change position and vary movement.
- Space should accommodate postural changes to prevent the user sitting in a static position for prolonged periods.

10.2 lighting, reflection and glare

- Imbalances in lighting and reflections on screens can lead to visual fatigue.
- Lighting should be appropriate for all workstation tasks, whether it be natural or artificial light or a combination of both.
- Reflections and glare can be avoided if the screen or user does not directly face a window or bright lights.
- A user should ideally sit at a right angle to a natural light source.
- Windows should be fitted with an adjustable covering (e.g. blinds). Use of these must pay consideration of the effects to other users.
- Most modern screens have an anti-glare finish and therefore screen filters are not mandatory under the regulations. However, screen filters may be considered if other corrective measures are not successful.

10.3 noise

- Noise emitted by workstation equipment should ensure that concentration and speech is not distracted.
- Noise from equipment such as printers and photocopiers should be considered.
- If noise is distracting, equipment may be re-positioned. If this is not possible, sound-proofing cabinets may be useful.
- Workstation partitions may also help.

10.4 heat and humidity

- Workstation equipment should not produce excess heat which may cause user discomfort.
- Electronic equipment can be a source of dry heat which can cause user discomfort, particularly dry/sore eyes.

10.5 workstation housekeeping and cleaning

It is easier to clean work surfaces if they are kept tidy, keeping your desk clear of unnecessary materials. It is advisable to keep food and drink away from your computer equipment, taking breaks to consume food and drink away from your workstation.

Keyboards and screens should be systematically cleaned by somebody employed for that specific purpose. However, it is good practice for users to be given screen-cleansing wipes to be used as required.
10.6 radiation

- All radiation with the exception of the visible part of the electromagnetic spectrum should be reduced to negligible levels for user protection.

- As stated in the Regulations, so little radiation is emitted from current designs of display screen equipment (cathode-ray tube and LCD flat panel) that no special action is needed to meet this requirement. In fact, radiation levels are much less than the natural background level to which everyone is exposed.

- UV, visible and infrared radiation emissions are much less than the maximum exposures recommended by national and international advisory bodies.

- Levels of electric and magnetic fields are similar to those of common domestic appliances.

- Research has shown no adverse health and safety effects as a result of dse emissions and therefore it is not necessary for employers to take any action for reducing risk. Users do not need to be given protective devices such as anti-radiation screens.

11 pregnancy

Many scientific studies have been carried out to assess possible effects of radiation emissions from dse on pregnant women. As a whole their results do not show any link between miscarriages or birth defects and working with dse. In the light of this evidence the Regulations state that pregnant women do not need to stop work with dse.

12 portable dse users

It may be necessary for employers to use portable dse such as laptops and handheld devices. Employees using these portable devices for prolonged periods are also subject to the regulations. The design of portable dse can make it difficult to find a comfortable working posture, particularly due to smaller keyboards and no keyboard/screen separation.

Employers should ensure that work with portable dse is assessed and appropriate measures are taken to control risks. All users should be trained on identifying risks, including the set up of equipment away from the office. As with use of all dse the user should report any problems to their employer at the earliest opportunity.

The guidance given in sections 1-11 of this booklet also applies to portable dse users. Additional recommendations are detailed in the following sections.
12.1 selecting portable dse

- Opt for a large screen.
- Compatibility with a docking station is recommended and/or a facility for attaching an external mouse or keyboard.
- Friction pads can prevent sliding across work surfaces.
- There should be sufficient memory and speed for the tasks.
- Look for a low weight as possible, including accessories.
- For use outdoors the device should be adequately waterproof and legible in bright sunlight.
- Keyboards and screens on handheld devices should be big enough to be used comfortably.

12.2 docking stations

Employees should be encouraged to use their portable at a docking station whenever possible. There are various designs helping the user to adopt a more comfortable posture. The aim is to provide a full sized screen and/or keyboard, and to separate the screen from the keyboard, allowing the portable’s own screen to be viewed at the correct height.

Considering health and safety, the docking station should be treated in the same way as a full sized dse.

12.3 breaks

Regular breaks in routines are particularly important for portable users who do not work at a docking station. Longer and more frequent breaks or changes in activity will be necessary to compensate for a poorer working environment.

12.4 eyes and eyesight

On having an eye test you are advised to inform the optician or doctor that you use portable dse as viewing distances may be shorter than those of a desktop dse user.

12.5 other portable dse considerations

- Use a lightweight carrying case and only carry what you need to reduce the load.
- To reduce the risk of theft avoid manufacture-branded laptop cases, do not leave in a parked car and take care in public places.
- Avoid using a portable on your lap as this is likely to result in a poor working posture.
- Minimise the use of portables in non-ideal locations such as a car.
- If you do need to use a portable in a car, sit in the passenger seat and adjust the seat to allow sufficient leg room.
- Raising your laptop, using a briefcase for example, will help to improve your posture.
- Avoid using a laptop on a plane.
- When using a laptop on a train, using a larger communal table is recommended.
13 homeworkers

If a dse user is employed to work at home the dse Regulations do apply. Homeworkers are subject to the normal risks explained previously in this booklet and should be trained on how to minimise their risk. A workstation assessment should be carried out and submitted to the employer and any appropriate measures should be taken to ensure the user can work comfortably. As with all dse users, homeworkers should report any concerns or problems with their workstation to their employer as soon as possible.

13.1 legal requirements

Under the Management of Health and Safety at Work Regulations 1999 (Management Regulations) the employer is required to carry out a risk assessment of the homeworker and their homeworking environment.

The five steps to completing a homeworker risk assessment are;

1 Identifying the hazard: It is the responsibility of the employee and their manager to identify any homeworking related risks.

2 Identify who may be at risk and how: All members of the household and visitors, as well as the homeworker, must be considered.

3 Risk assessment and appropriate action: If a hazard is identified, it’s severity of risk must be considered to allow for appropriate action.

4 Record the findings: It is a legal requirement to record any significant findings from a homeworker risk assessment. This can be achieved by producing an assessment form covering the range of hazards listed in the next column.

- Work Equipment
- Electricity
- Display Screen Equipment
- Manual Handling
- Hazardous Substances
- First Aid
- Accident Reporting
- Fire

13.2 work equipment

The employer must ensure that all equipment supplied to the homeworker is suitable for their tasks. Under the Provision and Use of Work Equipment Regulations 1998 (PUWER) all work equipment must be suitable and maintained in an efficient state, in effective working order and in good repair.

Employers must ensure that homeworkers are trained in the use of their equipment. The homeworker must take responsibility for checking equipment regularly to ensure it is maintained. Any issues with work equipment must be reported to the employer promptly.

13.3 electricity

The Electricity at Work Regulations requires the electrical integrity of the supplied equipment to be checked on a regular basis. It must be understood that the employer is only responsible for the equipment that they provide. The homeworker is responsible for the suitability, maintenance and repair of the electrical system in their home.
Testing and inspection requirements by a qualified person are as follows;

- Portable electrical appliances and plugs connected to computer equipment: Test every 2 years
- Any four gang leads and plugs used in conjunction with other equipment: Test every year

A qualified electrician must also carry out an earth test, insulation resistance (not on electronic equipment), load test and an earth leakage test.

It is also important that the homeworker carries out regular visual inspections (6 months) of the outside of all electrical equipment.

**Homeworker checklist**

- Ensure electrical sockets are switched off at the wall when inserting or removing a plug.
- Disconnect electrical equipment from the socket at the end of the day or when not in use.
- Do not attempt to make repairs or modifications including taking a plug apart.
- Do not overload electrical sockets.
- Do not leave trailing cables across the floor.

It is the responsibility of the homeworker to report issues concerning the equipment supplied by the employer, such as;

- Exposed wires.
- Damage to cables, plugs or socket casings.
- Loose wiring and screws.
- Evidence of overheating.
- No covering cable sheath where the cable enters the plug or equipment.
- Overloading of socket adapters.
- Evidence of non-standard, handmade or taped joints in the cable.
- Damage to the outer cover or loose parts.

**13.4 Display screen equipment**

A homeworker is defined as a user if they use their display screen equipment continuously or near continuously for at least 1 hour a day. To comply with the DSE Regulations a risk assessment of the homeworking environment is required. For guidance on minimum requirements refer to sections 4-12 of this booklet. The home workstation is subject to the same requirements as that of an office employee.
13.5 manual handling

Guidelines for manual handling and moving goods are covered by the Manual Handling Operations Regulations 1992 (as amended). If your homework role requires significant manual handling then it is the responsibility of your employer to ensure you are sufficiently trained to reduce risk.

basic rules

- When lifting keep the feet apart, bend the knees and keep the back as straight as possible.
- Keep the load as close to the body as possible.
- Try to minimise twisting and turning when lifting.
- Lift and carry smaller amounts.
- Use a half way resting point if necessary.
- Consider using a trolley for loads to be moved easily.

13.6 hazardous substances

If your homework involves handling of hazardous substances it is the responsibility of the employer to ensure that such substances are covered under The Control of Substances Hazardous to Health Regulations 2002 (COSHH). This states that all hazardous substances are identified and associated risks are eliminated or, if this is not possible, controlled.

general considerations

- Are the substances flammable or corrosive?
- Do they give off fumes?
- Are they stored away safely?
- After use, has anyone suffered from symptoms such as headaches, dizziness or nausea?
- Has anyone suffered from irritation or rashes to the skin?
- Before use consider if anyone in the home is asthmatic.

Look for the warning label on the packaging as illustrated above. Ensure that all substances are used in accordance with manufactures instructions. If the use of hazardous substances cannot be eliminated, please ensure that the correct personal protective equipment is used. Such equipment should be requested from your employer.

13.7 first aid

Under the Health and Safety (First Aid) Regulations 1981, employers should ensure that adequate first aid provisions are provided for homeworkers. The first aid box should be green with a white cross and should contain the minimum of;

- General guidance for first aid.
- Six individually wrapped sterile adhesive dressings.
- One large sterile un-medicated dressing.
- Two triangular bandages.
- Two safety pins.
- Individually wrapped moist cleansing wipes.

The first aid box should be maintained and re-stocked after use. This is the responsibility of the homeworker.
13.8 accident reporting

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR 1995) require work related accidents, injuries, diseases and dangerous occurrences to be reported by the homeworker to their employer.

The homeworker also has legal obligations for their own health and safety and the implications of their actions to others. All equipment provided must be used in accordance with their training and instructions. Co-operation with their employer on all health and safety issues is vital.

13.8 fire

Fire safety of the homeworker is not the direct responsibility of the employer. However, general guidance is listed below;

• Install smoke detectors. They must be correctly fitted and conform to BS5446, part 1. Check the batteries regularly.

• Install a portable fire extinguisher. This should be serviced annually and positioned in a main exit route. For home use a general purpose extinguisher (CO2), which can be used on electrical and combustible materials, should be used. If in doubt contact the fire service who will inform of the appropriate type and size for your home.

• Check electrical leads and appliances for wear.

• Do not overload power points.

• Do not use portable heaters next to furniture/furnishings.

• Do not leave cigarettes burning and empty ashtrays frequently.

• Do not leave papers or drinks on top of monitors or radiators.

Should a fire start in your home, here are some basic guidelines;

• Do not risk injury to fight a fire. If in doubt get out.

• Do not stop to collect personal belongings.

• Dial 999 and ask for the fire brigade.

• Alert your neighbours if you feel it is necessary.

• Wait in a safe place and do not attempt to go back inside the building.
REFERENCES


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