

# Report on health and safety issues in relation to building and using computers

[Environment](#), [Electricity](#)



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Electro Static; what is it? When materials rub together, an electric charge can build up. If the material is an insulator, that charge is held and doesn't move and is referred to as static electricity. Electro Static Discharge; what is it? When the charged object is then brought near an electrically neutral object there is an electrostatic discharge – or static electric shock – as the charge is neutralised. Tribocharging is one of the processes that can generate static electricity.

How to safely build and operate computers. Anti-Static Mat An anti-static mat is used to dampen the effects of an electro-static discharge (ESD). It can help protect both operator and machine from ESD. The mats material only allows ESD to move across it at a slow rate, helping neutralise ESD's ill effects. Anti-static bags Anti-static bags were created to protect components that are likely to suffer damage from ESD, especially during transit. There are two main types of anti-static bags; Anti-Static & Dissipative Bags. They are produced with a thin layer of Static Dissipative Coating on the plastic. Tallow amine used in the production of Anti-Static Bags also attracts moisture that can conduct a charge to another surface. 4 Anti-Static Gloves Garment of protective clothing that protects both an operator and electronic device from

ESD. An operator hands are vulnerable to building up electrical charges putting both human and electrical device at increased risk.

## **Anti-Static Wristband**

An Antistatic wrist strap should be worn by all operators working directly with electrical components. This helps prevent the build-up of static electricity on the body that can result in electrostatic discharge. The 'clip' is attached to a non-painted metal surface that sends any static to the ground. 5 Electro Magnetic Interference EMI is described as any external effect that disturbs/damages electrical circuits by way of induction or radiation. There are two types of EMI, natural and man-made. Lightening is an example of natural EMI Radio & Telephone communications cause EMI Power surges can cause damage to electrical circuits Electromagnetic interference filter An electromagnetic interference filter, is an electronic device which is used in order to suppress conducted interference that is present on a signal or power line. EMI filters can be used to suppress interference that is generated by the device or by other equipment in order make a device more immune to electromagnetic interference signals present in the environment.

Protective Applications for EMI filters; Data lines, Secondary power supply lines for digital audio / video and communications equipment, Computer motherboards, USB hubs, Printers, Hard disk drives Material Safety Data Sheets These are papers that identify what chemicals are in a product. They highlight the hazards of the chemicals and how to protect yourself from those hazards. A Central Processing Unit (CPU) contains 6 toxic substances, lead is found in Motherboards and Chromium is often used to protect metal

plates from corrosion. Below are examples of two MSD's the first is a battery from a HP computer, and the second relates to a cleaning agent specifically for computer maintenance 7 8 How to Dispose of Old & Out-dated Computer Devices. Simply deleting files on a computer is insufficient. There are readily available data recovery programmes that can be used to retrieve files. A better method is to overwrite then delete all files. Delete and overwrite sensitive files. If there are sensitive documents and files on a computer, they should be overwritten and deleted using a file shredder or other specialised software. Windows PCs have both a free File Shredder & a Secure Empty Trash option. Turn on drive encryption. For Windows PCs with SSD drives go to Settings > About. Toward the bottom, you'll see either an option for Drive Encryption or Bitlocker Settings. Follow the prompts to encrypt your drive. For Macs, go to System Preferences > Security & Privacy > FileVault and select Turn On FileVault. You'll then select a password and select Restart. Deauthorize computer. Some programs, such as iTunes and MS Office only allow you to install software on a limited number of computers or allow a limited number of computers to access your files. So be sure to de authorize your old computer with your accounts before uninstalling all programs. Delete browsing history. Most browsers save information about browsing history and, depending on your settings, can even store your user names and passwords various sites. Obviously, you don't want a stranger having access to this information.

For Internet Explorer, you click on the cog wheel in the upper right corner to open the browser menu, then on the Safety option and then Delete Browsing

History. Make sure all of the check boxes are selected so everything gets removed. Repeat this for any other browsers on your computer — Firefox, Safari, Chrome. For Firefox and Chrome, you'll want to first sign out of your browser if you're signed in. Uninstall your programs. Some programs, such as Microsoft Office, may contain personal information such as your name and address or other details. So be sure to uninstall any programs before disposing of your computer. Consult employer about data disposal policies. If you use your computer for business purposes, check with your employer about how to follow data security and disposal requirements for certain information that's related to customers. Wipe hard drive.

For PCs, once you've gone through and removed the data you know is there, it's time to perform a factory reset to ensure you've removed all of your personal files and software programs. If your computer has a hard drive, restart the computer, download and install Eraser (make sure you only click on the most recent build name — i. e. Eraser 6. 2. 0. 2982). When disposing of the actual computer or other electronic device it must be recycled according to S. I. No. 149/2014 – European Union (Waste Electrical and Electronic Equipment) Regulations 2014.

## **Physical Safety – Manual Handling**

All employees/ operators should follow best practice methods and receive regular training for manual handling. Asking a co-worker for assistance is always recommended when engaging in manual handling tasks.

**Warm Up:** Muscles need good blood flow to perform properly. Gentle exercises eg, jumping jacks to get warmed up prior to lifting tasks. Stand close to load: The force exerted on your lower back is multiplied by the distance to the object. Stand as close to the load as possible when lifting.

**Bend your knees:** Bending your knees and keeping your upper body upright allows you to use your legs to lift, rather than your back.

**Grip the load:** Do not lift a load if you can't get a good grip. Some loads are not too heavy, but are simply too large to grip easily. Ask a colleague to help and share the load.

**Lower load in reverse:** You can just as easily injure your back putting something down as you did picking it up. Lower using your legs and keep the load close to your body. Things to avoid Lifting and twisting around at the same time. Throwing items/ materials/ components. Working while fatigued. Reaching overhead/ over-stretching.

## **Operating Computers**

Carry out an analysis or risk assessment of employee workstations. Hazards like loose wires & cables or overhanging / overloaded sockets are some of the most common workplace hazards. Provide training to employees in the use of workstations before commencing work with display screen equipment and whenever the organisation of the workstation is modified. Perform a further analysis or risk assessment where an employee transfers to a new workstation or significant new work equipment, change of equipment or new technology is introduced to an individual's workstation. Ensure that the

provision of an appropriate eye and eyesight test is made available to every employee. Provide information to employees in relation to measures which have been implemented.