Soldering Mat Anti-Static ESD Sets

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Electronics & Prototyping

An ESD soldering mat is an antistatic work surface that protects sensitive electronic components from static discharge while also catching solder spills and holding small parts. Sets include the mat, a wrist strap connection point and sometimes a grounding lead and tray.

Key Features

- Conductive rubber or vinyl top layer
- Laminated grid layout for measurements
- Grounding point for the wrist strap
- Heat-resistant surface up to 350+ degrees
- Rolled or flat mat sizes for benches

Typical Uses in the Workshop

- Protect ICs and MOSFETs from static damage
- Provide a safe surface for soldering stations
- Organise small components during assembly
- Catch solder splashes and drips cleanly

Safe Operation

1. Lay the mat flat on the bench and earth it to a common ground
2. Wear the wrist strap and connect it to the mat point
3. Bench the sensitive parts on the conductive surface
4. Clean the mat of solder debris after use
5. Roll and store the mat when not in use

SAFETY NOTES

- The mat must be connected through the correct resistor to safety earth
- Do not cut or puncture the mat
- Keep the mat away from water and solvents
- Replace mats that crack and lose conductivity
- Test the connection with a wrist strap tester

Maintenance & Consumables

- Wipe the mat with a damp cloth and antistatic cleaner
- Test the earth connection weekly
- Check the wrist strap cord for breaks
- Roll rather than fold the mat when storing
- Replace the strap when frayed

Specification & Buying Notes

Buy a mat with a built-in wrist strap point and a separate ground lead. Size 60 x 90 cm covers most stations. Check heat rating if soldering directly on the mat.