

# **Standard Operating Procedure (SOP) for Material Testing Lab**

## **1. Lab Entry Protocol**

All personnel must wear a lab coat, safety shoes, and safety goggles. Only authorized individuals are allowed inside the laboratory.

## **2. Pre-Check of Equipment**

Inspect all testing machines (like UTM, Hardness Tester, Impact Tester) for any visual damage. Ensure the machines are calibrated and functioning properly before use.

## **3. Material Sample Preparation**

Samples must meet the required standards in size, shape, and finish as per testing codes (e.g., ASTM, IS). Sharp edges and burrs should be removed.

## **4. Machine Setup**

Set up machines correctly according to the test to be performed. Load cells, grips, dies, and other attachments should be fitted securely. Always reset tare/zero before starting.

## **5. Use of Personal Protective Equipment (PPE)**

Proper PPE such as gloves, goggles, and ear protection must be worn during all experiments, especially during noisy or high-impact tests.

## **6. Test Procedure and Standards**

Each test must follow a standardized procedure (ASTM, IS, BS, etc.). Ensure proper load rates, environmental conditions, and machine settings are maintained and recorded.

## **7. Machine Operation**

Only trained and authorized personnel may operate testing machines. Be aware of and prepared to use the emergency stop button.

## **8. Data Recording**

Test results must be recorded accurately in both manual logs and digital systems, if available. Include relevant graphs, charts, and readings.

## **9. Post-Test Handling**

Turn off machines after use. Return movable parts to neutral positions. Remove tested specimens and store or dispose of them properly.

## **10. Lab Cleanliness and Housekeeping**

Maintain a clean work area. Clear any debris, oil spills, or waste materials immediately after test completion.

## **11. Machine Maintenance Logs**

Keep detailed maintenance and calibration records. Follow the machine servicing schedule strictly.

## **12. Report Preparation**

Include test objectives, sample details, equipment used, procedure followed, results, and conclusions. All reports must be reviewed by a lab in-charge.

## **13. Emergency Protocols**

Ensure all users know the location of fire extinguishers, first aid kits, and emergency exits. Report any injuries or incidents without delay.

## **14. Food and Electronic Devices**

Food and drinks are not permitted in the lab. Use of mobile phones is limited to safe and non-critical areas.

## **15. Conduct and Discipline**

Maintain professional behavior. Avoid unnecessary movement, noise, or behavior that could cause distraction or accidents

