



METROPOLITAN STATE UNIVERSITY OF DENVER
CIVIL/MECHANICAL ENGINEERING TECHNOLOGY (CET/MET)

LABORATORY SAFETY POLICY AND GUIDELINES

By Edward P. Steinhauser, MS, PE and Rose Holtzman, MS, PE
Civil Engineering Technology Laboratory Coordinator
January 2020

Introduction: Safety is the highest priority of any laboratory. Many of the engineering materials used in this laboratory class will be loaded until the material fails. Loads at failure for some materials can range as high as 550,000 pounds (2,200 kiloNewtons) of force. These materials can fail suddenly and sometimes explosively. All compression tests to failure will use safety screens. Although all safety equipment will be utilized during each experiment and experimental run, students should remain “aware” and never turn their backs to the equipment during operation, or become distracted by cell phones, or other personal electronic devices.

The use of tools requires care to avoid scratches, abrasions or more serious injuries. Some materials are heavy and care should be taken during the lifting and carrying of these materials. Some materials may be hot and/or caustic to the skin. All students, MSU Denver staff and faculty are encouraged to work together and be constantly alert to the safety requirements of the laboratory. **Students, MSU Denver staff and/or faculty should immediately contact emergency medical personnel by dialing 911, on any telephone, in the instance that any serious injuries occur during the laboratory class.**

To maximize safety, students should wear durable work/construction grade clothing, work gloves and safety boots. Long sleeve shirts are recommended. ***Closed-toe shoes and long pants (no shorts or skirts) must be worn at all times.*** It is also strongly recommended that steel-toe work boots be worn to prevent injuries to the feet. Safety glasses, hard hats and dust masks are available upon request. Students are prohibited from wearing loose fitting clothing or jewelry. ***Students failing to follow the safety policies and guidelines will be removed from the laboratory, and excluded from the laboratory experiment.***

Laboratory Safety Policy and Guidelines:

1. Conduct yourself in a responsible manner at all times in the laboratory. Please be polite, respectfully and courteous.

2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ASK YOUR LABORATORY COORDINATOR OR CLASSROOM PROFESSOR BEFORE PROCEEDING WITH THE ACTIVITY.
3. **Never work alone in the laboratory.** No student may work in the Engineering Technology Laboratory without the presence of the Laboratory Coordinator or Classroom Professor.
4. When first entering the Engineering Technology Laboratory, do not touch any equipment, chemicals, or other materials in the laboratory area until you are instructed to do so. Do not disturb or surprise students working in the laboratory.
5. Perform only those experiments authorized by the Laboratory Coordinator or Classroom Professor. Carefully follow all instructions, both written and oral. **Unauthorized experiments are not allowed.**
6. Do not eat food, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
7. **Be prepared for your work in the laboratory. Read all procedures thoroughly before entering the laboratory.** Never fool around in the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
8. Always work in a well-ventilated area.
9. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times.
10. Be alert and proceed with caution at all times in the laboratory. Notify the Laboratory Coordinator or Classroom Professor immediately of any unsafe conditions you observe.
11. Chemical Safety Goggles, nitrile gloves, and dust masks must be worn during the handling of cement products.
12. Chemical Safety Goggles, nitrile gloves, and dust masks must be worn during the handling of epoxy resin and epoxy hardener.
13. Safety Glasses must be worn during Concrete Compression Testing.
14. ***Wet concrete should not be placed in any drains and should not be placed on any existing concrete surface, in the bushes, or on the grass. Concrete/Cement slurries should not be flushed down any storm sewer drains. Any cement contaminated water should be disposed of as directed by the Laboratory Coordinator.***

15. Dispose of all chemical waste properly. Never mix chemicals in sink drains. Sinks are to be used only for water. Check with the Laboratory Coordinator for disposal of chemicals and solutions.
16. Labels and equipment instructions must be read carefully before use. Set up and use the equipment as directed by Laboratory Coordinator.
17. Keep hands away from face, eyes, mouth, and body while using chemicals or laboratory equipment. Wash your hands with soap and water after performing all experiments.
18. Experiments must be personally monitored at all times. Do not wander around the room, distract other students, startle other students or interfere with the laboratory experiments of others.
19. Know the locations and operating procedures of all safety equipment including: first aid kits, and fire extinguisher. Know where the fire alarm and the exits are located.
20. Know what to do if there is a fire alarm during a laboratory period; containers must be closed, and any electrical equipment turned off. **Student, Faculty and Staff must evacuate the building during a fire alarm.**
21. Dress properly during a laboratory activity. Long hair, dangling jewelry, and loose or baggy clothing are a hazard in the laboratory. Long hair must be tied back, and dangling jewelry and baggy clothing must be secured. Shoes must completely cover the foot. ***No sandals are allowed in the Engineering Technology Laboratory.***
22. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the Laboratory Coordinator immediately, no matter how trivial it seems. Do not panic.
23. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass.
24. Heated ovens, samples and equipment remain very hot for a long time. Heated samples and equipment should be set aside in a designated place to cool, and picked up with caution. Use tongs or heat protective gloves if necessary.