



FAHAD BIN SULTAN UNIVERSITY  
COLLEGE OF ENGINEERING  
DEPARTMENT OF CIVIL ENGINEERING

---

# **Laboratory Safety Manual**

**Department of Civil Engineering**

**Fahad Bin Sultan University**

**Tabuk, Saudi Arabia**

## Contents

1.	Introduction.....	4
2.	General Safety Rules .....	4
3.	Specific Safety Guidelines for Laboratory Equipment .....	4
4.	Emergency Procedures .....	5
4.1.	<i>Fire</i> .....	5
4.2.	<i>Chemical Spill</i> .....	5
4.3.	<i>Injury</i> .....	6
4.4.	<i>Evacuation</i> .....	6
4.5.	<i>Other Emergencies</i> .....	6
5.	Lab Rules and Regulations .....	6
5.1.	<i>Authorized Personnel</i> .....	7
5.2.	<i>Food and Drink</i> .....	7
5.3.	<i>Personal Belongings</i> .....	7
5.4.	<i>Lab Cleanup</i> .....	7
5.5.	<i>Equipment Use</i> .....	8
5.6.	<i>Chemical Handling</i> .....	8
6.	Safety Equipment.....	8
6.1.	<i>First Aid Kits</i> .....	8
6.2.	<i>Fire Extinguishers</i> .....	9
6.3.	<i>Eyewash Stations</i> .....	9
6.4.	<i>Safety Showers</i> .....	9

6.5.	<i>Personal Protective Equipment (PPE)</i> .....	9
6.6.	<i>Emergency Exit Signs</i> .....	9
6.7.	<i>Other Safety Equipment</i> .....	9
7.	Lab Conduct.....	10
8.	Lab Hours .....	10

## 1. Introduction

This safety manual outlines the essential safety procedures and guidelines to be followed by all personnel working in the Civil Engineering Laboratories. Adherence to these guidelines is crucial to prevent accidents and ensure a safe working environment. As part of your introduction to the laboratory, before starting experiments in the department labs, laboratory user must review this manual with his/her instructor, be familiar with its contents, and keep it handy for reference.

## 2. General Safety Rules

- **Proper Attire:** Wear appropriate safety attire, including closed-toe shoes, safety glasses, and lab coats when working in the lab.
- **Emergency Procedures:** Familiarize yourself with the location of emergency exits, first aid kits, fire extinguishers, and eyewash stations. Know how to use these equipment in case of an emergency.
- **Chemical Safety:** Handle all chemicals with care. Wear appropriate personal protective equipment (PPE), such as gloves, aprons, and respirators, when working with hazardous substances.
- **Electrical Safety:** Ensure that all electrical equipment is properly grounded and in good working condition. Avoid using damaged or frayed cords.
- **Fire Safety:** Never leave open flames unattended. Dispose of flammable materials properly.
- **Machine Safety:** Use machinery only after receiving proper training and authorization. Follow all safety instructions provided by the manufacturer.
- **First Aid:** Report all injuries or accidents to the lab instructor immediately. Provide first aid as necessary.

## 3. Specific Safety Guidelines for Laboratory Equipment

- **Concrete Mixer:** Use the mixer only when it is securely clamped in place. Avoid placing hands or other body parts near the mixing drum while it is in operation.
- **Soil Testing Equipment:** Handle soil samples carefully to avoid inhalation of dust. Use appropriate PPE, such as respirators and gloves.
- **Hydraulic Press:** Ensure that the press is properly secured before use. Avoid placing hands or other body parts between the press and the specimen.
- **Material Testing Machines:** Operate these machines only after receiving proper training. Follow all safety instructions provided by the manufacturer.

#### 4. Emergency Procedures

- **Fire:** If a fire occurs, evacuate the lab immediately and sound the alarm.
- **Chemical Spill:** If a chemical spill occurs, contain the spill and notify the lab instructor immediately. Follow the appropriate cleanup procedures.
- **Injury:** If an injury occurs, provide first aid as necessary and notify the lab instructor immediately.
- **Evacuation:** In case of a building evacuation, follow the established emergency procedures.

##### 4.1. Fire

- If a fire occurs, evacuate the lab immediately and sound the alarm.
- Use a fire extinguisher if trained to do so.
- Follow the established evacuation routes and procedures.
- Do not re-enter the building until given the all clear by emergency personnel.

##### 4.2. Chemical Spill

- If a chemical spill occurs, contain the spill by using appropriate absorbent materials.

- Avoid spreading the spill.
- Notify the lab instructor immediately.
- Follow the appropriate cleanup procedures for the specific chemical involved.
- Wear appropriate PPE when handling spills.

#### 4.3. *Injury*

- If an injury occurs, provide first aid as necessary.
- Notify the lab instructor immediately.
- Seek medical attention if required.
- Document the incident in the lab accident report.

#### 4.4. *Evacuation*

- In case of a building evacuation, follow the established emergency procedures.
- Proceed to the designated assembly area.
- Do not re-enter the building until given the all clear by emergency personnel.

#### 4.5. *Other Emergencies*

- For other emergencies, such as power outages or natural disasters, follow the instructions provided by lab staff or emergency personnel.

By following these emergency procedures, we can minimize the impact of accidents and ensure the safety of all personnel in the Civil Engineering Laboratories.

## 5. **Lab Rules and Regulations**

- **Authorized Personnel:** Only authorized personnel are allowed in the lab.

- **Food and Drink:** Food and drink are prohibited in the lab.
- **Personal Belongings:** Keep personal belongings to a minimum in the lab.
- **Lab Cleanup:** Clean up your workspace after each use. Dispose of waste materials properly.

#### 5.1. *Authorized Personnel*

- Only authorized personnel, including students, faculty, staff, and approved visitors, are allowed in the laboratory.
- All individuals entering the lab must sign in and out in the lab logbook.
- Unauthorized individuals will be asked to leave the lab immediately.

#### 5.2. *Food and Drink*

- Food and drink are strictly prohibited in the laboratory.
- Consuming food or drink can create a health hazard and contaminate the working environment.
- Eating or drinking in the lab can also increase the risk of accidents.

#### 5.3. *Personal Belongings*

- Keep personal belongings to a minimum in the lab.
- Store personal items, such as backpacks, coats, and purses, in designated areas.
- Avoid leaving valuable items unattended in the lab.

#### 5.4. *Lab Cleanup*

- Clean up your workspace after each use.
- Dispose of waste materials properly in designated containers.
- Wipe down equipment and surfaces to prevent contamination.
- Return equipment to its proper storage location.

### 5.5. *Equipment Use*

- Use equipment only after receiving proper training and authorization.
- Follow all safety instructions provided by the manufacturer.
- Do not attempt to repair or modify equipment without proper authorization.
- Report any equipment malfunctions or damage to the lab instructor immediately.

### 5.6. *Chemical Handling*

- Keep the MSDS handy when using a chemical.
- Handle all chemicals with care.
- Wear appropriate PPE, such as gloves, aprons, and respirators, when working with hazardous substances.
- Never mix chemicals unless instructed to do so.
- Avoid inhaling or ingesting chemicals.
- Dispose of chemicals properly according to laboratory procedures.

## 6. **Safety Equipment**

- Familiarize yourself with the location and use of safety equipment, such as first aid kits, fire extinguishers, eyewash stations, and emergency exits.
- Report any safety equipment malfunctions or damage to the lab instructor immediately.

### 6.1. *First Aid Kits*

- Know the location of first aid kits in the laboratory.
- Kits are well-stocked with essential supplies, such as bandages, antiseptic wipes, gauze, and pain relievers.



### 6.2. *Fire Extinguishers*

- Know the locations of fire extinguishers throughout the laboratory.
- Know how to use a fire extinguisher in case of an emergency.

### 6.3. *Eyewash Stations*

- Know the location of eyewash stations in the laboratory.
- Know how to use an eyewash station in case of a chemical splash.

### 6.4. *Safety Showers*

- Safety showers are installed in areas where hazardous chemicals are used.
- Know how to use a safety shower in case of a chemical spill or splash.

### 6.5. *Personal Protective Equipment (PPE)*

- PPEs are readily available for use in the laboratory.
- PPE includes items such as gloves, aprons, lab coats, safety glasses, and respirators.
- Select appropriate PPE based on the specific hazards involved in the experiment.

### 6.6. *Emergency Exit Signs*

- Familiarize yourself with the location of emergency exits.

### 6.7. *Other Safety Equipment*

- Other safety equipment may include fume hoods, safety cabinets, and spill containment kits.
- Know how to use this equipment as needed.

## **7. Lab Conduct**

- Maintain a respectful and professional demeanor in the lab.
- Avoid horseplay or other disruptive behavior.
- Follow all lab policies and procedures.
- Report any safety concerns or incidents to the lab instructor immediately.

## **8. Lab Hours**

- The lab is open during designated hours.
- Adhere to the posted lab hours and avoid using the lab outside of these times without proper authorization.

**By following these rules and regulations, we can create a safe and productive learning environment in the Civil Engineering Laboratories.**

**Thank You!**