Civil Engineering Materials Laboratory Safety Instructions

Guidelines and Regulations

Introduction

The Civil Engineering Material Laboratory introduces common construction materials through laboratory testing procedures. Safety is the most important aspect for all experiments and each participant must understand and agree to the following rules and guidelines.

General Safety

- Only enter the laboratory when authorized
  - Always sign-in and sign-out
- A supervisor must be present at all times
- Never work alone in the laboratory
- You have the primary responsibility for your safety
  - Don't do anything you feel is unsafe
  - Don't do anything you are not confident about
  - Be prepared for the test/experiment you will run

Personal Safety

- Medical conditions must be reported immediately
  - No matter how small they are
- No personal belongings in work area
- Be careful for your own safety
- Be as careful for the safety of others as for yourself
- Wash your hands before leaving the laboratories

Clothing

- Long sleeve (tight) shirts and pants
- Shoes must completely cover your feet
  - No sandals or opened-toed shoes
  - Preferably steel-toed shoes
    - If experiment requires heavy lifting
    - Dropping a 15 pound weight from 3 feet
- Long hair must be tied back at all times
- Remove bracelets, necklaces or other loose jewelry

Personal Protection

- Eye safety glasses are required during preparation and testing
  - Never wear contacts when working with volatile materials
- Use appropriate filter masks if:
  - handling fine particles
  - working in dusty environments
- Hard hats must be worn if:
  - lifting heavy objects with crane
  - there is danger of falling objects

Equipment Safety

- Never use a tool you are not familiar with
- Do not operate heavy equipment (cranes, forklifts, platforms, etc.)
  - Do not operate equipment you are not trained for
- Inspect equipment before each experiment
- All guards must be in place before equipment operation
  - Do not bypass guards or safeties
- Report faulty equipment to supervisor
  - Do not use equipment that has been marked faulty
- De-energize machinery or equipment before cleaning or adjusting

Chemical Hazards

- Know the properties and dangers of the chemicals you are handling
- Never smell chemicals
- Never taste chemicals
- No open flames are allowed when chemicals are present

Laboratory Regulations

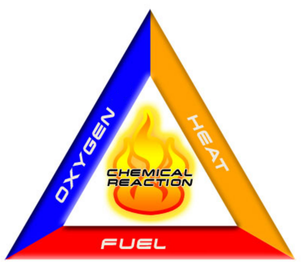
- Follow the assigned instructions/procedures exactly
- No food or liquids are allowed inside the laboratory
- Do not taste or ingest anything while in the laboratory
- Smoking is prohibited
- Keep work area well lit and dry (as much as possible)
- Always keep your work area and the entire laboratory clean

Before running your experiment you should:

- locate all fire extinguishers in the laboratory
- access the first aid kits and check for completion
- test the eyewash stations
- find out where the fire alarm is located
- check emergency and exit routes
- locate the nearest phone

Fire Safety

What is necessary for a fire?



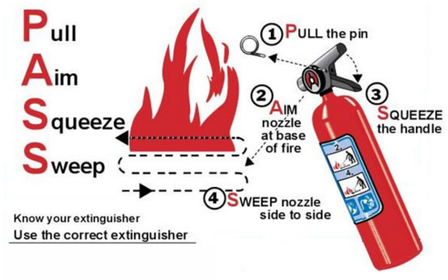
- Oxygen to sustain combustion
- Heat to raise the material to its ignition temperature
- Fuel to support the combustion
- Chemical reaction between the first three elements

Remove any of the four elements to extinguish the fire

How to use a Fire Extinguisher

Follow the **P A S S** Technique

- **P**ull the pin at top of the extinguisher
- **A**im at the base of the fire, not the flames
- **S**queeze the lever slowly
- **S**weep from side to side



Use of Eyewash Station

- Try to stay as calm as possible
- Shout out for help and allow someone to assist you
  - Someone should contact emergency medical personnel
- Get to the eyewash station and turn water on
- Rinse both eyes with extensive amounts of water for a minimum of 15 minutes
- Keep your eyelids open by using your hands to ensure adequate flushing of the eyes
- Continue rinsing eyes until professional medical care arrives