

Sample Lesson Plan
Construction Training Program (10-hour)
Excavations

Introduction

- An excavation is any man-made cut, cavity, trench or depression in the earth's surface formed by earth removal.
- A trench is a narrow excavation in which the depth is greater than the width when the width is 15 feet or less.
- Cave-ins are the greatest risk at excavations and the possibility of cave-ins exists at every excavation.

Instructor's Activities

- PowerPoint presentation
- Discuss 29 CFR 1926 Subpart P
- Participant feedback

Learning Objectives and Outcomes

- I. Methods to protect employees from cave-ins**
 - A. Sloping--inclining sides at a specific angle based on site factors
 - B. Shielding--a structure able to withstand cave-ins
 - C. Shoring--a structure that supports the sides and protects against cave-ins
- II. Other hazards at excavation sites and potential solutions**
 - A. Water—proper drainage
 - B. Vehicles and equipment—barricades and “stop logs”
 - C. Soil type—assessment of proper protective system by competent person
 - D. Spoil pile—placed more than two feet from edge
 - E. Crane operation—operate as far away from edge as possible; never closer than two feet
 - F. Asphyxiation—testing by competent person; emergency recovery plan in place
 - G. Access/egress—Proper design, positioning and use of structural ramps and ladders
- III. Role of competent person**
 - A. Site evaluation and planning, including soil and oxygen testing
 - B. Daily site inspection before work begins and after a rainstorm or other bad weather conditions
 - C. Removes employees from hazardous areas and ensures they do not return until necessary precautions have been taken

References

OSHA Standard: 29 CFR 1926 Subpart P (1926.650 to 1926.652)

- http://www.osha-slc.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10930

OSHA Publications

- www.osha-slc.gov/OshDoc/Additional.html
- 2226 Excavations

OSHA References/Resources

- Construction Safety and Health Outreach Program
 - www.osha-slc.gov/doc/outreachtraining/htmlfiles/excavate.html
- Electronic library of Construction Occupational Safety and Health - Safety Hazards - Trenches and Excavations
 - www.cdc.gov/elcosh/docs/hazard/safety_trenches.html

- OSHA Construction eCAT - Trenching and Excavation
 - www.osha.gov/SLTC/etools/construction/trenching/mainpage.html
- OSHA Technical Links - Construction: Trenching and Excavation
 - www.osha-slc.gov/SLTC/constructiontrenching/index.html

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