



COURSE 13932

Trenching and Excavations

Exam Material

Uscontractorlicense LLC

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Summary Of This Course

Trenching and Excavations

Approved by the

Wisconsin Department of Safety and Professional Services Safety and Buildings Division

Course Identification Number 13932

Educational Credit Hours: Multiple Hours by Profession

Course Provider:

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The Occupational Safety and Health Administration issued its first Excavation and Trenching Standard in 1971 to protect workers from excavation hazards. Since then, OSHA has amended the standard several times to increase worker protection and to reduce the frequency and severity of excavation accidents and injuries. Despite these efforts, excavation-related accidents resulting in injuries and fatalities continue to occur.

This course is an overview of OSHA's Trenching and Excavating Rule for the construction industry. Employers and employees will benefit from knowing the risks associated with excavations and trenching and solutions to minimizing the dangers.

This Course is approved for the following Registrations/Certifications or Licenses:

[illegible]

Course Outline

This course is a distance learning or e-learning course, which allows the attendee to complete the course on their time schedule.

- Working Safely in Trenches
 - Dangers of Trenching and Evacuation
 - Protect Yourself
 - Protective Systems
 - Competent Person
 - Access and Egress
 - General Trenching and Excavation Rules
 - Excavations
 - Introduction
 - Difference between Excavation and Trench
 - Dangers
 - OSHA Standard Rule
 - Exemptions
 - PrePlanning
 - Why is it important?
 - Utility Lines and Pipes
 - Informing Workers
 - Protective Systems Preventing Cave-ins
 - Most appropriate Protective System Design
 - Other Safety Precautions
- Installation and Removal of Protective Systems
 - Additional Hazards and Protections
 - Warning Systems
 - Water Accumulation
 - Hazardous Atmospheres
 - Means of Egress
 - Pier Holes
 - Site Inspection
- OSHA Assistance, Services and Programs
 - State Plans
 - Consultation Assistance
 - Privacy
 - Cost
 - Violations
- Voluntary Protection Programs
 - Strategic Partnership Program
- Continuing Education Credit Hours
- OSHA Training for Employers and Employees
 - Training Grants
 - Contact OSHA

Exam

40 questions related to the reference materials are used to test the attendee on their comprehension of the materials. A 70% score will need to be attained in order to pass this course.

Answer Sheet(s)

1 bubble style answer sheet(s) are included. When you are finished with the exam, you may return the answer sheets for grading to:

By Mail: Uscontractorlicense LLC
PO Box 268
Platteville, Wisconsin 53818

By Email: michael@uscontractorlicense.com

By Fax: 608-571-0096

Once we get the answer sheets back, we will grade them, enter your hours into the attendance portal and email or mail you back your certificate of completion(s). You will be responsible for renewing your license with the DSPS at www.license.wi.gov website.

Any questions, please contact us at 608.348.6688

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OSHA Awareness – Trenching and Excavating

Working Safely In Trenches

1. A safe means of egress shall be provided within _____ of workers in a trench.

- a. 20 feet
- b. 25 feet
- c. 30 feet
- d. 35 feet

Trenching and Excavation Safety

2. OSHA defines an excavation as any _____, or depression in the earth's surface formed by earth removal.

- a. man-made cut
- b. cavity
- c. trench
- d. All of the above

3. A trench is defined as a narrow underground excavation that is deeper than it is wide, and no wider than _____.

- a. 15 feet
- b. 20 feet
- c. 25 feet
- d. None of the above

4. Trenches 5 feet (1.5 meters) deep or greater require a protective system unless the excavation is made entirely in stable rock.

- a. True
- b. False

5. OSHA standards require that trenches be inspected _____ by a competent person prior to worker entry to ensure elimination of excavation hazards.

- a. only as conditions change
- b. daily and as conditions change
- c. weekly/ monthly, depending on the work being performed
- d. weekly and as conditions change

6. Safe access and egress devices _____ be located within 25 feet (7.6 meters) of all workers.

- a. should
- b. may
- c. can
- d. must

Excavations

7. Examples of general Trenching and Excavation Rules:

- a. Know where underground utilities are located.
- b. Test for low oxygen, hazardous fumes and toxic gases.
- c. Inspect trenches following a rainstorm.
- d. All of the above

8. OSHA defines an excavation as any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways.

- a. True
- b. False

9. Cave-ins pose _____ and are _____ than other excavation-related accidents to result in worker fatalities.

- a. the greatest risk/ much more likely
- b. a minimal risk / less likely
- c. no risk / not as likely
- d. a slight risk / statistically less likely

Excavation and Trenching Standard

10. The OSHA Evacuation and Trenching Standard Rule applies to small excavations made in the earth's surface, excluding trenches.

- a. True
- b. False

11. The standard does not apply to house foundation/ basement excavations, including those that become trenches by definition when constructing formwork, foundations, or walls. For this exemption to apply, which of the following conditions must exist?

- a. No water, surface tension cracks, or other environmental conditions reduce the excavation's stability;
- b. Soil, equipment, and material surcharge loads are no closer to the top edge of the excavation than the excavation is deep. When you use front-end loaders to dig the excavations, place the soil surcharge load as far back from the edge of the excavation as possible, but never closer than 2 feet (.61 meters);
- c. The fewest crew members possible are performing the work; and Workers spend the minimum time possible in the excavation.
- d. All of the above

Preplanning

12. Many on-the-job accidents result directly from inadequate initial planning. Waiting until after the work has started to correct mistakes in shoring or sloping slows down the operation, adds to the cost, and increases the possibility of a cave-in or other excavation failure.

- a. True
- b. False

13. Ask the utility companies or owners to find the exact location of underground installations. If they cannot respond within _____ (unless the period required by state or local law is longer) or cannot find the exact location of the utility installations, you may proceed with caution.

- a. 48 hours
- b. 36 hours
- c. 24 hours
- d. 12 hours

14. When you share the details of your safety and health program with employees, it is important to emphasize the critical role you expect them to play in keeping the jobsite safe. You _____ emphasize specific rules to help reduce the risk of on-the-job injuries.

- a. have to
- b. are required to
- c. may want to
- d. obligated to

Protective Systems

15. You are _____ the most practical design approach for any particular circumstance.

- a. required to choose
- b. free to choose
- c. obligated to choose
- d. None of the above

16. All simple slope excavations _____ deep should have a maximum allowable slope of 1-1/2:1.

- a. 30 feet or more
- b. 30 feet or less
- c. 20 feet or more
- d. 20 feet or less

17. At least one copy of the data, including the identity of the registered professional engineer who approved it, _____ be kept at the worksite during construction of the protective system. After the system is completed, the data may be stored away from the jobsite, but a copy _____ be provided upon request to the Assistant Secretary of Labor for OSHA.

- a. must/ can
- b. must/ must
- c. can / must
- d. can / should

18. OSHA standards permit the use of a trench shield (also known as a welder's hut) if it provides the same level of protection or more than the appropriate shoring system.

- a. True
- b. False

19. Excavations under sidewalks and pavements are _____ you provide an appropriately designed support system or another effective means of support.

- a. discouraged even if
- b. prohibited even if
- c. prohibited unless
- d. never approved even if

20. The standard requires you to provide support systems such as shoring, bracing, or underpinning to ensure that adjacent structures such as _____ remain stable.

- a. buildings and walls
- b. sidewalks
- c. pavement
- d. All of the above

21. In addition, the standard permits excavation of _____ below the bottom of the members of a support or shield system of a trench if the system is designed to resist the forces calculated for the full depth of the trench. In addition, there must be no indications, while the trench is open, of a possible cave-in below the bottom of the support system.

- a. 3 feet or less
- b. 2 feet or more
- c. 2 feet or less
- d. 4 feet or less

22. Defective and damaged materials and equipment _____ failure of a protective system and other excavation hazards.

- a. may cause
- b. can cause
- c. will cause
- d. are known to cause

Additional Hazards and Protections

23. In addition to cave-ins and related hazards, workers involved in excavation work also are exposed to hazards involving falls, falling loads, and mobile equipment.

- a. True
- b. False

24. Prohibit employees from standing or working under loads being handled by lifting or digging equipment. _____ to stand away from vehicles being loaded or unloaded to protect them from being struck by any spillage or falling materials.

- a. Suggest to workers
- b. Ask workers
- c. Require workers
- d. None of the above

25. OSHA standards also require the use of diversion ditches, dikes, or other suitable means to prevent surface water from entering an excavation and to provide _____ of the adjacent area.

- a. some drainage
- b. adequate drainage
- c. protection
- d. coverage

26. _____ any excavation deeper than 4 feet (1.22 meters) or where an oxygen deficiency or a hazardous atmosphere is present or could reasonably be expected, such as a landfill or where hazardous substances are stored nearby, before an employee enters it.

- a. A competent person can test
- b. A competent person should test
- c. A competent person may test
- d. A competent person must test

27. If unhealthful atmospheric conditions exist or develop in an excavation, you _____ provide emergency rescue equipment such as a breathing apparatus, safety harness and line, and basket stretcher and ensure that it is readily available. This equipment _____ be attended when in use.

- a. must/must
- b. must/ should
- c. should/ should
- d. should/ must

28. OSHA requires you to provide safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations _____ or deeper. These devices must be located in the excavation within _____ of all workers.

- a. 3 feet/ 25 feet
- b. 3 feet / 20 feet
- c. 4 feet / 25 feet
- d. 4 feet / 20 feet

29. An employee who enters a bell-bottom pier hole or similar deep and confined footing excavation may wear a harness with a lifeline. The lifeline should be attached securely to the harness and can be separate from any line used to handle materials.

- a. True
- b. False

30. The standard requires that a competent person inspect an excavation and the areas around it _____ for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions.

- a. daily
- b. weekly
- c. bi-weekly
- d. as needed (no regular schedule)

31. Larger and more complex operations should have a _____ safety official who makes recommendations to improve implementation of the safety plan. In a smaller operation, the safety official may be _____ and usually will be a supervisor.

- a. full-time / full-time
- b. part-time / part-time
- c. full-time / part-time
- d. part-time / full-time

OSHA Assistance, Services and Programs

32. OSHA can provide extensive help through a variety of programs, including assistance about safety and health programs, _____, and more.

- a. state plans & strategic partnerships
- b. training and education
- c. workplace consultation & voluntary protection programs
- d. All of the above

33. State plans are OSHA-approved job safety and health programs operated by individual states or territories instead of Federal OSHA. There are 26 state plans: 23 cover both private and public (state and local government) employment, and 3 (Connecticut, New Jersey, and New York) cover only the public sector.

- a. True
- b. False

34. In addition to helping employers identify and correct specific hazards, OSHA's consultation service provides _____, onsite assistance in developing and implementing effective workplace safety and health management systems that emphasize the prevention of worker injuries and illnesses.

- a. low cost
- b. free
- c. flat fee
- d. sliding scale (depending on the size of the company)

35. What does VPP stand for?

- a. Voluntary Partnership Program
- b. Vocational Provisionary Partnership
- c. Voluntary Protection Program
- d. Visionary Partnership Plan

36. OSHA Strategic Partnerships are alliances among labor, management, and government to foster improvements in workplace safety and health. These partnerships are federally regulated/mandated relationships between OSHA, employers, employee representatives, and others such as trade unions, trade and professional associations, universities, and other government agencies. OSPPs are the some of the oldest of OSHA's regulatory compliance programs.

- a. True
- b. False

37. Whereas OSHA's Consultation Program and VPP entail one-on-one relationships between OSHA and individual worksites, most strategic partnerships seek to have a broader impact by building cooperative relationships _____.

- a. with groups of employers only.
- b. with groups of employees only.
- c. with groups of employers and employees.
- d. None of the above

38. OSHA's _____ are full-service centers offering a variety of informational services such as personnel for speaking engagements, publications, audiovisual aids on workplace hazards, and technical advice.

- a. 43 area offices
- b. 53 area offices
- c. 63 area offices
- d. 73 area offices

39. OSHA Regional offices. States with approved programs must have a standard that is identical to, or at least as effective as, the federal standard. Which regional office / region is Wisconsin part of?

- a. Region VII / Kansas City
- b. Region V / Chicago
- c. Region III / Philadelphia
- d. Region VIII / Denver

40. OSHA Area Offices. Wisconsin has _____ area office(s).

- a. four
- b. three
- c. two
- d. one

