

EXAM

***Course 14134
7 Hours of Continuing
Education***

***ELECTRICAL WORKPLACE
SAFETY (Version 2)
Lead in Construction
Trenching & Excavations***



**USCONTRACTORLICENSE LLC dba Kevin Wunderlin
PO Box 268
Platteville, Wisconsin 53818
608-348-6688**

Email: michael@uscontractorlicense.com



USCONTRACTORLICENSE LLC dba Kevin Wunderlin
PO Box 268
Platteville, Wisconsin 53818
608-348-6688

www.uscontractorlicense.com

We would like to thank you for ordering Electrical Workplace Safety- Lead in Construction; Trenches and Excavations [Course 14134]. This course has been approved for 7 hours of Continuing Education by the Wisconsin Department of Safety and Professional Services for the following Registration/Certifications or Licenses:

<i>Commercial Electrical Inspector Certification</i>	<i>Registered Electrician Registration</i>
<i>Industrial Journeyman Electrician License</i>	<i>Residential Journeyman Electrician License</i>
<i>Journeyman Electrician License</i>	<i>Residential Master Electrician License</i>
<i>Master Electrician License</i>	<i>UDC-Electrical Inspector Certification</i>

This course is broken out into two sections and is intended to familiarize those in the electrical field with:

1. Lead in Construction (OSHA)
2. Trenching and Excavations (OSHA)

Materials included

1. REVIEW MATERIALS
2. EXAM
3. Answer Sheet
4. Misc. Information

Once you complete the course

Return the bubble answer sheets to our company. Fax: (608) 571-0096
 E-mail: michael@uscontractorlicense.com
 US Mail: Above address

We will grade your exam and notify you of the results and will notify the State of Wisconsin of your successful completion of the course.

The State of Wisconsin requires that you attain a passing score of 70%. In the event that you did not attain the required score we will notify you of the incorrect answers. You will need to retake only the incorrect questions and resubmit them to us for grading purposes.

After you are notified that you passed the course

Save the Certificate of Completion for your records.

Once you complete the course, we will notify the Dept. of Safety & Professional Services of your successful completion. They will send you a renewal reminder prior to the expiration of your certification/registration or license. If you are notified that you can renew online, click on this link;

<https://dsps.wi.gov/Pages/SelfService/ElectronicPayments.aspx>

If you did not receive the renewal reminder or obtained your continuing education after the expiration date; contact the Dept. of Safety & Professional Services by e-mail: DspsSbCredentialing@wi.gov or call them at 608-266-2112 to request the renewal requirements.

Please feel free to contact us with any questions and/or suggestions on improving this course or future educational courses you would like to see us offer.

Thank you for your business!

FOR QUESTIONS 1 TO 40 REFER TO LEAD IN CONSTRUCTION

1. HEALTH HAZARDS OF LEAD EXPOSURE: Lead can damage the _____.

- a. kidneys
- b. hematological and reproductive system
- c. cardiovascular and central nervous system
- d. All of the above

2. REPRODUCTIVE RISKS: Lead can alter the structure of sperm cells and there is evidence of miscarriage and stillbirth in women exposed to lead or whose partners have been exposed.

- a. True
- b. False

3. PERCENT OF CHILDREN WITH ELEVATED BLOOD LEAD LEVELS BY COUNTY – WISCONSIN, 2008: In 2008 Wisconsin had _____ counties with children that had an elevated blood lead levels of 1.8 -2.8% percent.

- a. One
- b. Two
- c. Three
- d. Four

4. WORKER EXPOSURE: A significant portion of the lead inhaled or ingested gets into the bloodstream. Once in the bloodstream, lead circulates through the body and _____. Some of this lead is filtered out of the body quickly and excreted, but some remains in the blood and tissues. As exposure continues, the amount stored will increase if the body absorbs more lead than it excretes.

- a. stored in organs only
- b. stored in body tissue only
- c. stored in organs and body tissue
- d. is filtered out

5. HOW WIDESPREAD IS LEAD BASED PAINT IN HOUSING? _____ of homes built during 1940 to 1959 have lead based paint components.

- a. 87%
- b. 69%
- c. 24%
- d. None of the above

6. MOST VULNERABLE WORKERS: Workers potentially at risk for lead exposure include those involved in iron work; demolition work; painting; lead-based paint abatement; plumbing; heating and air conditioning maintenance and repair; electrical work; and carpentry, renovation, and remodeling work. _____ are among those workers most exposed to lead.

- a. Plumbers
- b. Welders
- c. Painters
- d. All of the above

7. EXPOSURE LIMITS: PEL is the abbreviation for:

- a. Permissible Exposure Limit
- b. Probable Exposure Limit
- c. Possible Exposure Limit
- d. None of the above

8. EXPOSURE LIMITS: AL is the abbreviation for:

- a. Allowable level
- b. Appropriate level
- c. Action Level
- d. Accountability level

9. WORKER PROTECTION: Because lead is a cumulative and persistent toxic substance and health effects will result from a onetime exposure, employers may use these precautions where feasible to maximize employee exposure to lead.

- a. True
- b. False

10. ELEMENTS OF A COMPLIANCE PROGRAM: For each job where employee exposure is below the PEL, the employer can implement a compliance program to increase employee exposure to stay under the PEL.

- a. True
- b. False

11. INITIAL EMPLOYEE EXPOSURE ASSESSMENT: According to the Wisconsin Dept. of Health Services (DHS 163) "Lead exposure" means a level of lead in the blood of 10 or more micrograms per _____.

- a. 100 milliliters of blood
- b. 125 milliliters of blood
- c. 150 milliliters of blood
- d. 200 milliliters of blood

12. BIOLOGICAL MONITORING TESTS: Analysis of blood lead samples must be conducted by an OSHA approved lab and be accurate (to a confidence level of 95 percent) _____, or 6 µg/dl, whichever is greater.

- a. within plus or minus 10 percent
- b. within plus or minus 15 percent
- c. within plus or minus 20 percent
- d. within plus or minus 25 percent

13. TEST RESULTS SHOWING NO OVEREXPOSURES: If the initial assessment indicates that no employee is exposed above the AL, the employer may discontinue monitoring.

- a. True
- b. False

14. EMPLOYEE NOTIFICATION OF MONITORING RESULTS: The employer must notify each employee in writing of employee exposure assessment results within _____ of receiving them.

- a. ten working days
- b. ten days days
- c. five working days
- d. five days

15. MEDICAL SURVEILLANCE: When an employee's airborne exposure is at or above the AL for more than 30 days in any consecutive 12 months, an immediate medical consultation is required when the employee notifies the employer that he or she:

- a. Has developed signs or symptoms commonly associated with lead-related disease;
- b. Has demonstrated difficulty in breathing during respirator use or a fit test;
- c. Desires medical advice concerning the effects of past or current lead exposure on the employee's ability to have a healthy child.
- d. All of the above

16. WHEN MONITORING SHOWS NO EMPLOYEE EXPOSURES ABOVE THE AL: Which renovation activity creates the most airborne leaded dust?

- a. Hand Sanding
- b. Interior Demolition
- c. Power Sanding
- d. All of the above

17. WORKER PROTECTIONS AND BENEFITS: The employer must provide up to 6 months of medical removal protection (MRP) benefits only the first time an employee is removed from lead exposure or medically limited.

- a. True
- b. False

18. RECORDS REQUIREMENTS INVOLVING MEDICAL REMOVAL: In the case of medical removal, the employer's records must include:

- a. The worker's name and social security number,
- b. The date of each occasion that the worker was removed from current exposure to lead and the date when the worker was returned to the former job status,
- c. A brief explanation of how each removal was or is being accomplished, and a statement indicating whether the reason for the removal was an elevated blood lead level.
- d. All of the above

19. EMPLOYER REQUIREMENTS: The employer must maintain any employee exposure and medical records to document ongoing employee exposure, medical monitoring, and medical removal of workers. This data provides a baseline to evaluate the employee's health properly.

- a. True
- b. False

20. EMPLOYER REQUIREMENTS RELATED TO OBJECTIVE DATA: The employer must maintain the record of objective data relied on for _____.

- a. at least 7 years
- b. at least 15 years
- c. at least 20 years
- d. at least 30 years

21. WHEN CLOSING A BUSINESS: When an employer ceases to do business, the successor employer must receive and retain all required records. If no successor is available, these records must be sent to the Director of NIOSH.

- a. True
- b. False

22. EXHAUST VENTILATION: Equip power tools used to remove lead-based paint with dust collection shrouds or other attachments so that paint is exhausted through a _____.

- a. Central Air vacuum system
- b. high-efficiency particulate air (HEPA) vacuum system
- c. Shop vac system
- d. None of the above

23. ENCLOSURE OR ENCAPSULATION: One way to reduce the lead inhalation or ingestion hazard posed by lead-based paint is to encapsulate it with a material that bonds to the surface, such as ____ (1) ____ or flexible wall coverings. Another option is to enclose it using systems such as gypsum wallboard, plywood paneling, and aluminum, ____ (2) _____. Floors coated with lead-based paint can be covered using ____ (3) _____.

	1	2	3
a.	acrylic and epoxy coating	vinyl tile or linoleum	carpeting
b.	vinyl tile or linoleum	fiber cement siding	6 mil plastic
c.	vinyl or wood exterior siding	or Tyvek	fiber cement
d.	acrylic or epoxy coating	vinyl or wood exterior siding	vinyl tile or linoleum

24. SUBSTITUTION: Using a paint stripper containing methylene chloride is a prohibited practice in Wisconsin.

- a. True
- b. False

25. PROCESS OR EQUIPMENT MODIFICATION: When using a heat gun to remove lead-based paints in _____, be sure it is of the flameless electrical softener type. Heat guns should have electronically controlled temperature settings to allow usage below 700 degrees F. Equip heat guns with various nozzles to cover all common applications and to limit the size of the heated work area.

- a. Commercial units
- b. Residential housing units
- c. Commercial and residential units
- d. None of the above

26. HOUSEKEEPING PRACTICES: An effective housekeeping program involves a regular schedule to remove accumulations of lead dust and lead-containing debris.

- a. True
- b. False

27. HOUSEKEEPING PRACTICES: Put all lead-containing debris and contaminated items accumulated for disposal into _____. Label bags and containers as lead-containing waste.

- a. Sealed, impermeable bags only
- b. closed impermeable containers only
- c. Sealed, impermeable bags or other closed impermeable containers
- d. None of the above

28. PERSONAL HYGIENE PRACTICES: Provide and ensure that workers _____ washing facilities.

- a. are aware of
- b. know about
- c. are informed about the
- d. use

29. CHANGE AREAS: The employer _____ provide a clean change area for employees whose airborne exposure to lead is above the PEL. The area _____ be equipped with storage facilities for street clothes and a separate area with facilities for the removal and storage of lead-contaminated protective work clothing and equipment.

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

30. PERSONAL PRACTICES: In all areas where employees are exposed to lead above the _____, employees must observe the prohibition on the presence and consumption or use of food, beverages, tobacco products, and cosmetics.

- a. AL
- b. PEL
- c. MSDS
- d. None of the above

31. END-OF-DAY PROCEDURES: Employers must ensure that workers who are exposed to lead above the permissible exposure limit follow these procedures at the end of their workday:

- a. Place contaminated clothes, including work shoes and personal protective equipment to be cleaned, laundered, or disposed of, in a properly labeled closed container.
- b. Take a shower and wash their hair. Where showers are not provided, employees must wash their hands and face at the end of the work shift.
- c. Change into street clothes in clean change areas.
- d. All of the above

32. EMPLOYER REQUIREMENTS: Employers must provide workers who are exposed to lead above the PEL or for whom the possibility of skin or eye irritation exists with clean, dry protective work clothing and equipment that are appropriate for the hazard. Employers must _____ to employees.

- a. provide these items at no cost
- b. offer these items at a reduced rate
- c. provide a vendor name
- d. None of the above

33. PREVENTING HEAT STRESS: When heat stress is a concern, the employer should choose lighter, less insulating protective clothing over heavier clothing, as long as it provides adequate protection. Other measures the employer _____ take include: discussing the possibility of heat stress and its signs and symptoms with all workers; using appropriate work/rest regimens; and providing heat stress monitoring that includes measuring employees' heart rates, body temperatures, and weight loss.

- a. shall
- b. will
- c. can
- d. must

34. RESPIRATORY PROTECTION: Respirators also must be provided upon employee request. A requested respirator is included as a requirement to provide increased protection for those employees who wish to reduce their lead burden below what is required by the standard, particularly if they intend to have children in the near future. In addition, respirators must be used when performing previously indicated high exposure or "trigger" tasks, before completion of the initial assessment.

- a. True
- b. False

35. PROVIDING ADEQUATE RESPIRATORY PROTECTION: Before any employee first starts wearing a respirator in the work environment, the employer must perform a fit test. For all employees wearing _____ tight-fitting face piece respirators, the employer must perform either qualitative or quantitative fit tests using an OSHA-accepted fit testing protocol.

- a. only negative pressure
- b. only positive pressure
- c. negative or positive pressure
- d. None of the above

36. SELECTING A RESPIRATOR: A NIOSH-certified respirator may be selected and may be used in compliance with the conditions of its certification.

- a. True
- b. False

37. WARNING SIGNS: Employers are required to post warning signs in each work area where employee exposure to lead is above the PEL:

- a. Warning / Lead Work Area
- b. Poison / No Smoking or Eating
- c. Both a. and b. are needed
- d. No special signs are needed

38. CONSULTATION ASSISTANCE: Consultation assistance is available on request to employers who want help establishing and maintaining a safe and healthful workplace. Funded largely by OSHA, the service is provided _____ to small employers and is delivered by state authorities through professional safety and health consultants.

- a. for a minimal fee
- b. at no cost
- c. at a \$25.00 per hour fee
- d. in conjunction with a larger employer

39. COOPERATIVE PARTNERSHIPS: OSHA has learned firsthand that voluntary, cooperative partnerships with employers, employees, and unions can be a useful alternative to traditional enforcement and an _____ way to reduce worker deaths, injuries, and illnesses. This is especially true when a partnership leads to the development and implementation of a comprehensive workplace safety and health management system.

- a. effective
- b. forceful
- c. weak
- d. unproductive

40. BLOOD LEAD LABORATORIES – WISCONSIN (AS OF 2/17/2012): Monitoring _____ for lead and zinc protoporphyrin (or free erythrocyte protoporphyrin) in blood. The employer is required to have these analyses performed by a laboratory that meets accuracy requirements specified by OSHA.

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

FOR QUESTIONS 41 TO 80 REFER TO TRENCHING AND EXCAVATIONS

Working Safely In Trenches

41. 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 Evacuation Safety

42. 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

43. A trench is defined as a narrow underground excavation that is deeper than it is wide, and no wider than _____.
- 15 feet
 - 20 feet
 - 25 feet
 - None of the above
44. Trenches 5 feet (1.5 meters) deep or greater require a protective system unless the excavation is made entirely in stable rock.
- True
 - False
45. OSHA standards require that trenches be inspected _____ by a competent person prior to worker entry to ensure elimination of excavation hazards.
- only as conditions change
 - daily and as conditions change
 - weekly or monthly, depending on the work being performed
 - weekly and as conditions change
46. Safe access and egress devices _____ be located within 25 feet (7.6 meters) of all workers.
- should
 - may
 - can
 - must

Excavations

47. Examples of general Trenching and Excavation Rules:
- Know where underground utilities are located.
 - Test for low oxygen, hazardous fumes and toxic gases.
 - Inspect trenches following a rainstorm.
 - All of the above
48. 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.
- True
 - False
49. Cave-ins pose _____ and are _____ than other excavation-related accidents to result in worker fatalities.
- the greatest risk/ much more likely
 - a minimal risk / less likely
 - no risk / not as likely
 - a slight risk / statistically less likely

Excavation and Trenching Standard

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

- a. True
- b. False

51. 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

52. 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

53. 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

54. 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

55. 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

56. 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

57. 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

58. 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

59. 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

60. 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

61. 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

62. 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

63. 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
64. 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
65. 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
66. _____ 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
67. 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

68. 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.
- 3 feet/ 25 feet
 - 3 feet / 20 feet
 - 4 feet / 25 feet
 - 4 feet / 20 feet
69. 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.
- True
 - False
70. 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.
- daily
 - weekly
 - bi-weekly
 - as needed (no regular schedule)
71. 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.
- full-time / full-time
 - part-time / part-time
 - full-time / part-time
 - part-time / full-time

OSHA Assistance, Services and Programs

72. OSHA can provide extensive help through a variety of programs, including assistance about safety and health programs, _____, and more.
- state plans & strategic partnerships
 - training and education
 - workplace consultation & voluntary protection programs
 - All of the above
73. 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.
- True
 - False

74. 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)

75. What does VPP stand for?

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

76. 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

77. 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

78. 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

79. 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

80. OSHA Area Offices. Wisconsin has _____ area office(s).
- a. four
 - b. three
 - c. two
 - d. one