

## CONCRETE AND CEMENT MASONRY: BOOK TWO PROFILE OF TRAINING MASTERY

Instructor \_\_\_\_\_

Date \_\_\_\_\_

Program _____	
Grade _____	School _____
Name _____ Soc. Sec. No. _____	
Address _____ Phone _____	
In Case of Emergency, Contact _____	
Address _____ Phone _____	
Allergies/Disabilities that might require special accommodation for training (please specify) _____	
<p><b>The above information can be used for school records and/or to ensure safety of students. This confidential information is not to be released to employers or the general public.</b></p>	

Date of Enrollment \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Total Class Hours \_\_\_\_\_ Total Hours Absent \_\_\_\_\_

Date of Withdrawal \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Total On-the-Job Training Hours \_\_\_\_\_ Total Hours Tardy \_\_\_\_\_

Date of Completion \_\_\_\_ - \_\_\_\_ - \_\_\_\_ Total Lab Hours \_\_\_\_\_

### ON-THE-JOB TRAINING/WORK EXPERIENCE

_____	_____	_____
Duration of Employment	Job Title	Supervisor's Name
_____		_____
Address of Employer		Phone
_____	_____	_____
Duration of Employment	Job Title	Supervisor's Name
_____		_____
Address of Employer		Phone

### Use of This Document

This document can be used to record information about the student and skills mastered. This information is useful in documenting student progress during training and in providing information about the student's qualifications to potential employers and/or for entry into advanced training programs. Instructors using these materials are authorized to reproduce this document as required for use in their training programs.



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## SPECIFIC JOB COMPETENCIES CONCRETE AND CEMENT MASONRY: BOOK TWO

Instructor: As each competency is mastered, place your initials and the date in the blank on the left. This will verify that the student can perform the skill with a minimum of supervision.

Date/Initials

### UNIT 1 — SOIL CONDITIONS AND SUBGRADE PREPARATION

- \_\_\_\_\_ 1. Discuss reasons for preparing a building site.
- \_\_\_\_\_ 2. Select from a list consequences of building on soil that has not been properly compacted.
- \_\_\_\_\_ 3. Select from a list the primary goals of compacting.
- \_\_\_\_\_ 4. Name factors that affect the degree of compaction.
- \_\_\_\_\_ 5. Describe the three types of soils.
- \_\_\_\_\_ 6. Describe the effects of moisture on soil compaction.
- \_\_\_\_\_ 7. Identify methods of soil compaction.
- \_\_\_\_\_ 8. Match types of compactors to the jobs for which they are designed.
- \_\_\_\_\_ 9. Compare methods of testing soil compaction.
- \_\_\_\_\_ 10. Select compacting equipment given site conditions.
- \_\_\_\_\_ 11. Determine soil type.

### UNIT 2 — EDGE FORMS ON GRADE

- \_\_\_\_\_ 1. Label types of pours using edge forms.
- \_\_\_\_\_ 2. Match edge form parts to their correct definitions.
- \_\_\_\_\_ 3. Identify the parts of an edge form.
- \_\_\_\_\_ 4. List materials used for edge form construction.
- \_\_\_\_\_ 5. Construct edge forms on grade for a slab without foundation.
- \_\_\_\_\_ 6. Construct edge forms on grade for a slab with foundation.
- \_\_\_\_\_ 7. Construct edge forms for a patio with a radius.
- \_\_\_\_\_ 8. Construct edge forms for a sidewalk.

### UNIT 3 — ON-GRADE CURB AND CURB-AND-GUTTER FORMS

- \_\_\_\_\_ 1. Identify types of curbs and curbs and gutters.
- \_\_\_\_\_ 2. Identify types of curb and curb-and-gutter forms.
- \_\_\_\_\_ 3. Construct a straight curb form.
- \_\_\_\_\_ 4. Set metal curb-and-gutter forms with a radius.
- \_\_\_\_\_ 5. Identify types of median barrier forms.
- \_\_\_\_\_ 6. Name methods of forming median barriers.
- \_\_\_\_\_ 7. Describe the operation of a curb-and-gutter machine.

### UNIT 4 — SCREEDS AND BULKHEADS

- \_\_\_\_\_ 1. Distinguish between screeds and bulkheads according to their characteristics.
- \_\_\_\_\_ 2. Identify types of screeds.
- \_\_\_\_\_ 3. Determine spacing of screeds.
- \_\_\_\_\_ 4. Determine spacing of screeds.
- \_\_\_\_\_ 5. Set bulkheads for a four-inch slab.
- \_\_\_\_\_ 6. Set wet pads using a builder's level or laser level.
- \_\_\_\_\_ 7. Set pipe screeds using a builder's level or laser level.
- \_\_\_\_\_ 8. Set grade stakes using a builder's level or laser level.
- \_\_\_\_\_ 9. Set grade stakes using a hand level, a straightedge, and stringline.
- \_\_\_\_\_ 10. Set adjustable screed chairs using a builder's level or laser level.
- \_\_\_\_\_ 11. Set pins and saddles with a builder's or laser level and stringline.

### UNIT 5 — FINISHING FLOORS

- \_\_\_\_\_ 1. Define rodding and jitterbugging.
- \_\_\_\_\_ 2. State reasons for consolidating concrete.
- \_\_\_\_\_ 3. Arrange in order the steps for placing and trowel finishing a concrete floor.
- \_\_\_\_\_ 4. Select from a list types of finishes for concrete slabs.
- \_\_\_\_\_ 5. Select from a list variables that may determine when to start finishing procedures.
- \_\_\_\_\_ 6. Select from a list factors to look for before starting finishing operations.
- \_\_\_\_\_ 7. State reasons for floating concrete.
- \_\_\_\_\_ 8. State reasons for troweling concrete.
- \_\_\_\_\_ 9. Explain what is meant by premature troweling.
- \_\_\_\_\_ 10. Select from a list defects that may be caused by premature or excessive troweling.
- \_\_\_\_\_ 11. Match special concrete toppings to their uses.
- \_\_\_\_\_ 12. Float finish a large slab with a troweling machine.
- \_\_\_\_\_ 13. Finish a slab with hand trowels.

Date/Initials

### UNIT 6 — SIDEWALKS AND PATIOS

- \_\_\_\_\_ 1. Select from a list steps to take before placing concrete for a sidewalk or patio.
- \_\_\_\_\_ 2. Arrange in order the steps to take when placing and finishing concrete for a sidewalk or patio.
- \_\_\_\_\_ 3. Name types of finishes used on sidewalks and patios.
- \_\_\_\_\_ 4. Name types of joints used on sidewalks and patios.
- \_\_\_\_\_ 5. List reasons joints in sidewalks and patios are important.
- \_\_\_\_\_ 6. Match types of joints to their locations on sidewalks and patios.
- \_\_\_\_\_ 7. Name types of nonskid materials used on sidewalks and patios.
- \_\_\_\_\_ 8. Place and finish a sidewalk with a float finish.
- \_\_\_\_\_ 9. Finish a sidewalk with a fine swirl finish.
- \_\_\_\_\_ 10. Finish a sidewalk with a fine broom finish.

### UNIT 7 — DRIVES, APPROACHES, CURBS, AND CURBS AND GUTTERS

- \_\_\_\_\_ 1. Name types of drives and approaches.
- \_\_\_\_\_ 2. Select from a list factors to consider prior to laying out an approach.
- \_\_\_\_\_ 3. List guidelines for width and slope of drives and approaches.
- \_\_\_\_\_ 4. Identify types of finishes for residential drives and approaches.
- \_\_\_\_\_ 5. Identify types of joints used on drives and approaches.
- \_\_\_\_\_ 6. Match types of joints to their locations on drives and approaches.
- \_\_\_\_\_ 7. Explain briefly concrete thickness variations for drives and approaches.
- \_\_\_\_\_ 8. Name methods used to drain driveways.
- \_\_\_\_\_ 9. Identify types of curbs and curbs and gutters.
- \_\_\_\_\_ 10. Place and finish concrete for a driveway.
- \_\_\_\_\_ 11. Place and finish concrete for a drive with curbs.
- \_\_\_\_\_ 12. Place and finish concrete for a straight curb.
- \_\_\_\_\_ 13. Place and finish concrete for a roll-type curb and gutter.

### UNIT 8 — JOINTS IN CONCRETE

- \_\_\_\_\_ 1. Match types of basic joints to their purposes.
- \_\_\_\_\_ 2. Identify types of control (contraction) joints.
- \_\_\_\_\_ 3. Identify types of isolation (expansion) joints.
- \_\_\_\_\_ 4. Identify types of construction joints.
- \_\_\_\_\_ 5. Identify types of decorative joints.
- \_\_\_\_\_ 6. Select from a list reasons for using joints in concrete slabs.
- \_\_\_\_\_ 7. Name factors to consider when designing joint systems for slabs.
- \_\_\_\_\_ 8. Select from a list variables to consider when deciding joint locations in slabs.
- \_\_\_\_\_ 9. Name factors that affect the spacing of joints in slabs.
- \_\_\_\_\_ 10. Label types of equipment used to cut joints.
- \_\_\_\_\_ 11. Select from a list types of materials used in joints.
- \_\_\_\_\_ 12. Select from a list types of sealants used in joints.
- \_\_\_\_\_ 13. Label types of equipment used to apply sealants.
- \_\_\_\_\_ 14. Arrange in order procedures used to maintain joint systems.
- \_\_\_\_\_ 15. Identify types of waterstops.
- \_\_\_\_\_ 16. Identify location of types of joints.

### UNIT 9 — PAVEMENTS

- \_\_\_\_\_ 1. Identify types of paving equipment.
- \_\_\_\_\_ 2. Identify characteristics of a slipform paver.
- \_\_\_\_\_ 3. Identify characteristics of a form paver.
- \_\_\_\_\_ 4. Identify characteristics of a tube float machine.
- \_\_\_\_\_ 5. Identify characteristics of a tube or roller-type finishing machine.
- \_\_\_\_\_ 6. Match types of tools used on pavements to their correct uses.
- \_\_\_\_\_ 7. Identify types of slipform curb machines.
- \_\_\_\_\_ 8. Identify characteristics of a slipform curb machine.
- \_\_\_\_\_ 9. Identify types of work bridges.
- \_\_\_\_\_ 10. Identify types of automatic finishers.
- \_\_\_\_\_ 11. Arrange in order step-by-step procedures to construct concrete pavements.
- \_\_\_\_\_ 12. Check, level, and finish pavement behind a paving machine.

**Student ratings on specific competencies evaluated during the course are available upon student's written request and/or by calling the instructor. Parent's or guardian's signature is necessary if student is under 18 years of age.**

# CONCRETE AND CEMENT MASONRY: BOOK TWO

Date/Initials

## UNIT 10 — CURING AND PROTECTION

- \_\_\_\_\_ 1. State reasons for curing concrete.
- \_\_\_\_\_ 2. Match types of curing to their methods of application.
- \_\_\_\_\_ 3. Discuss briefly the proper time to cure concrete.
- \_\_\_\_\_ 4. Select from a list factors that regulate length of curing time.
- \_\_\_\_\_ 5. Select from a list factors that may affect curing.
- \_\_\_\_\_ 6. State advantages of using a curing compound.
- \_\_\_\_\_ 7. Identify curing equipment.
- \_\_\_\_\_ 8. State minimum curing requirements for concrete.
- \_\_\_\_\_ 9. Name types of protection needed for concrete.
- \_\_\_\_\_ 10. Select from a list temperatures at which protection is needed.
- \_\_\_\_\_ 11. Select from a list reasons for protecting concrete in hot weather.
- \_\_\_\_\_ 12. State methods used to protect concrete in hot weather.
- \_\_\_\_\_ 13. Select from a list precautions to use when protecting concrete during hot weather.
- \_\_\_\_\_ 14. Select from a list reasons for protecting concrete in cold weather.
- \_\_\_\_\_ 15. State methods used to protect concrete in cold weather.
- \_\_\_\_\_ 16. Select from a list precautions to use when protecting concrete during cold weather.
- \_\_\_\_\_ 17. Name types of physical protection.
- \_\_\_\_\_ 18. Select from a list reasons for using physical protection.
- \_\_\_\_\_ 19. State methods used to protect concrete from physical damage.

## UNIT 11 — STEPS

- \_\_\_\_\_ 1. Name types of steps.
- \_\_\_\_\_ 2. Identify types of stair forms.
- \_\_\_\_\_ 3. Identify parts of a stair form.
- \_\_\_\_\_ 4. State rules for unit rise and unit run.
- \_\_\_\_\_ 5. Arrange in order the steps for determining the size and number of risers and treads for a stair.
- \_\_\_\_\_ 6. Calculate size and number of stair risers and treads for stairwells of given dimensions.
- \_\_\_\_\_ 7. Explain briefly where to start placing concrete in stair forms.
- \_\_\_\_\_ 8. Name types of nosings and treads used on concrete steps.
- \_\_\_\_\_ 9. Name reasons for using low slump concrete in stair forms.
- \_\_\_\_\_ 10. Construct forms for a solid set of stairs.
- \_\_\_\_\_ 11. Construct forms for earth-supported stairs with open sides.
- \_\_\_\_\_ 12. Construct forms for suspended stairs with open sides.
- \_\_\_\_\_ 13. Place and finish concrete steps with a fine swirl finish.
- \_\_\_\_\_ 14. Place and finish concrete steps in metal pan forms with a nonskid finish.
- \_\_\_\_\_ 15. Place and finish concrete steps with nosings and pipe inserts.

## UNIT 12 — LEVELS AND TRANSITS

- \_\_\_\_\_ 1. Select from a list uses of a level.
- \_\_\_\_\_ 2. Identify types of levels.
- \_\_\_\_\_ 3. Identify parts of a level.
- \_\_\_\_\_ 4. Select from a list uses of a transit.
- \_\_\_\_\_ 5. Identify types of transits.
- \_\_\_\_\_ 6. Label major components of a transit.
- \_\_\_\_\_ 7. Identify parts of a transit.
- \_\_\_\_\_ 8. Identify different types of verniers.
- \_\_\_\_\_ 9. Interpret readings on different styles of verniers.
- \_\_\_\_\_ 10. List typical mistakes made in reading verniers.
- \_\_\_\_\_ 11. Label vertical and horizontal cross hairs and line of sight on a leveling instrument.
- \_\_\_\_\_ 12. State rules for proper care of leveling instruments.
- \_\_\_\_\_ 13. Identify parts of a leveling rod.
- \_\_\_\_\_ 14. Match parts of a leveling rod to their correct uses.
- \_\_\_\_\_ 15. Describe commonly used direct-reading rods.
- \_\_\_\_\_ 16. Identify markings on a direct-reading rod.
- \_\_\_\_\_ 17. Read direct-reading rods.
- \_\_\_\_\_ 18. Identify hand signals used by the instrument person to guide the rod person.
- \_\_\_\_\_ 19. Accurately read various types of verniers on transits.
- \_\_\_\_\_ 20. Set up and adjust a level.
- \_\_\_\_\_ 21. Use a level to check elevations.
- \_\_\_\_\_ 22. Use a level to perform differential leveling.
- \_\_\_\_\_ 23. Tie a slip knot for adjusting a plumb bob.
- \_\_\_\_\_ 24. Set up and adjust a transit.
- \_\_\_\_\_ 25. Use a transit to locate building corners.
- \_\_\_\_\_ 26. Measure and read angles in the field.

## UNIT 13 — SITE LAYOUT

- \_\_\_\_\_ 1. Name factors pertinent to site layout.
- \_\_\_\_\_ 2. Select from a list information used to lay out building lines.
- \_\_\_\_\_ 3. State the purpose of batter boards.
- \_\_\_\_\_ 4. Determine common methods used to square building lines.
- \_\_\_\_\_ 5. Write layout dimensions on a plot plan.
- \_\_\_\_\_ 6. Erect batter boards and locate building lines for a structure.
- \_\_\_\_\_ 7. Lay out footings for a structure.
- \_\_\_\_\_ 8. Set grade stakes for footings without forms.