



NCCER

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INDUSTRIAL COATING AND LINING APPLICATION SPECIALIST

Competencies / Objectives

Level One

MODULE 00101-04 – BASIC SAFETY

1. Explain the role that safety plays in the construction crafts.
2. Describe the meaning of job-site safety.
3. Describe the characteristics of a competent person and a qualified person.
4. Explain the appropriate safety precautions to take around common job-site hazards.
5. Demonstrate the use and care of appropriate personal protective equipment (PPE).
6. Properly don and remove personal protective equipment (safety goggles, hard hat, and personal fall protection).
7. Follow the safety procedures required for lifting heavy objects.
8. Describe safe behavior on and around ladders and scaffolds.
9. Explain the importance of Hazard Communications (HazCom) and material safety data sheets (MSDSs).
10. Describe fire prevention and firefighting techniques.
11. Define safe work procedures to use around electrical hazards.

MODULE 00106-04 – BASIC RIGGING

1. Identify and describe the use of slings and common rigging hardware.
2. Describe basic inspection techniques and rejection criteria used for slings and hardware.
3. Describe basic hitch configurations and their proper connections.
4. Describe basic load-handling safety practices.
5. Demonstrate proper use of American National Standards Institute (ANSI) hand signals.

MODULE 69101-09 - INTRODUCTION TO THE TRADE

1. Define the composition and purpose of different industrial coatings.
2. Discuss some of the causes of premature failure of coatings.
3. Define and list the components of process control.
4. Define quality control and quality assurance.
5. State the purpose of preparing test sections for demonstration processes.
6. Explain some of the preparation and application methods and how some coatings are used.
7. Identify the responsibilities of a person working in the industrial coatings profession.
8. State the personal characteristics of a professional.
9. Explain the importance of safety in working with industrial coatings.

MODULE 69102-09 - SURFACE PREPARATION

1. Define surface preparation and list reasons for its importance.
2. Define the goals of surface preparation.
3. Recognize the surface conditions of steel substrates, mill scale, and steel fabrication surface defects.
4. State surface preparation methods and reasons for coating galvanized steel, weathering steel and other metals.
5. List properties of concrete, types of concrete surfaces, reasons for assessing and repairing concrete surfaces prior to surface preparation, and methods of surface preparation of concrete surfaces.
6. State how, when, and why to use solvents, hand tools, and power tools for cleaning.
7. State how, when, and why dry abrasive blasting is done.
8. State how, when, and why water cleaning is done.
9. Explain reasons for surface preparation and consequences of poor preparation methods.
10. State when overcoating is used, and how surfaces are prepared for overcoating.

MODULE 69103-09 - INDUSTRIAL COATINGS

1. State the purpose of each coating component.
2. List physical properties of paints.
3. List basic coating additives.
4. State the purpose for solvents (thinners) in cleaning.
5. State the difference between convertible and non-convertible coatings.
6. List curing mechanisms for coatings.
7. Identify conditions that must be considered before selecting a coating/lining.
8. Describe the coverage of coatings and learn to calculate wet and dry-film thickness.
9. Locate and practice safety procedures listed on the MSDS.
10. List safety equipment and correct PPE for use during coatings mixing operations.
11. Describe disposal techniques for hazardous and non-hazardous waste.

MODULE 69104-09 - COATING APPLICATION

1. Locate information about application equipment and other things on a coating specification and a product data sheet (PDS).
2. Mix one or more of the following using proper PPE:
 - Single-component coatings
 - Multi-component liquid coatings
 - Coatings with a powder component,Consider the importance of mixing time and the condition and appearance of the mixed material.
3. Describe induction time and pot life in relationship to material temperature.
4. Define viscosity, list the methods of viscosity control, and reduce the viscosity of coatings.
5. Install protective coverings and discuss the safe use of basic application equipment (setup, operation, adjustment, cleanup) on simple structures; list the strengths, weaknesses, and limitations of each piece; and identify basic application equipment problems with:
 - Brush, roller, mitt
 - Trowel, squeegee
 - Spray (air, airless, air-assisted airless, HVLP)
6. Demonstrate correct application techniques with:
 - Brush, roller, mitt
 - Trowel, squeegee
 - Spray (air, airless, air-assisted airless, HVLP)

MODULE 69104-09 - COATING APPLICATION (CONTINUED)

7. Describe and demonstrate striping procedures.
8. Recognize the importance of the following during coating application operations:
 - Impact of environmental conditions on application and drying
 - Achieving correct thickness of each coating layer
 - Achieving a pinhole/holiday-free lining
9. Identify application defects during and after coating.
10. Describe how to calculate wet film thickness (WFT) from DFT, how to measure WFT, and explain how to calculate percentage of thinners by volume.
11. Recognize the importance of achieving a cured and a solvent-resistant film.

MODULE 69105-09 - HEALTH AND SAFETY, DEBRIS MANAGEMENT, CONTAINMENT, AND VENTILATION

1. Describe the required personal protective equipment.
2. List the reasons and methods for containment, ventilation, and dehumidification.
3. Name the industry standards for containment/ventilation.
4. Name containment classes.
5. List methods to verify containment effectiveness.
6. List consequences of containment failure.
7. List and demonstrate safety procedures associated with disturbing coatings containing toxic materials.
8. Discuss methods to stay safe while working in a containment area.

