Senior Certified Coatings Inspector Oral Exam

Exam Preparation Guide

Table of Contents

Introduction

The Senior Certified Coatings Inspector Oral Exam evaluates whether a candidate meets the minimum qualifications expected of an AMPP Senior Certified Coatings Inspector. This in-depth oral peer review is conducted by a three-member panel and is based on the Coatings Inspector Program (CIP) Body of Knowledge.

Candidates are expected to demonstrate expert-level knowledge of corrosion, surface preparation, cleanliness, environmental conditions, test instruments, coating mixtures, and safety practices. They must be able to explain how to perform unsupervised, destructive and non-destructive inspections of both liquid and non-liquid coatings on any substrate. In addition, successful candidates must articulate their ability to troubleshoot jobsite challenges, supervise Level 1 and Level 2 Coatings Inspectors, and reference applicable industry standards to support their decisions and recommendations.

Test Name	Senior Certified Coatings Inspector Peer Review Oral Exam (formerly known as CIP Level 3)
Test Code	NACE-CIP3-001
Time	2 hours
Number of Items	10 (6 Technical and 4 Practical)
Format	Oral Examination: Hybrid • **Candidates** will participate **in person** at a designated test center. • The **Peer Review Panel** will participate **remotely** via a secure virtual connection.
Passing Score	Passing rating from 2 out of 3 peers

Target Audience

A Senior Certified Coatings Inspector is recognized as an advanced inspector who:

- Is highly skilled and experienced in corrosion, surface preparation, cleanliness, environmental conditions, test instruments, coating mixtures, and safety.
- Has a thorough understanding of the coating systems and curing mechanisms used across the industry sectors.
- Can undertake unsupervised non-destructive and destructive inspections of liquid and non-liquid coatings applied to any substrate.
- Has demonstrated technical knowledge and problem-solving abilities regarding issues that may arise onsite and is capable of supervising basic (CIP Level 1) and intermediate (CIP Level 2) coatings inspectors.
- Possesses in-depth knowledge of relevant industry standards and accurately applies them to inspection practices and decision-making.

Requirements

Requirements to Earn the Senior Certified Coatings Inspector Certification:

- Prerequisite
- Ethics course
- Core Exam
- Application

Prerequisite
• Certified Coatings Inspector certification
Ethics Course
Successful completion of **either**: • *AMPP Ethics for the Corrosion Professional* course **OR** • Submit a third-party ethics training program for review and approval as an equivalent
Core Exam
• Senior Certified Coatings Inspector Oral Exam (Level 3)
Application
• Five years (minimum) verifiable coatings-related work experience **AND** • Qualification references

Upon successful completion of all requirements, the candidate will be awarded the **Senior Certified Coatings Inspector** certification.

Certification Renewal Requirements

- Recertification application required every 3 years, subject to approval
- 1.5 years of coating-related experience within the past 3 years
- Ethics course requirement

Exam Blueprint

Note: In this blueprint, "CIP 1 and CIP 2 courses" refers collectively to the CIP Level 1 and CIP Level 2 courses.

Domain 1 - Safety

- Demonstrated understanding of all safety-related information covered in the CIP 1 and CIP 2 courses
- Demonstrated ability to respond appropriately as an inspector to minor and major safety issues

Domain 2 - Inspection Process

- Demonstrated understanding of the Inspection Process as defined in the CIP 1 and CIP 2 courses
- Demonstrated ability to explain the Inspection Process as it applies to simple and difficult scenarios
- Demonstrated ability to make technically sound suggestions to improve job flow and quality at all stages of the inspection process

Domain 3 - Corrosion

- Demonstrated understanding of Galvanic Corrosion and basic Cathodic Protection complete with Cathodic Disbondment Testing
- Demonstrated ability to identify various corrosion types
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when provided with specific corrosion data/criteria

Domain 4 - Environmental Controls and Inspection

- Demonstrated understanding of environmental controls as outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to use SSPC Guides 6 and 12
- Demonstrated ability to evaluate data provided by electronic hygrometers and data loggers
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when provided with specific environmental data

Domain 5 - Surface Preparation and Inspection

- Demonstrated understanding of all surface preparation methods and standards outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to evaluate surface preparation data provided by all surface preparation inspection instruments outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to explain acceptable variations in appearance as defined by the various surface preparation standards
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when given specific surface preparation data

Domain 6 - Coatings and Inspection

- Demonstrated understanding of all standard and specialty coatings & linings outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to differentiate Organic vs. Inorganic; Thermoset vs. Thermoplastic; Convertible vs. Non-Convertible
- Demonstrated ability to identify the primary curing mechanism by generic class of coating
- Demonstrated ability to identify common coating defects by generic class of coating
- Demonstrated ability to evaluate coating data provided by all coating inspection instruments outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to identify coating failure modes and potential causes
- Demonstrated ability to understand coating surveys
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when given specific coating data

Domain 7- Coating Application

- Demonstrated understanding of all application methods outlined in the CIP 1 and CIP 2 courses, including basic troubleshooting
- Demonstrated knowledge of how to troubleshoot airless and plural component spray application methods
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when given specific coating application data

Domain 8 - Documentation

- Demonstrated understanding of all documentation information outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to develop and critique an Inspection and Test Plan, and Final Report
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when given specific documentation data

Domain 9 - Standards

- Demonstrated detailed understanding of all relevant standards outlined in the CIP 1 and CIP 2 courses
- Demonstrated ability to evaluate the pass/fail of specific inspection data based on an identified standard
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when given a specific standard

Domain 10 - Teamwork

- Demonstrated advanced understanding of teamwork as outlined in the CIP 1 and CIP 2 courses and work experience gained since achieving certification
- Demonstrated ability to identify positive or negative factors influencing group behavior
- Demonstrated ability to make technically sound suggestions to improve job flow and quality while a matter is in dispute

Domain 11 - Ethics

- Demonstrated advanced understanding of ethics required of an AMPP Certified Coatings Inspector (as per attestation)
- Demonstrated ability to react in accordance with the attestation when under pressure
- Demonstrated ability to make technically sound suggestions to improve job flow and quality when facing an ethical challenge

Exam Format and Preparation

Exam Structure and Item Format

The Senior Certified Coatings Inspector exam is divided into two sections:

- **Technical Items** – Focused on theoretical topics
- **Practical Items** – Focused on field-related experience

Candidates are allotted one hour per section and will be asked to respond verbally to all items posed by a panel of three Peer Reviewers.

Each candidate must respond to six technical items and four practical items, all based on content from the CIP Level 1 and CIP Level 2 courses. You may take up to 10 minutes for each technical item and up to 15 minutes for each practical item.

The exam is designed to assess the knowledge and skills expected of a minimally qualified Senior Certified Coatings Inspector. Items reflect real-world applications and theoretical understanding relevant to coatings inspection.

Preparing and Presenting Your Responses

You will be provided with paper and a pen to organize your thoughts **before** responding. You are encouraged to take time to prepare thorough, well-structured responses in the manner that works best for you.

Your responses should be:

- Clear and focused
- Relevant to the item being asked
- Comprehensive, covering the key aspects without adding unrelated details

Important: You will be assessed on the entire response that you provide. Including irrelevant information may result in a lower evaluation and lost time. **Think before you speak.**

When ready, begin your verbal response. Once you've finished, clearly state that you are done. The panel may ask clarifying questions, if needed.

Additional Preparation

There is no formal training course for this certification. It is strongly recommended that you study all areas outlined in the exam blueprint, including:

- Relevant industry standards
- Test methods
- Safety practices
- Instruments and their operation

To help guide your preparation, a set of sample items is provided below.

Sample Items

The sample items (questions) provided below illustrate the format and types of items that may appear on the exam. These examples are intended to help candidates become familiar with the style of items used during the oral exam.

Performance on the sample items should not be considered a predictor of success on the actual exam.

1. **Technical Sample Item:**

   Coal tar/asphalt cutbacks, vinyls, and chlorinated rubber coatings cure by evaporation of the solvent.

   Describe some common problems associated with this type of coating that the inspector might encounter.

2. **Practical Sample Item:**

   It's 5 P.M., and the paint crew has just completed painting a yellow alkyd enamel caution stripe on the helicopter pad on an offshore platform.

   As you climb down you look up at the exposed massive beams bracing the steel deck. The traffic on the deck was very heavy, and it was responsible for delaying completion for three weeks.

   The very next morning the owner's representative is questioning you about the two different colors of alkyd that the painters used to stripe the deck. You explain to him that they only used one gallon of alkyd for striping.

   Up on the helicopter deck, on the stripe running the total width of the deck you see what appear to be alternate bands of a slightly lighter and darker shade of the same color.

   What do you think is the problem?

Sample Responses

1. **Technical Sample Answer:**

   Inspection criteria for solvent evaporation cure coatings may include:

   Since all the solvent must evaporate for the coating to be properly cured, solvent-evaporation cure coatings should not be applied too thick. If this occurs, the coating is likely to have solvents entrapped within the film that ultimately can weaken the coating integrity

   Vinyls and chlorinated rubber coatings contain significant amounts of volatile solvents. If applied to a hot surface, these coatings may not be able to wet the surface adequately before the solvents flash off, resulting in a dry, poorly formed film being deposited. The coating film may be porous, with poor film integrity, have low gloss, and be useless as protective coating.

   Coal tar and asphalt coatings contain lesser amounts of volatile solvents; if applied to a hot surface, these coatings may develop pinholes in the film, resulting in a porous surface. These heavy bodied coatings if applied too thickly at higher ambient temperatures may skin set, causing solvent entrapment. The film underneath will remain soft, prolonging total cure.

   Solvent-evaporation cure coatings should not be topcoated with a different type of coating containing a strong solvent. The topcoat solvent may attack the base coating causing it to redissolve.

   Evaporation cure coatings should not be topcoated with an epoxy because as the epoxy cures significant internal stresses develop causing the coating system to delaminate (peel).

   Evaporation type coatings may be applied over a different type of base coat. For example, an epoxy basecoat may be topcoated with chlorinated rubber. However, if the epoxy coating is hard and slick, poor intercoat adhesion will result.

2. **Practical Sample Points for Discussion:**

   a. The platform is a heat sync issue.

   b. The platform absorbs heat during the day and the beams supporting the platform hold the heat in the evening where the area between cools faster.

   c. Where the coating is in the area of the beams there is sufficient heat to dry the coating on the platform surface.

   d. The area between the beams cools fast in the evening, the coating does not dry before dew falls on the surface, and the coating losses its gloss (looks dull), causing the different appearance.

Study Resources and Reference Materials

Course Material

- Basic Coatings Inspector Program (Level 1) course materials
- Certified Coatings Inspector Program (Level 2) course materials

Books

- Corrosion prevention by protective coatings by Charles Munger and revised by Lou Vincent, et. al.
- Practical Math for the Protective Coatings Industry by Raymond Weaver
- Users Guide to Hot Dip Galvanizing by American Galvanizers Association
- SSPC Painting Manual Volume 1- Good Painting Practices
- SSPC Painting Manual Volume 2- Systems and Specifications

Relevant Standards

- ISO
- AMPP / NACE / SSPC
- ASTM