Senior Corrosion Technologist Written Exam

Exam Preparation Guide

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Introduction

The Senior Corrosion Technologist exam is designed to assess whether a candidate has the requisite knowledge, skills and abilities (KSAs) that a minimally qualified Senior Corrosion Technologist must possess. The 140 questions are based on the KSAs a Senior Corrosion Technologist needs to be successful in the job. A candidate should have at least eight (8) years of experience, possess a wide range of practical knowledge over multiple areas of corrosion and knowledge of the control of corrosion.

Test Name	AMPP Certified Senior Corrosion Technologist
Test Code	NACE-SCT-001
Time	240 Minutes*
Number of Questions	140
Format	Computer-Based Testing (CBT)
Passing Score	Pass or Fail

**NOTE: Includes 4 minutes for the non-disclosure agreement and 6 minutes for the system tutorial.*

Target Audience

A Senior Corrosion Technologist is responsible for understanding the theory of corrosion and corrosion prevention. The certification is geared toward persons who will work in all types of corrosion and means of prevention as well as have knowledge and experience within the field of specializations. The Senior Corrosion Technologist may have specialized knowledge or experience related to corrosion prevention by protective coatings, testing, stress corrosion cracking, chemical processes, and/or in pipelines, and is capable of performing responsible work under the direction of Specialist level personnel but requires minimal supervision.

Requirements

Requirements for Certified Senior Corrosion Technologist

Work Experience & Education Requirements:
Bachelor's degree in physical sciences or engineering with 4 years of experience in responsible charge.* **Refers to work experience at a level of responsibility requiring initiative, technical ability, and independent judgement.*
Core Course and/or Exam Requirements:
Senior Corrosion Technologist Exam *Certification candidates have four (4) years to complete all requirements, including a successful completion of the exam, and an approved application with the required work experience and education requirements.* **Renewal requirements:** Recertification application and approval required every 3 years

Exam Blue Print

NOTE: At the end of the CBT exam candidates should log on to their AMPP profiles to view a bar chart of strengths and weaknesses that correspond to these Domains.

Domain 1 - Metallurgy Material properties Carbon steel Stainless steel Material selection Metallurgy standards (MR0175) Interaction of materials Corrosion resistance	**19-23 %**
Domain 2 – Chemical Treatment Pipeline corrosion Corrosion inhibitors Inorganic materials properties Testing and programs Organic material properties	**18-22 %**
Domain 3 – Cathodic Protection Corrosion basics Impressed/stray currents Galvanic series Thermoplastics Fundamentals of cathodic protection Standards (SP0169), Cathodic protection basics Pipelines Materials Corrosion rates Metallic structures Mitigation methods	**24-28 %**
Domain 4 - Coatings Surface preparation Application methods/techniques/equipment Coatings under insulation (CUI) Coating anomalies/defects/failures Protective coatings (organic/inorganic) Curing mechanisms Galvanizing	**21-25 %**
Domain 5- Internal Corrosion Microbiologically influenced corrosion (MIC) Corrosion inhibitors Chemical treatment Monitoring methods	**5-9 %**

Domain 6- Planning & Safety General knowledge of safety Job site safety Personal responsibility Chemical hazards Permit requirements	**2-5 %**

Types of Questions

Description of Questions

This is a closed book exam. The questions consist of multiple-choice questions where some questions may have more than one answer. Items with more than one correct answer may contain the phrase ***"SELECT ALL THAT APPLY"*** and you will need to select more than one answer choice. The questions are based on the knowledge and skills required in the Senior Corrosion Technologist industry.

Sample Questions

The sample questions are included to illustrate the formats and types of questions that will be on the exam. Your performance on the sample questions should not be viewed as a predictor of your performance on the actual test.

1. What materials are susceptible to Corrosion Under Insulation (CUI)?
   SELECT ALL THAT APPLY
   A. 200 Series Stainless Steel
   B. 300 Series Stainless Steel
   C. Carbon & Low Alloy Steel
   D. Duplex Stainless Steel

2. What is a bioprobe?
   A. Sample of bacteria
   B. Sample of biofilm
   C. Coupon used to assess sessile bacteria
   D. Coupon used to planktonic sessile bacteria

3. NACE SP 0110 describes a rough rule that a partial pressure ratio above 500 and a pressure below 20 creates different types of corrosion. What type of corrosion is created at each pressure ratio?
   SELECT ALL THAT APPLY
   A. Sour if pressure above 500
   B. Sweet if pressure below 20
   C. Sweet if pressure above 500
   D. Sour if pressure below 20

Answer Key:

1. **B, C, D**
   Reference: API 571

2. **C**
   NACE Internal Corrosion Advanced Manual

3. **C, D**
   Reference: API 571

Preparation

Available Training*

*AMPP courses connected to parallel path options

Suggested Study Material

ASM Handbook Volume 13

ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

ASTM STP 518 - Stress Corrosion Cracking of Copper Metals

Cooling Water Treatment, Principles and Practice (Collin Frayne)

Corrosion Engineering (Mars G. Fontana)

Corrosion Inhibitors (CC Nathan)

Corrosion in the Petrochemical Industry (Linda Garverick)

Corrosion Prevention by Protective Coatings (Munger)

Corrosion Tests and Standards: Application and Interpretation (Robert Baboian)

Fitz Atlas for Coating Defects

Fundamentals of Inorganic Glasses (Varshneya and Mauro)

Fundamentals of Metallic Corrosion (Phillip Schweitzer)

Handbook of Corrosion Data, ASM 2nd Edition

Introduction to Corrosion Science (E McCafferty)

Local and International safety rules/regulations (i.e. OSHA, ISO, etc.)

AMPP Basic Corrosion Manual

AMPP Cathodic Protection Tester Manual

AMPP Cathodic Protection Technologist Manual AMPP

Coating Inspector Program 1 Manual

AMPP Corrosion Engineer's Reference Book

AMPP Internal Corrosion Basic Manual

AMPP Internal Corrosion Advanced Manual

AMPP Internal Corrosion of Pipelines Manual Peabody's

Control of Pipeline Corrosion, 3rd Ed Pipeline Corrosion

and Cathodic Protection (M E Parker) Publication 266 -

NiDi (Nickel Development Institute)

Standards

API 510 - Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration

API 570 - Piping Inspection Code

API 571 - Corrosion and Materials

API 653 - Tank Inspection, Repair, Alteration, and Reconstruction.

AWS D1.1 - Structural Welding – Steel

AWS D10.18M/D10.18 - Guide for Welding Ferritic/Austenitic Duplex Stainless Steel Piping and Tubing

ISO 8044 - Corrosion of metals and alloys – Basic terms and definitions

ISO 21457 - Petroleum, petrochemical and natural gas industries — Materials selection and corrosion control for oil and gas production systems

ISO 23936 – Part 1 on Thermo plastics

NACE MR0175 - Selection and qualification of carbon and low-alloy steels, corrosion-resistant alloys, and other alloys for service in equipment in oil and natural gas production

NACE SP 0775 - Preparation, Installation, Analysis, and Interpretation of Corrosion Coupons in Oilfield Operations

NACE SP 01699 - Control of External Corrosion on Underground or Submerged Metallic Piping Systems

NACE SP 0177 - Mitigation of Alternating Current and Lightning Effects on Metallic Structures and Corrosion Control Systems

NACE 1/SSPC SP 5 - White Metal Blast Cleaning

NACE 2/SSPC SP 10 - Near-White Metal Blast Cleaning

NACE 3/SSPC SP 6 - Commercial Blast Cleaning

NORSOK - M-501 Surface Preparation and Protective Coating

NACE TM0172 - Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines

Reference Material Provided During Exam

No reference material provided. It is closed book exam.

What to Expect on Test Day

Arriving at the Pearson Test Center

When you go to the Pearson Testing Center, there are a few things you should know. Please visit this link for information you should know before you go.

https://home.pearsonvue.com/test-taker/security.aspx

Computer-Based Test Demonstration

Once you are in the testing room and at the computer, you will start with agreeing to the non-disclosure agreement and have a brief tutorial of using the system. Please visit this link for a demonstration of the computer-based exam. You will have the opportunity to practice answering a variety of questions to help you get familiar with how it all works.

https://wsr.pearsonvue.com/demo/