



# Marine Coating Technology (MCT) Theory Exam

## Exam Preparation Guide

November 2020

## Table of Contents

Introduction .....	3
Target Audience .....	3
Requirements.....	4
Exam Blue Print.....	5
Types of Questions.....	7
Description of Questions .....	7
Sample Questions .....	8
Preparation .....	9
Required Training.....	9
Suggested Study Material .....	9
Reference Material Provided During Exam.....	9
What to Expect on Test Day.....	9
Remote Online Exam Proctoring.....	9
Examity Demonstration with Automated Proctor .....	9

## Introduction

The Marine Coating Technology exam is designed to assess whether a candidate has the requisite knowledge, skills and abilities (KSAs) that a minimally qualified person working specifically with coatings in the marine industry must possess. The 100 questions are based on the KSAs a coating inspector trainee needs to be successful in the job. It is recommended that a candidate have the CIP Level 1 or CIP Level 2 Certification, but it is not required.

Exam Name	Marine Coating Technology Exam
Time	2 Hours
Number of Questions	100
Format	Live Online Remote Proctoring (Examity*)
Passing Score	Pass or Fail

*\*Delivered through Examity NOT AT Pearson Testing Center*

## Target Audience

Marine Coating Technology (MCT) benefits anyone interested in gaining a better understanding of coating application and inspection in the marine industry. The MCT Exam and training was designed for coating inspector trainees however it is also targeted to the following:

- Project engineers
- Quality assurance managers
- Contractors
- Technical sales representatives
- Blasters
- Paint applicators
- Maintenance personnel
- Management or staff involved in maritime or shipbuilding with a required knowledge of coatings

The person who may successfully complete the MCT course and exam is able to describe the types and uses of protective coatings, their application, and associated quality control on vessels as well as recognize salient safety issues associated with performing inspection in the marine industry. Additionally, they should be able to identify and use instruments mainly used in marine coating inspection and recognize various IMO Resolutions related to protective coatings (PSPC for ballast tanks, cargo tanks and voids, antifouling, etc.).

## Requirements

### Requirements for Marine Coating Technology

#### Prerequisites

- None required if Education Only

-OR-

- CIP Level 1 at minimum if seeking Marine Endorsement

#### Core Course Requirements

Successfully complete the following course:

- **+ Course - Marine Coating Technology**

#### Core Exam Requirements

- Exam - Marine Coating Technology Exam

#### Application Requirements

- None required

## Exam Blue Print

NOTE: At the end of the exam the candidate will receive a chart with strengths and weaknesses that correspond to the Domains listed below. You will have the option to email or print it.

<p><b>Domain 1 – The Marine Industry</b></p> <ul style="list-style-type: none"> <li>• Ship Dimensions &amp; Form</li> <li>• Volume &amp; Weights</li> <li>• Plimsoll Mark</li> <li>• Ship Drawings</li> <li>• Vessel Types</li> <li>• Passenger Cruise Ships</li> <li>• Liquid Cargo Ships</li> <li>• Floating Production Storage &amp; Offloading</li> <li>• Specialty Ships Semisubmersible Drilling &amp; Drilling Ships</li> <li>• Major Components Structure</li> <li>• Superstructures &amp; Accommodations</li> <li>• Funnel Exteriors</li> <li>• Decks</li> <li>• Bulwarks</li> <li>• Pipe Rack &amp; Cable Trays</li> <li>• Tanks &amp; Spaces</li> <li>• Cargo Spaces</li> <li>• Seawater Ballast Tanks &amp; Wing Tanks</li> <li>• Forepeak &amp; Aftpeak</li> <li>• Chain Lockers</li> <li>• Machinery Spaces</li> <li>• Shipping Organizations</li> <li>• IMO Performance Standard for Protective Coatings</li> <li>• Laws &amp; Regulations</li> <li>• Certificates</li> <li>• Safety of Life at Sea</li> <li>• Standard for Design &amp; Construction</li> <li>• Objective of IACS Common Structural Rules</li> <li>• Structural Design Programs</li> <li>• Classification</li> </ul>	<p><b>23-27 %</b></p>
<p><b>Domain 2 – Corrosion &amp; Corrosion Types</b></p> <ul style="list-style-type: none"> <li>• Corrosion</li> <li>• Types of Corrosion</li> <li>• Corrosion Rate</li> <li>• Corrosivity Categories</li> <li>• Corrosion Control</li> <li>• Stray Current Corrosion</li> </ul>	<p><b>10-14 %</b></p>

<p><b>Domain 3 – Surface Preparation &amp; Application</b></p> <ul style="list-style-type: none"> <li>• Surface Preparation</li> <li>• Surface Preparation Methods</li> <li>• Anchor Profile</li> <li>• Application of Coatings</li> <li>• Coatings Application Technique</li> </ul>	<b>11-15 %</b>
<p><b>Domain 4 – Marine Coating &amp; Lining</b></p> <ul style="list-style-type: none"> <li>• Properties of a Coating</li> <li>• Classification of Coatings</li> <li>• Curing Mechanisms</li> <li>• Modes of Protection</li> <li>• Coating Systems</li> <li>• Exterior &amp; Interior</li> <li>• Universal Primer Concept</li> <li>• Antifouling Coatings</li> <li>• Shop-Primer</li> </ul>	<b>14-18 %</b>
<p><b>Domain 5 – Shipbuilding &amp; Maintenance Process</b></p> <ul style="list-style-type: none"> <li>• The Process</li> <li>• Marine Construction</li> <li>• Repair Facilities</li> </ul>	<b>5-9 %</b>
<p><b>Domain 6- Design &amp; Fabricating for Corrosion Controls in Marine Environment</b></p> <ul style="list-style-type: none"> <li>• Design Issues</li> <li>• Considerations</li> </ul>	<b>2-6 %</b>
<p><b>Domain 7 – Surface Preparation: New Building &amp; Repair</b></p> <ul style="list-style-type: none"> <li>• Primary Surface Preparation</li> <li>• Secondary Surface Preparation</li> <li>• Special Situations</li> <li>• Repair &amp; Refurbishment</li> <li>• Ballast Tanks</li> <li>• Seawater Testing</li> </ul>	<b>2-5 %</b>
<p><b>Domain 8 – Quality Control Instruments &amp; Methods</b></p> <ul style="list-style-type: none"> <li>• Inspection Instruments</li> <li>• Testing for Surface Contaminants</li> <li>• DFT Measurement</li> <li>• Hull Roughness Measurement</li> </ul>	<b>4-8 %</b>
<p><b>Domain 9 – Safety &amp; Environmental Considerations</b></p> <ul style="list-style-type: none"> <li>• Hazards in Coating Works</li> <li>• Exposure Limits</li> <li>• Other Hazards</li> <li>• Vessel Safety Coordination Committee</li> <li>• Permit-to-Work System</li> <li>• Material's Information</li> <li>• Personal Protective Equipment</li> </ul>	<b>5-9 %</b>

<p><b>Domain 10 – IMO PSPC for Ballast Tanks, Cargo Tanks &amp; Voids</b></p> <ul style="list-style-type: none"> <li>• IMO PSPC for Ballast Tanks</li> <li>• Verification Requirements</li> <li>• Alternative systems</li> <li>• Test Procedures for Coating Qualification</li> <li>• IMO PSPC for Cargo Oil Tank</li> <li>• Design for Coating System</li> <li>• Secondary Surface Preparation</li> <li>• Alternative Systems</li> <li>• Void Space Performance Standard</li> <li>• Definitions</li> <li>• Test Procedures for Coating Qualification</li> </ul>	<p><b>2-4 %</b></p>
<p><b>Domain 11 – In-Service Survey &amp; Inspection</b></p> <ul style="list-style-type: none"> <li>• Safety</li> <li>• In-Service Surveys</li> <li>• IACS System Evaluation for Expected Service Life</li> <li>• Survey of Cargo Oil Tanks of Crude Oil Carriers</li> <li>• Other Surveys</li> <li>• Sampling</li> <li>• Photography</li> <li>• Documentation</li> <li>• Reporting</li> </ul>	<p><b>2-4 %</b></p>
<p><b>Domain 12 – Inspection Records &amp; Procedures</b></p> <ul style="list-style-type: none"> <li>• General Reports</li> <li>• Type of Reports</li> <li>• Inspection Procedure</li> <li>• Work Organization &amp; Planning</li> <li>• Sampling</li> <li>• Inspector &amp; Team Work</li> </ul>	<p><b>2-4 %</b></p>

## Types of Questions

### Description of Questions

The questions consist of true/false and 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 Marine Coating Technology 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 exam.

1. What are the advantages of a double-hull design?

**SELECT ALL THAT APPLY**

- A. Ease of ballasting
  - B. Increased use of salt water ballast in cargo spaces
  - C. Quicker and easier cargo discharging
  - D. Better protection in collision and grounding
2. The components that must be present for corrosion to occur include oxygen, anode, electrolyte, and metallic pathway.
    - A. True
    - B. False
  3. The reduction of the thickness on the edges of a dry paint film performed with the scope to avoid detachment and lifting is:
    - A. Edging
    - B. Pickling
    - C. Feathering
    - D. Galvanizing
  4. The topside of the ship is the:
    - A. entire exterior of the ship above the water line.
    - B. entire interior of the ship above the water line.
    - C. entire exterior of the ship above the deck.
    - D. entire interior of the ship above the deck.



Answer Key:

1. **A, C, D**

*Reference: MCT Manual Chapter 2*

2. **B**

*Reference: MCT Manual Chapter 3*

3. **C**

*Reference: MCT Manual Chapter 4*

4. **A**

*Reference: MCT Manual Chapter 2*

## Preparation

### Required Training

NACE Marine Coating Technology

### Suggested Study Material

NACE Marine Coating Technology Manual

NACE Coating Inspector Program 1 Manual

NACE Coating Inspector Program 2 Manual

### Reference Material Provided During Exam

The MCT Course manual is provided in electronic form during the exam.

## What to Expect on Test Day

### Remote Online Exam Proctoring

*\* Remote online proctored exams are offered for select exams.*

The NACE Institute has partnered with Examity to offer remote online proctoring for the Marine Coating Technology Exam. With the new Examity platform, you can take the exam from home without the need to arrange for a proctor or take the exam at a testing site. Please visit this link for information you should know.

<https://naceinstitute.org/certification-resources/online-exam-proctoring>

### Examity Demonstration with Automated Proctor

Please visit this link for a demonstration of the computer-based exam. You will have the opportunity to get familiar with how it all works.

<https://vimeo.com/399635210/2eb75207b8>