



National Center for Construction
Education and Research

Assessment Packet

Overhead Crane

ASMT-OVRHD01

Updated October 2025

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Focus Statement

The Overhead Crane Operator Certification verifies that candidates possess the minimum competence required to safely and effectively operate overhead cranes in construction and industrial environments. This certification is aligned with OSHA 29 CFR 1910.179 and ASME B30, ensuring compliance with recognized federal regulations and consensus safety standards.

Certified operators will demonstrate competence in the following areas:

1. Regulatory Compliance and Safety Awareness
 - Apply working knowledge of OSHA 1910.179 and ASME B30.2 requirements, including employer responsibilities and operator duties.
 - Recognize and mitigate hazards related to ground conditions, weather, power lines, equipment interaction, and personnel exposure.
2. Crane Setup and Operational Readiness
 - Conduct pre-operational inspections and functional checks in accordance with manufacturer guidance and ASME B30.2 inspection requirements.
 - Verify that operational aids, safety devices, and load charts are functional and properly applied.
3. Operational Proficiency
 - Accurately interpret load charts and apply data to determine safe rated capacities under various configurations.
 - Execute safe crane operations, including travel, hoisting, booming, and load positioning, while maintaining awareness of rated load limits and environmental conditions.
4. Rigging and Communication
 - Confirm load and rigging hardware compliance with OSHA and ASME standards.
 - Use standardized hand and voice signals to maintain clear communication with signalpersons and ground personnel.
5. Inspection, Maintenance, and Emergency Response
 - Identify inspection intervals, testing requirements, and preventive maintenance practices for ropes, hooks, brakes, and other crane components.
 - Demonstrate appropriate response to equipment malfunctions, electrical contact, or site emergencies in compliance with OSHA and ASME procedures

Performance Level Expectation

A certified operator demonstrates the foundational knowledge, practical skill, and judgment required to maintain compliance, prevent accidents, and conduct lifting operations safely. Certification confirms readiness to perform crane operations independently, without supervision.

Assessment Structure

- There are 65 scored items on this assessment.
 - Pilot items are included for research purposes throughout the assessment: these items will not affect the candidate's overall score.
- The [Assessment Specifications](#) is a blueprint that includes the topic domains and weightings for this assessment.
 - Please note that not all topic areas may be covered on every form of the test. The content may vary among different versions.

Time Limit

This assessment must be completed within the 3 hours allotted.

Passing Score

The minimum passing [scaled score](#) is 80.

Materials Permitted During the Assessment

- The candidate may use a basic function, non-printing calculator.
- No extra papers, books, notes, or study materials are allowed.

Assessment Specifications

The specifications for this assessment are a framework of content on which the candidate will be tested, using the following outline of domains, sub-domains, and content areas. Each domain comprises a specific percentage of the assessment, as identified in the tables.

1. General Knowledge and Safety a. Regulatory Standards b. General Safety Procedures	12%
2. Inspection, Testing, and Maintenance a. Inspection Types b. Testing Procedures c. Rope Inspection	15%
3. Crane Operations a. Crane Function Controls b. Load Handling c. Travel Procedures d. Load Charts i. Net Capacity ii. Gross Capacity	28%
4. Crane Operational Components	8%
5. Emergency Response	4%
6. Standard Signals	15%
7. Safety Devices and Operational Aids	9%
8. Verify Load and Rigging Weights	9%

Assessment Development

Under the direction of NCCER's Test Development department, subject matter experts assist in the development of the contents within this assessment package, including the focus statement; domains, sub-domains, and content areas in the assessment specifications; and corresponding items' content and complexity on the assessment. The Test Development department continuously maintains the assessment, ensuring the content remains valid in the construction industry.

Practical Examination

A corresponding hands-on Practical Examination is available, and a "pass" status required, to become certified. The practical examination consists of the following tasks. Candidates will be required to complete the tasks in order.

- **Task 1: Pre-Operation Inspection**
Candidates must demonstrate the ability to identify and inspect the essential parts of the crane prior to operation.
- **Task 2: Diagonal Travel to Target**
Candidates must demonstrate control of the load to accurately reach the designated target location.
- **Task 3: Hoist Over the Bar**
Candidates must demonstrate control of the load over a stationary object and lower the load under control to a designated target.
- **Task 4: Chain Placement**
Candidates must safely and effectively control a chain through a designated area while keeping the chain on the ground.
- **Task 5: Crane Shutdown**
Candidates must demonstrate the ability to properly shutdown and secure the crane in accordance with the manufacturer's specifications.

Scaled Score

A scaled score is the candidate's raw score that has been converted to a scale of 1 to 100. Scaling raw scores is a standardization procedure to account for differences in total points possible on each assessment form to include item types, weightings, and difficulties. It is also performed to consider the difficulty of assessment forms when comparing performance across all of NCCER's offerings.

Score Report

Each candidate will have online access through their NCCER account to their assessment results, including their overall score with a "pass" or "training recommended" status.

Credentials

Upon successful completion of the certification requirements, credentials can be viewed and printed by the candidate or assessment program through their NCCER account.

Contact

Please contact NCCER's Test Development department if you have questions or concerns about this assessment, or if you find errors in the content: testdev@nccer.org.

For customer support, please go to <https://nccer.my.site.com/Support/s/contact-support-team>.

Resources

A candidate is expected to have relevant education and/or on-the-job experience to be successful in completing this assessment and the associated practical examination. Although not an all-inclusive list of available resources, the following NCCER resources can aid candidates with their preparation, in addition to applicable codes, laws, and standards relevant to the job.

Codes, Laws, and Standards

- ASME B30.2- Overhead and Gantry Cranes (2022)
- ASME B30.17- Cranes and Monorails (2020)
- ASME B30.10- Hooks (2014)
- ASME B30.26- Rigging Hardware (2010)
- ASME B30.9- Slings (2009)
- OSHA 29 CFR 1910.179- Overhead and Gantry Cranes
- IPT's Crane and Rigging Training Manual (2005)