

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate in Metal Forming & Processing Level 3
Competency Standard	Perform Green Sand Mold Casting
Purpose of Assessment	Formative Assessment
Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within 04 Hrs. time frame (for practical demonstration & assessment):</p> <ul style="list-style-type: none"> • Perform pre-casting operations • Perform green sand mold casting process • Perform post casting operations
Time: 04 Hrs.	During a practical assessment, under observation by an assessor, you are required to
Minimum Evidence Required	<p>Perform pre-casting operations</p> <ol style="list-style-type: none"> 1. Identify tools/equipment/material as per requirement for sand casting 2. Arrange sand casting molds as per requirement 3. Arrange raw material for melting operations 4. Set casting parameters as per SOPs 5. Check the melting equipment availability as per requirement 6. Check the tilting operation of casting ladles <p>Perform green sand mold casting process</p> <ol style="list-style-type: none"> 1. Carryout pouring with the defined work standards and specifications 2. Regulate the speed of the molten metal into sand molds through gating system 3. Monitor casting temperature by observing the readings on various panels/ meters to prevent deviation from desired specifications 4. Prevent metal spillage in the work area 5. Take preventive actions to avoid parting leak, gas evolution and

	<p>interrupted pouring</p> <ol style="list-style-type: none"> 6. Maintain maximum limit of melt in down sprue during pouring as per the process mentioned in the work instructions/ SOPs 7. Remove the sand molds with metal cast as per SOPs <p>Perform post casting operations</p> <ol style="list-style-type: none"> 1. Analyze any irregularity in the casting process to take preventive steps in next casting 2. Check the in-line composition/ soundness of the casting 3. Inspect the conformance of final metal casting as per specification given in work order 4. Send the casting for further processing in terms of chipping, fettling, wedge cutting etc.
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Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate in Metal Forming & Processing Level 3
Competency Standard	Perform Green Sand Mold Casting
Purpose of Assessment	Formative Assessment
Assessment Task	<ul style="list-style-type: none"> • Perform pre-casting operations • Perform green sand mold casting process • Perform post casting operations

I can.....

Performance Criteria	Yes	No
1. Identify tools/equipment/material as per requirement for sand casting	<input type="checkbox"/>	<input type="checkbox"/>
2. Arrange sand casting molds as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
3. Arrange raw material for melting operations	<input type="checkbox"/>	<input type="checkbox"/>
4. Set casting parameters as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
5. Check the melting equipment availability as per requirement	<input type="checkbox"/>	<input type="checkbox"/>
6. Check the tilting operation of casting ladles	<input type="checkbox"/>	<input type="checkbox"/>
7. Carryout pouring with the defined work standards and specifications	<input type="checkbox"/>	<input type="checkbox"/>
8. Regulate the speed of the molten metal into sand molds through gating system	<input type="checkbox"/>	<input type="checkbox"/>
9. Monitor casting temperature by observing the readings on various panels/ meters to prevent deviation from desired specifications	<input type="checkbox"/>	<input type="checkbox"/>
10. Prevent metal spillage in the work area	<input type="checkbox"/>	<input type="checkbox"/>
11. Take preventive actions to avoid parting leak, gas evolution and interrupted pouring	<input type="checkbox"/>	<input type="checkbox"/>
12. Maintain maximum limit of melt in down sprue during pouring as per the process mentioned in the work instructions/ SOPs	<input type="checkbox"/>	<input type="checkbox"/>
13. Remove the sand molds with metal cast as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
14. Analyze any irregularity in the casting process to take preventive steps in next casting	<input type="checkbox"/>	<input type="checkbox"/>
15. Check the in-line composition/ soundness of the casting	<input type="checkbox"/>	<input type="checkbox"/>
16. Inspect the conformance of final metal casting as per specification given in work order	<input type="checkbox"/>	<input type="checkbox"/>

17. Send the casting for further processing in terms of chipping, fettling, wedge cutting etc.	<input type="text"/>	<input type="text"/>
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Candidate's Signature_____ Assessor's Signature_____

Date: _____

Assessors Judgment Guide

Qualification	National Vocational Certificate in Metal Forming & Processing Level 3
Competency Standard	Perform Green Sand Mold Casting
Purpose of Assessment	Formative Assessment
Candidate Details	Name: _____ Registration/Roll Number: _____ Signature: _____
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor _____ Assessor's code: _____ Signature: _____

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	<ul style="list-style-type: none"> Perform pre-casting operations Perform green sand mold casting process Perform post casting operations 		
During the practical assessment, candidate demonstrated the following:	Yes	No	Remarks
1. Identify tools/equipment/material as per requirement for sand casting			
2. Arrange sand casting molds as per requirement			
3. Arrange raw material for melting operations			
4. Set casting parameters as per SOPs			
5. Check the melting equipment availability as per requirement			
6. Check the tilting operation of casting ladles			
7. Carryout pouring with the defined work standards and specifications			
8. Regulate the speed of the molten metal into sand molds through gating system			
9. Monitor casting temperature by observing the readings on various panels/ meters to prevent deviation from desired specifications			
10. Prevent metal spillage in the work area			
11. Take preventive actions to avoid parting leak, gas evolution and interrupted pouring			
12. Maintain maximum limit of melt in down sprue during pouring as per the process mentioned in the work instructions/ SOPs			
13. Remove the sand molds with metal cast as per SOPs			
14. Analyze any irregularity in the casting process to take preventive steps in next casting			
15. Check the in-line composition/ soundness of the casting			
16. Inspect the conformance of final metal casting as per specification given in work order			
17. Send the casting for further processing in terms of chipping, fettling, wedge cutting etc.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Knowledge Assessment

Qualification	National Vocational Certificate in Metal Forming & Processing Level 3
Competency Standard	Perform Green Sand Mold Casting
Purpose of Assessment	Formative Assessment
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	<div style="display: flex; justify-content: space-around;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> Name of the Assessor: _____ Assessor's code: _____ Signature of the Assessor: _____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		Satisfactory	Not Satisfactory
1.	Define casting process.		
2.	Enlist the types of sand molds.		
3.	What is gating system?		

4.	Define types of equipments used for casting process.		
5.	Enlist the types of furnaces used for melting.		
6.	Enlist casting defects.		

Feedback to the Candidate

Candidate's Signature_____ **Assessor's Signature** _____