

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate in Metal Forming & Processing Level 4
Competency Standard	Perform Centrifugal Casting Process
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"> • Prepare mold for casting • Cast the molten metal • Remove the Casting from molds • Perform post casting operations
Time: 04 Hrs.	During a practical assessment, under observation by an assessor, you are required to
Minimum Evidence Required	<p>Prepare mold for casting</p> <p>P1. Arrange material for centrifugal casting process P2. Apply refractory ceramic coating to cylindrical mold walls P3. Perform rotation of mold to spread coating properly P4. Perform drying of ceramic coat as per standard operating procedures P5. Rotate mold about its axis at required speeds</p> <p>Cast the molten metal</p> <p>P1. Pour molten metal directly into the rotating mold without the use of runners or a gating system. P2. Pour the molten metal into the mold P3. Carryout pouring of molten metal as per standard P4. Follow safe handling practice during pouring of molten metal P5. Perform solidification of molten metal at room temperature P6. Trim the casting to the desired shape</p> <p>Remove the Casting from molds</p> <p>P1. Take the metal out of the mold as per standard practice P2. Remove the solidified casting from mold</p>

	<p>P3. Inspect the molted part for defects, if any</p> <p>P4. Prepare the inspection report as per SOPs</p> <p>Perform post casting operations</p> <p>P1. Clean less dense impurities or bubbles at the inner surface of the casting.</p> <p>P2. Perform shot blast to smooth the inner diameter of the part.</p> <p>P3. Execute proper shut down of the machine</p> <p>P4. Perform regular cleaning process as prescribed by manufacturer</p>
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Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate in Metal Forming & Processing Level 4
Competency Standard	Perform Centrifugal Casting Process
Purpose of Assessment	Formative Assessment
Assessment Task	<ul style="list-style-type: none"> • Prepare mold for casting • Cast the molten metal • Remove the Casting from molds • Perform post casting operations

I can.....

Performance Criteria	Yes	No
P1. Arrange material for centrifugal casting process	<input type="checkbox"/>	<input type="checkbox"/>
P2. Apply refractory ceramic coating to cylindrical mold walls	<input type="checkbox"/>	<input type="checkbox"/>
P3. Perform rotation of mold to spread coating properly	<input type="checkbox"/>	<input type="checkbox"/>
P4. Perform drying of ceramic coat as per standard operating procedures	<input type="checkbox"/>	<input type="checkbox"/>
P5. Rotate mold about its axis at required speeds	<input type="checkbox"/>	<input type="checkbox"/>
P6. Pour molten metal directly into the rotating mold without the use of runners or a gating system.	<input type="checkbox"/>	<input type="checkbox"/>
P7. Pour the molten metal into the mold	<input type="checkbox"/>	<input type="checkbox"/>
P8. Carryout pouring of molten metal as per standard	<input type="checkbox"/>	<input type="checkbox"/>
P9. Follow safe handling practice during pouring of molten metal	<input type="checkbox"/>	<input type="checkbox"/>
P10. Perform solidification of molten metal at room temperature	<input type="checkbox"/>	<input type="checkbox"/>
P11. Trim the casting to the desired shape	<input type="checkbox"/>	<input type="checkbox"/>
P12. Take the metal out of the mold as per standard practice	<input type="checkbox"/>	<input type="checkbox"/>
P13. Remove the solidified casting from mold	<input type="checkbox"/>	<input type="checkbox"/>
P14. Inspect the molted part for defects, if any	<input type="checkbox"/>	<input type="checkbox"/>
P15. Prepare the inspection report as per SOPs	<input type="checkbox"/>	<input type="checkbox"/>
P16. Clean less dense impurities or bubbles at the inner surface of the casting.	<input type="checkbox"/>	<input type="checkbox"/>
P17. Perform shot blast to smooth the inner diameter of the part.	<input type="checkbox"/>	<input type="checkbox"/>

P18.	Execute proper shut down of the machine	<input type="checkbox"/>	<input type="checkbox"/>
P19.	Perform regular cleaning process as prescribed by manufacturer	<input type="checkbox"/>	<input type="checkbox"/>

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Assessors Judgment Guide

Qualification	National Vocational Certificate in Metal Forming & Processing Level 4
Competency Standard	Perform Centrifugal Casting Process
Purpose of Assessment	Formative Assessment
Candidate Details	Name: _____ Registration/Roll Number: _____ Signature: _____
Assessment Outcome	<div style="display: flex; justify-content: space-between;"> COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> </div> 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"> • Prepare mold for casting • Cast the molten metal • Remove the Casting from molds • Perform post casting operations 		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Arrange material for centrifugal casting process			
2.	Apply refractory ceramic coating to cylindrical mold walls			
3.	Perform rotation of mold to spread coating properly			
4.	Perform drying of ceramic coat as per standard operating procedures			
5.	Rotate mold about its axis at required speeds			
6.	Pour molten metal directly into the rotating mold without the use of runners or a gating system.			
7.	Pour the molten metal into the mold			
8.	Carryout pouring of molten metal as per standard			
9.	Follow safe handling practice during pouring of molten metal			
10.	Perform solidification of molten metal at room temperature			
11.	Trim the casting to the desired shape			
12.	Take the metal out of the mold as per standard practice			
13.	Remove the solidified casting from mold			
14.	Inspect the molted part for defects, if any			
15.	Prepare the inspection report as per SOPs			
16.	Clean less dense impurities or bubbles at the inner surface of the casting.			
17.	Perform shot blast to smooth the inner diameter of the part.			
18.	Execute proper shut down of the machine			
19.	Perform regular cleaning process as prescribed by manufacturer			

Competent

☐

Not Yet Competent

☐

Knowledge Assessment

Qualification	National Vocational Certificate in Metal Forming & Processing Level 4
Competency Standard	Perform Centrifugal Casting Process
Purpose of Assessment	Formative Assessment
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	<div style="display: flex; justify-content: space-around; align-items: center;"> 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.	Describe centrifugal casting process		
2.	Types of centrifugal casting process		
3.	Describe semi centrifugal casting		

4.	What is Preventive Maintenance		
5.	Define Ferrous and non-Ferrous metal		

Feedback to the Candidate	
Candidate's Signature_____	Assessor's Signature _____