

# **Assessment Evidence Guide**

## **For**

### **“Assistant Caster”**

**Level-2**

**Module name**  
**(Formative Assessment)**

*8<sup>th</sup> -12<sup>th</sup> March 2021*



**National Vocational & Technical**  
**Training Commission**



<b>Title of Qualification:</b> Assistant Caster	<b>CS Code:</b>	<b>Level: 2</b>	<b>Version: 01</b>
<b>Competency Standard Title:</b> Perform Sand Casting	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

<b>Candidate Details</b>	Name: .....  Registration/Roll Number:.....
<b>Guidance for Candidate</b>	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment) as per the instructions given in Annexure A:</b></p> <p><b>Assessment Task 1:</b> Candidate is required to: Identify sand casting requirements.</p> <p><b>Assessment Task 2:</b> Candidate is required to: Perform pre-casting operations.</p> <p><b>Assessment Task 3:</b> Candidate is required to: Perform sand casting process</p> <p><b>Assessment Task 4:</b> Candidate is required to: Monitor casting process parameters</p> <p><b>Assessment Task 5:</b> Candidate is required to: Perform post casting operations</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
<b>Minimum Evidence Required</b>	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <ul style="list-style-type: none"> <li>Identify casting process for completing the work order</li> <li>Identify various casting parameters like temperature, pouring speed before starting the process</li> <li>Identify the equipment availability as per requirement</li> </ul>



	<b>Assessment Task 2</b> <ul style="list-style-type: none"> <li>• Check the tilting operation of casting ladles</li> <li>• Set casting parameters as per requirement</li> <li>• Ensure melt is ready for casting</li> <li>• Perform pre-heating of the molds</li> <li>• Perform pre-heating of the ladle.</li> <li>•</li> </ul>
	<b>Assessment Task 3</b> <ul style="list-style-type: none"> <li>• Position the ladle in line with molds as per standard</li> <li>• Tilt the ladle to pour melt into the molds</li> <li>• Perform un-interrupted pouring during casting</li> <li>• Maintain down sprue level during pouring as per SOPs</li> <li>• Ensure metal stream inoculation for each mold</li> </ul>
	<b>Assessment Task 4</b> <ul style="list-style-type: none"> <li>• Measure casting temperature if required to prevent deviation from desired specifications</li> <li>• Analyze any irregularity in the process to take preventive steps</li> <li>• Minimize metal spillage in the work area</li> </ul>
	<b>Assessment Task 5</b> <ul style="list-style-type: none"> <li>• Shake out casting from molds</li> <li>• Inspect the final metal casting as prescribed in work order</li> <li>• Send the casting for further processing in terms of chipping, fettling, wedge cutting etc.</li> </ul>
	<b>Portfolios required at the time of assessment (if any) for</b>

*Continued on following page*



**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature: .....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor: .....

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							

Each Assessment Task (with performance criteria)				
<b>Assessment Task 1</b>		<b>Description of assessment task 1</b>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify casting process for completing the work order			
2.	Identify various casting parameters (e.g. temperature, pouring speed before starting the process)			
3.	Identify the equipment requirement for casting process			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



<b>Assessment Task 2</b>		<b>Description of assessment task 2</b>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Perform the tilting operation of casting ladles			
2.	Perform pre-heating of the molds			
3.	Perform pre-heating of the ladle			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of assessment task 3</b>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Position the ladle in line with molds as per standard			
2.	Perform the tilting of the ladle to pour melt into the molds			
3.	Perform un-interrupted pouring during casting			
4.	Maintain down sprue level during pouring as per SOPs			
5.	Ensure metal stream inoculation for each mold			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 4</b>		<b>Description of assessment task 4</b>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Measure casting temperature if required (to prevent deviation from desired specifications)			
2.	Analyze any irregularity in the process to take preventive steps			
3.	Perform pouring of metal & minimize metal spillage in the work area			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



<b>Assessment Task 5</b>		<b>Description of assessment task 5</b>		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Shake out casting(s) from molds			
2.	Inspect the final metal casting as prescribed in work order			
3.	Identify the casting defects, if any, post casting.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



<b>Title of Qualification:</b> Assistant Caster	CS Code:	Level: 2	Version: 01
<b>Competency Standard Title:</b> Perform Sand Casting	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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**Assessors Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name:..... Registration/Roll Number:  Candidate Signature: .....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/>  Name of the Assessor: ..... Assessor's code:  Signature of the Assessor: .....



<b>Title of Qualification:</b> Assistant Caster	CS Code:	Level: 2	Version: 1
<b>Competency Standard Title:</b> Perform Sand Casting	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

### WRITTEN ASSESSMENT

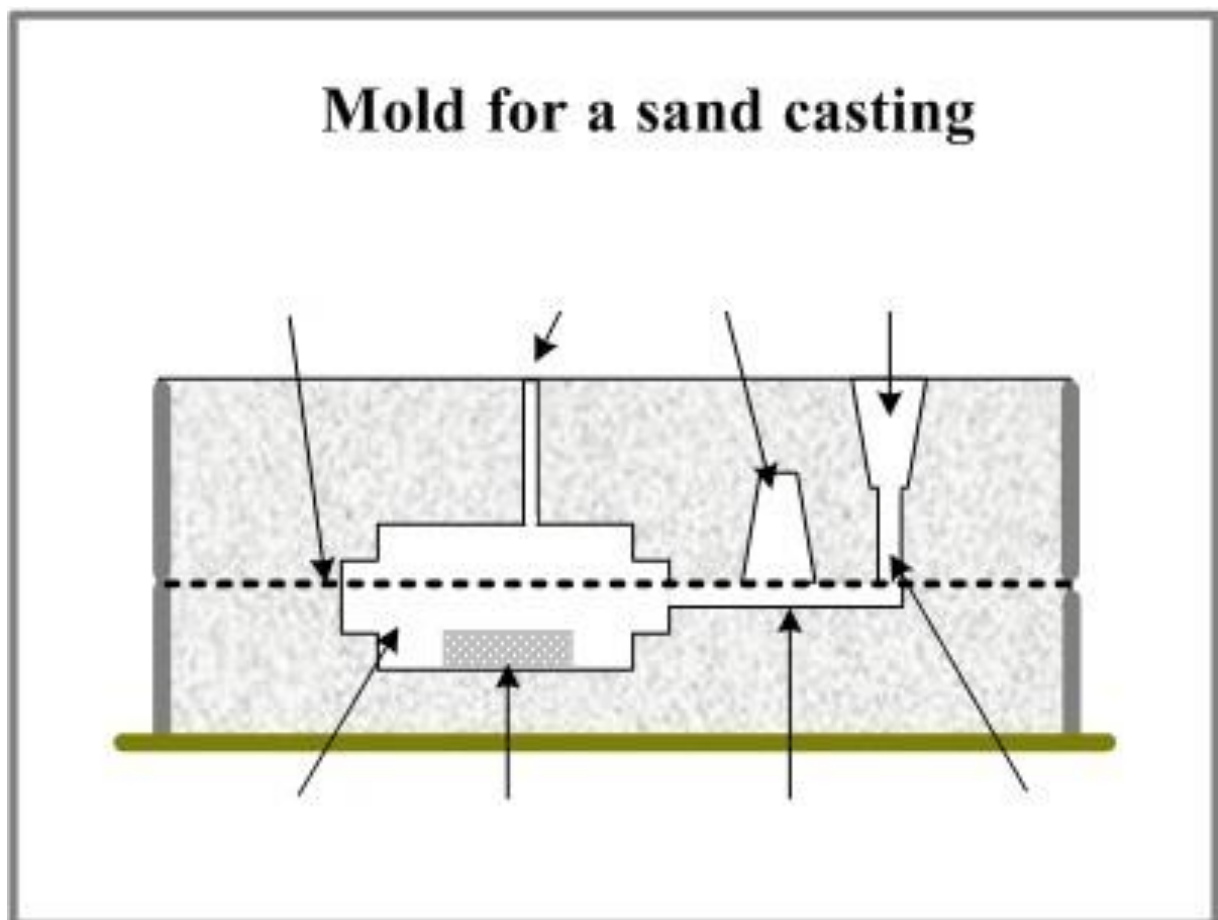
Question	Candidate's answer
1. Name few casting defects?	<ul style="list-style-type: none"> <li>• Blow holes</li> <li>• Pinholes</li> <li>• Shift/Mismatch</li> <li>• Shrinkage cavity</li> <li>• Slag</li> </ul>
2. Name few raw material used for casting?	<ul style="list-style-type: none"> <li>• Iron</li> <li>• Aluminum</li> <li>• Steel</li> <li>• Copper</li> </ul>
3. Name few tools used in casting?	<ul style="list-style-type: none"> <li>• Crucible ring</li> <li>• Tongs</li> <li>• Pouring ladles</li> <li>• Furnace</li> </ul>
4. How casting defects are produced?	<ul style="list-style-type: none"> <li>• By cold dies</li> <li>• By low metal temperature</li> <li>• Dirty metal</li> <li>• Lack of venting</li> <li>• Gas porosity</li> </ul>
5. Name different methods of melting of metal.	<ul style="list-style-type: none"> <li>• Using heat torch</li> <li>• Induction furnace</li> <li>• Gas furnace</li> </ul>
6. What we called the melting metal process?	<ul style="list-style-type: none"> <li>• Smelting is a process of applying heat to ore in order to extract a base metal</li> </ul>
7. Name few types of casting processes?	<ul style="list-style-type: none"> <li>• Sand Casting</li> <li>• Die casting</li> <li>• Centrifugal Casting</li> <li>• Gravity Die Casting</li> <li>• Low pressure casting</li> </ul>



Question	Candidate's answer
8. What is the most common and cheaper casting process?	<ul style="list-style-type: none"> <li>Sand Casting</li> </ul>

**Annexure A:**

**Q: Name the mentioned parts of a sand mold.**





## SOLUTION

