

Assessment Evidence Guide

For

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Level-2

Module name
(Formative Assessment)

8th-12th March 2021



**National Vocational & Technical
Training Commission**

Title of Qualification: Continuous casting machine (CCM) operator	CS Code: 	Level: 4	Version: 01
Competency Standard Title: Carry out casting process	Assessment Date (DD/MM/YY): Assessment Time:		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Candidate is required to; Perform Pre-Casting steps</p> <p>Assessment Task 2: Candidate is required to Carry out Pouring of molten metal</p> <p>Assessment Task 3: Candidate is required to: Perform Cooling Process</p> <p>Assessment Task 4: Candidate is required to: Carry out Withdrawal (Extraction) process</p> <p>Assessment Task 5 : Candidate is required to: Perform Post-Casting Operation</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>P1. Get feedback from reliever at the start of shift</p> <p>P2. Coordinate with melting section to receive molten metal on CCM platform</p> <p>P3. Coordinate with the rolling mill, if direct rolling is required</p> <p>P4. Inform all the related sections if any abnormality arises</p> <p>P5. Carry out placement of slide gate ladle filled with molten metal on CCM platform</p> <p>P6. Take temperature of metal in slide gate ladle</p> <p>P7. Perform purging of the slide gate ladle, if required</p> <p>P8. Add slag former in the ladle to retain heat</p>

	<p style="text-align: center;">Assessment Task 2</p> <p>P9. Open the slide gate ladle nozzle as per SOPs</p> <p>P10. Perform oxygen lancing to open the nozzle, if required</p> <p>P11. Pour molten metal into the tundish</p> <p>P12. Open tundish nozzle as level reaches 3/4th</p> <p>P13. Open all tundish nozzles sequentially</p> <p>P14. Direct the flow of the material into the water cooled mold</p> <p>P15. Carry out continuous supply of molten metal in the mold to keep the process going</p> <p>P16. Perform continuous mold oscillation in order to prevent sticking with the casting</p> <p>P17. Add casting powder (flux) to the molten metal in mold to prevent sticking</p> <p>P18. Ensure molten metal grips the end of dummy bar</p> <p>P19. Remove slag continuously throughout casting process</p>
	<p style="text-align: center;">Assessment Task 3</p> <p>P20. Open emergency valve to maintain mold water pressure</p> <p>P21. Carry out continuous heat extraction by the water-cooled jacket surrounding the mold for primary cooling</p> <p>P22. Take casting out of the mold to cool its surface by water spray</p> <p>P23. Use specific set of rollers to move the metal casting outside of the mold</p> <p>P24. Adjust water spray speed at the foot ring for secondary cooling</p>
	<p style="text-align: center;">Assessment Task 4</p> <p>P25. Send down the semi-solid metal grid through the strand guide</p> <p>P26. Use withdrawal set of rollers to bend the grid</p> <p>P27. Carry out grid withdrawal at control speed until the production length is met</p> <p>P28. Use center tangent set of rollers to direct the grid</p> <p>P29. Send the fully solidified grids through straightener rolls to achieve final dimensions</p> <p>P30. Cut head of billet using gas cutter/shear machine</p> <p>P31. Control casting speed using knob once dummy bar is disconnected</p>

	<p>Assessment Task 5</p> <p>P32. Report level of molten metal in ladle to melting section by using lancing pipe</p> <p>P33. Report tundish level to in-charge during casting</p> <p>P34. Push billet to cooling bed/rolling mill as per requirement</p> <p>P35. Stack/wound finished grids as per requirement</p> <p>P36. Report and give feedback to his coming reliever at the end of shift</p>
	<p>Portfolios required at the time of assessment (if any) for</p>

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)			
Assessment Task 1		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:		Yes	No
	P1. Get feedback from reliever at the start of shift		
	P2. Coordinate with melting section to receive molten metal on CCM platform		
	P3. Coordinate with the rolling mill, if direct rolling is required		
	P4. Inform all the related sections if any abnormality arises		
	P5. Carry out placement of slide gate ladle filled with molten metal on CCM platform		
	P6. Take temperature of metal in slide gate ladle		
	P7. Perform purging of the slide gate ladle, if required		
	P8. Add slag former in the ladle to retain heat		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Assessment Task 2		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	P9. Open the slide gate ladle nozzle as per SOPs			
	P10. Perform oxygen lancing to open the nozzle, if required			
	P11. Pour molten metal into the tundish			
	P12. Open tundish nozzle as level reaches 3/4 th			
	P13. Open all tundish nozzles sequentially			
	P14. Direct the flow of the material into the water cooled mold			
	P15. Carry out continuous supply of molten metal in the mold to keep the process going			
	P16. Perform continuous mold oscillation in order to prevent sticking with the casting			
	P17. Add casting powder (flux) to the molten metal in mold to prevent sticking			
	P18. Ensure molten metal grips the end of dummy bar			
	P19. Remove slag continuously throughout casting process			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	P20. Open emergency valve to maintain mold water pressure			
	P21. Carry out continuous heat extraction by the water-cooled jacket surrounding the mold for primary cooling			
	P22. Take casting out of the mold to cool its surface by water spray			
	P23. Use specific set of rollers to move the metal casting outside of the mold			
	P24. Adjust water spray speed at the foot ring for secondary cooling			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	P25. Send down the semi-solid metal grid through the strand guide			
	P26. Use withdrawal set of rollers to bend the grid			
	P27. Carry out grid withdrawal at control speed until the production length is met			
	P28. Use center tangent set of rollers to direct the grid			
	P29. Send the fully solidified grids through straightener rolls to achieve final dimensions			
	P30. Cut head of billet using gas cutter/shear machine			
	P31. Control casting speed using knob once dummy bar is disconnected			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5		Description of assessment task 5		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	P32. Report level of molten metal in ladle to melting section by using lancing pipe			
	P33. Report tundish level to in-charge during casting			
	P34. Push billet to cooling bed/rolling mill as per requirement			
	P35. Stack/wound finished grids as per requirement			
	P36. Report and give feedback to his coming reliever at the end of shift			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: Continuous casting machine (CCM) operator	CS Code:	Level:	Version: 01
Competency Standard Title: Carry out casting process	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
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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:
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Written Assessment Outcome	COMPETENT <input type="checkbox"/>	NOT YET COMPETENT <input type="checkbox"/>
	Name of the Assessor: Assessor's code:	
	Signature of the Assessor:	

Title of Qualification: Continuous casting machine (CCM) operator	CS Code:	Level:	Version: 01
Competency Standard Title: Carry out casting process	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

WRITTEN ASSESSMENT

Question	Candidate's answer
1. What are dummy bars?	Dummy bar is a molten steel guide that allows continuous casting at a constant speed without spilling molten steel.
2. What is tundish nozzle?	Tundish Nozzles usually comprise a zirconia inner nozzle
3.	
4.	
5.	
6.	
7.	

Question	Candidate's answer
8.	
9.	