

Instruction Sheet for the Candidate

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| Qualification | National Vocational Certificate in Metal Forming & Processing Level 5 |
| Competency Standard | Carryout Continuous Casting Machine (CCM) operations |
| 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"> • CU1. Practice safety requirements for CCM • CU2. Perform Coordination with attached sections • CU3. Carry out pre casting operations of CCM • CU4. Carry out casting process • CU5. Conduct cleaning and maintenance of equipment |
| Time: 04 Hrs. | During a practical assessment, under observation by an assessor, you are required to |
| Minimum Evidence Required | <p>CU1. Practice safety requirements for CCM</p> <p>P1. Use standard PPEs as per requirement</p> <p>P2. Use standard tools and equipment as per job requirement</p> <p>CU2. Perform Coordination with attached sections</p> <p>P1.Coordinate with melting section to receive molten metal</p> <p>P2. Coordinate with the rolling mill section for direct rolling operation</p> <p>P3. Inform to the concerned shops in case of any abnormality arises during casting process</p> <p>CU3. Carry out pre casting operations of CCM</p> <p>P1. Prepare launder and mold jacket safety cover</p> <p>P2. Carry out mold tube cleaning as per standard</p> <p>P3. Perform slag box cleaning and changing</p> <p>P4. Apply dummy bar packing/ceiling oil as per requirement</p> <p>P5. Perform Spray nozzle cleaning as per requirement</p> |

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| | <p>P6. Check primary cooling water pressure inlet and outlet</p> <p>P7. Prepare strands for casting as per requirement</p> <p>P8. Preheat tundish and tundish nozzles as per requirement</p> <p>P9. Prepare strands of casting tundish nozzles</p> <p>P10. Carryout centering of tundish trolley as per requirement</p> <p>P11. Check the operation of all strands in new tundish as per standard</p> <p>P12. Check ladle nozzle opening as per standard</p> <p>P13. Fix slide gate plate of ladle as per standard</p> <p>CU4. Carry out casting process</p> <p>P1. Put dummy bar in mold tube by skid bank operator</p> <p>P2. Open emergency valve to maintain water pressure</p> <p>P3. Perform purging as the slide gate reaches CCM platform</p> <p>P4. Take temperature of metal in slide gate ladle</p> <p>P5. Open the ladle if the temperature is as per requirement</p> <p>P6. Open tundish nozzle as level reaches 3/4th of tundish</p> <p>P7. Remove slag continuously through casting process</p> <p>P8. Check level of slide gate ladle by using lancing pipe</p> <p>P9. Open all tundish nozzles sequentially</p> <p>P10. Control casting speed using knob once dummy bar is cut</p> <p>P11. Report tundish level during casting as per requirement</p> <p>P12. Cut head of billet using gas cutter as per standard</p> <p>P13. Push billet to cooling bed/rolling mill as per directions</p> <p>CU5. Conduct cleaning and maintenance of equipment</p> <p>P1. Clean the equipments and process auxiliaries regularly to remove any dust, moisture, waste material</p> <p>P2. Open the equipment and clean the internal parts of the equipment</p> <p>P3. Clean the working area under the process and create a healthy, clean and safe working environment</p> |
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Self-Assessment Checklist

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| Candidate Name | |
| Registration No. | |
| Qualification | National Vocational Certificate in Metal Forming & Processing Level 5 |
| Competency Standard | Carryout Continuous Casting Machine (CCM) operations |
| Purpose of Assessment | Formative Assessment |
| Assessment Task | <ul style="list-style-type: none"> CU1. Practice safety requirements for CCM CU2. Perform Coordination with attached sections CU3. Carry out pre casting operations of CCM CU4. Carry out casting process CU5. Conduct cleaning and maintenance of equipment |

I can.....

| Performance Criteria | Yes | No |
|---|--------------------------|--------------------------|
| P1. Use standard PPEs as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P2. Use standard tools and equipment as per job requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P3. Coordinate with melting section to receive molten metal | <input type="checkbox"/> | <input type="checkbox"/> |
| P4. Coordinate with the rolling mill for direct rolling operation | <input type="checkbox"/> | <input type="checkbox"/> |
| P5. Inform to the concerned shops in case of any abnormality arises during shift | <input type="checkbox"/> | <input type="checkbox"/> |
| P6. Prepare launder and mold jacket safety cover | <input type="checkbox"/> | <input type="checkbox"/> |
| P7. Carry out mold tube cleaning as per standard | <input type="checkbox"/> | <input type="checkbox"/> |
| P8. Perform slag box cleaning and changing | <input type="checkbox"/> | <input type="checkbox"/> |
| P9. Apply dummy bar packing/ceiling oil as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P10. Perform Spray nozzle cleaning as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P11. Check primary cooling water pressure inlet and outlet | <input type="checkbox"/> | <input type="checkbox"/> |
| P12. Prepare strands for casting as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P13. Preheat tundish and tundish nozzles as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P14. Prepare strands of casting tundish nozzles | <input type="checkbox"/> | <input type="checkbox"/> |
| P15. Carryout centering of tundish trolley as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P16. Check the operation of all strands in new tundish as per standard | <input type="checkbox"/> | <input type="checkbox"/> |

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| P17. Check ladle nozzle opening as per standard | <input type="checkbox"/> | <input type="checkbox"/> |
| P18. Fix slide gate plate of ladle as per standard | <input type="checkbox"/> | <input type="checkbox"/> |
| P19. Put dummy bar in mold tube by skid bank operator | <input type="checkbox"/> | <input type="checkbox"/> |
| P20. Open emergency valve to maintain water pressure | <input type="checkbox"/> | <input type="checkbox"/> |
| P21. Perform purging as the slide gate reaches CCM platform | <input type="checkbox"/> | <input type="checkbox"/> |
| P22. Take temperature of metal in slide gate ladle | <input type="checkbox"/> | <input type="checkbox"/> |
| P23. Open the ladle if the temperature is as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P24. Open tundish nozzle as level reaches 3/4 th of tundish | <input type="checkbox"/> | <input type="checkbox"/> |
| P25. Remove slag continuously through casting process | <input type="checkbox"/> | <input type="checkbox"/> |
| P26. Check level of slide gate ladle by using lancing pipe | <input type="checkbox"/> | <input type="checkbox"/> |
| P27. Open all tundish nozzles sequentially | <input type="checkbox"/> | <input type="checkbox"/> |
| P28. Control casting speed using knob once dummy bar is cut | <input type="checkbox"/> | <input type="checkbox"/> |
| P29. Report tundish level during casting as per requirement | <input type="checkbox"/> | <input type="checkbox"/> |
| P30. Cut head of billet using gas cutter as per standard | <input type="checkbox"/> | <input type="checkbox"/> |
| P31. Push billet to cooling bed/rolling mill as per directions | <input type="checkbox"/> | <input type="checkbox"/> |
| P32. Clean the equipments and process auxiliaries regularly to remove any dust, moisture, waste material | <input type="checkbox"/> | <input type="checkbox"/> |
| P33. Open the equipment and clean the internal parts of the equipment | <input type="checkbox"/> | <input type="checkbox"/> |
| P34. Clean the working area under the process and create a healthy, clean and safe working environment | <input type="checkbox"/> | <input type="checkbox"/> |

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Assessors Judgment Guide

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|------------------------------|---|
| Qualification | National Vocational Certificate in Metal Forming & Processing Level 5 |
| Competency Standard | Carryout Continuous Casting Machine (CCM) operations |
| 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

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| Assessment Task | | <ul style="list-style-type: none">• CU1. Practice safety requirements for CCM• CU2. Perform Coordination with attached sections• CU3. Carry out pre casting operations of CCM• CU4. Carry out casting process• CU5. Conduct cleaning and maintenance of equipment | | |
| During the practical assessment, candidate demonstrated the following: | | Yes | No | Remarks |
| 1. | Use standard PPEs as per requirement | | | |
| 2. | Use standard tools and equipment as per job requirement | | | |
| 3. | Coordinate with melting section to receive molten metal | | | |
| 4. | Coordinate with the rolling mill for direct rolling operation | | | |
| 5. | Inform to the concerned shops in case of any abnormality arises during shift | | | |
| 6. | Prepare launder and mold jacket safety cover | | | |
| 7. | Carry out mold tube cleaning as per standard | | | |
| 8. | Perform slag box cleaning and changing | | | |
| 9. | Apply dummy bar packing/ceiling oil as per requirement | | | |
| 10. | Perform Spray nozzle cleaning as per requirement | | | |
| 11. | Check primary cooling water pressure inlet and outlet | | | |
| 12. | Prepare strands for casting as per requirement | | | |
| 13. | Preheat tundish and tundish nozzles as per requirement | | | |
| 14. | Prepare strands of casting tundish nozzles | | | |

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| 15. | Carryout centering of tundish trolley as per requirement | | | |
| 16. | Check the operation of all strands in new tundish as per standard | | | |
| 17. | Check ladle nozzle opening as per standard | | | |
| 18. | Fix slide gate plate of ladle as per standard | | | |
| 19. | Put dummy bar in mold tube by skid bank operator | | | |
| 20. | Open emergency valve to maintain water pressure | | | |
| 21. | Perform purging as the slide gate reaches CCM platform | | | |
| 22. | Take temperature of metal in slide gate ladle | | | |
| 23. | Open the ladle if the temperature is as per requirement | | | |
| 24. | Open tundish nozzle as level reaches 3/4 th of tundish | | | |
| 25. | Remove slag continuously through casting process | | | |
| 26. | Check level of slide gate ladle by using lancing pipe | | | |
| 27. | Open all tundish nozzles sequentially | | | |
| 28. | Control casting speed using knob once dummy bar is cut | | | |
| 29. | Report tundish level during casting as per requirement | | | |
| 30. | Cut head of billet using gas cutter as per standard | | | |
| 31. | Push billet to cooling bed/rolling mill as per | | | |

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| | directions | | | |
| 32. | Clean the equipments and process auxiliaries regularly to remove any dust, moisture, waste material | | | |
| 33. | Open the equipment and clean the internal parts of the equipment | | | |
| 34. | Clean the working area under the process and create a healthy, clean and safe working environment | | | |
| Competent <input type="checkbox"/> | | Not Yet Competent <input type="checkbox"/> | | |

Knowledge Assessment

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|------------------------------|---|
| Qualification | National Vocational Certificate in Metal Forming & Processing Level 5 |
| Competency Standard | Carryout Continuous Casting Machine (CCM) operations |
| 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. | How Tundish level is Controlled | | |
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| 2. | What is the Function of tundish nozzels | | |
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| 3. | What is the use of oxygen lancing | | |

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| 4. | What are the aspects of safe Laddle handling | | |
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| 5. | What is the function of slide gate plate | | |
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| 6. | Why Strand cooling controls are adjusted during casting | | |
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| Feedback to the Candidate |
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| Candidate's Signature _____ Assessor's Signature _____ |