

Assessment Evidence Guide

For

“Dies and Moulds Technology”

Level-5

(Summative Assessment)

01-05 March 2021



**National Vocational & Technical
Training Commission**

Title of Qualification: National Vocational Certificate Level 5, in (Dies and Mould Technology) "Associate Engineer"	CS Code:	Level: 5	Version: 01
Competency Standard Title: A- Design Mould B- Design Dies C- Manufacture Die and Mould Components	Assessment Date (DD/MM/YY): Assessment Time: 5 Hrs.		

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 create 3D model of product and perform core/cavity separation through software and draw free hand sketch of conceptual design of the Mould and describe main features of the Mould of product as assigned by the assessor</p> <p style="text-align: center;">OR</p> <p>Assessment Task 2: Candidate is required to prepare breakup of dies required for production of given part and draw free hand sketch for layout of each die of given part and create 3D model of product and perform die/punch separation if required through software as assigned by the assessor</p> <p>Assessment Task 3: Candidate is required to display/present final project of Manufacture Die and Mould Components, including:</p> <ul style="list-style-type: none"> ○ Technical Drawings ○ Process Sheets ○ Die and Mould Parts <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>Performance Criteria 1: Prepare a 3D Model of the product and perform core/cavity separation through software</p> <p>Performance Criteria 2: Prepare a free hand sketch for conceptual Design of Mould</p> <p>Performance Criteria 3: Demonstrate main features of the mould i.e., type of mould, injection mechanism, ejection mechanism and slide core etc.</p>

	<p>Assessment Task 2</p> <p>Performance Criteria 1: Prepare breakup of dies required for production of given part</p> <p>Performance Criteria 2: Draw free hand sketch for layout of each die of given part</p> <p>Performance Criteria 3: Create 3D model of product</p> <p>Performance Criteria 4: Perform die/punch separation if required through software as assigned by the assessor</p>
--	---

	<p>Portfolios required at the time of assessment (if any) for</p> <p>Performance Criteria 1: Prepare 3D part and assembly modelling of all components of Blow mould according to design</p> <p>Performance Criteria 2: Prepare 2D assembly drawings and detailed drawings of all components of Blow mould</p> <p>Performance Criteria 3: Prepare a Bill of Quantity (BOQ) of all components of Blow Mould as per final design</p> <p>Performance Criteria 4: Prepare 3D part and assembly modelling of all components of Injection mould according to design</p> <p>Performance Criteria 5: Prepare 2D assembly drawings and detailed drawings of all components of Injection mould</p> <p>Performance Criteria 6: Prepare a Bill of Quantity (BOQ) of all components of Injection Mould as per final design</p> <p>Performance Criteria 7: Prepare a 3D Model for Die Casting and detailed drawings of required workpiece</p> <p>Performance Criteria 8: Prepare a Design of Die Casting Mould as per size of the machine</p> <p>Performance Criteria 9: Prepare 3D part and assembly modelling of all components of Die Casting according to design</p> <p>Performance Criteria 10: Prepare 2D assembly drawings and detailed drawings of all components of Die Casting mould</p> <p>Performance Criteria 11: Prepare a Bill of Quantity (BOQ) of all components of Die Casting Mould as per final design</p> <p>Performance Criteria 12: Prepare a 3D Model for Vacuum Mould and detailed drawings of required workpiece</p> <p>Performance Criteria 13: Prepare a Design of Vacuum Mould as per required product</p> <p>Performance Criteria 14: Prepare 3D part and assembly modelling of all components of Vacuum Mould according to design</p> <p>Performance Criteria 15: Prepare 2D assembly drawings and detailed drawings of all components of Vacuum Mould</p> <p>Performance Criteria 16: Prepare a Bill of Quantity (BOQ) of all components of Vacuum Mould as per final design</p> <p>Performance Criteria 17: Prepare 3D part and assembly modelling of all components of piercing/blanking Die according to design</p> <p>Performance Criteria 18: Prepare 2D assembly drawings and detailed drawings of all components of piercing/blanking Die</p> <p>Performance Criteria 19: Allocate estimated time for each operation</p>
--	---

	<p>Performance Criteria 20: Prepare a Bill of Quantity (BOQ) of all components of piercing/blanking Die as per final design</p> <p>Performance Criteria 21: Prepare a 3D Model for Forming Die and detailed drawings of required workpiece</p> <p>Performance Criteria 22: Prepare a conceptual Design of Forming Die as per size of the press machine</p> <p>Performance Criteria 23: Prepare 3D part and assembly modelling of all components of Forming Die according to conceptual design</p> <p>Performance Criteria 24: Prepare 2D assembly drawings and detailed drawings of all components of Forming Die</p> <p>Performance Criteria 25: Prepare a Bill of Quantity (BOQ) of all components of Forming Die as per final design</p> <p>Performance Criteria 26: Prepare process designing including sequencing of manufacturing process and required tooling of each part</p> <p>Performance Criteria 27: Manufacture all components of Mould as per process plan according to design requirements</p> <p>Performance Criteria 28: Perform inspection of final parts and perform rectification accordingly</p> <p>Performance Criteria 29: Manufacture all components of Die as per process plan according to design requirements</p> <p>Performance Criteria 30: Perform inspection of final parts and perform rectification accordingly</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 Candidate is required to create 3D model of product and perform core/cavity separation through software and draw free hand sketch of conceptual design of the Mould and describe main features of the Mould of product as assigned by the assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Prepare a 3D Model of the product and perform core/cavity separation through software			
2.	Prepare a free hand sketch for conceptual Design of Mould			
3.	Demonstrate main features of the mould i.e., type of mould, injection mechanism, ejection mechanism and slide core etc.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Candidate is required to prepare breakup of dies required for production of given part and draw free hand sketch for layout of each die of given part and create 3D model of product and perform die/punch separation if required through software as assigned by the assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Prepare breakup of dies required for production of given part			
2.	Draw free hand sketch for layout of each die of given part			
3.	Create 3D model of product			
4.	Perform die/punch separation if required through software as assigned by the assessor			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio		Description of (Portfolio)		
		Candidate is required to create conceptual design of a Piercing or Blanking Die assign by assessor using CAD.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Prepare 3D part and assembly modelling of all components of Blow mould according to conceptual design			
2.	Prepare 2D assembly drawings and detailed drawings of all components of Blow mould			
3.	Performance Criteria 3: Prepare a Bill of Quantity (BOQ) of all components of Blow Mould as per final design			
4.	Prepare 3D part and assembly modelling of all components of Injection mould according to conceptual design			
5.	Prepare 2D assembly drawings and detailed drawings of all components of Injection mould			
6.	Prepare a Bill of Quantity (BOQ) of all components of Injection Mould as per final design			
7.	Prepare a 3D Model for Die Casting and detailed drawings of required workpiece			
8.	Prepare a conceptual Design of Die Casting Mould as per size of the machine			

9.	Prepare 3D part and assembly modelling of all components of Die Casting according to conceptual design			
10.	Prepare 2D assembly drawings and detailed drawings of all components of Die Casting mould			
11.	Prepare a Bill of Quantity (BOQ) of all components of Die Casting Mould as per final design			
12.	Prepare a 3D Model for Vacuum Mould and detailed drawings of required workpiece			
13.	Prepare a conceptual Design of Vacuum Mould as per required product			
14.	Prepare 3D part and assembly modelling of all components of Vacuum Mould according to conceptual design			
15.	Prepare 2D assembly drawings and detailed drawings of all components of Vacuum Mould			
16.	Prepare a Bill of Quantity (BOQ) of all components of Vacuum Mould as per final design			
17.	Prepare 3D part and assembly modelling of all components of Die according to conceptual design			
18.	Prepare 2D assembly drawings and detailed drawings of all components of Die			
19.	Allocate estimated time for each operation			
20.	Prepare a Bill of Quantity (BOQ) of all components of Die as per final design			
21.	Prepare a 3D Model for Forming Die and detailed drawings of required workpiece			
22.	Prepare a conceptual Design of Forming Die as per size of the press machine			
23.	Prepare 3D part and assembly modelling of all components of Forming Die according to conceptual design			
24.	Prepare 2D assembly drawings and detailed drawings of all components of Forming Die			
25.	Prepare a Bill of Quantity (BOQ) of all components of Forming Die as per final design			
26.	Interpret engineering drawing of required part			
27.	Calculate sizes of material required for the work piece			

28.	Create a list of required tools			
29.	Perform Sequencing of manufacturing process of each part			
30.	Manufacture all components of Mould as per process plan according to design requirements			
31.	Perform inspection of final parts and perform rectification accordingly			
32.	Manufacture all components of Die as per process plan according to design requirements			
33.	Perform inspection of final parts and perform rectification accordingly			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		