

Please read the instructions printed at the end of this form. **One** of these sheets, suitably completed, should be attached to the assessed work of **each** candidate.

<b>Unit Title</b>	<b>Selection and application of engineering materials</b>	<b>Unit Code</b>	<b>F558</b>	<b>Session</b>	Jan / June	<b>Year</b>	<b>2</b>	<b>0</b>		
<b>Centre Name</b>						<b>Centre Number</b>				
<b>Candidate Name</b>						<b>Candidate Number</b>				

Marking Criteria – total marks for this unit is 60				Teacher Comment	Page
Ref	Band 1	Band 2	Band 3	<div style="border: 1px solid black; width: 60px; height: 60px; margin: auto;">Mark</div>	
1.1	Plan and carry out basic research into atomic structures, amount of bonding, periodicity and classification of engineering materials. Analyse and evaluate information in little depth, judging its relevance and value. Apply this limited knowledge to the consideration of materials for a particular application  <div style="text-align: right;">[0 1 2]</div>	Plan and carry out limited research into atomic structures, amount of bonding, periodicity and classification of engineering materials. Analyse and evaluate information in some depth, judging its relevance and value. Apply this basic knowledge to the consideration of materials for a particular application  <div style="text-align: right;">[3 4]</div>	Plan and carry out detailed research into atomic structures, amount of bonding, periodicity and classification of engineering materials. Analyse and evaluate information in depth, judging its relevance and value. Apply knowledge to the consideration of materials for a particular application  <div style="text-align: right;">[5 6]</div>		
2.1	Investigate thermal equilibrium diagrams for common alloys, draw basic conclusions about properties of materials; test a limited range of materials using destructive and non-destructive methods. Make some basic evaluative comments  <div style="text-align: right;">[0 1 2 3 4]</div>	Investigate thermal equilibrium diagrams for common alloys, draw limited conclusions about properties of materials; test a range of materials using destructive and non-destructive methods, analyse and evaluate information to a limited depth, judging its value in the context of an engineered product  <div style="text-align: right;">[5 6 7 8]</div>	Investigate thermal equilibrium diagrams for common alloys, draw detailed conclusions about properties of materials; test a wide range of materials using destructive and non-destructive methods, analyse and evaluate information in depth, judging its value in the context of an engineered product Explain the merits of the tests undertaken  <div style="text-align: right;">[9 10 11 12]</div>	<div style="border: 1px solid black; width: 60px; height: 60px; margin: auto;">Mark</div>	

Marking Criteria – total marks for this unit is 60				Teacher Comment	Page
Ref	Band 1	Band 2	Band 3	<b>Mark</b>	
3.1	Investigate the effects of different processing methods by basic testing and analysis of samples, which have been formed and worked in different ways  <b>[0 1 2]</b>	Investigate the effects of different processing methods by limited testing and analysis of samples, which have been formed and worked in different ways  <b>[3 4]</b>	Investigate the effects of different processing methods by thorough detailed testing and analysis of samples, which have been formed and worked in different ways. Act on the outcome of these investigations  <b>[5 6]</b>		
4.1	Investigate and research safety factors and modes of failure. Identify basic examples of where failure has occurred and a few measures engineering designers take to minimise risks  <b>[0 1 2]</b>	Investigate and research safety factors and modes of failure. Identify limited examples of where failure has occurred and detail some measures engineering designers take to minimise and manage risks  <b>[3 4]</b>	Investigate and research safety factors and modes of failure. Clearly identify a range of actual examples where failure has occurred. Explain measures engineering designers take to anticipate, minimise and manage risks and their likely success  <b>[5 6]</b>		
5.1	Select an engineered product made from a small range of engineering materials  <b>[0 1 2]</b>	Select an engineered product made from a reasonable range of engineering materials  <b>[3 4]</b>	Select an engineered product made from a wide range of engineering materials  <b>[5 6]</b>	<b>Mark</b>	
	Analyse the product and investigate each material used in its manufacture to establish the identity of the material, its properties and the reasons for its selection  <b>[0 1 2 3 4]</b>	Analyse the product to a limited depth and investigate each material used in its manufacture to establish the identity of the material, its properties and the reasons for its selection  <b>[5 6 7 8]</b>	Analyse the product in depth and investigate each material used in its manufacture to establish the identity of the material, its properties and the reasons for its selection  <b>[9 10 11 12]</b>		
	Provide little or no evidence for the original forms in which the materials were supplied and the process used to manufacture  <b>[0 1 2]</b>	Provide limited evidence for the original forms in which the materials were supplied and the process used to manufacture  <b>[3 4]</b>	Provide detailed evidence of the original forms in which the materials were supplied and the process used to manufacture  <b>[5 6]</b>		

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<b>Marking Criteria – total marks for this unit is 60</b>								<b>Teacher Comment</b>			<b>Page</b>		
<b>Ref</b>	<b>Band 1</b>	<b>Band 2</b>	<b>Band 3</b>						<b>Mark</b>				
6.1	Investigate a new or smart material and provide basic evidence of their possible engineering applications          <b>[0 1 2]</b>	Investigate a new or smart material and apply this limited knowledge when suggesting possible engineering applications for these new materials. Show an ability to influence others to use these materials          <b>[3 4]</b>	Investigate a new or smart material and apply this knowledge fully when detailing possible engineering applications for these new materials. Show an ability to persuade and influence others towards the use of these materials          <b>[5 6]</b>										
									<b>Total/60</b>				
If this work is a re-sit, please tick		Session and Year of previous submission		Jan / June	<b>2</b>	<b>0</b>	Please tick to indicate this work has been standardised internally						

Please note: This form may be updated on an annual basis. The current version of this form will be available on the OCR website ([www.ocr.org.uk](http://www.ocr.org.uk)).

### Guidance on Completion of this Form

- 1 **One** sheet should be used for each candidate.
- 2 Please ensure that the appropriate boxes at the top of the form are completed.
- 3 Please enter *specific* page numbers where evidence can be found in the portfolio, and where possible, indicate to which part of the text in the mark band the evidence relates.
- 4 Circle the mark awarded for each strand of the marking criteria in the appropriate box and enter the circled mark in the final column.
- 5 Add the marks for the strands together to give a total out of 60. Enter this total in the relevant box.