# Chief Examiner and Chief Moderator Report

**NCFE Level 1/2 Technical Award in Engineering**
**QN: 603/7006/3**

**Series: Summer 2025**

**Examined assessment (EA) paper number: P002845/P002846**

**Non-exam assessment (NEA) paper number: P002847**

**EA assessment date: 21 May 2025**

**NEA assessment date: 30 April 2025**

## Introduction

This report contains information in relation to the examined assessment (EA) from the chief examiner and non-exam assessment (NEA) from the Chief Moderator, with an emphasis on the standard of learner work within this assessment series.

The aim is to highlight where learners generally performed well, as well as any areas where further development may be required.

Key points:

- grade boundary information
- administering the EA and NEA
- evidence creation
- standard of learner work
- responses to the assessments

The qualification is linear, meaning both assessments must be taken in the same assessment series and cannot be combined across different assessment series. Learners are allowed one attempt at each assessment, and there are no resit opportunities.

## Grade boundary information

This qualification consists of two assessments: the examined assessment (EA) and the non-exam assessment (NEA).

After both assessments are completed and marked or moderated, the marks are combined to give a final mark for each learner. Where the raw marks do not reflect the required weighting of the assessment, a scaling factor is applied. For further information on grading information and scaling factors, please see the Qualification Specification.

Qualification scaled mark boundaries in this series are:

| | | Notional boundaries* | |
|---|---|---|---|
| | **Overall** | EA | NEA |
| **Scaling factor** | | 1 | 1 |
| **Max** | 200 | 80 | 120 |
| **Level 2 Distinction*** | 165 | 67 | 98 |
| **Level 2 Distinction** | 142 | 57 | 85 |
| **Level 2 Merit** | 119 | 47 | 72 |
| **Level 2 Pass** | 96 | 37 | 59 |
| **Level 1 Distinction** | 76 | 29 | 46 |
| **Level 1 Merit** | 56 | 21 | 34 |
| **Level 1 Pass** | 36 | 14 | 22 |

***** The grade boundaries given for each assessment are known as ‘notional grade boundaries’, as they are for illustrative purposes only. Grade boundaries are the lowest mark with which a grade is achieved**.**

## Administering the examined assessment (EA) and non-exam assessment (NEA)

The EA is invigilated and must be conducted in line with our Regulations for the Conduct of External Assessment document. The NEA is moderated and must be conducted in line with our Regulations for the Conduct of NEA – Non-Exam Assessment document.

Learners must be given the resources to carry out the tasks and these are highlighted within the Qualification Specific Instructions for Delivery (QSID) document.

## Evidence creation

### Examined assessment (EA)

Learners should use the space provided to answer questions. Where answers are typed or additional pages included, the learner's name, centre number, centre name and task number must be clearly visible. The additional paper must then be securely attached to the workbook.

Where assessments are completed online, centres must ensure they are familiar with the Surpass platform and have completed all testing and preparation before the assessment, to ensure learners are unaffected by technological issues.

### Non-exam assessment (NEA)

Learners should approach all tasks in the NEA with reference to time requirements and control conditions, which can be found in the QSID document. Learners should produce evidence to meet each task independently and with no feedback or guidance from tutors during the assessment.

Learner evidence requirements are stated per task and required outcomes are given, which can often be evidenced in a variety of ways to best meet the needs of the learner, unless otherwise stated.

Learner evidence submissions in this session often included a range of word-processed documents, digital presentations, screenshots, diagrams, hand drawings, computer-aided design (CAD) drawings and photographic images, which are in line with expectations.

Centres are reminded that template documents and any other supporting documents should not be supplied to the learner for the purposes of generating evidence against this assessment. Use of such materials to generate assessment evidence could potentially be considered a maladministration / malpractice issue.

## Standard of learner work

### Examined assessment (EA)

The standard of learner work varied across the cohort sitting the assessment paper this academic year. Overall learners attempting all questions has improved year upon year with less learners leaving questions blank and not attempted. Learner performance has improved in their accessing of mathematical questions, in comparison to previous papers.

Learners sitting the paper performed well with knowledge recall questions on materials and multiple-choice questions that were based on foundation knowledge from the specification. An improvement was seen in the quality of learner responses based on properties. Within the paper, learners were able to confidently attempt the extended-response questions. In these questions learners were able to recall knowledge, apply knowledge to the scenario and then offer up an opinion.

Within the paper, learners performed less successfully in the medium-response questions, where the learner was asked to recall a specific piece of knowledge and apply their understanding. These questions were based on specific strands within the specification, therefore as a result not all learners performed as well within these questions.

### Non-exam assessment (NEA)

There are no significant changes from last session's NEA to this session's NEA, other than the necessary change of the overall brief / context itself. The structure of the NEA, number of tasks, marks and overall requirements remain the same, despite minor changes to wording to enhance clarity and assessment quality.

The NEA consisted of six tasks that are to be completed by learners over 18-hours duration. The assessment was marked and quality assured internally by centres, with a sample of work externally moderated by NCFE.

A total of 120 marks was available across the assessment. Each task was allocated a range of marks placed against stated assessment objectives (AOs) linked to task focus. In this assessment, AOs 1 to 5 were assessed via levels of response mark grids aligned to each task, with weightings per task varied to reflect the nature of the qualification outcomes.

Learner outcomes were achieved across the available range of awarded grades in this assessment, which was suggestive of learner engagement and useful differentiation of assessment. Most learners had attempted all tasks within the assessment, producing appropriate evidence in most cases to accrue marks against AOs. A minority of learners who registered for the assessment had not submitted any evidence or had not gained any marks for evidence produced. Some learners had not attempted all tasks within the assessment, which led to a reduction in the available marks they could achieve.

Learner evidence was generally appropriately presented with tasks referenced to learner submissions, as was the case last session. A minority of learners, less in number this session

than in last session, had not clearly referenced evidence to tasks which in some cases led to some lack of structure in responses. The chief moderators (CM) continue to note that evidence should be referenced to task responses, to aid clarity of assessment and to aid learners in ensuring coverage of tasks.

Most learners had produced credible outcomes which indicated application of engineering skills and understanding of key areas of the qualification content. Outcomes generally reflected the demands of the Project Brief and, in some cases, showed creativity alongside technical cleverness. Learners who achieved well in practical outcomes generally tended to be able to demonstrate, not only understanding of the requirements of the Project Brief, but the ability to develop their ideas throughout the project.

It was noted by moderators that summative assessor feedback to learners was generally useful and constructive. However, assessor feedback did not always include marks and commentary at AO level within tasks. This, on occasion, made assessor decisions unclear for both the purposes of accuracy of feedback to learners and external moderation.

Evidence upload for moderation was generally well handled by centres, although it was noted that some uploads did not initially include all submitted learner evidence and, in some cases, did not include assessment feedback forms. These cases of missing evidence, which are lesser in number this session than in last session, potentially led to some delays in moderation of learner work. Centres must use the learner evidence upload checklists, available with the live assessment materials, to mitigate this missing evidence issue.

## Responses to the assessments

### Examined assessment (EA)

**Question 1**
A multiple-choice question which was answered correctly by the majority of learners.

**Question 2**
A multiple-choice question which was answered well by most learners.

**Question 3**
A multiple-choice question where some learners correctly answered 'thermoplastic'.

**Question 4**
Recall question based on learner knowledge. Most learners were able to recall one to two of the three non-ferrous alloys required.

**Question 5 (a)**
Learners were able to mostly recall an example of a manufactured board on this 1-mark question.

**Question 5 (b)**
Some learners were able to identify one reason why medium-density fibreboard (MDF) is suitable for shelving. There were a lot of misconceptions about MDF; a number of learners thought the material was strong which was incorrect.

**Question 6**
The majority of students were unable to correctly identify that the saw presented was a handsaw.

**Question 7 (a)**
A well-answered question where learners were able to identify either a mechanical system or a product which had a mechanical system within it.

**Question 7 (b)**
Most learners were able to state one use of hydraulics including braking systems and lifts.

**Question 7 (c)**
Learners were able to explain in context why rubber was a good choice for a caterpillar track. Learners wrote about elasticity, shock absorption and corrosion resistance.

**Question 8**
A multiple-choice question based on the efficiency of tools where only a small number of learners answered correctly.

**Question 9**
A medium response question where learners had to describe the function of an integrated

circuit (IC) within a device. Most learners were able to correctly identify products that had an IC however few learners were able to describe how an IC works**.**

**Question 10 (a)**
Learners were asked to state two properties of magnets. Most learners focussed upon the function of a magnet rather than the properties of a magnet attracting ferrous metals and creating a magnetic field.

**Question 10 (b)**
Learners were asked to explain how magnets are used to keep doors on fridges secure. Learners correctly identified that magnets are incorporated into the door seal, and some went on to talk about how this seal keeps the fridge temperature constant.

**Question 11 (a)**
For this question, marks were awarded where learners identified that turning the handle or pins would release the blade, allowing it to be adjusted**.**

**Question 11 (b)**
Most learners were able to correctly identify one explanation point about why a coping saw would be used to cut intricate shapes. Most learners focussed upon the size of the blade and did not talk about the ability to turn the blade during cutting.

**Question 12**
Learners were asked to discuss why nails are used in some products and not in others. Learners mostly identified one to two of the three points required in these questions. Correct responses included that nails are a low-skill technique and cheap compared to other methods such as screws. Learners focussed more on the reasons to use nails; they did not fully address why they would not be used, for example they can split the wood.

**Question 13**
A multiple-choice question which was well-answered by many learners.

**Question 14**
A multiple-choice question which was well-answered by learners, with around half of the learners achieving the 2 marks available**.**

**Question 15**
A 1-mark multiple-choice question which was well-answered, with the majority of learners gaining the one mark.

**Question 16**
This 1-mark multiple-choice question proved challenging, with fewer than half of the learners able to respond correctly.

**Question 17**
Learners were able to identify one benefit of using a time plan within their work such as

efficiency and to reduce waste. However, most learners did not identify two benefits that were required for full marks.

**Question 18**
A 1-mark knowledge question asking about safety measures for a pillar drill. The majority of learners performed well on this question, identifying personal protective equipment (PPE) and control measures.

**Question 19**
A maths-based question where learners had to use a formula to work out the speed of a train. The majority of learners correctly used the formula to work out the correct answer.

**Question 20**
A maths-based question where learners had to use a formula to work out the momentum of a minibus. Most learners correctly used the formula to work out the correct answer.

**Question 21**
Most learners were able to correctly identify that amps are used to measure the flow of current.

**Question 22**
Learners had difficulty converting 650 milliamps to amps. Learners mostly divided by 100 instead of correctly dividing by 1000

**Question 23**
Learners struggled with being able to identify two different activities for preparing materials for process. Learners mostly attained 1 mark for removing burr and sharp edges off the material.

**Question 24**
In this question most learners were able to identify that an isometric drawing can help visualise a drawing to gain 1 mark. Fewer learners carried on to identify a second reason and mostly repeated their first response, therefore not gaining a second mark.

**Question 25**
In this question learners were asked to discuss two advantages of using finite element modelling (FEM) within the design process. Most learners did not recall the definition of FEM, nor did they utilise the scenario where the question talked about the use of computer-aided design (CAD. Not many learners were able to discuss two advantages of FEM. Some learners correctly focussed upon the safety of the aeroplane and the reduction of waste materials to gain marks.

**Question 26 (a)**
The majority of learners correctly identified the dimension line in this question.

**Question 26 (b)**
Learner performance was split relatively evenly in this 1-mark question, but most learners correctly identified the minimal size accepted using the tolerance in the question.

**Question 27**
In this question, learners were asked to discuss either rendering or annotation on freehand sketches. Some learners wrote about both, rather than choosing just one area to focus upon as the question had asked. Learners mostly identified one or two points rather than three individual points on their chosen area.

**Question 28**
Learners mostly achieved 1 mark for this question rather than the full 2 marks. Most learners submitted evidence to meet the task requirements by providing a written report, supported by diagrams.

**Question 29**
This question focussed upon explaining why automotive engineers use a third-angle orthographic symbol. Some learners explained the different views to enable them to gain marks. More focus on the language barrier and global manufacture would help learners to achieve higher marks in this question.

**Question 30**
A 9-mark extended-response question focusing upon sustainable manufacturing and product recycling. Learners identified the environmental impact of both materials and manufacturing processes of washing machines, however only a small number of learners were able to justify and offer an opinion in relation to their analysis points, made in their writing. By including an opinion in their writing, learners lifted their responses to access higher marks.

**Question 31**
An extended-response question focusing upon the telecommunications industry and its products. Learners correctly identified various examples of products in this discipline and discussed how they are essential to our modern lives, with examples including the necessity of these products for the emergency services. Few learners were able to justify and offer an opinion in relation to their analysis points made in their writing; again, by including an opinion in their responses, learners were able to reach higher marks

## Non-exam assessment (NEA)

### Task 1

In this first task, learners were required to research and select materials and tools / machinery which would be required to manufacture their model. Most learners had submitted evidence to meet the task by providing a written report, supported by diagrams. A minority of learners had not undertaken the task.

Most learners engaged well with this task to produce a creditable outcome that utilised research findings. Evidence of research and selection was often usefully supported by commentary, to access the range of AO1, AO2 and AO3 marks available. Research sources were not always well-referenced in learner responses, which in some cases suggested a limited understanding of how source material should be presented to achieve a higher outcome.

Learners who achieved well in this task tended to have selected materials and tools / machinery which were relevant to the specified Project Brief and provided justification for their selections, via consideration of properties and characteristics in the context of the required outcome. Tools and machinery were often considered in terms of application to the Project Brief, with a focus on model development. Justifications pointed to a process of discounting selections, showing an understanding of how specific materials and tools would interact, alongside the consideration of their availability. Learners were able to consider all aspects of the Project Brief and comment appropriately.

Learners who achieved lower marks tended to have undertaken less-coherent research, often spanning a fewer range of materials and with less consideration of context. Properties and characteristics were stated but with more limited reference to potential application against the Project Brief. Material, tools and machinery tended to be less well-justified, and selections were often more limited against the research undertaken. In some cases, not all aspects of the Project Brief were considered, or some areas were given considerably more focus leading to an inconsistent response.

An understanding of properties, characteristics and application in this task tended to allow learners to approach subsequent tasks with greater confidence.

### Task 2

In Task 2, learners were required to provide a description of the requirements of BS8888 and create hand-drafted engineering drawings of their model to inform the development of their project. Most learners had submitted evidence including a written response and hand drawings to evidence this task. A minority of learners had not produced evidence to meet the task requirements.

Learners who achieved well in this task tended to have used research to draw out key elements of BS8888 and show clear understanding of how these could be applied to hand-drafted

engineering drawings. Understanding of requirements tended to reflect in the presentation of drawings with consideration of scale, dimensions, lines and title block information. Drawings were often well-considered in terms of representing all required elements, alongside accurate angles, scaling and dimensions. The resulting hand-drafted engineering drawings often provided a useable starting point for continued development of the model.

Learners who achieved less well in this task tended to have identified fewer features of the BS8888 regarding the production of drawings, in some cases providing a definition of the nature of BS8888 in broad terms. For these learners, application of drawing requirements was often more inconsistent and with less appreciation of requirements in evidence. In some cases, hand-drafted engineering drawings were not wholly accurate in terms of angles and dimensions, leading to more basic outcomes. Learners working at this level did not always consider all aspects of the Project Brief, which tended to result in less useable outcomes.

It was noted by the CM that in some cases, learners had been able to produce creditable hand-drafted engineering drawings which demonstrated appreciation of drawing skills with more limited reference to a descriptive understanding of BS8888 requirements. Where learners produced a limited understanding of such requirements, they lacked an ability to accrue marks in AO4. Learners who had produced well considered hand-drafted engineering drawings in this task were often able to move into Task 3 with greater confidence.

**Task 3**

In Task 3, learners were required to use computer-aided design (CAD) software to create engineering drawings of the hand-drafted engineering drawings created in Task 2. Most learners had produced evidence of CAD software engineering drawings for this task. A minority of learners had not produced evidence.

Learners who achieved greater marks in this task tended to exhibit confidence in the application of CAD software to create accurately dimensioned and scaled drawings, which in some cases improved the outcomes seen in Task 2. Some learners in this category had produced a range of drawings including orthographic and isometric views which suggested useful understanding of CAD software and considered representation of the outcome. Consideration of requirements, for example in the use of lines and provision of title block information, was evidenced. The outcomes tended to consider all aspects of the Project Brief and resulted in useable engineering drawings.

Learners who achieved less marks tended to have provided outcomes with less sophistication in application of CAD skills and were not as developed. In some cases, consideration of dimensions and scaling were more limited, alongside more basic reference to title block information. As in Task 2, appreciation of the requirements of the brief was often less consistent in these cases, which made some of the drawings less functionally useable.

In a minority of submissions, CAD software engineering drawings were not consistent with prior hand-drafted engineering drawings. It was noted that some learners exhibited differing levels of

skills across Task 2 and Task 3, which allowed for useful differentiation of marks between these tasks.

Creation of accurate and useable drawings tended to allow learners to approach subsequent development of their model with greater confidence.

**Task 4**

In Task 4, learners were required to create a production plan for their model, with reference to tool / equipment requirements, health and safety measures, quality control measures and a time plan. Learners had generally engaged with this task to provide coverage of some, or all elements noted above in their responses. A minority of learners had not produced evidence in response to this task, limiting available marks against the specified AO2 and AO3 outcomes.

Learners who achieved well in this task tended to be able to produce a clear, concise and useable plan which referenced time planning against requirements and measures. Learners had often clearly considered timelines referenced against the NEA to apply realistic approaches to model production. Details of processes against each stage of production were logically stepped and, in some cases, justified in detail via commentary. Risk assessments were suitably documented with consideration of relevant hazards and control measures. Some thought was also given to quality control at this stage.

Learners who achieved less well in this task tended to have produced less coherent planning documents that, in turn, impacted on the credit available against AO2. As well as this, these learners seemed to provide limited justifications for their planning decisions, which resulted in an impact on credit available against AO3. Timelines were in some cases not considered or were unrealistically short. Choices of process and tools were often more limited and not subject to justification within the learner commentary. Risk assessments were generally functional, showing some learner engagement with this area of specification content but identified hazards were not always contextually considered and measures to mitigate risk were sometimes not well interlinked. Consideration of quality control and testing was less often in evidence.

Learners who had engaged with this task to produce a coherent, considered, and well justified plan were often able to proceed Task 5 with greater confidence.

**Task 5**

Task 5 was credited against the highest proportion of marks in this assessment and learners were allocated 6 hours to complete, as was the case in last session’s NEA. The task required learners to create their model, using the drawings and production plan they developed in Tasks 2 to 4, and test the functionality of the model, alongside using suitable processing skills and techniques. It was noted by the moderators that average task mark scored as a percentage of the maximum mark achievable for the task is higher for Task 5 than for any other tasks in the NEA. The reason for this could be that learners were demonstrating their strengths in practical work.

Most learners had presented evidence of engagement with this task; there was a higher percentage of registered learners this session than in the last session. A minority of learners had not attempted this task. The range of AO4 marks allowed for differentiation of marks against learner evidence across a range of evidence outcomes.

Learners who achieved well in this task tended to be able to have created a functioning model which addressed the Project Brief, alongside evidence of testing and with reference to drawings and planning completed in previous tasks. The final model was well supported by commentary that demonstrated stages of the production process, skills and techniques, often with annotated images. Evidence of the final model was clear and indicated how the Project Brief had been fulfilled. Many learners had produced convincing outcomes using a range of materials, tools and techniques with clear focus and application of skills to meet any challenges they encountered.

Learners who achieved lower marks in this task tended to have produced limited evidence of a functioning outcome and limited evidence of process. In some cases, models were not functional or complete or had not met significant areas of the Project Brief. Evidence of process, in some cases, was not provided or was limited to statements confirming some activities undertaken, rather than providing evidence of processing skills and techniques. Photographic images submitted in response to this task were not always useful in identifying functionality or process, with a limited range of unannotated images sometimes provided.

Assessor commentary in some cases was usefully detailed in supporting outcomes, but this was not always the case. Often, a general pattern was notable in that learners who had not achieved well in the earlier tasks tended not to normally accrue marks as successfully in response to Task 5.

Learners who had engaged with all elements of this task were often able to develop more confident approaches to undertaking the analysis and evaluation required in task 6.

**Task 6**

In this final task learners were required to evaluate their model in terms of success and functionality, and potential improvements. Most learners had produced evidence against this task, although a significant minority had not produced evidence in comparison to Tasks 1 to 5.

Learners who were able to produce a considered evaluation were often able to achieve well. Evaluation of functionality linked back to the model, with reference to the Project Brief, was often provided by these learners. Suggestions for improvement were in some cases usefully specific, thoughtful, and imaginative. Coherent and relevant documentation of the evaluation often allowed for positive achievement against AO5.

Learners who achieved less well tended to produce evaluations against this task that were not always substantive, and in some cases did not identify evidence explicitly against the task. For these learners, consideration of all targeted areas of the evaluation was not always handled consistently and learners working at this level sometimes moved to a bullet point or tabulated approach, which in some cases constrained depth and coherency of commentary in this respect.