

T Level Technical Qualification in Building Services Engineering for Construction

**Electrotechnical Engineering (8710–33)
(353)**

Assessor pack

Practical Assignment 2020 – Sample

Version and date	Change detail	Section
1.1 Jan 2021	Minor amendment to Band 1 descriptor	Marking Grid (Health and Safety)

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Assessment

The assessment for this component consists of a practical assignment that includes a project brief and then a number of tasks for the candidate to complete. The tasks set produce assessment themes that cover a range of knowledge and skills from the performance outcomes in the qualification specification. They are designed to allow judgement of the candidate to be made across different categories of performance.

The assessment for this component has been allocated a set number of marks against each task, based on weightings recommended by stakeholders of the qualification. This mark allocation remains the same for all versions of the assessments, ensuring consistency across assessment versions and over time.

Performance outcomes

The weightings for each performance outcome will remain the same for every version of the practical assignment. This ensures the appropriate depth and breadth of knowledge and skills for each specialism can be reliably assessed in every version and meets the needs of industry while keeping comparability between each assessment over time.

Performance outcome	Typical knowledge and skills	Weighting
Install electrotechnical systems	Displays a breadth of knowledge and practical skills that enables them to complete the given installation tasks successfully. Has the technical skills to use tools and materials safely and in logical order in relation to a plan.	36%
Commission electrotechnical systems	Working in a safe manner, use of tools and test equipment and in accordance with BS 7671 Guidance Note 3. Carry out inspection, testing and commissioning of a given installation in the correct sequence. Complete the required documentation that is required for a new installation.	30%
Maintain electrotechnical systems	Applying knowledge and understanding through practical skills to solve a particular scenario/ problem in a logical sequence – justifying decisions, methods used and completion of maintenance records.	20%
Decommission electrotechnical systems	Logical and systematic approach to the task, clear consideration to environmental sustainability and recycling of materials, clear and practiced use of the techniques of making building fabric repairs to restore work area to pre-installation condition including correct selection of materials and finish products.	14%

Grade descriptors

To achieve a pass (threshold competence), a candidate will be able to:

Demonstrate an acceptable performance that meets the requirement of the brief and that is required to enter the industry to begin to work in the occupational area.

Demonstrate the adequate technical skills for installing components that is in line with industry standards.

Interpret information, demonstrate planning, assess risk and follow safe working methods when applying practical skills to an acceptable standard as recognised by industry.

Demonstrate basic knowledge and understanding of the principles and processes required for Electrotechnical Engineering.

Work safely showing an understanding in the selection and use of tools and equipment and demonstrate a basic awareness of straightforward preparation and application processes.

Attempt some complex tasks and the level of performance mostly meets an acceptable level.

Identify causes of faults and have some knowledge and skills in how to locate and rectify them.

Mostly use industry terminology accurately in both written and verbal contexts.

To achieve a distinction, a candidate will be able to:

Demonstrate an exemplary performance that fully meets the requirement of the brief and is able to enter the industry to begin to work in the occupational area.

Demonstrate exemplary technical skills for installing components that is in line with industry standards. They will also demonstrate relevant and comprehensive knowledge and understanding of principles and processes through the tasks completed.

Work safely and make informed and appropriate use of tools, materials and equipment within the environments that they are working in. They will competently and independently interpret information and apply the technical skills to practical tasks and procedures to an exemplary standard as recognised by industry, producing an excellent quality of work that meets acceptable tolerances, regulations and standards.

Confidently attempt some complex tasks and the level of performance meets an exemplary level.

Locate and identify faults, diagnose their causes and have a thorough understanding and the skills to be able to repair and rectify them.

Consistently use accurate industry terminology in both written and verbal contexts.

Assignment brief

You have been asked by your employer to help with the design, planning and installation of sections of the electrical installation for a client's building. One section is outlined in the drawing in Figure 1. Within the overall site there are also other new systems that need to be inspected and verified. The client has also reported some of the existing systems are faulty and in need of investigation and repair.

Figure 2 shows an incomplete design grid which is required for task 1.

Figure 3 shows an assessment form relating to an assessment of general characteristics which is required for task 1.

Figure 4 shows a blank schedule for the lighting design within task 1.

Figure 5 shows a blank Materials schedule required for task 1.

Figure 6 shows an outline of the installation required for task 2.

Figure 7 shows a fault report sheet.

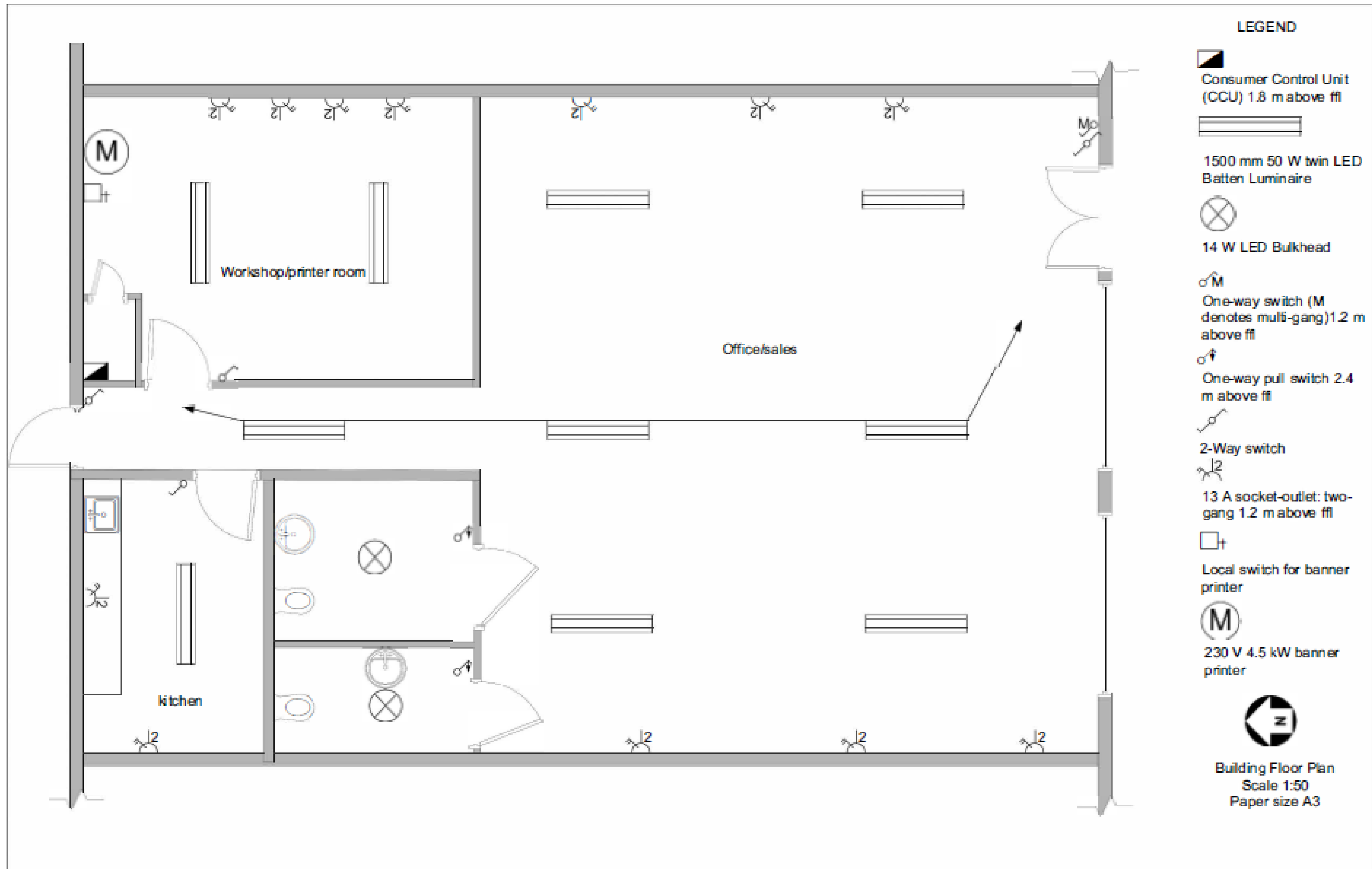


Figure 1

Consumer unit located in workshop VOLTAGE DROP TO COMPLY WITH BS 7671		Nominal Voltage (U) 230 V			Earthing Arrangement TN-C-S		External Earth Fault Loop Impedance (Z_e) 0.3 Ω		
Circuit	1	2	3	4	5	6	7	8	
Description	Ring-final office	Radial-final sockets workshop	Radial-sockets kitchen x2 twin	Boiler supply	Outbuilding DB	4.5 kW printing machine	Lighting office	Lighting workshop/kitchen/toilets	
No. outlets	6 x 2-gang	4 x 2-gang	2 x 2-gang	1	1	1	7	5	
Type of wiring	70 °C thermoplastic single-core non-sheathed	70 °C thermoplastic single-core non-sheathed	70 °C thermoplastic single-core non-sheathed	70 °C thermoplastic multi-core flat profile	70 °C thermoplastic 3-core PVC SWA	70 °C thermoplastic 3-core PVC SWA	70 °C thermoplastic single-core non-sheathed	70 °C thermoplastic single-core non-sheathed	
Design Current (I_b)	22 A	15 A	9 A	4 A	16 A		1.6 A	0.7 A	
Type and Nominal rating (I_n)	32 A B	20 A B	20 A B	16 A B	16 A C		6 A C	6 A C	
Length (metres)	50 m loop		10 m	8 m	27 m			20 m	
Installation method		B	B	B	C	C			
Ambient temperature °C	25 °C	25 °C	25 °C	30 °C	30 °C	30 °C	30 °C	30 °C	
Rating Factor Ambient air temp. C_a				1	1	1	1	1	
Total circuits in group	2	2	2	1	1	1	2	2	
Rating factor grouping C_g				1	1	1			
Minimum current capacity ($<I_t$) mV/A/m				16	16		7.5	7.5	
Actual Voltage drop				29	18				
Minimum conductor csa mm ²	2.5		4	1.5	2.5		1.5	1.5	

Figure 2

Lighting design schedule

Area	Utilisation factor	Light loss factor	Spacing	Height	Required lux level	Calculation	Lumens required per luminaire
Workshop/print room	0.7	0.65			500 lux		
Office sales area	0.75	0.8			300 lux		

Figure 4 lighting design schedule

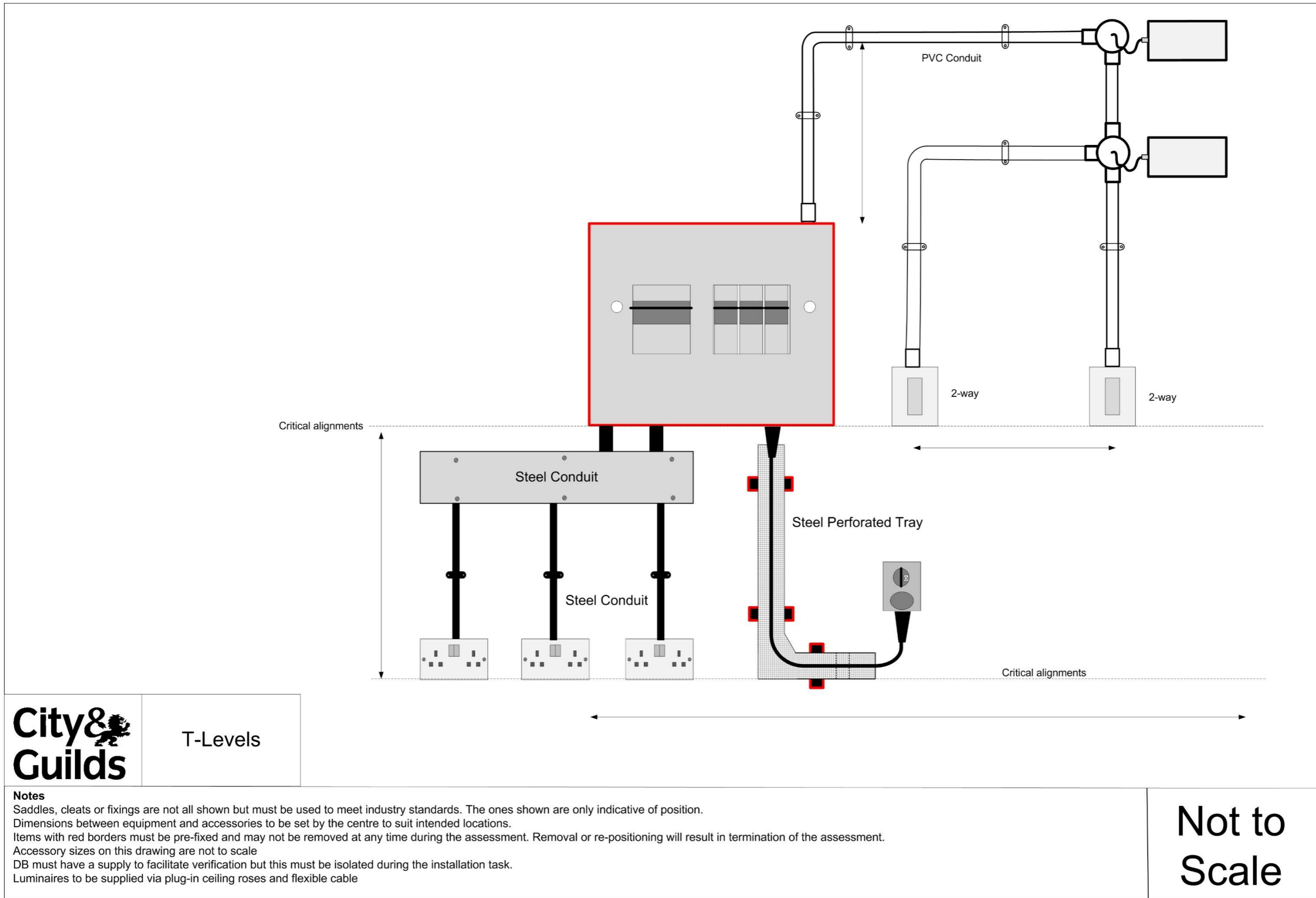


Figure 6 – Installation outline for Task 2

Task 3 Report sheet	
Job card reference number:	
Candidate name:	Date of assessment:
Description of work done/ tests carried out to locate fault (if any)	
The nature of the fault	
Brief description including materials required to fix the fault.	
Actions required to ensure rectification is suitable.	

Figure 7 – Fault report sheet

Task specific guidance

All work carried out should be to industry standards, done in a safe manner and compliant with BS 7671 and any related building regulations. If a candidate fails to carry out the activities in a safe manner, the assignment should be suspended until this aspect is corrected.

Photographs should be used to support the qualitative statements captured on the Practical Observation PO form. Photographs at timed intervals should show the progress of the work and should be clearly labelled indicating the candidate's name and the interval taken, e.g. 2 hours, 4 hours etc. The candidate does not need to be in the photograph, the purpose of the photograph is to demonstrate the progress and standard of the work throughout the stages of the assignment.

Centres must meet the specification given in **Figure 6** as a minimum. If they are unable to implement or facilitate this specification, they must contact City & Guilds to discuss appropriate simulations and alterations.

Centres are expected to utilise existing resources for the fault rectification task. Centres must use the Electrotech Practical Assessment Test Rig (2015).

Time

The following timings are provided to support centre planning.

The time allocated for the completion of the tasks and production of evidence for this assessment is 24 hours. Timings for completion of specific tasks are outlined below.

- Task 1 – 6 hours
- Task 2 – 15 hours
- Task 3 – 3 hours

Resources

Candidates must have access to a suitable range of resources to carry out the tasks and, where appropriate, to have the opportunity to choose tools, plant and materials demonstrating the ability to select from a range.

Candidates should have access to a range of the following:

- hand tools
- materials
- equipment
- PPE
- BS 7671, IET On-site Guide and Guidance Note 3

The assessment area must also contain the following:

- a pre-installed distribution board with a minimum of 4 ways
- pre-installed brackets for cable trays

Tasks

Task 1 – Planning the installation

Resources

- Figures 1 to 5
 - BS 7671
 - IET On-site Guide
 - Manufacturer's literature for selection of luminaires. This may involve access to the internet.
- a) Complete the assessment of general characteristics form as Figure 3 whilst referencing Part 3 of BS 7671. Indicate what must be assessed in relation to the installation shown in Figure 1 and how the assessment impact on the design of the installation.
- b) Complete the lighting design schedule as Figure 4 and select suitable luminaires for the areas shown on the drawing.
- c) Complete the material take off sheet as Figure 5 based on the installation drawing in Figure 1.
- d) Complete the design grid as Figure 2. Any assumptions made in order to complete the design must be listed on a separate sheet with justifications.

Conditions of assessment:

- The time allocated for this task is 6 hours
- Candidates must carry out the task on their own, under controlled conditions

What must be produced for marking that marks will be awarded for:

- Completed design grid (Figure 2)
- Completed assessment of general characteristics form (Figure 3)
- Completed lighting design form (Figure 4)
- Completed materials take-off sheet (Figure 5)

Additional evidence of candidate performance that must be captured for marking that will get marks awarded for:

- Tutor's notes of the candidates referencing and research approach, describing the methods used to reference or research information and how information was used or processed in relation to the task

Task 2 – Installation, commissioning and decommissioning

Resources

- Installation outline as Figure 6
- Tools, plant and materials required for the installation as figure 6 - test meters (including PAT), network tester and isolation kits
- Manufacturers' documentation where appropriate
- BS 7671
- IET On-site Guide
- IET guidance note 3

a) Installation

Candidates must

- Carry out safe isolation to the distribution board prior to commencement of the installation. Complete the installation in accordance with the drawing (Figure 6) and to the dimensions agreed with the assessor.

All cables and wiring systems **must** be terminated and installed in accordance with BS 7671. All terminations, joints and couplings must be mechanically secure and electrically continuous where applicable. Wastage must be minimised as far as possible.

The assessor must be satisfied that the work complies with BS 7671 and is electrically safe prior to the circuits being energised and tested for function.

b) Inspection, testing and commissioning

Candidates must

- Carry out an inspection and complete the inspection schedule for initial verification document.
- Carry out the full range of applicable tests, in the correct sequence, to the completed installation. NB Candidates must obtain permission from the assessor before proceeding with any tests involving switching on the supply.
- Use instruments safely and in accordance with manufacturer's information and HSE GS38.
- Complete a schedule of test results for the results obtained.
- Compare results with BS7671 and design criteria
- Complete the Electrical Installation Certificate for this installation.
- Carry out a handover of the installation assuming your assessor to be your client.

All work must be to current standards and carried out in accordance with all health and safety requirements. Any unsafe actions will result in termination of this assessment.

c) Decommissioning

Once the installation has been completed, checked and verified by the customer (assessor) candidates must

- Decommission in a safe manner ensuring safe isolation

- Ensure the workspace is made good, including filling, sanding and painting any holes or damage to the building fabric.

Following dismantling, consideration must be given to sustainability and recycling.

Conditions of assessment:

- The time allocated for this task is 15 hours (installation 10 hours, commissioning 3 hours, decommissioning 2 hours)
- Candidates must carry out the task on their own, under controlled conditions

What must be produced for marking that marks will be awarded for:

- photographs of the installation process to include
 - a photograph of the whole installation area every 2 hours which will show how the installation progressed over the time period, detail of the standard of workmanship and state of the general work area
 - on completion of the work if the time taken extended beyond the allowed time
 - a close-up photo of the connected distribution board

Notes: Photographs should not feature the candidate and should focus on the produce work. Each photo of the work area should contain a notice indicating the candidate name and the time each photo was taken eg 2 hours, 4 hours etc.
- completed Electrical Installation Certificate, together with a Schedule of Inspections, and a Schedule of Test Results, accompanied by a copy of the Guidance for recipients

Additional evidence of candidate performance that must be captured for marking that candidate will be awarded marks for:

- Assessor feedback on candidate performance including the use of tools and working to tolerances and safe isolation procedure
- Installed components are to be installed to required standards, with photographic/video evidence confirming accuracy and attention to detail.

Task 3 – Carrying out maintenance

Resources

- Hand and power tools - test meters (including PAT), network tester and isolation kits

Candidates must carry out the following for a minimum of six faults. **All work must be undertaken with the installation fully isolated.**

For each fault candidates must:

- Select a job card from the range offered by the assessor
- Copy the job card reference number onto the blank report sheet as figure 7
- Identify from the range of equipment given, necessary items that will be required in order to prepare and diagnose the fault description provided
- Carry out checks to test equipment prior to using it
- Locate the fault, using a logical process
- Complete the report sheet identifying:
 - description of work done to find fault.
 - tests carried out to locate fault (if any)
 - the nature of the fault
 - brief description of actions required, including materials and time required to rectify the fault
 - Further actions required to ensure rectification is suitable.

All work **must** be to current standards and carried out in accordance with **all** health and safety requirements. Any unsafe actions will result in termination of assessment.

Examples of faults include (but are not restricted to):

- Office lights not working – broken line / broken neutral etc.
- Following initial verification, all circuits in workshop have a poor earth fault loop impedance - open distribution cpc
- DOL fails to hold in – fault on hold in circuit
- Staff member reports getting an electric shock – broken bonding etc.

Conditions of assessment:

- The time allocated for this task is 3 hours
- Candidates must carry out the task on their own, under controlled conditions.

What must be produced for marking and marks will be awarded for:

- Six completed report cards

Additional evidence of candidate performance that must be captured for marking:

- Assessor feedback on performance of diagnostic techniques
- Assessor observations

Centre guidance

Guidance provided in this document supports the administration of this project.

The following documents, available on the City & Guilds website, provide essential generic guidance for centres delivering Technical Qualifications and **must** be referred to alongside this guidance:

- ***T level technical qualifications – marking***
- ***T level technical qualifications – moderation*** (updated annually)
- ***T level technical qualifications – teaching, learning and assessment***

This synoptic assessment is designed to require the candidate to make use of their core knowledge, understanding and the practical skills they have built up over the course of their learning to tackle tasks/problems/challenges.

This approach to assessment emphasises to candidates the importance and applicability of the full range of their learning to practice in their industry area and supports them in learning to take responsibility for transferring their knowledge, understanding and skills to the practical situation, fostering independence, autonomy and confidence.

Candidates are provided with an assignment brief. They then have to draw on their knowledge and skills and independently select the correct processes, tools, equipment, materials and approaches to take, to complete the brief.

During the learning programme, it is expected that tutors will have taken the opportunity to set shorter, formative tasks that allow candidates to be supported to independently use the learning they have so far covered, drawing this together in a similar way, so they are familiar with the format, conditions and expectations of the synoptic assessment.

Candidates should be made aware during learning what the assessment themes are and how they are implemented in marking the assignment, so they will understand the level of performance that will achieve them high marks.

Candidates should not be entered for the assessment until the end of the course of learning for the qualification, so they are in a position to complete the assignment successfully.

Health and safety

Candidates must not be entered for assessment without being clear of the importance of working safely and having attended sufficient practical training to be able to work safely. The assessor must immediately stop an assessment if a candidate works unsafely. At the discretion of the assessor, depending on the severity of the incident, the candidate may be given a warning. If they continue to work unsafely, risking the safety of themselves or others however, their assessment must be ended, and they must retake the assessment in a future series after significant further training has taken place.

Compliance with timings

Due to the nature of this assessment, the maximum time allowances provided must be adhered to. They refer directly to assessment time, not any additional setting up or drying times the centre needs to create an appropriate assessment environment.

It is the centre's responsibility to plan sufficient assessment sessions, under the appropriate conditions, within the assignment window, to allow candidates reasonable time to complete the assessment tasks.

Where candidates are required to plan their work, they should have their plans confirmed for appropriateness in relation to the time allocated for each task.

Candidates should be allowed sufficient time to fully demonstrate the range of their skills, however this also needs to be reasonable and practicable. Candidates should be allowed to overrun their planned timings or professional service times (where they exist) in order for evidence of a range of their skills to be captured. If, however, the time required exceeds reasonably set assessment periods, or the tolerance suggested for professional service times, the centre may stop the assessment and base the marking on the evidence up to that point, including the tutor's notes of how far over time the task has taken.

Assessor student ratios

Where the tutor is required to carry out observation of performance, detailed, descriptive notes must be recorded on the practical observation (PO) form provided. The centre has the flexibility to adapt the form, to suit local requirements (e.g. to use tablet, hand-written formats, or to ease local administration) as long as this does not change or restrict the type of evidence collected.

The number of candidates a tutor will be able to observe at one time will vary depending on:

- the complexity of evidence collection for the task
- local conditions e.g. layout of the assessment environment,
- amount of additional support available (e.g. to capture image/ video evidence), staggered starts etc.,
- whether there are any peak times where there is a lot of evidence to collect that will need additional support or any that are quieter.

It is advisable to trial the planned arrangements where possible during formative assessment, reviewing the quality of evidence captured and manageability. It is expected that for straight forward observations, (and unless otherwise specified) no more than six candidates will be observed by a single tutor at one time, and the number will usually be fewer than this maximum. The key factor to consider is the logistics of collecting sufficient evidence.

As far as possible, candidates should not be distracted, or their performance affected by the process of observation and evidence collection.

Observation evidence

Observation notes form part of the candidate's evidence and must capture evidence of student performance during the practical tasks describing how well the activity has been carried out, rather than stating the steps / actions, the candidate has taken. The notes must be very descriptive and focus on the quality of the performance that are notable in relation to the quality indicators in the marking grid. They must provide sufficient, appropriate evidence that can be used by the marker (and moderator) to mark the performance using the marking grid. These descriptions will be used, along with eg photographic and video evidence to choose the relevant marking band and mark within the band so that students can be reliably and validly differentiated based on their performance. Observation evidence captured in these forms must give the necessary information to enable the final assessment of the task at a later date. This is to allow a holistic judgement to be carried out after all evidence for the task is available, at which point full consideration of how the student has applied both their skills and their knowledge during the practical can be given.

Identifying what it is about the performances that is different between candidates can clarify the qualities that are important to record. Each candidate is likely to carry out the same steps, so a checklist of this information would not help differentiate between them. However, qualitative comments on how well they do it, and quantitative records of accuracy and tolerances would.

The tutor should refer to the marking grid to ensure appropriate aspects of performance are recorded. These notes will be used for marking and moderation purposes and so must be detailed, accurate and differentiating.

Tutors should ensure that any required additional supporting evidence including e.g. photographs or video can be easily matched to the correct candidate, are clear, well-lit and showing the areas of particular interest in sufficient detail and clarity for assessment (i.e. taken at appropriate points in production, showing accuracy of measurements where appropriate).

If candidates are required to work as a team, each candidate's contribution must be noted separately. The tutor may intervene if any individual candidate's contribution is unclear or to ensure fair access (see below).

Assessor marking and justification is completed on a separate form (CRF) to differentiate this evidence from the judgement, since in some cases the observation form will, in some cases, provide evidence relating to the judgement for more than one assessment theme.

The **Technical qualifications guides on marking and moderation** are essential guidance documents and are available on the City & Guilds website. These provide further information on preparing for assessment, evidence gathering, standardisation, marking and moderation, and must be referred to when planning and carrying out assessment.

Video and photograph evidence in T Level Technical qualifications

The assessment materials for each synoptic assignment identify the minimum candidate and assessor evidence requirements to support marking and moderation. Where ephemeral evidence (e.g. areas of candidate performance that may be hard to capture with photographs and assessor notes alone) plays a significant part of the synoptic practical assessment. If this is the case City & Guilds will prescribe the type/capture where the use of video is necessary for practical assessment components (e.g. specifying exactly which elements of the practical must be videoed, or photographed), and any technical specifications for these forms of evidence e.g. length of videos, maximum file sizes etc will also be supplied. Photographic and video evidence will be submitted along with the written candidate evidence and tutor evidence (Practical Observation forms) as described in the additional evidence section of the task

If this is the case then the video evidence must meet these minimum requirements, in order to be considered by moderators:

- As per the guidance in section 2.3.2 of *The Marking and Moderation Guide for Centres*, tutors must ensure that this evidence can be easily matched to the correct candidate and task, is clearly shot, well-lit and shows the areas of particular interest in sufficient detail and clarity for assessment (i.e. filmed at appropriate points in production, showing accuracy of measurements where appropriate).
- The qualitative written evidence provided by tutors must
 - clearly identify the parts of the video that are being referred to, when used as supporting evidence. Using a timecode for this is recommended.
 - include their judgement on the performance being demonstrated
- Section 6.5 of the *Centre Manual* also contains general information about the requirements for video evidence submission, however for Technical Qualifications videos must be no longer than 5 minutes long.

Please note that where video evidence is unclear, or does not meet these minimum requirements, moderators will disregard it.

Minimum evidence requirements for marking and moderation

The sections in the assignment:

- ***What you must produce for marking***, and
- ***Additional evidence of your performance that must be captured for marking***

These list the minimum requirements of evidence to be submitted for marking and the moderation sample.

Evidence produced during assessment above and beyond this may be submitted, as long as it provides useful information for marking and moderation and has been produced under appropriate conditions.

While technological methods which support the capturing or creating of evidence can be helpful, e.g. pin board style websites for creating mood boards, the final evidence must be converted to a suitable format for marking and moderation which cannot be lost/ deleted or amended after the end of the assessment period (e.g. screen prints, pdf files). Considerations around tracking authenticity and potential loss of material hosted on such platforms during assessment is the centre's responsibility.

Note: Combining candidates' individual pieces of evidence into single files or zip files may make evidence management during internal marking more efficient and will greatly simplify the uploading of the moderation sample.

Where the minimum requirements have not been submitted for the moderation sample by the final moderation deadline, or the quality of evidence is insufficient to make a judgement, the moderation, and therefore any subsequent adjustment, will be based on the evidence that *has* been submitted. **Where this is insufficient to provide a mark on moderation, a mark of zero may be given.**

Preparation of candidates

Candidates should be aware of which aspects of their performance will give them good marks in assessment. This is best carried out through routinely pointing out good or poor performance during the learning period, and through formative assessment.

During the learning programme, direct tutor instruction in how to approach tasks through modelling, support, guidance and feedback are critical. However, gradual removal of this support is necessary in preparation for summative assessment. This supported approach is not valid for summative assessment.

The purpose of summative assessment is to confirm the standard the candidate has reached as a result of participating in the learning process. Candidates should be encouraged to do the best they can and be made aware of the difference between these summative assessments and any formative assessments they have been subject to. Candidates may not have access to the full marking grids. Refer to the ***T Level Technical qualifications – teaching, learning and assessment*** centre guidance document, available on the City & Guilds website for further information on preparing candidates for Technical qualification assessment.

Guidance on assessment conditions

The assessment conditions that are in place for this synoptic assignment are to:

- ensure the rigour of the assessment process
- provide fairness for candidates
- give confidence in the outcome.

They can be thought of as the rules that ensure that all candidates who take an assessment are being treated fairly, equally and in a manner that ensures their result reflects their true ability.

The conditions outlined below relate to this synoptic assignment. These do not affect any formative assessment work that takes place, although it is advised that candidates are prepared for the conditions they will need to work under during summative assessment.

The evidence for the tasks that make up this synoptic assignment must be completed under the specified conditions. This is to ensure authenticity and prevent malpractice as well as to assess and record candidate performance for assessment in the practical tasks. Any aspect that may be undertaken in unsupervised conditions is specified. It is the centre's responsibility to ensure that local administration and oversight gives the tutor sufficient confidence to be able to confirm the authenticity of the candidate's work.

Security and authentication of candidate work

Candidate evidence must be kept secure to prevent unsupervised access by the candidate or others. Where evidence is produced over a number of sessions, the tutor must ensure learners and others cannot access the evidence without supervision. This might include storing written work or artefacts in locked cupboards and collecting memory sticks of evidence produced electronically at the end of each session.

Candidates are required to sign declarations of authenticity, as is the tutor. The relevant form is included in this assignment pack and must be signed after the production of all evidence.

Where the candidate or tutor is unable to or does not confirm authenticity through signing the declaration form, the work will not be accepted at moderation and a mark of zero will be given. If any question of authenticity arises e.g. at moderation, the centre may be contacted for justification of authentication.

Accessibility and fairness

Where a candidate has special requirements, tutors should refer to the *Access arrangements and reasonable adjustments* section of the City & Guilds website.

Tutors can support access where necessary by providing clarification to any candidate on the requirements or timings of any aspect of this synoptic assignment. Tutors should not provide more guidance than the candidate needs as this may impact on the candidate's grade, see the guidance and feedback section below.

All candidates must be provided with an environment, time frame and resources that allows them reasonable access to the full range of marks available.

Where candidates have worked in groups to complete one or more tasks for this synoptic assessment, the tutor must ensure that no candidate is disadvantaged as a result of the performance of any other team member. If a team member is distracting or preventing another team member from fully demonstrating their skills or knowledge, the tutor must intervene.

Guidance and feedback

To support centre file management, tutors may specify a suitable file format and referencing format for evidence (unless otherwise specified e.g. if file naming is an assessment point for the assignment). Guidance must only support access to the assignment brief and must not provide feedback for improvement. The level and frequency of clarification & guidance must be

- recorded fully on the candidate record form (CRF),
- taken into account along with the candidate's final evidence during marking
- made available for moderation.

Tutors must not provide feedback on the quality of the performance or how the quality of evidence can be improved. This would be classed as malpractice. However, this does not apply if the tutor asks questions as part of the assessment process. Such requirements will be specifically stated within task centre guidance.

Tutors should however provide general reminders to candidates throughout the assessment period to check their work thoroughly before submitting it, and to be sure that they are happy with their final evidence as it may not be worked on further after submission.

Candidates can rework any evidence that has been produced for this synoptic assignment during the time allowed. However, this must be as a result of their own review and identification of weaknesses and not as a result of tutor feedback. Once the evidence has been submitted for assessment, no further amendments to evidence can be made.

Tutors should check and be aware of the candidates' plans and designs to ensure management of time and resources is appropriate, and so any allowed intervention can take place at an appropriate time.

Tutors should ensure that candidates' plans for completion of the tasks distribute the time available appropriately and may guide candidates on where they should be up to at any point in a general way. Any excessive time taken for any task should be recorded and should be taken into account during marking if appropriate.

It is up to the marker to decide if the guidance the candidate has required suggests they are lacking in any performance outcome, the severity of the issue, and how to award marks on the basis of this full range of evidence. The marker must record where and how guidance has had an impact on the marks given, so this is available should queries arise at moderation or appeal.

What is, and is not, an appropriate level of guidance

- A tutor should intervene with caution if a candidate has taken a course of action that will result in them not being able to submit the full range of evidence for assessment. However, this should only take place once the tutor has prompted the candidate to check that they have covered all the requirements. Where the tutor has to be explicit as to what the issue is, this is likely to demonstrate a lack of understanding on the part of the candidate rather than a simple error, and full details should be recorded on the CRF.
- The tutor should not provide guidance if the candidate is thought to be able to correct the issue without it, and a prompt would suffice. In other words, only the minimum support the candidate actually needs should be given, since the more tutor guidance provided, the less of the candidate's own performance is being demonstrated and therefore the larger the impact on the marks awarded.
- A tutor must not provide guidance that the candidate's work is not at the required standard or how to improve their work. In this way, candidates are given the chance to identify and correct any errors on their own, providing valid evidence of knowledge and skills that will be credited during marking.
- The tutor must not produce any templates, pro-formas, work logs etc unless instructed to in the assignment guidance. Where instructed to do so, these materials must be produced as specified and contain no additional guidance. Templates provided, as part of the assignment should be used as provided, and not adapted.

All specific prompts and details of the nature of any further guidance must be recorded on the relevant form and reviewed during marking and moderation.

Guidance on marking

Please refer to the ***T Level Technical qualifications – marking, and - moderation*** centre guidance documents for further information on gathering evidence suitable for marking and moderation, and on using the marking grid and forms.

The candidate record form (CRF) is used to record:

- Details of any guidance or the level of prompting the candidate has received during the assessment period

- Rough notes bringing together relevant evidence from across tasks during marking.
- Summary justifications when holistically coming to an overall judgement of the mark for each performance objective and overall.

The practical observation form (PO) is used to record:

- Descriptive information and evidence of candidate performance during an observation.

Marking guidance

Carrying out marking using assessment themes

The process of marking each assessment theme is iterative and should follow the process below which will become more spontaneous over time as the descriptors become familiar. It is recommended to refer back to these frequently however, so the standard does not unintentionally drift over the marking period.

The indicative content gives an indication of the expected content parameters the responses are likely to cover, and which aspects of the evidence are relevant. It is not exhaustive, and an acceptable answer may concentrate more on depth rather than fully cover the range indicated or deviate into relevant topics not listed.

The specific task evidence listed within the assessor guide and marking grid must be used to make a judgement on performance in relation the specific assessment theme.

The assessment tasks guide the production of valid evidence under appropriate conditions for assessment. Candidate evidence from a range of tasks may contribute to the marking of a single assessment theme, or from a single task to more than one assessment theme. In this case different aspects of the evidence are being considered for each theme and need to be judged against the marking descriptors specified in the assessment themes independently of each other.

In some cases, the quality indicators looked for in the judgement may naturally be more strongly evidenced in one piece of evidence than another. For instance, more formulaic/prescriptive forms of evidence may not be able to generate evidence of higher levels of performance, so this evidence would need to be looked for in the other forms of evidence. This means that where a range of evidence is to be assessed, it should be treated as a single package of evidence for the purposes of marking even if generated through different tasks.

Timing of marking

As some assessment themes require the triangulation of a number of pieces of evidence, marking cannot take place until after all of these are available. This does not however mean that all marking needs to take place after all candidates have completed the whole assessment.

Also, it is possible to begin recording the notes that will justify the marking for some assessment themes as evidence is produced, with the final mark only being decided once the complete array of evidence is available. This is particularly the case if later evidence is more confirmatory, and the earlier evidence is sufficiently informative for the qualities being assessed to make this a useful exercise.

Through planning, it should be possible to identify any evidence that can start being reviewed earlier, and the assessment themes which could be scheduled for earlier completion of marking e.g. while observation evidence is fresh in the mind should this be helpful. Care must of course be taken to ensure any evidence required by candidates to progress with another task are available for that task to take place. In addition, it is recommended that a sense check across marking for each assessment theme, and across assessors, is carried out at the end to ensure marking has not drifted during the period. This may take the form of comparing candidate work to check that the ranking of quality of evidence matches the ranking of marks – where there are discrepancies marking should be checked for accuracy.

Process for each assessment theme:

- Select the range of evidence relevant for making the judgement – this is indicated in the mark scheme for each assessment theme.

- Scan / read the candidate evidence, evidence captured by the assessor and the indicative content & band descriptors in the mark scheme.
- Make an initial assessment of the required evidence as a whole, considering each band in turn to make a balanced judgement of the best band to use it as a starting point.
- Read the evidence and review it against the band descriptor in more detail, deciding if the response is securely sitting within the band; i.e. all quality characteristics described by the band descriptor are seen, and strongly meets the level of performance described by the descriptor holistically (i.e. across the range of relevant evidence).
 - Check the descriptor for the level above
 - If the evidence clearly shows some of the characteristics of the higher band, select a suitable mark at the bottom of that band
 - If *not* showing characteristics of the higher band revert to the original band, select a mark at the higher end of that mark range

If the response is not securely in the band, but *is partially* showing the characteristics of the band,

- check the descriptor of the level below.
- decide on a suitable mark either at the bottom of the original band as some characteristics shown, or top of the lower band if it better describes the quality of the characteristics being shown.

If the response is largely meeting the band, with only a few concerns, and is not showing characteristics aligning with the higher or lower bands, the appropriate mark is likely to be in the middle range.

If there is no alignment with the descriptor, reassess the starting band, and begin again.

- Based on the level of alignment with the descriptor, confirm the final mark within the band, bearing in mind that the available marks form an *evenly distributed scale*:
 - If the quality of response *fully* aligns with the performance described by the descriptor – assign a high mark within the band
If the quality of the response *partially* aligns with the performance described by the descriptor – assign a low to medium mark within the band
 - Consider the quality compared to a range of similar responses (e.g. relevant annotated training material exemplars, responses reviewed during standardisation, and through experience) choose a mark on the point on the scale that would give an appropriate ranking for the assessed piece of evidence in relation to this information and in comparison with that of the rest of the cohort for that assessment theme.

Marking grid

There is a marking grid for each assessment theme that must be assessed as part of this occupational specialism assessment.

Assessment theme - Health and safety

<p>Note: where there is insufficient evidence to award a mark, a zero mark may be given</p>	<p>Band 1 descriptor</p>	<p>Band 2 descriptor</p>	<p>Band 3 descriptor</p>	<p>Total marks per assessment theme</p>
<p>Indicative content</p>	<p>Typical knowledge, understanding and skills:</p> <p>Identification of main hazards which include major danger of death or major injury hazards.</p> <p>Analysis of risk and appropriate mitigation against hazards for planned tasks.</p> <p>Knowledge and understanding of minor injury or delay hazards and provide appropriate mitigation for such risks.</p> <p>Demonstration of the ability to correctly prepare tools and materials lists for the proposed task.</p> <p>Assessment of risk as part of commissioning and installation.</p> <p>Use of correct PPE at all times and demonstrate good housekeeping.</p> <p>Checking instrument safety and compliance with HSE GS38.</p> <p>Safe isolation procedures completed accurately and safely (Failure to complete safe isolation as specified below leading to an unsafe situation the assessment will be stopped immediately).</p> <ul style="list-style-type: none"> • Obtain permission to start work • Prove that the approved voltage indicator is functioning correctly • Identify the source(s) of supply using an approved voltage indicator • Isolate the supply, lock off and retain the key • Prove the system/equipment is DEAD using an approved voltage indicator • Prove that the approved voltage indicator is functioning correctly 			

	<ul style="list-style-type: none"> Put up warning signs to tell other people that the electrical installation has been isolated Once the system/equipment is proved DEAD, work can begin. 			
Marks per band	1-4	5-8	9-12	12
	<p>Risk mitigation methods limited. Likelihood against probability attempted but lacks reasoning.</p> <p>Health and safety is followed during preparation and throughout tasks so that all work is completed safely but when working some low risk hazards were missed.</p>	<p>Risk mitigation methods identified for some of the potential risks, but not all. Consideration given to potential for harm and probability factors.</p> <p>Health and safety is followed during preparation and throughout tasks and all work completed safely</p>	<p>Risk mitigation methods are detailed and have been clearly identified for all potential risks. Potential for harm and probability factors have been identified throughout.</p> <p>Health and safety is followed during preparation and throughout tasks and all work completed safely. Risks and hazards that occur during the tasks are correctly mitigated against as they arise.</p>	

Guidance for markers

Evidence from Task 1, Task 2 and Task 3 should be used to assess performance against this assessment theme.

Task 1

Assessment of risk as part of task completion

Task 2

Assessor observation

- Installation work
- Inspection, testing and commissioning

- Decommissioning

Task 3

Assessor observation

- Inspection and testing
- Performance of diagnostic techniques

Assessment theme – Design and planning

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks per sub assessment themes.	Total marks for assessment theme
Indicative document	<p>Typical knowledge, understanding and skills: Providing a detailed method statement of how the task will be carried out in a safe and logical manor with reasoning to support the methods given. Choices made in response to the assignment brief and tasks and justified with reasoning. In selection of materials consideration of the suitability, type, size and quantity to complete the task in a timely manner and to ensure the highest quality of finish. Other aspects of design and planning within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Selection of correct luminaires • Accurate use of drawings • Evaluation of equipment quantities • Accurate calculations (for lighting design, for circuit design) • Design procedures followed • Justified assumptions made – where detail may be lacking in task brief information provided • Visualising building perception from 2D drawing. 				
Marks per band	1-2	3-4	5-6	6	18
Documentation	General planning and design work lack technical accuracy.	General planning and design work to a good standard with good links	General planning and design work undertaken is comprehensive with a high attention to detail. Efficient		

	<p>Navigating technical documentation and information is inefficient and looking for minimal reassurance in decisions.</p> <p>Documentation although complete has the minimum detail required with little or no evidence of checking for accuracy and consistency.</p> <p>Information is recorded but wording, symbols and abbreviations used are inconsistent with limited consideration for accuracy, legibility and audience</p> <p>Minor errors in terminology.</p>	<p>between drawing and practical situations.</p> <p>Documentation is generally acceptable over most aspects. May show some inefficiencies and may lack in some attention to detail.</p> <p>Terminology is used correctly throughout.</p>	<p>use of research materials and a good understanding of technical documents.</p> <p>Links made between drawing and practical situations with excellent assumptions made where information lacked.</p> <p>Provides a high level of accuracy in reports and written detail consistently ensuring and checking for accuracies with reference made to manufacturers' instructions and regulations.</p> <p>Full consideration of language, abbreviations, terminology etc audience and ensuring documentation is completed in line with recording and industry standards.</p>		
Marks per band	1-4	5-8	9-12	12	
Technical information	Partially captured assessment of general characteristics and made some links to installation drawings.	Captures most areas of the assessment of general characteristics and makes some links to their relevance to installation drawings.	Links all areas of the assessment of general characteristics to the installation and makes informed decisions as to relevance and impact.		

	<p>Calculations may contain some errors and selection may link to lumens output but may not be suited to other factors or other factors not considered.</p> <p>Circuit design calculations may be inaccurate with some factors missing or incorrect. Basic process followed.</p> <p>Identified most items using provided resources but some descriptions lack technical language or detail. Quantities may be inaccurate.</p> <p>Diagrams complete but with some inaccuracies that do not meet the installation specification.</p> <p>Calculations are accurate but there is minimal working shown to evidence that all factors have been considered. There are minimal units specified and presentation of work is not clear.</p>	<p>Calculations may contain minimal errors and most factors are considered and are accurate. Good use of BS 7671 and other technical documents but may seek reassurance with some information.</p> <p>Accurate calculations to determine luminaire output but selection may not consider all factors such as aesthetics, practical installation and suitability.</p> <p>All shown items identified using provided resources but some inaccuracy in quantities. Technical language good. May not capture all associated items not necessarily shown on drawings.</p> <p>Diagrams meets most of the design specification, with only some components out of tolerance.</p> <p>Calculations are accurate but there are gaps in workings that does not</p>	<p>Calculations accurate and well researched showing good understanding of technical information in BS 7671 as well as confident navigation.</p> <p>Good selection of luminaires based on all factors, not just output. Consideration given to aesthetics as well as function. All calculations accurate.</p> <p>All items identified using provided resources with good technical descriptions and accurate quantities. Able to understand all aspects of drawing and understands the associated accessories needed rather than the basic accessories shown on drawings.</p> <p>Diagrams accurate and meets the installation specification.</p> <p>Calculations are accurate with all factors considered and working out shown in detail. All units are nominated, and calculations</p>		
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		clearly show that all factors have been considered. Some units are not specified. Presentation of work is mostly clear.	are presented to a uniformed number of decimal places. Presentation of work is fully clear.		
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Guidance for markers

Evidence from Task 1 must be used to assess performance against the assessment theme.

Task 1

Calculations

Design grid

Assessment of general characteristics form

Lighting design form

Materials take-off sheet

Assessor observation

- Research work
- Information processed

Assessment theme – Systems and components

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks per sub assessment theme	Total marks for assessment theme
Indicative content	<p>Typical knowledge, understanding and skills: Completion of the installation and commissioning/decommissioning tasks safely and with consideration to customer/client property. Other aspects of systems and components within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Terminations correctly and securely made • Secure glanding / glands made off correctly • Aesthetics considered • Securely fixed systems • Edges finished/made off correctly • Suitable cable supporting and cable selection • Fluent use of tools • Enclosures securely fitted • Suitable basic protection provided. 				
Marks per band	1-6	7-12	13-18	18	27
Installation	Installation lacks clarity and does not follow logical sequencing. Component selection and installation is mostly appropriate but there are	Installation to a good standard and does follow some logic in process. Component selection is appropriate. Installation mostly meets plan with	Installation to industry standards and is completed in a timely manner. Component selection appropriate and clearly		

	<p>some gaps in completing processes.</p> <p>Selection and use of tools are mostly appropriate for the task. Some gaps in knowledge where more suitable tools could have been selected and used.</p> <p>Minimal reference made to manufacturer's instructions during the installation.</p> <p>Measurement of wiring and associated components for installation may have inaccuracies that has results in inefficiencies and unnecessary waste of materials.</p>	<p>some errors apparent due to minimal gaps in knowledge and skills.</p> <p>Selection of tools appropriate throughout. Use of tools is good but some tasks require numerous attempts.</p> <p>Reference made to manufacturer's instructions during the installation.</p> <p>Measurement wiring and associated components is to a sound standard with clear attempts to meet industry levels, resulting in an install that has few errors from the proposed installation plan.</p>	<p>links to the quality of finished installation.</p> <p>Highly competent in installation skills which is demonstrated in the quality of the finished installation.</p> <p>Use of tools is excellent resulting in a high-quality installation.</p> <p>Reference made to manufacturer's instructions at all appropriate stages during the installation.</p> <p>Measurement of wiring and associated component installation is accurate and meets the design specification and is within tolerance without undue waste.</p>		
Marks per band	1-3	4-6	7-9	9	
Decommissioning	<p>Consideration of some implications of sequence for dismantling minimising damage to parts that could be recycled.</p>	<p>Consideration of most implications of sequence for dismantling minimising damage to parts that could be recycled.</p>	<p>Consideration of implications of sequence for dismantling minimising damage to parts that could be recycled.</p>		

	Minimal use of removal techniques to salvage as much materials as possible for recycling.	Some use of removal techniques to salvage as much materials as possible for recycling.	Use of removal techniques to salvage as much materials as possible for recycling.		
	Some removed materials and equipment suitably designated and categorised for disposal as required.	Majority of removed materials and equipment suitably designated and categorised for disposal as required.	All removed materials and equipment suitably designated and categorised for disposal as required.		

Guidance for markers

Evidence from Task 1, Task 2 and Task 3 must be used to assess performance against the assessment theme.

Task 1

Assessor observation

- Information processed

Task 2

Completed installation

Assessor observation

- Installation work
- Inspection, testing and commissioning
- Decommissioning

Task 2

Completed maintenance

Assessor observation

- Inspection and testing
- Performance of diagnostic techniques

Additional supporting evidence

Photographic and/or video evidence requirements are stated in the specific task guidance for each task within this assessor pack.

Assessment theme – Reports and information

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks for assessment theme
Indicative content	<p>Typical knowledge, understanding and skills: Production of maintenance report cards detailing activity – which should include maintenance work and the selected method of repair. Accurate information and terminology throughout, presented clearly. Other aspects of reports and information within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Interpretation of technical information from sources • Completion of certification • Completion of schedules • Evaluation of results • Analysis of manufactures' information • Using communication techniques to gain information • Simplifying information for client (fault reporting). 			

Marks per band	1-2	3-4	5-6	6
Reporting and information	<p>Technical language minimal and explanations on reports and information provide minimal detail.</p> <p>Certification and schedules may have missing detail or inaccurate reporting.</p>	<p>Reports and information provided contain technical language and reasoned rectification solutions.</p> <p>Certification and schedules completed with minimal but accurate detail in all aspects</p>	<p>Consistently use industry terminology appropriately in both written and verbal contexts.</p> <p>Certification and schedules completed with sufficient and accurate detail in all aspects</p>	

Guidance for markers

Evidence from Task 1, Task 2, and task 3 must be used to assess performance against the assessment theme.

Task 1

Design grid

Assessment of general characteristics form

Lighting design form

Assessor observation

- Research work
- Information processed

Task 2

Electrical installation certificate

Schedule of inspections

Schedule of test results

Task 2

Maintenance report cards

Assessment theme – Inspecting and testing of systems and components

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks for assessment theme
Indicative content	<p>Typical knowledge, understanding and skills: Aspects of inspection and testing within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Correct selection and use of test instruments • Preparation of instruments (nulling) • Confident approach to connections • Evaluation of test data • Suitable range of test equipment used • Good evaluation of connections required in order to obtain results • Diligent inspection methods • Use of all senses (touch, sight etc) • Accurate recording of results • Interpretation of results against BS7671 tabulated values • Correct sequencing of tests. 			
Marks per band	1-4	5-8	9-12	12
Inspecting and testing of systems and components	Interprets information appropriately, demonstrates some ability in planning, assessing risk and follows safe working methods when applying practical skills to an acceptable standard when carrying out work.	Demonstrates a good range of knowledge of electrical principles and processes which is sound. Seeks minimal guidance or reassurance in the completion of tasks.	Demonstrates relevant and comprehensive knowledge and understanding of electrical principles and processes.	

	<p>Minimal safety aspects considered, and some aspects of the safe isolation procedures require prompts while undertaken before dismantling commences.</p> <p>Some reference made to manufacturers' instructions in planning how to proceed with tasks.</p> <p>Some evidence of familiarity with practical skills.</p> <p>Links between knowledge and practice are not always fully considered such as the number of cores needed in conduit/trunking when pulling in cables and can take several attempts.</p> <p>Limited dexterity with test instruments and hesitant with connections.</p> <p>Follows correct testing sequence following prompting.</p>	<p>Most safety aspects considered, and correct safe isolation procedures undertaken with minimal prompting before dismantling commences.</p> <p>Displays clear care in planning commissioning tasks.</p> <p>Demonstrates good, consistent skills, which meets industry standards. Work is well planned following a logical sequence and is completed in a timely manner.</p> <p>Works within tolerances. Complex situations are attempted well and mostly effective.</p> <p>Regularly confirms outcomes with use of good supporting reference materials.</p> <p>Good links between knowledge and practice giving consideration to aspects such as the number of cores required.</p> <p>Follows correct testing sequence with no prompting</p>	<p>Can competently and independently interpret information. Can demonstrate excellent planning, assess risk and follow safe working methods.</p> <p>All safety aspects considered, and correct safe isolation procedures undertaken before dismantling commences.</p> <p>Highly focused on inspection techniques showing extreme care in the accuracy in the work.</p> <p>Can apply technical skills to practical tasks and procedures to an exemplary standard</p> <p>Produce an excellent quality of work that meets acceptable tolerances, regulations and standards.</p> <p>When working with tools and plant demonstrates an excellent technique with efficient, well timed stages</p>	
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			<p>in developing the overall product.</p> <p>Follows correct testing sequence with no prompting and with justification and explanation of action and potential consequences.</p>	
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Guidance for markers

Evidence from Task 2 must be used to assess performance against this assessment theme.

Task 2

Electrical installation certificate

Schedule of inspections

Schedule of test results

Assessor observation

- Inspection, testing and commissioning

Additional supporting evidence

Photographic and/or video evidence requirements are stated in the specific task guidance for each task within this assessor pack.

Assessment theme – Handover and Communication

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks for assessment theme
Indicative content	<p>Typical knowledge, understanding and skills: Handover including demonstration to the customer relevant information relating to the completed installation. Other aspects of handover and communication within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Professional approach • Range of demonstration techniques used – operation of RCDs, MCBs, switching arrangements, emergency isolation/switching • Provision of all required information • Responding to understanding cues/confirming understanding • Description of maintenance requirements • Explanation of certification retention and instructions • Informing of next test due date. 			
Marks per band	1-2	3-4	5-6	6
Handover & Communication	Handover with assessor/client and other communication covers the minimum required information with little explanation or elaboration Wording and communication techniques may not consider	Handover considered and well organised/structured and all elements explained. Consideration of client perspective and requirements, confirmation of understanding sought. Interaction with assessor/client demonstrated some good customer care	All communication detailed and fully explained to meet industry required standards. Client perspective and requirements understood, and	

	<p>client perspective e.g. use technical jargon, acronyms etc</p> <p>Interaction with assessor/client demonstrates basic customer care skills.</p>	<p>skills, through using appropriate language and checking understanding.</p>	<p>evidence of communication style adapted to respond to situation/questions etc.</p> <p>Interaction with assessor/client demonstrates strong customer care skill, adapting to type of customer.</p>	
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Guidance for markers

Evidence from Task 2 and Task 3 must be used to assess performance against this assessment theme.

Task 2

Assessor observation

- Handover to client

Task 3

Assessor observation

- Inspection and testing
- Performance of diagnostic techniques

Assessment theme – Working with faults

Note: where there is insufficient evidence to award a mark, a zero mark may be given	Band 1 descriptor	Band 2 descriptor	Band 3 descriptor	Total marks for assessment theme
Indicative content	<p>Typical knowledge, understanding and skills: Fault finding tests to ensure correct diagnosis of fault. Techniques should include systematic and logical approach to fault finding. Demonstration of the correct selection and use of tools and testing equipment to diagnose the faults. Other aspects of working with faults within the tasks that may contribute evidence to this assessment theme include;</p> <ul style="list-style-type: none"> • Following a safe system of working • Evaluating and working to a logical approach • Selection and use of testing instruments from a range • Consideration of minimisation of dismantling and disruption • Formulating a cost effective approach • Confirmation of repairs/ replacements • Estimation of time to repair/ replace. 			
Marks per band	1-3	4-6	7-9	9
Working with faults	Fault-finding techniques carried out but limited and show a basic knowledge of fault-finding techniques. Minimal reference made to manufacturer's instructions.	Fault-finding techniques carried out with some success demonstrating appropriate knowledge of fault-finding techniques. Reference was made to manufacturer's instructions at some points during fault diagnosis.	Fault-finding techniques carried out systematically and logically displaying accurate knowledge of fault-finding techniques.	

	Rectification of faults follows a limited logical process which may impact on timing and systems operational.	Rectification of faults follows a logical process and the systems operational.	Reference made to manufacturer's instructions throughout fault diagnosis. Rectification of faults follows logical process and systems is operational.	
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Guidance for markers

Evidence from Task 3 must be used to assess performance against this assessment theme.

Task 3

Maintenance report cards

Assessor observation

- Inspection and testing
- Performance of diagnostic techniques

Additional supporting evidence

Photographic and/or video evidence requirements are stated in the specific task guidance for each task within this assessor pack.

Declaration of authenticity

Assessment ID	Qualification number
Candidate name	Candidate number
Centre name	Centre number

Additional Support

Has the candidate received any additional support in the production of this work?

No **Yes** (Please tick appropriate)

If yes, give details below (and on a separate sheet if necessary).

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Candidate:

I confirm that all work submitted is my own, and that I have acknowledged all sources I have used.

Candidate signature	Date

Tutor:

I confirm that all work was conducted under conditions designed to assure the authenticity of the candidate's work, and am satisfied that, to the best of my knowledge, the work produced is solely that of the candidate.

Tutor signature	Date

Note: Where the candidate and/or tutor is unable to or does not confirm authenticity through signing this declaration form, the work will be returned to the centre and this will delay the moderation process. If any question of authenticity arises, the tutor may be contacted for justification of authentication

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