



irtec Assessment Strategy
Supplement for Large Electric
Vehicle

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INTRODUCTION

This document is to be used as a supplement to the main irtec assessment strategy and should only be referred to by those centres assessing the Large Electric Vehicle LEV01 - High Voltage Isolation, Reinstatement and safety accreditation.

The main irtec assessment strategy document should be used for the following details:

- General Details
- Candidate Requirements
- Under Pinning Knowledge Test
- Irtec Approved Centre Equipment Requirements
- Assessment Vehicle – Rigs
- Documents
- Assessment set-up for:
 - Classroom / IT suite
 - Workshop
- Assessment Documentation Marking Criteria
- Moderation of irtec Assessments
- Appeals and Grievance

Where there is any deviation from the main assessment strategy for the Large Electric Vehicle LEV01 - High Voltage Isolation, Reinstatement and safety accreditation; these details will be found below.

All irtec assessment centre staff delivering this accreditation must familiarise themselves with the content to ensure the quality, validity and assessment judgements are fair and consistent.

All irtec documentation must be downloaded regularly from the IMI website ensuring all documents used for practical assessment are current and valid.

LARGE ELECTRIC VEHICLE MEANING

1. The term `Large Electric Vehicle` relates to hybrid or full electric vehicle types; these are generally described in the relevant DVSA inspection manuals:

- DVSA HGV Inspection manual; a vehicle which exceeds 3,500kg
- DVSA PSV Inspection Manual; Category M2 or M3 vehicle
- Other types of `Large Electric Vehicle` may be considered for this accreditation, however; this will require authorisation from the IMI`s EQA prior to any candidate registration

CENTRE APPROVAL

2. Centres wishing to offer irtec Large Electric Vehicle Accreditation **must first** be approved by the IMI. Approval of this accreditation route will only be achieved where centres have appropriate resources and technically competent assessors.

ASSESSOR REQUIREMENTS

3. The Large Electric Vehicle accreditation **MUST** only be assessed by technically competent and qualified assessors who have been approved by the IMI prior to delivering this assessment.

4. Irtec assessors are required to comply with the following criteria for this accreditation:

- Minimum of 5 years' experience within the industry and 2 years' experience in an appropriate service maintenance role for commercial vehicle or bus and coach
- Hold a level 3 electric/hybrid vehicle vocationally recognised qualification (VRQ) for example: IMI Level 3 Award in Electric/Hybrid Vehicle System Repair and Replacement 603/1468/0 or 603/4182/8 or to have successfully completed a recognised manufacturers training programme which meets with the aforementioned qualifications
- Be first aid trained or have a currently trained first aider present throughout the practical assessment activity who can also take the role as the technician required to be available during assessment periods
- Hold an irtec Accredited Assessor Award
- Assessors must ensure that their technical knowledge is kept up to date to the level they wish to assess through Continuing Professional Development (CPD)

CANDIDATE REQUIREMENTS

5. Assessment centres are required to apply the following guidelines to the candidate for the route for which they are applying.

Candidate must have a minimum age of 18 and a level of relevant industry experience. Candidates could count experience in another sub-sector as relevant such as LCV, LCOMV or B&C in:

- Current irtec Service Maintenance Technician
- Current irtec Advanced Technician

Or:

6. Hold a relevant nationally recognised automotive mechanical industry competence based qualification i.e. SVQ level 5, (NVQ, VCQ level 2), in addition to a minimum of 1 year's post qualification experience.

7. Centres must satisfy themselves that a candidate is sufficiently medically fit to carry out high voltage isolation and reinstatement before assessment takes place.

8. Prior to candidate registration, approved assessment centres must satisfy themselves that the candidate has received appropriate training and has the required knowledge and skills for this assessment.

9. An applicant should only be registered with the IMI once the approved assessment centre is satisfied that the candidate is aware of the level at which they are to be assessed.

ASSESSMENT

10. Successful candidates will be issued with an irtec photo ID card and irtec Certificate by the Society of Operations Engineers (SOE) which will be valid for three years; in addition, the SOE will enter the individual's details onto the irtec register.

11. Prior to assessment, the approved centre must ensure a candidate:

- Has been registered to take the assessments
- Is eligible to take the assessments
- Has no medical conditions that maybe affected by the high voltage isolation and reinstatement task
- Has been made aware of, had sight of and agreed to the irtec Code of Conduct

Note; details of the irtec Code of Conduct are displayed [here](#) on the irtec website.

UNDER PINNING KNOWLEDGE ASSESSMENT REQUIREMENTS

12. Under Pinning Knowledge (UPK) assessments must be invigilated and the individual must be linked as an invigilator within `Centres Hub`. Further details on online assessment requirements are provided in the IMI Operating Manual.

13. This Large Electric Vehicle UPK test **MUST** be successfully completed before the candidate undertakes the practical activity.

- A candidate must achieve the agreed minimum pass mark of 70%

14. Candidates may re-take the on-line UPK test as many times as the centre considers appropriate allowing a minimum of 2 hours between assessments. However, if they are not successful after three attempts, the centre should review whether the candidate is being assessed at the most appropriate level and be given access to suitable refresher training where necessary.

PRACTICAL ASSESSMENT REQUIREMENTS

15. All workshop areas used for assessment purposes must comply with current relevant legislation, for example: Health and Safety at Work Act that is applicable to the organisation and the type of irtec assessment.

16. The centres responsible persons including assessors must ensure that all the necessary risk assessments have been conducted to comply with the Electricity at Work Regulation 1989.

17. Vehicles used for this practical assessment must be placed in a suitable, safe and controlled environment to provide a 'fair assessment'. Use of training rigs are **NOT** permitted for this assessment.

18. The use of appropriate `live` or customer Large Electric Vehicles **MAY** be used for the purpose of High Voltage Isolation, Reinstatement and Safety accreditation. However the centre **MUST** ensure that they are able to replicate a controlled assessment environment where the assessment is not conducted at the training facility.

19. The centre **MUST** post within Centres Hub 'Notes' all planned assessment activities and location where assessments are not conducted at the training facilities.

20. Centre`s must ensure vehicles used for irtec assessments are in a clean, roadworthy and reasonable condition. Vehicles used for assessment purposes should reflect the current range of vehicles used on the highway.

21. No more than **ONE** candidate may work on any vehicle at any one time.

22. **Note:** Barriers and warning signage should be placed no less than 1 meter away from the vehicle to secure a `safe working environment`.

TECHNICIAN TO ASSESSOR RATIO

23. This practical assessment has a **maximum** ratio of **ONE** candidate to **ONE** assessor.

24. **Note:** A workshop technician **must be** available to reset the task between assessments and resolve any technical issues which may arise during the assessment day.

CENTRE DEVISED ASSESSMENTS

25. Centres may devise their own assessments in place of irtec devised assessments. Centre devised assessments must however reflect the type of assessments specified, i.e. competence assessments must be replaced by other competence assessments. It is not acceptable to substitute competence assessments with assignments, knowledge tests etc.

26. Centre devised assessments must cover the competences and/or written knowledge statements specified for this accreditation route. This must be demonstrated by 'mapping' the competences being assessed in the centre devised assessments to this accreditation`s competences and/or written knowledge statements, and having the centre devised alternative assessment approved by the IMI. Centres will be charged for the approval of centre devised assessments.

27. The Centre **must** apply for approval of centre devised assessment before they are used by completing an application form within Centres Hub.

28. Further details on centre devised assessments is located in the IMI Awarding Organisation Operations Manual (Section 2.7).

SIMULATED WORK ENVIRONMENT

29. The irtec Accreditation is based on critical competences required in the workplace and therefore candidates are to be assessed under conditions replicating the normal workplace.

30. The observation of the assessment process must be undertaken away from the direct working environment and thereby provide a 'fair assessment' so that the candidate will not be subject to external influences during an assessment. .i.e. with no customers or work colleagues present. This must be in a segregated controlled environment.

31. Any vehicles used for assessment purposes must be screened off appropriately to prevent external viewing of the assessments.

32. To undertake the assessment in a simulated environment the following guidelines must be met:

- The simulated environment represents a real work situation
- Assessments must be carried out under realistic business pressures
- All services that are carried out should be completed in a way and to the timescale stated, that is acceptable in business organisations
- The candidate must be expected to achieve a volume of work comparable to normal business practices
- The range of services, products, tools, materials and equipment that the candidate uses must be up to date and available
- Account must be taken of any legislation or regulations in relation to the type of work that is being carried out
- The candidate must be given workplace responsibilities to enable them to meet the requirements of this module
- The candidate must show that their productivity reflects those found in the work situation being represented

REACCREDITATION

33. There is 1 option for re-accreditation:

- Full re-assessment

MANDATORY REQUIREMENTS

34. Candidate, assessor and technician personal safety equipment:

- Defibrillator
- Rubber gloves (1000 volts or higher)
- Outer gloves (leather) to protect the Cat 0 rubber gloves
- Safety pole "Device used to remove a person from a current source"
- Protective insulated footwear; rubberised soles; non-metallic protective toe caps
- Flash guard face protection
- Overalls with non-conductive fasteners and natural fibers

Environment:

- Copy of Electricity at Work Regulations 1989, which may be electronic
- Suitably trained on site person to administer first aid in the event of high voltage electrical shock or electrocution treatment
- CO2 or dry powder extinguisher
- Barriers to place around the vehicle
- Electric shock warning safety signs for placing on the vehicle and around the barriered area.
- Safe and lockable storage of vehicle ignition key – driver's dongle and battery isolator (at least 15 meters away)
- Appropriate labelling which identifies the vehicle is in a `safe condition` and `vehicle NOT safe – under repair`
- Rubber matting (e.g. CAT 0) for technician to stand on

Equipment:

- A calibrated multi-meter (CAT 111. 1,000V) and test equipment (i.e. CAT 4 600V AC / CAT 3 1000V DC suitable to test both low and high voltage systems including AC and DC voltage)
- Suitable alternative (low voltage) power source including tools and equipment to connect to vehicle electrical systems (where applicable)
- Lockout Tag "Device used to indicate that a component or a piece of equipment must not be used by any person other than the one indicated on it"
- Specialist and certified insulated tools and equipment (CAT A 1,000V), e.g.: insulated: screw drivers, socket set

Vehicle:

Large Electric Vehicle means: a hybrid or full electric vehicle which:

exceeds 3,500kg as defined in the DVSA HGV Inspection manual; Category M2 or M3 vehicle which meets the requirements stated in the DVSA PSV Inspection Manual.

- Vehicle Protection Equipment (floor mats, seat and steering wheel covers)
- Vehicle manufacturer's information which contains the procedures to carry out the practical activity listed for the task, for example: Health and Safety, vehicle safety procedures
- Vehicle diagnostic equipment for reading fault codes and live data