



Alliance for Batteries Technology, Training and Skills

2019-2023

Automotive Repair and Inspection Personel

~~~~



Co-funded by the  
Erasmus+ Programme  
of the European Union



## Automotive Repair and Inspection Personnel

Electric vehicle (EV) repair and maintenance personnel are responsible for the repair and maintenance of electric vehicles. They work in EV repair shops and dealerships and are responsible for ensuring that the vehicles are operating efficiently and effectively. They need to have a strong understanding of electrical and mechanical systems, as well as experience with EV repair and maintenance.

They are responsible for performing regular inspections and preventative maintenance on the vehicles, identifying and resolving issues that arise during operation, and making necessary repairs or modifications to improve vehicle performance. They also need to be able to work closely with other technicians and mechanics, and with EV owners to ensure that the vehicles are safe and reliable to operate. They may also be responsible for troubleshooting and diagnosing problems with EV systems, such as the battery, power electronics, and drivetrain, as well as for replacing or repairing faulty components. They also need to be familiar with the regulations and standards related to EV repair and maintenance.

### ESCO Occupations - [ESCO - Occupations - European Commission \(europa.eu\)](https://ec.europa.eu/esco/)

| ID      | NAME                            | Concept URI                                                                                                                                                         |
|---------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2141.8  | maintenance and repair engineer | <a href="http://data.europa.eu/esco/occupation/615920c5-4f63-4eb3-8b60-afaaed3ab1ff">http://data.europa.eu/esco/occupation/615920c5-4f63-4eb3-8b60-afaaed3ab1ff</a> |
| 7231.10 | vehicle technician              | <a href="http://data.europa.eu/esco/occupation/4ad4024e-d1d3-4dea-b6d1-2c7948111dce">http://data.europa.eu/esco/occupation/4ad4024e-d1d3-4dea-b6d1-2c7948111dce</a> |
| 7543.3  | battery test technician         | <a href="http://data.europa.eu/esco/occupation/43eb6228-8241-47d6-875e-7ccc214291d5">http://data.europa.eu/esco/occupation/43eb6228-8241-47d6-875e-7ccc214291d5</a> |

### Context

|                    |                                    |
|--------------------|------------------------------------|
| <b>Minimum EQF</b> | 4/5/6                              |
| <b>Value Chain</b> | Operation, Repair, and Maintenance |

|                        |                                                                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | Second Life                                                                                                                                                                          |
| <b>Departments</b>     | Production and Maintenance<br>Quality<br>Intellectual/Legal<br>Recycling                                                                                                             |
| <b>Specialisations</b> | Battery Repair Engineer<br>Electric Battery Repairer<br>Technician for Battery Analysis<br>Cell Inspection Technician<br>Electrical battery storage inspector<br>Inspection engineer |

### Cross-sectoral Specific Competence

| Name                                             | Type (S/K) | Description/Context                                                                                                                                                                                                                                                                                                                                                              | Level        | ESCO                         |
|--------------------------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------|
| Inspect Quality of Product / Sampling            | S          | <ul style="list-style-type: none"> <li>- Perform visual and mechanical control activities ensuring the functionality of the overall product</li> <li>- Inspect for discontinuities, Visual identification, damage, and other faults .</li> <li>- Perform visual and mechanical control activities</li> <li>- Determine malfunction</li> <li>- Perform troubleshooting</li> </ul> | Practitioner | inspect quality of product   |
| Analysis Methods                                 | K          | <ul style="list-style-type: none"> <li>- Create analyzes and report to management on quality issues and root causes of batteries.</li> </ul>                                                                                                                                                                                                                                     | Practitioner | analysis methods             |
| Audits                                           | S          | <ul style="list-style-type: none"> <li>- Analyze HV batteries out of the battery assembly process and execute product audits as part of the quality plan.</li> </ul>                                                                                                                                                                                                             | Practitioner | conduct workplace audits     |
| Equipment and tools handling                     | S          | <ul style="list-style-type: none"> <li>- Perform visual and mechanical control activities with proper equipment</li> <li>- Use the relevant quality tools/systems to analyze data and deal with non-conformances</li> <li>- Maintains and cares for the shop tools and equipment.</li> </ul>                                                                                     | Practitioner |                              |
| Process Improvement                              | S          | <ul style="list-style-type: none"> <li>- Improvement of working procedures and processes</li> </ul>                                                                                                                                                                                                                                                                              | Awareness    | Identify process improvement |
| Remove Defective Product                         | S          | <ul style="list-style-type: none"> <li>- removes, replaces, and repairs tires, undercarriages, and other components</li> </ul>                                                                                                                                                                                                                                                   | Practitioner | Remove defective product     |
| Maintenance Processes (Repair, Replace, Inspect, | K          | <ul style="list-style-type: none"> <li>- removes, replaces, repairs and inspects vehicle parts, components or systems</li> <li>- Maintains and cares for the shop tools and equipment.</li> <li>- Maintains a clean work area and performs miscellaneous housekeeping duties associated with the job.</li> </ul>                                                                 | Pactitioner  | Maintenance and repair       |

|                   |   |                                                                                                                                                                                                                                                            |              |                    |
|-------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|
| Service)          |   | -                                                                                                                                                                                                                                                          |              |                    |
| Safety Procedures | K | <ul style="list-style-type: none"> <li>- Examines protective guards, loose bolts, and specified safety devices on equipment, and make adjustments.</li> <li>- Insures safe work and procedures</li> <li>- Inform management of any safety risks</li> </ul> | Practitioner | Safety engineering |

### Sector Specific Competence

| Name                     | Type (S/K) | Description/Context                                                                                                                   | Level        | ESCO                      |
|--------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------|
| Battery charge/discharge | K          | <ul style="list-style-type: none"> <li>- changes or recharges batteries</li> <li>- working with the battery in safe manner</li> </ul> | Practitioner | Repair battery components |

### Soft Competence

| Name                            | Type (S/K) | Description/Context                                                                                                                                                                                                                                                     | Level        | ESCO                           |
|---------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------|
| Communication                   | k          | <ul style="list-style-type: none"> <li>- Together with the rest of the team, act as a key player to develop and maintain a safe work environment.</li> <li>- Participate in teams focused on delivering quality improvements.</li> </ul>                                | Expert       | communication                  |
| Problem Solving/Troubleshooting | S          | <ul style="list-style-type: none"> <li>- Perform inspections and troubleshoot cause of physical testing failures, when appropriate.</li> </ul>                                                                                                                          | Expert       | problem solving & troubleshoot |
| Teamwork                        | K          | <ul style="list-style-type: none"> <li>- Participate in teams focused on delivering quality improvements.</li> <li>- Exchange experience with other battery analysis departments across locations within the company</li> <li>- work closely with production</li> </ul> | Practitioner | teamwork                       |

### General Transversal Competence

| Name                       | Type (S/K) | Description/Context                                                                                                                                    | Level        | ESCO                                           |
|----------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------------------------|
| Reporting                  | S          | <ul style="list-style-type: none"> <li>- complete daily reports</li> <li>- report findings</li> <li>- Report accomplishments and roadblocks</li> </ul> | Practitioner | Follow reporting procedures                    |
| Documentation              | S          | <ul style="list-style-type: none"> <li>- Establish and maintain documentation</li> <li>- Understanding of technical drawings</li> </ul>                | Practitioner | use technical documentation; observe documents |
| Computer Literacy / Office | S          | <ul style="list-style-type: none"> <li>- Knowledge on regular office suite and used applications</li> </ul>                                            | Awareness    | Have computer literacy                         |

### Academic Competence (can be taken from University programme)

| Name                   | Type (S/K) | Description/Context                                                                                                                                                                                             | Level        | ESCO                   |
|------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------|
| Mechanical Engineering | K          | <ul style="list-style-type: none"> <li>- Perform manual and machine assembly and disassembly of serial, pre-serial and prototype parts of the traction battery</li> <li>- Or technical school degree</li> </ul> | Practitioner | mechanical engineering |
| Electrical Engineering | K          | <ul style="list-style-type: none"> <li>- have previous experience of working in electricity</li> </ul>                                                                                                          | Practitioner | Electrical engineering |