



Alliance for Batteries Technology, Training and Skills

2019-2023

Quality Engineer in Battery Industry



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Quality Engineer in Battery Industry

A battery quality engineer is responsible for ensuring the quality of batteries and battery systems during the development and production phases. They work with a team of engineers and scientists to establish and maintain quality standards and procedures for the design, development, and production of batteries and battery systems. They are responsible for identifying, analyzing, and preventing defects in the batteries and systems, and for implementing quality control measures to ensure that the products meet the required specifications.

ESCO Occupations - [ESCO - Occupations - European Commission \(europa.eu\)](http://data.europa.eu/esco/occupation/30c0943c-caa1-411d-b273-26f475971273)

ID	NAME	Concept URI
2149.2.7	quality engineer	http://data.europa.eu/esco/occupation/30c0943c-caa1-411d-b273-26f475971273

Context

Minimum EQF	4/5/6/7
Value Chain	<ul style="list-style-type: none"> Raw Materials and Processing Cell and Components Manufacturing Modules and Packs Battery Integration Operation Second Life Recycling
Departments	<ul style="list-style-type: none"> Production and Maintenance Quality
Specialisations	<ul style="list-style-type: none"> Other job roles that are more specialised but based on this Quality control engineer Supplier quality engineer Quality engineers - general General quality role experience, skills General quality role traits Quality control team roles Quality postproduction team roles Quality management system team roles

Future skills - Quality
 Quality Engineer
 Quality Planner Battery Assembly
 Process Quality Engineer
 Quality Process Engineer
 Quality Launch Engineer

Cross-sectoral Specific Competence

Name	Type (S/K)	Description/Context	Level	ESCO
Agile	K	<ul style="list-style-type: none"> - Implementing of quality standards in the organization and continuous improvement - Solving quality issues - Initiating and implementing corrective and preventive actions - Contribution in Product- and Process FMEAs 	Expert	ICT project management methodologies
Automation	K	<ul style="list-style-type: none"> - Initiation, maintenance and development projects according to Quality Plan - Planning and execution of measures for process monitoring and process control - Coordinate the implementation capabilities of the machine, process and evaluation 	Expert	operate automated process control
Product Quality Assurance	K	<ul style="list-style-type: none"> - Implementing of quality standards in the organization and continuous improvement - Operating according to quality plan - Contribution in Product- and Process FMEAs - Providing accurate and complete registration data in SQMS - Participation in project meetings and reporting of quality related items.P90 	Expert	quality assurance methodologies
Clean/Dry Room Procedure/Validation	S	<ul style="list-style-type: none"> - Coordinate the implementation capabilities of the machine, process and evaluation, both during the start-up of the project and in series 	Practitioner	maintain manufacturing rooms
Audits	S	<ul style="list-style-type: none"> - Implement internal auditing process to ensure constant readiness for external audits in production area and process adherence - Implement internal Quality Monitoring Processes, including Torque Monitoring, Assembly Process Monitoring, New Supplier Monitoring, Initial Sample Inspection, and Layered Audit - Lead company through internal and 3rd party audits 	Expert	conduct workplace audits



		<ul style="list-style-type: none"> - Focus on processes and systems, as well as guiding through audits, this position is responsible for ensuring our systems and processes both comply with and reinforce policies and procedures 		
Process Improvement (Engineering)	S	<ul style="list-style-type: none"> - Conceptualize, develop, implement, and optimize quality systems and processes to support - Ensure complete and effective root cause analysis and corrective action implementation making necessary recommendations and improvements where needed manufacturing - Initiating and implementing corrective and preventive actions 	Expert	identify process improvement
Inspect Quality of Product / Sampling	S	<ul style="list-style-type: none"> - Sample part inspections of in house parts. Initiating and coordinating the first sample, providing accurate and complete registration data in SQMS - Implement Quality Circles within production area to ensure quality is produced and maintained - Conceptualize, develop, implement, and optimize quality systems and processes - Document and track all non-conformities; define, implement, and maintain all non-conformity countermeasures 	Expert	inspect quality of product
Analysis Methods (root cause)	K	<ul style="list-style-type: none"> - Prepare Failure Mode Effect Analysis (FMEA), process flow diagrams, and process control plans for assigned programs, revising as needed - Review and analyse CMM layout reports, recommending process changes as required - Non-Conformance Tracking (MRB) - Supplier Corrective Action Requests (SCAR) - Corrective Action and Preventive Action (CAPA) - Supplier Quality Scorecard (SQC) - Cost of Poor Quality (COPQ) 	Expert	analysis methods
Standards/isation	S	<ul style="list-style-type: none"> - Ensure the Quality system is prepared for International Organization for Standardization (ISO) - Implementing of quality standards in the organization and continuous improvement - Ensure the Completed Vehicle Inspection Standards (CVIS) are incorporated in standard work 	Expert	adhere to standard procedures

Sector Specific Competence

Name	Type (S/K)	Description/Context	Level	ESCO
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Soft Competence

Name	Type (S/K)	Description/Context	Level	ESCO
Problem Solving/Troubleshooting	S	<ul style="list-style-type: none"> - Tasked with advanced levels of process troubleshooting, root cause analysis as well as driving the necessary improvements to completion - Institute permanent corrective actions to address and contain concerns related to both customer and internal issues - Prepare Failure Mode Effect Analysis (FMEA), process flow diagrams, and process control plans for assigned programs, revising as needed - Demonstrated ability with problem-solving methodologies including 8-D, 5-why, Ishikawa, DMAIC 	Expert	problem solving & troubleshoot

General Transversal Competence

Name	Type (S/K)	Description/Context	Level	ESCO
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Academic Competence (can be taken from University programme)

Name	Type (S/K)	Description/Context	Level	ESCO
Engineering	K	-	Expert	engineering principles
Mechanical Engineering	K	-	Expert	mechanical engineering
Electrical Engineering (systems)	K	-	Expert	electrical engineering