

Alternative Drive Systems – E-Mobility -Level -III

Live working (LW)

Course outline

Sr No	Content Outline
1	Basing the HV qualification for LW on BGI 8686
2	Why is this additional qualification needed? In which situations might it be necessary to carry out live work on the vehicle?
2.1	Repairs to the HV batteries of vehicles with HV intrinsic safety
2.2	Development of HV vehicles
2.3	Vehicle testing
2.4	Test bench operations
2.5	Development of HV batteries
2.6	Repair and recovery of HV vehicles involved in an accident
3.	Legal principles for live working
3.1	Laws, regulations, guidelines, standards
3.2	Operational organization
3.3	"Live working"
3.4	Employee training and qualification
4	Dangers due to faults in a vehicle's high-voltage system
4.1	Statistical studies with electrical accidents
4.2	Basic electrical concepts and fault types
4.3	Protective measures
4.4	Protection through potential equalization
4.5	Protection through IT-type network configuration
4.6	Protection through insulation monitoring
4.7	Additional potential equalisation through shielding
4.8	Effect of an initial fault in the HV network of the vehicle
4.9	Protection through HV interlock
4.10	Protection while charging electric vehicles at charging stations
4.11	Wiring example for a charger in a smart ED
5	Live work
5.1	Effect of a second fault in the IT network of a vehicle's HV system
5.2	"De-energising" by disconnecting the HV lines
5.3	Measuring on energised systems Measuring exercise
5.4	Potential equalisation measurement



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5.5	Testing the insulation resistance
5.6	Testing the insulation resistance
5.7	Personal protective equipment (PPE) for live working