

meant that there have had to be revisions of the act or additional acts to support these changes. One such additional instruction is the Electricity at Work Regulation 1989 (HSR25). HSR25 sets out criteria for the minimum standard of safety for anyone working in the Electrical industry.

Within the HSR25 responsibilities are placed with

the employer to ensure that employees engaged in activities on or near electrical equipment implement safe systems of work and have the technical knowledge and training to do so. There are two regulations mentioned within the HSR25 guidelines that can be construed as providing adequate context for working on/with Hybrid and Electric Vehicles (See Table 2).

Article No.	Relevance	Appropriate for Hybrid and Electric Vehicles
Regulation 12: Means for cutting off the supply and for isolation	In effect this would mean shutting off the supply as well as disconnecting and separation of the electrical equipment from every electrical source i.e. 'Safe isolation procedures'	Yes and No - The premise that all electrical components should be switched off prior to any work being conducted on the vehicles electrical system holds true. However, as there are two types of battery in a hybrid, the system remains live even after one battery has been disconnected. Second, each electric and hybrid car has its own electrical dissipation time. This can determine when the car is safe to work on
Regulation 16: Persons to be competent to prevent danger and injury	No person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent danger or, where appropriate, injury, unless he possesses such knowledge or experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work	Yes - However, unlike the electrical industry there are no common standards of competency. The technicians in the automotive industry do not have the same knowledge base as electricians. It is therefore impossible for employers to deem employees competent to the aforementioned standards

Table 2. HSR25 Regulations that cross sector and cover individuals working on HV & EV vehicles

The Electricity at Work Regulations do indeed set out a defined set of rules for electricians working with low and high voltage systems. The way that these systems are made safe in a Hybrid or Electric vehicle differs significantly. It is therefore not feasible for an electrician who has met the BS 7671 standard of competence to know how to make an Electric or Hybrid vehicle safe to work on.

Further to the Electricity at Work regulation 1989, the Health and Safety in motor vehicle repair and associated industries regulation 2009 (HSG261) is the other instruction that would presumably cover the safe working practices of working with Hybrid and Electric vehicles.

HSG261 includes 90 rules for working in a garage on motor vehicles. Again, these regulations adequately protect employers and trained individuals against accidents in the work place. Therefore, it is not necessary to cover all of these regulations in detail. Rule 72 though is of interest. In this section, the provision covers electricity in the work place. Paragraphs 317, 318, 319 all refer to HSR25 and BS 60079 for electrical equipment for use in potentially explosive atmospheres and any requirements to have fixed installations should be fitted by someone who is compliant with BS761. There are further mentions of working safely with electrical equipment that is either portable or fixed, which are also covered by the HSR25 regulations.