

Regulation No. 22 and electric bikes.

Note by the secretariat: since the request to resume discussion on the issue of adequate safety helmets for protection of riders of electric bikes has been put forward in the past sessions (i.e. December 2014 session), the secretariat would like to offer the following information in view of a possible reiterated request from experts.

Harmonizing current legislation

The debate on helmets and their wearing, has been extended to electric bicycles. One of the problem raised was where to draw the line between bicycles and mopeds. The European Union Regulation No 168/2013 concerns the approval and market surveillance of two- or three-wheel vehicles and quadricycles and sets harmonized rules for the type-approval of L-category vehicles. The Regulation defines and classifies L-category vehicles as shown in the Table below. As a complement of this table, Article 2(h) of the EU Regulation No 168/2013 excludes from its scope the type approval of: "**pedal cycles with pedal assistance which are equipped with an auxiliary electric motor having a maximum continuous rated power of less than or equal to 250 W, where the output of the motor is cut off when the cyclist stops pedalling and is otherwise progressively reduced and finally cut off before the vehicle speed reaches 25 km/h.**"

The above definition and the Table below identify whether a vehicle should be considered a bicycle or a moped.

Classification criteria for L-category vehicles

Category	Category name	Classification criteria
L1e	Light two-wheel powered vehicle	<ol style="list-style-type: none"> 1. two wheels and powered by a propulsion as listed under Article 4(3) of Regulation No 168/2013 2. engine capacity ≤ 50 cm³ if a PI internal combustion engine forms part of the vehicle's propulsion configuration 3. maximum design vehicle speed ≤ 45 km/h 4. maximum continuous rated or net power¹ $\leq 4\ 000$ W 5. maximum mass = technically permissible mass declared by the manufacturer
Sub-categories	Subcategory name	Supplemental sub-classification criteria
L1e-A	Powered cycle	<ol style="list-style-type: none"> 6. cycles designed to pedal equipped with an auxiliary propulsion with the primary aim to aid pedalling 7. output of auxiliary propulsion is cut off at a vehicle speed ≤ 25 km/h 8. maximum continuous rated or net power $\leq 1\ 000$ W 9. a powered three- or four-wheel cycle complying with supplemental specific sub-classification criteria (6) to

¹ The power limits are based on maximum continuous rated power for electric propelled vehicles and maximum net power for vehicles propelled with a combustion engine. The weight of a vehicle is considered equal to its mass in running order.

		(8) is classified as being technically equivalent to a two-wheel L1e-A vehicle
L1e-B	Two-wheel moped	10. any other vehicle of the L1e category that cannot be classified according to the criteria (6) to (9) of a L1e-A vehicle

Source: Regulation (EU) No 168/2013, Annex 1

The current scope of UN Regulation No. 22 applies to protective helmets for drivers and passengers of **mopeds and of motor cycles** with or without side-car and to the visors fitted to such helmets or intended to be added to them.

Actually, a harmonized definition in the Consolidated Resolution No. 3 (R.E.3.) to distinguish electric L category of vehicles assumed as "bicycles" because of their power and speed from those that should be considered mopeds, is missing.

Encouraging helmet use

If legislation mandates helmet use for electric bikes, it should fulfil a minimum set of safety requirements in type and design. Riders of electric bikes are engaged physically and thus sweating, making an aerated helmet more important for them. It is also necessary for the helmet to be lightweight without compromising on safety. Electric bikes are becoming particularly popular in emerging economies, which often have a tropical climate.

On the subject of helmets in tropical countries, GRSP expressed already its view at its December 2010 session (see ECE/TRANS/WP.29/GRSP/48, paras. 27-30). Some experts expressed concerns on introducing alternative less stringent requirements to Regulation No. 22 that would compromise safety. In their opinion, initiative to promote less stringent set of requirements to encourage wearing, could lead to a false sense of consumer protection and disharmonize already well-proved existing requirements. In addition, GRSP noted that Regulation No. 22 does not prevent the construction of ventilated helmets. Accordingly, the United Nations Regulation No. 22 does not prevent a design oriented solution tailored for e-bike riders as well.

Moreover, according to some GRSP experts, encouraging helmet use does not happen only through legislation, but also through marketing. Having unified prescriptions, such as those in UN Regulation No. 22, would allow easy mass production of helmets that are both safe and comfortable in use irrespective of climate. Mass production would also lower the price of helmets and make them affordable for everyone.
