

ERF technical recommendations to adapt CAVs - Road Markings

On 17 May 2018, the European Commission released the third set of actions to modernize the European transport sector by stressing the role of road infrastructure as key element of the road safety triangle complemented by users and vehicles¹. New actions of the mobility package include the revision of the General Safety Regulation and specially the Road Infrastructure Safety Management Directive with measures such as²:

- Properly designed and maintained markings and signs, which can be easily and reliably recognized by both human drivers and vehicles equipped with driver assistance systems or higher levels of automation
- Development of general performance requirements to facilitate the recognition of road markings and road signs



1 https://ec.europa.eu/transport/modes/road/news/2018-05-17-europe-on-the-move-3_en
2 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018PC0274>

Recommendations for minimum performance of road markings in EU

The ERF strongly supports the road safety approach of the European Commission.

Based on the analysis of research taking into consideration both vehicles equipped with driver assistance systems and human requirements, the ERF proposes the establishment of an intervention and maintenance policy as follows:

- Road Markings in night visibility should never drop below **150 mcd/lx/m² night visibility under dry conditions** and never below **35 mcd/lx/m² under wet and rainy conditions** (recent CAVs studies in US and EU also point in even higher performance levels¹)
- The width of Road Markings should never be less than **15 cm**
- **Ensure a sufficiently high contrast ratio between marking and pavement.** While a contrast ratio of 3:1 appears sufficient, increased reliability can be achieved with a 4:1 ratio, mitigating possible false readings caused by glare and other critical conditions
- The **harmonisation of markings design and layout** across various countries improves the reliability for machine visibility and universality of automated vehicles

¹ For further technical references:
-ERF, Road Safety Programme: <http://erf.be/activities/road-safety-programme/>
-RAINVISION EU Research Collaborative Project: <http://www.rainvision.eu/>
-EuroRAP, Roads that cars can read: https://www.eurorap.org/wp-content/uploads/2015/03/roads_that_cars_can_read_2_spread1.pdf
-ERF, Marking the way towards a safer future: <http://erf.be/publications/markings-the-way-towards-a-safer-future/>