

Road Markings in the scope of EU Ecolabel for Paints and Varnishes

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Road markings should remain excluded from the scope of the EU ecolabel criteria for paints and varnishes because they are vastly different due to their system character comprising multiple functional components from other included coatings in terms of the demanded performance requirements, used materials, technology, and the scope and purpose of use. Inclusion of road markings in the broad ecolabel criteria, without development of completely new criteria adequate for this specific type of industrial heavy-duty maintenance coatings, would cause the decrease in overall quality and thus higher environmental impact and compromise road safety.

Rationale

Road markings are horizontal traffic safety devices that ensure safe guidance at all weather conditions and must withstand under harsh abrasion caused by high traffic wear and/or exposure to winter maintenance (snow ploughs).

Road markings are exclusively applied by professional construction teams.

Road marking are different from all products in scope of the EU ecolabel for paints and varnishes.

Road markings are not mono materials, but dual-layer highly specialised heavy-duty industrial maintenance coating systems comprising two vastly dissimilar functional components (pigmented material and typically glass beads). Only combination of these two layers can provide the required in-use durability in accordance with European standards and national requirements for road markings and the functionality to assure road signalling and improving safety for all drivers (see figure 1).

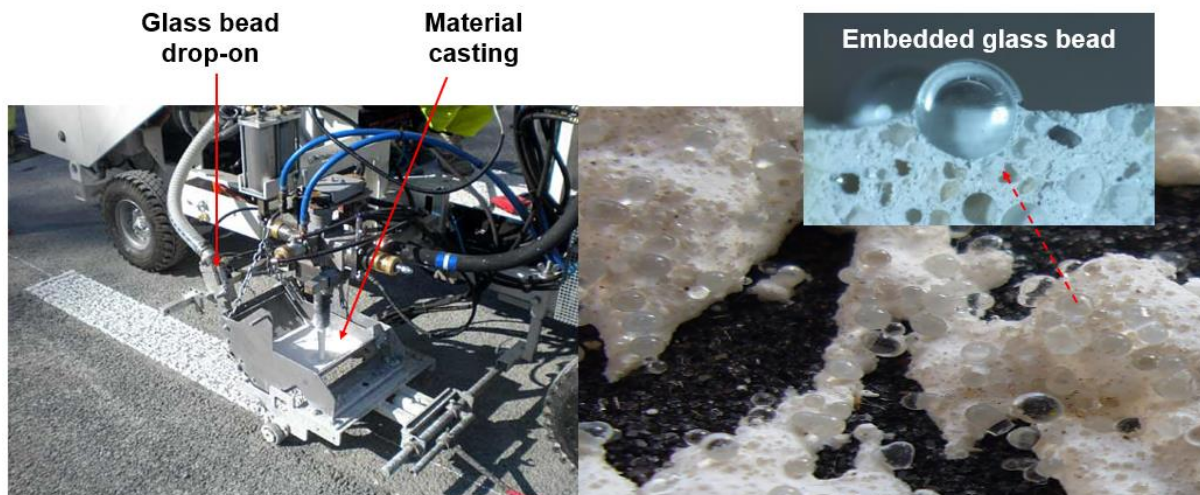


Figure 1: Structured or agglomerated road marking system composed of a pigmented material with a retro-reflective glass bead component embedded in the surface and application machine.

Various road marking material technologies and system compositions are available to provide road safety features that include nighttime visibility, skid resistance and even haptic warning signal function when distracted drivers are departing the traffic lane. At the same time, road marking technology must cope with the different geographic and climatic conditions as well as with different traffic wear and abrasion situations on roads across Europe. While some systems, like road marking tapes are pre-manufactured off-site and fixed on the road by adhesives, most road marking systems are formed at the job site – applied to the roadway in liquid or molten state. Highly durable and wear resistant road marking systems are typically applied in several millimetres thickness and may have a pronounced surface texture. Some of the highly successful road marking systems are agglomerates that do not form a continuous film over the pavement.

From environmental perspective, based on cradle-to-grave Life Cycle Assessment (LCA), the key sustainability impactor is the durability of the road markings (i.e. their functional service life). The glass beads component can have environmental impact as significant as the pigmented material component. In case of hot applied systems, emissions from application step are significant as well. These specificities make comparison with paints and varnishes effectively impossible.

Evaluation of different traffic wear scenarios reveals that plurality of systems is needed to cope with the different level of traffic wear and safety requirements with a minimum overall carbon footprint [Environmental Impacts from Road Markings in Germany \(dsgs.de\)](http://dsgs.de). Thin-layer paint-type systems employed on roads with elevated level of traffic require more frequent renewals of markings, which results in higher carbon footprint and higher microparticle emission over the whole pavement life in comparison, for instance, with more durable reactive cold plastic systems. Nonetheless, on roads with lower traffic load, paint-type systems can provide a competitive environmental and cost performance ratio. Hence, road marking system technologies must be selected appropriately for a specific application, which again makes them incomparable with paints and varnishes.

Road markings have been excluded from the scope of the ecolabel for paints and varnishes. In the subsequent development of Green Public Procurement (GPP) criteria for paints and varnishes, a decision was made to include them. However, in the process of GPP criteria development, after extensive research and stakeholder consultation, it has been acknowledged that this specific group of construction products requires a specific set of GPP criteria due to characteristics and performance requirements dissimilar from paints and varnishes.

It should be noted that Environmental Product Declarations (EPDs) according to EN 15804 provide a basis for the direct assessment of actual overall environmental impacts of construction products including contributions from up-stream, namely from raw materials. For example the Dutch Bepalingsmethode [Assessment method \(milieudatabase.nl\)](http://milieudatabase.nl) harmonized with EN 15804 uses a weighted Environmental Cost Indicator (ECI or in Dutch MKI), which combines all impacts into one monetary value. The ECI is used to consider environmental performance in Dutch public construction tenders including road marking tenders.

This method is suitable to analyse environmental performance of complex, heavy-duty construction products, such as road markings as it considers all system components and emissions beyond the formulators gate.