

# ROAD MARKINGS AND MICROPLASTICS

## THE ERF POSITION ON THE SITUATION



### INTRODUCTION

The European Union is preparing a draft legislation aiming to minimise emissions of secondary microplastics.

Road markings are essential road safety devices that are subject to abrasion by traffic to a certain extent and can thus be considered as a source of secondary microplastics. Unfortunately, up to now the literature on the topic has been dominated by numerous misconceptions and false assumptions due to the lack of industry experts involved and the absence of data from practice.

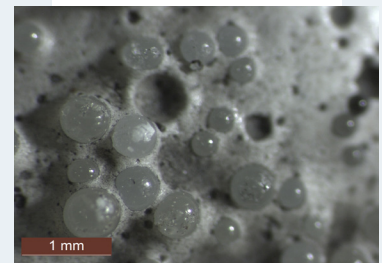
This position paper provides the view of road marking professionals and highlights potential measures to minimise the impact of microplastics originating from road markings, using empirical evidence and practical experiences from various European countries.

### POSITION IN BRIEF

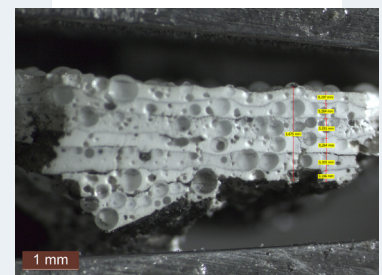
Road markings are systems comprising a coating layer and a glass beads layer. The presence of the glass beads layer is critical because it simultaneously protects the underlying coating layer and delivers retroreflectivity.

Whereas the coating layer contains durable synthetic polymers that might release microplastics into the environment, one must note that the **previously estimated emission quantities were based on fundamentally wrong assumptions:**

- The quantities of road marking materials were in some cases incorrect or massively overestimated.
- The polymer-bearing coating layer is fully protected by the glass beads layer, on which the vehicle tyres roll; hence, abrasion is very limited during the functional lifetime.
- Upon loss of retroreflectivity, road markings are being renewed with fresh layers of the coating and the glass beads; consequently, stacking of layers occurs.
- When renewals are no longer possible, the layers of road markings are mechanically removed without generating dust, collected, and disposed of appropriately.
- Thick-layer road markings usually also contain glass beads mixed in the mass of the product, as well as used as drop-on materials. These glass beads will not contribute to microplastics.



Picture showing road markings that lost some of the drop-on glass beads.



Picture showing several layers of road markings applied during renewals.

### SUPPORTING DATA

Please scroll to find recent scientific research supporting our position and confirming that the contribution of road markings to microplastic pollution is insignificant in comparison with other sources.

### CONCLUSIONS

To further minimise the contribution of road marking materials to microplastic pollution, it is recommended to select durable high-quality road markings and implement proactive maintenance programs where the road marking systems (coating and glass beads) are renewed as soon as the performance falls below intervention levels based on retroreflectivity. Road markings are critical elements of roadway infrastructure, providing enormous safety benefits to both human drivers and advanced driver-assistance systems (ADAS), so they should be maintained at the highest possible level for the benefits of the entire society.