

Rubberised Asphalt Mixtures (RAM) are widely recognised as an optimal solution to enhance road pavement performance and its durability but also to tackle the environmental impact by reusing end of life tyres (ELTs).

Nevertheless, road authorities preserve environmental concerns regarding the potential release of microplastics (MPs) due to the abrasion and degradation of RAM. Although the environmental impact of MPs has not yet been entirely understood, MPs are known to cause pollution by entering natural ecosystems.



## What is RUBBERFREE??

**RUBBERFREE** is a cooperation project between the University of Palermo (UNIPA), University of Milan (UNIMI), Waste & Chemicals, and Ecopneus scpa, Italian non-profit company for the tracking, collection, processing, and final destination of end-of-life tyres.

The project aims to assess whenever or not Rubberised Asphalt Mixtures release microplastics in the surrounding environment and its toxicity.

**RUBBER  
FREE**



## CONTACT US

**Davide Lo Presti**

davide.lopresti@unipa.it

**Serena Sgarioto**

s.sgarioto@ecopneus.it

**Stefano Magni**

stefano.magni@unimi.it

**Valentina Persici**

valentina.persici@wasteandchemicals.com

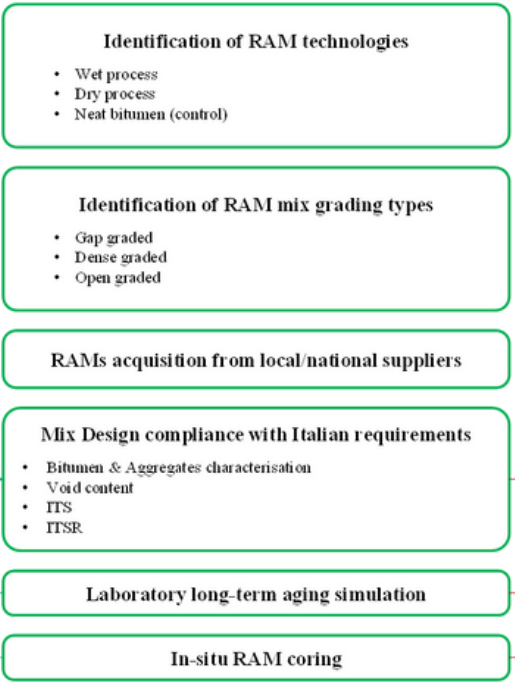
**Gaspare Giancontieri**

gaspare.giancontieri@unipa.it

[www.rubberfree.unipa.it](http://www.rubberfree.unipa.it)

Investigating the  
potential release  
and toxicity of  
microplastics  
from Rubberised  
Asphalt Mixtures

S  
T  
A  
G  
E  
1



# IS IT POSSIBLE TO ASSESS IF RUBBERISED ASPHALT MIXES REALESE MICROPLASTICS?

To achieve that, first a multidisciplinary experimental programme involving the engineering characterisation of RAM produced in-plant will be performed, then the analysis of microplastics released from different RAMs will be carried out. RubberFree will provide the results of tests conducted both on lab-produced and in-situ cored specimens for different asphalt rubber and mix grading technologies from a microplastics perspective.

# RUBBERFREE IS DEVELOPED BY



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO

WITH THE COLLABORATION OF



# THE NOVELTIES OFFERED BY THIS STUDY ARE:

- Adapting the Wet Track Abrasion to produce realistic samples
- Developing a procedure to isolate microplastics from the bitumen and aggregates released through abrasion
- Validating the developed procedure by fluorescence microscopy.
- Evaluating the ecotoxicological effects of TRWPs from conventional and rubberized asphalts on a freshwater biological model

S  
T  
A  
G  
E  
2

