

# 1.A.3.b vii - Road Transport: Automobile Road Abrasion

## Short description

In sub-category *1.A.3.b vii - Road Transport: Automobile Road Abrasion* emissions from road abrasion in Road Transport are reported. Therefore, this sub-category is an important source for a) particle emissions and b) emissions of heavy metals, POPs etc. included in these particles.

Method	AD	EF	Key Category
T1, T3	NS, M	CS	<b>L&amp;T:</b> TSP, PM <sub>2.5</sub> , PM <sub>10</sub>

## Methodology

### Activity data

Abrasive emissions from tyre and brake wear are estimated based on vehicle-type specific mileage data.

For detailed mileage data, please see [superordinate chapter](#) on abrasive emissions from road vehicles.

### Emission factors

The tier1 emission factors used here have been derived from the 2019 version of the EMEP/EEA air pollutant emission inventory guidebook.

[gallery size="medium"](#) : AD\_Mileage.png : AD\_Mileage\_el.png [gallery](#)

+++ Emission factors

The tier1 emission factors used here have been derived within a literature study in 2006. During this study, average amounts of particulate wear per km ( = EF<sub>PM</sub> ) were derived from which annual amounts of PM emissions can be estimated as follows:

$$EM(PM)_{\text{annual, type of vehicle}} = EF(PM)_{\text{specific, per km}} \cdot \text{Mileage}_{\text{annual, type of vehicle}}$$

Table 1: Average abrasion rates [mg TSP / vehicle km] for different types of road vehicles

= Vehicle type	= Ø Abrasion rate
Passenger Cars	> 15
Motorcycles	> 6
Mopeds	> 6



## Discussion of emission trends

**NFR 1.A.3.b vii - Emissions from road abrasion** is key category for emissions of **PM<sub>2.5</sub>**, **PM<sub>10</sub>**, and **TSP** regarding these emissions' level.

++ Particulate Matter - PM<sub>2.5</sub>, PM<sub>10</sub>, & TSP (*from wear/abrasion only; no fuel combustion included*)

Emissions from road abrasion are directly linked to driven mileage. Thus, the overall trend of emissions from road abrasion is similar to the trend for total driven mileage.

[gallery size="medium" : 1A3bvii\\_EM\\_PM2.5.PNG gallery](#)

## Recalculations

**Activity data** (mileage) have been revised due to the regular revision of the TREMOD model. (see [superordinate chapter](#)).

However, the biggest changes occur in the tier1 **emission factors** that have been revised fundamentally in order to be in line with the tier1 default values provided in the EMEP/EEA Guidebook 2019. Unfortunately, the variety of old and revised emission factors cannot be compared here in a comprehensible way.



For more information on recalculated emission estimates for Base Year and 2018, please see the pollutant-specific recalculation tables following [chapter 8.1 - Recalculations](#).

## Planned improvements

Besides a routine revision of the underlying model, no specific improvements are planned.

## FAQs

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[bibliography](#) : 1 : EMEP/EEA, 2019: EMEP/EEA air pollutant emission inventory guidebook 2019; <https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>; Copenhagen, 2019. [bibliography](#)