2.D.3.c - Asphalt Roofing

Short description

Category Code	Method					AD					EF				
2.D.3.c	T1					AS					CS				
Key Category	**SO_2**	**NO_x**	**NH_3**	**NMVOC**	**CO**	**BC**	**Pb**	**Hg**	**Cd**	**Diox**	**PAH**	**HCB**	**TSP**	**PM_{10}**	**$PM_{2.5}$**
2.D.3.c	-	-	-	-/-	-	-	-	-	-	-	-	-	-	-	-

T = key source by Trend **L** = key source by Level

Methods	
D	Default
T1	Tier 1 / Simple Methodology *
T2	Tier 2*
T3	Tier 3 / Detailed Methodology *
C	CORINAIR
CS	Country Specific
M	Model

* as described in the EMEP/EEA Emission Inventory Guidebook - 2019, in the group specific chapters.

AD - Data Source for Activity Data	
NS	National Statistics
RS	Regional Statistics
IS	International Statistics
PS	Plant Specific data
As	Associations, business organisations
Q	specific Questionnaires (or surveys)
M	Model / Modelled
C	Confidential

EF - Emission Factors	
D	Default (EMEP Guidebook)
C	Confidential
CS	Country Specific
PS	Plant Specific data
M	Model / Modelled

Bitumen is used in production and laying of roof and sealing sheeting. Roof and sealing sheeting is laid by means of both hot and cold processes.

The hot process, involving welding of sheeting, produces significant emissions of organic substances.

The relevant emissions trends depend primarily on trends in quantities of polymer bitumen sheeting produced. Use of solvent-containing primers is not considered here; it is covered via the solvents model – cf. 2.D.3.a Domestic Solvent Use.

Because of importance from other sources as solvents use, NMVOC emissions are considered and taken into account in this part of the emissions inventory.

Method

Activity data

The quantity of roof and sealing sheeting produced (activity rate) has been provided by the Verband der Dachbahnenindustrie, the roof-sheeting manufacturers association (VDD, actual table exchanged with UBA) ever since a relevant cooperation agreement was concluded.

Emission factors

In the process, a distinction is made between emissions from production and emissions from laying of roof and sealing sheeting. The emission factor for production of roof and sealing sheeting was obtained via a calculation in accordance with current technological standards of German manufacturers (VDD, see activitiy data). The emission factor for laying of polymer bitumen sheeting has been taken from an ecological balance sheet [1)]. The implied emission factor for the source category has been increasing slightly, as a result of the increasing importance of polymer bitumen sheeting. NMVOC emissions are calculated in keeping with a Tier 1 method, since no pertinent detailed data are available.

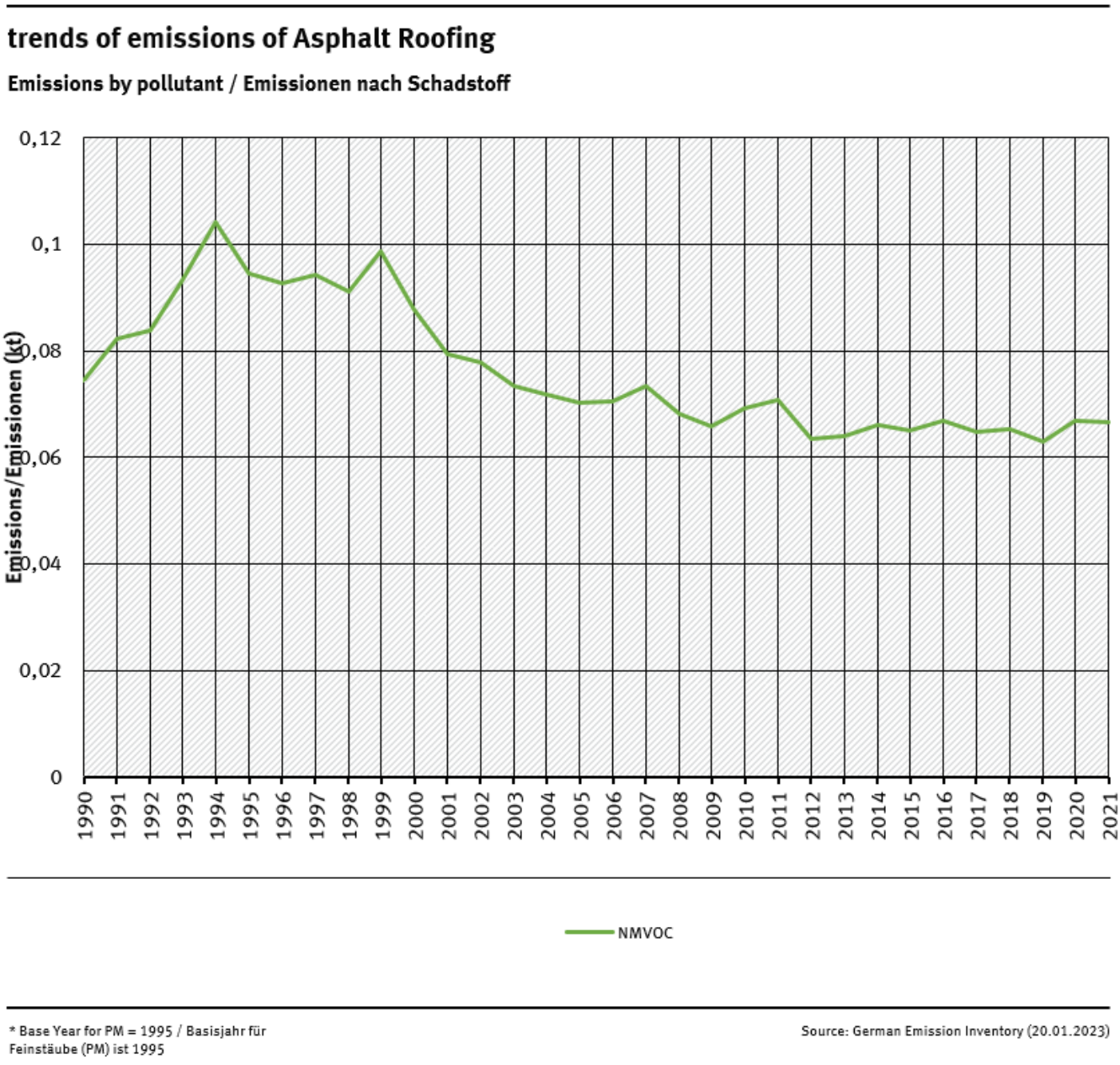
Table 1: Overview of applied emission factors, in kg/m²

pollutant	source of emissions	EF value	EF trend
NMVOC	Production of roofing materials	0.00035795	constant
NMVOC	roofing of sheeting and shingle	0.000027 to 0.000040	rising

Emissions from the use of solvents are reported under specific categories of solvents use model, therefore the emission factors used are on a low level. The trend of emission is not influenced importantly by the changing use of material types.

Trends in emissions

The trend of NMVOC emissions corresponds to trend of production amount. No rising trends are to identify.



Emission trends of road paving

Recalculations

With activity data and emission factors remaining unrevised, no recalculations have been carried out compared to last year's submission.

For pollutant-specific information on recalculated emission estimates for Base Year and 2019, please see the pollutant specific recalculation tables following chapter 8.1 - Recalculations.

Planned improvements

At the moment, no category-specific improvements are planned.

[1)] Kreißig, J. (1996): Ganzheitliche Bilanzierung von Dachbahnen aus Bitumen : Kurzbericht. Frankfurt am Main.