

DIRECTIVE 2002/49/EC

OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
relating to the assessment and management of environmental noise

END



Overview

- Aim and objectives of the END
- Noise indicators and assessment methods
- Strategic noise mapping
- Action plans
- Data to be send to the EC
- Information to the public
- Timetable



Aim of the END ...

... is to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise.

Relevant sources of environmental noise



Objectives of the END

➤ Strategic noise mapping

- determination of exposure to environmental noise, through noise mapping, by methods of assessment common to the Member States (MS);

➤ Action plans

- adoption of action plans by the MS, based upon noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

➤ Information and participation of the Public

- ensure that information on environmental noise and its effects is available to the public;
- ensuring that the public is consulted about proposals for action plans

➤ Data to be send to the Commission



Annexes

- ANNEX I - **NOISE INDICATORS**
(referred to in Article 5)
- ANNEX II - **ASSESSMENT METHODS FOR THE NOISE INDICATORS**
(referred to in Article 6)
- ANNEX III - **ASSESSMENT METHODS FOR HARMFUL EFFECTS**
(referred to in Article 6 (3))
- ANNEX IV - **MINIMUM REQUIREMENTS FOR STRATEGIC NOISE MAPPING**
(referred to in Article 7)
- ANNEX V - **MINIMUM REQUIREMENTS FOR ACTION PLANS**
(referred to in Article 8)
- ANNEX VI - **DATA TO BE SENT TO THE COMMISSION**
(referred to in Article 10)



Scope

1. This Directive **shall** apply to environmental noise to which humans are exposed in particular in
 - **built-up areas,**
 - **in public parks or other quiet areas in an agglomeration,**
 - **in quiet areas in open country,**
 - **near schools, hospitals and other**
 - **noisesensitive buildings and areas.**
2. This Directive shall **not** apply to
 - **noise that is caused by the exposed person himself,**
 - **noise from domestic activities,**
 - **noise created by neighbours,**
 - **noise at work places or**
 - **noise inside means of transport or**
 - **due to military activities in military areas.**



Noise indicators

$$L_{DEN} = \frac{10}{24} \cdot \log \left(12 \cdot 10^{\left(\frac{L_{day}}{10}\right)} + 4 \cdot 10^{\left(\frac{L_{evening} + 5}{10}\right)} + 8 \cdot 10^{\left(\frac{L_{night} + 10}{10}\right)} \right)$$

annoyance

- L_{day} is the A-weighted long-term average sound level (**12 hours**),
- $L_{evening}$ is the A-weighted long-term average sound level (**4 hours**),
- L_{night} is the A-weighted long-term average sound level (**8 hours**);

The Member States may **shorten the evening period by one or two hours** and **lengthen the day and/or the night period** accordingly, provided that this choice is the same for all the sources and that they provide the Commission with information on any systematic difference from the default option.

L_{night}

sleep disturbance



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Assessment methods ...

The European Commission has published
**COMMISSION
RECOMMENDATION
of 6 August 2003**
concerning the
**Guidelines on the revised
interim computation methods
for industrial noise, aircraft
noise, road traffic noise and
railway noise**



Railway Noise
Netherlands national computation
method **RMR**



Road Traffic Noise
French national computation
method **NMPB-Routes-96**



Aircraft Noise
ECAC.CEAC Doc. 29



Industrial Noise
ISO 9613-2
(+ ISO 8297: 1994 + EN ISO 3744: 1995 +
EN ISO 3746: 1995)



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Strategic noise mapping



Article 7 Strategic noise mapping

ANNEX IV MINIMUM REQUIREMENTS FOR STRATEGIC NOISE MAPPING

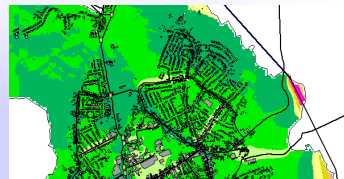
referred to in Article 7

ANNEX VI DATA TO BE SENT TO THE COMMISSION

Strategic noise mapping - Presentation of data

Strategic noise mapping: **presentation of data** on one of the following **aspects**

- **existing, previous** or **predicted noise** situation in terms of a noise indicator,
- the **exceeding of a limit value**,
- the estimated **number of dwellings, schools and hospitals** in a certain area that are exposed to specific values of a noise indicator,
- the estimated **number of people** located in an area exposed to noise.



Area	Noise source	Band of Noise-level [dB]		Number of affected people							
				most exposed façade		special sound-insulation (optional)		quiet façade (optional)			
				Limit	Upper	Limit	Upper	Limit	Upper	Limit	Upper
Agglomeration A	Road traffic (major roads)	55-59	50-54	50 000 (5 000)	60 000 (6 000)	5 000 (2 000)	5 000 (2 000)	20 000 (2 000)	20 000 (2 000)	20 000 (2 000)	20 000 (2 000)
		60-64	55-59	20 000 (5 000)	25 000 (5 000)	4 000 (2 000)	4 000 (2 000)	7 000 (2 000)	7 000 (2 000)	7 000 (2 000)	7 000 (2 000)
		65-69	60-64	3 000 (2 000)	4 000 (2 500)	800 (800)	800 (800)	500 (200)	500 (200)	300 (200)	300 (200)
		70-74	65-69	1 000 (1 000)	1 500 (1 500)	500 (500)	500 (500)	100 (100)	100 (100)	100 (100)	100 (100)
		>75	>70	0	0	0	0	0	0	0	0
Railway traffic (major railways)	55-59	50-54	...	...	...	...	...	...	...	...
	
Air traffic (major airports)	55-59	50-54	...	...	...	...	...	...	...	...
	



Strategic noise mapping - Purposes

For **agglomerations** **separate** strategic noise maps must be made for road-traffic noise, rail-traffic noise, aircraft noise and industrial noise.

Maps for **other sources** may be added.

Strategic noise mapping will be used for the following **purposes**:

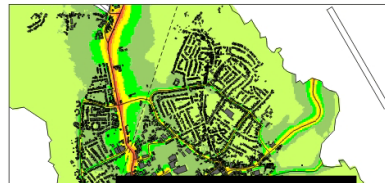
- the provision of the **data to be sent to the Commission** in accordance with Article 10(2) and Annex VI,
- a source of **information for citizens** in accordance with Article 9,
- a **basis for action plans** in accordance with Article 8.



Strategic noise mapping - Presentation to the public

Strategic noise maps may be presented to the public as:

- graphical **plots**,
- numerical data in **tables**,
- numerical data in **electronic form**.



Area	Noise source	Band of Noise-level [dB]		Number of affected people									
				most exposed façade				special sound-insulation (optional)				quiet façade (optional)	
				L _{den}	L _{night}	L _{den}	L _{night}	L _{den}	L _{night}	L _{den}	L _{night}	L _{den}	L _{night}
Agglomeration A	Road traffic (major roads)	55-59	50-54	50 000 (5 000)	60 000 (6 000)	5 000 (2 000)	5 000 (2 000)	20 000 (2 000)	20 000 (2 000)	20 000 (2 000)	20 000 (2 000)		
		60-64	55-59	20 000 (5 000)	25 000 (6 000)	4 000 (2 000)	4 000 (2 000)	7 000 (2 000)	7 000 (2 000)	7 000 (2 000)	7 000 (2 000)		
		65-69	60-64	3 000 (2 000)	4 000 (2 500)	300 (800)	300 (800)	300 (200)	300 (200)	300 (100)	300 (100)		
		70-74	65-69	1 000 (1 000)	1 500 (1 500)	500 (500)	500 (500)	100 (100)	100 (100)	100 (100)	100 (100)		
		>75	>70	0	0	0	0	0	0	0	0		
	Railway traffic (major railways)	55-59	50-54	...	...	...	...	...	...	...	...
	Air traffic (major airports)	55-59	50-54	...	...	...	...	...	...	...	...



Strategic noise mapping - Further aspects

Strategic noise maps for local or national application must be made for an
> **assessment height of 4 m** and the
> **5 dB ranges of Lden and Lnight**
as defined in Annex VI.

Noise maps shall be reviewed and revised if necessary, when a major development occurs affecting the existing noise situation, and at least **every five years** after the date of their approval.

The Commission may develop guidelines providing further
> **guidance on noise maps, noise mapping and mapping softwares**
(according to Article 13(2))



Action plans



Article 8 **Action plans**

ANNEX V
**MINIMUM
REQUIREMENTS FOR
ACTION PLANS**
referred to in Article 8



Action plans - Content of action plans

- **description of area** taken into account, **authority responsible**, **legal context**
- **limit values** in place (acc. to Article 5) + summary of **noise mapping results**
- evaluation of **estimated number of people exposed to noise**
- **identification of problems** and **situations that need to be improved**
- **noise-reduction measures** already **in force** and any projects **in preparation**,
- **actions** which the competent authorities intend **to take in the next five years**,
- measures to **preserve quiet areas** and **long-term strategy**,
- **financial information**:
budgets, cost-effectiveness and cost-benefit assessment.
- **record of public consultations** organised (acc. to Article 8(7))



Action plans - Further aspects

Action plans shall be reviewed and revised if necessary, when a major development occurs affecting the existing noise situation, and at least **every five years** after the date of their approval.

Each action plan should contain estimates in terms of the **reduction of the number of people affected** (annoyed, sleep disturbed, or other).

The Commission may develop guidelines providing further **guidance on the action plans** in accordance with Article 13(2).



Hungarian Guidelines on Strategic Noise Mapping and Action Planning according to Directive 2002/49/EC



Data to be send to the EC



Article 10

Collection and publication of data by Member States and the Commission

ANNEX VI

DATA TO BE SENT TO THE COMMISSION

referred to in Article 10



Data to be send to the EC - Common data

- **Description of the agglomeration:**
location, size, number of inhabitants.
- **Description of the roads, railways or airports:**
location, size, data on the traffic.
- **Characterisation of their surroundings:**
agglomerations, villages, countryside or otherwise, information on land-use, other major noise sources.
- The **responsible authority**.
- **Noise-control programmes** that have been **carried out in the past** and **noise measures in place**.
- The **computation or measurement methods** that have been used.
- **Summary of the action plan** (not exceeding ten pages in length)



Data to be send to the EC - Specific data (1)

For **agglomerations** the following data has to be prepared:

- estimated **number of inhabitants** in dwellings with a **most exposed façade**
- **60, 65, 70 and 75 dB contours** in noise maps

For **major roads, major railways and major airports** have to be prepared:

- estimated **number of inhabitants** in dwellings with a **most exposed façade**
- **55 and 65 dB contours** in noise maps
- total area (in km²) exposed to values of **Lden** higher than **55, 65 and 75 dB**

Preparation of the following data is **optional** for **both**:

- **numbers of inhabitants** in dwellings with a **quiet façade**
- **numbers of inhabitants** in dwellings that have **special sound-insulation**



Data to be send to the EC - Specific data (2)

Numbers of inhabitants living in dwellings with a most exposed façade

The **numbers of people** (in hundreds) living in dwellings that are exposed to each of the following **bands of noise-values** in dB **4 m above the ground** on the **most exposed façade separately for noise from road, rail and air traffic, and from industrial sources** have to be estimated:

- **Lden**: 55-59, 60-64, 65-69, 70-74, > 75,
- **Lnight**: 50-54, 55-59, 60-64, 65-69, > 70
(These data may also be assessed for value band 45-49.)

An indication should also be given on **how major roads, major railways and major airports contribute to the above.**



Data to be send to the EC - Specific data (3)

Area	Noise source	Band of Noise-level [dB]		Number of affected people					
				most exposed façade		special sound-insulation (optional)		quiet façade (optional)	
		L _{den}	L _{night}	L _{den}	L _{night}	L _{den}	L _{night}	L _{den}	L _{night}
Agglomeration A	Road traffic (major roads)	55-59	50-54	50 000 (5 000)	60 000 (6 000)	5 000 (2 000)	5 000 (2 000)	20 000 (2 000)	20 000 (2 000)
		60-64	55-59	20 000 (5 000)	25 000 (6 000)	4 000 (2 000)	4 000 (2 000)	7 000 (2 000)	7 000 (2 000)
		65-69	60-64	3 000 (2 000)	4 000 (2 500)	900 (800)	900 (800)	300 (200)	300 (200)
		70-74	65-69	1 000 (1 000)	1 500 (1 500)	500 (500)	500 (500)	100 (100)	100 (100)
		>75	>70	0	0	0	0	0	0
	Railway traffic (major railways)	55-59 ...	50-54...	...	...	...	...	...	...
	Air traffic (major airports)	55-59 ...	50-54...	...	...	...	...	...	...

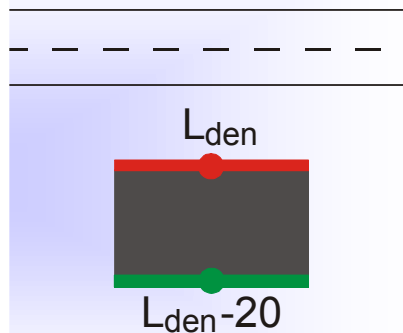


Data to be send to the EC - Specific data (4)

Numbers of inhabitants living in dwellings with a quiet façade and special insulation against noise

‘Quiet façade’ means the façade of a dwelling at which the value of the noise indicator **four metres above the ground and two metres in front of the façade**, for the noise emitted from a specific source, is **more than 20 dB lower than at the façade having the highest noise level.**

 **Optional!**



Information and participation



Article 9
Information to the public

Article 8
Action plans
 7. [participation]

 **Margit Bonacker**



Timetable

Area / source to be investigated	Strategic noise maps	Action plans
Agglomerations		
>250,000 inhabitants	30 June 2007	18 July 2008
>100,000 inhabitants	30 June 2012	18 July 2013
Major roads		
>6,000,000 vehicle passages per year	30 June 2007	18 July 2008
>3,000,000 vehicle passages per year	30 June 2012	18 July 2013
Major railways		
>60,000 train passages per year	30 June 2007	18 July 2008
>30,000 train passages per year	30 June 2012	18 July 2013
Major airports		
>50,000 movements per year	30 June 2007	18 July 2008

