

NOISE

COMMISSION REGULATION (EU) NO 1304/2014
ENTRY INTO FORCE: 26/11/2014

ESSENTIAL REQUIREMENTS

- Safety
- Reliability and availability
- Health
- Environmental protection
- Technical compatibility
- Accessibility

WHAT DOES IT CONTAIN?

- Introduction with the technical, risk, and geographical scopes
- Definitions of the subsystem and of the scope
- Essential requirements
- Characteristics of the subsystem, particularly the functional and technical specifications of the subsystem and of the interfaces
- Interoperability constituents
- Conformity assessment and EC verification
- Implementation

OPERATING RULES

Specific rules for:

- Operation of wagons on quieter routes in case of degraded operation
- Operation of wagons on quieter routes in case of infrastructure works and wagons maintenance

PARTICULAR CASES DEPENDING ON THE COUNTRY

They are divided in 'Permanent' and 'Temporary' cases.

Belgium, Czechia, Estonia, Finland, France, Italy, Latvia, Lithuania, Poland, Slovakia, Sweden, UK, Channel Tunnel

TECHNICAL SCOPE

Scope related to:

- **Rolling stock:** This TSI applies to all rolling stock within the scope of Regulation (EU) No 1302/2014 (LOC&PAS TSI) and Regulation (EU) No 321/2013 (WAG TSI);
- **Operational aspects:** Alongside with Commission Decision 2012/757/EU (OPE TSI), this TSI applies to the operation of freight wagons which are used on railway infrastructure designated as 'quieter routes'

GEOGRAPHICAL SCOPE

It applies to high-speed lines, conventional lines (both passenger and freight) and all vehicles likely to travel all or part of the Union's network (locomotives and passenger rolling stock, freight wagons and special vehicles, such as on-track machines).

It does not apply to metros, trams and light rail vehicles, privately owned railway infrastructure, infrastructure and vehicles reserved for a strictly local, historical or touristic use.

WHAT IS A QUIETER ROUTE?

A quieter route means a part of the railway infrastructure with a minimum length of 20 km on which the average number of daily operated freight trains during the night-time as defined in national legislation transposing Directive 2002/49/EC of the European Parliament and of the Council was higher than 12. The list of Quieter Routes can be checked [here](#).

HOW QUIETER ROUTES HAVE TO BE UPDATED?

Member States shall update the list of quieter routes at least every five years after 8 December 2024, shall refer to the last three years preceding the update for which the data is available.

HOW QUIETER ROUTES HAVE TO BE REPORTED?

The Member States which did not supply the quieter routes information in accordance with the Amended TSI Noise should supply them before 1st January 2021 directly in RINF.

FUNCTIONAL AND TECHNICAL SPECIFICATIONS OF THE SUBSYSTEM

There are different sound pressure levels (measured in dB) depending on the following cases:

- Limits for stationary noise
- Limit values for starting noise
- Limits for pass-by noise
- Limits for the driver's cab interior noise

Note: furthermore there are different thresholds depending on category of rolling stock subsystem and noise within the driver's cab.

What is a TSI? Is a document that defines the technical and operational standards which must be met by each subsystem or part of subsystem in order to meet the essential requirements and ensure the interoperability of the railway system of the European Union.

For each of those subsystems, the essential requirements need to be specified and the technical specifications determined, particularly in respect of constituents and interfaces, in order to meet those essential requirements. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0797&from=EN>

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CONFORMITY ASSESSMENT AND EC VERIFICATION

Subsystem rolling stock regarding noise emitted by rolling stock

- Modules: The EC verification shall be performed in accordance with the module(s) described in the table

SB	EC-Type Examination
SD	EC verification based on quality management system of the production process
SF	EC verification based on product verification
SH1	EC verification based on full quality management system plus design examination

- EC verification procedures
 - Stationary noise

Category of rolling stock subsystem	L _{pAeq,Tp,unit} [dB]	L _{pAeq,T} [dB]	L _{pAF,max} [dB]
Electric locomotives and OTMs with electric traction	70	75	85
Diesel locomotives and OTMs with diesel traction	71	78	
EMUs	65	68	n.a.
DMUs	72	76	
Coaches	64	68	
Wagons	65	n.a.	

Note:

- L_{pAeq,T}[unit] [dB]: the A-weighted equivalent continuous sound pressure level of the unit.
- L_{pAeq,T} [dB]: the A-weighted equivalent continuous sound pressure level at the nearest measuring position i considering the main air compressor.
- L_{pAF,max} [dB]: the AF-weighted sound pressure level at the nearest measuring position i considering impulsive noise of the exhaust valve of the air dryer

- Starting noise

Category of rolling stock subsystem	L _{pAF,max} [dB]
Electric locomotives with local tractive power P < 4500 kW	81
Electric locomotives with local tractive power P ≥ 4500 kW OTMs with electrical traction	84
Diesel locomotives P < 2000 kW at the engine output shaft	85
Diesel locomotives P ≥ 2000 kW at the engine output shaft OTMs with diesel traction	87
EMUs with a maximum speed v _{max} < 250 km/h	80
EMUs with a maximum speed v _{max} ≥ 250 km/h	83
DMUs P < 560 kW/engine at the engine output shaft	82
DMUs P ≥ 560 kW/engine at the engine output shaft	83

Note:

- L_{pAF,max} [dB]: the limit values for the AF-weighted maximum sound pressure level.

- Driver's cab interior noise

Noise within the driver's cab	L _{pAeq,T} [dB]
At standstill with horns sounding	95
At maximum speed v _{max} if v _{max} < 250 km/h	78
At maximum speed v _{max} if 250 km/h ≤ v _{max} < 350 km/h	80

Note:

- L_{pAeq,T}[dB]: the limit values for the A-weighted equivalent continuous sound pressure level.

- Pass-by noise
 - Test track conditions
 - Procedure
 - EMU, DMUs, locomotives and coaches
 - Wagons
 - OTMs

Category of rolling stock subsystem	L _{pAeq,Tp} (80 km/h) [dB]	L _{pAeq,Tp} (250 km/h) [dB]
Electric locomotives and OTMs with electric traction	84	99
Diesel locomotives and OTMs with diesel traction	85	n.a.
EMUs	80	95
DMUs	81	96
Coaches	79	n.a.
Wagons (normalised to APL ¹ =0,225)	83	n.a.

Note:

- L_{pAeq,Tp}(80 km/h)[dB]: limit value for the A-weighted equivalent continuous sound pressure level at a speed of 80 km/h.
- L_{pAeq,Tp}(250 km/h)[dB]: limit value for the A-weighted equivalent continuous sound pressure level at a speed of 250 km/h.
- Simplified evaluation: Consists of acoustically comparing the unit under assessment to an existing type with documented noise characteristics.

IMPLEMENTATION

New subsystems

The declaration of verification and/or conformity to type of a new vehicle established in accordance with Decision 2011/229/EU2 shall be considered valid:

- For locomotives, EMUs, DMUs and coaches until the type or design certificate needs to be renewed as stated in Decision 2011/291/EU for cases where the latter decision was applied, or until 31 May 2017 for other cases,
- For wagons until 13 April 2016.

The declaration of verification and/or conformity to type of a new vehicle established in accordance with Decision 2008/232/EC4 shall be considered valid until the type or design certificate needs to be renewed as stated in this Decision.

Existing subsystems

For existing subsystems the following points have to be checked:

- Provisions in case of changes to existing rolling stock or rolling stock type
- Additional provisions for the application of this TSI to existing wagons
 - From 8 December 2024, wagons within the scope of Regulation (EU) No 321/2013 which are not covered by 'Wagons operated in quieter routes' shall not be operated on the quieter routes.
 - Quieter brake blocks
 - Brake block listed in Appendix G of Regulation (EU) No 321/2013.
 - Brake block assessed in accordance with the procedure in accordance with Article 4(6) of Directive (EU) 2016/797.
 - Wagons operated on quieter routes

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