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Railway applications - Wheelsets and bogies - Monobloc Wheels - Technical approval procedure - Part 1: Forged and rolled wheels

Táto norma obsahuje anglickú verziu európskej normy.  
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## Railway applications - Wheelsets and bogies - Monobloc Wheels - Technical approval procedure - Part 1: Forged and rolled wheels

Applications ferroviaires - Essieux montés et bogies -  
Roues monobloc - Procédure d'évaluation de la  
conception - Partie 1 : Roues forgées et laminées

Bahnanwendungen - Radsätze und Drehgestelle -  
Vollräder - Technische Zulassungsverfahren - Teil 1:  
Geschmiedete und gewalzte Räder

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## European foreword

This document (EN 13979-1:2023) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13979-1:2020.

In comparison with the previous edition, the following technical modifications have been made:

- A new link to the pre-designing state of the art methods defined by UIC (thermo-mechanical calculation);
- Some recommendations for the rim geometrical design in order to ensure sufficient material to withstand thermal loading;
- A clearer definition of the wheel homologation scope and a new definition of the process to homologate a wheel design derived from a previously homologated one (Clause 3);
- Correction of the recommended reference combined roughness spectrum representative of the different types of braking system for the acoustical assessment (Table I.1).

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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**EN 13979-1:2023 (E)****Introduction**

An assessment of the two following aspects is carried out before a wheel is commissioned:

- assessment of the design as described in this standard;
- assessment of the quality of the product (EN 13262:2020).

## 1 Scope

This document specifies a design assessment procedure for a forged and rolled monobloc wheel (RST). This assessment is carried out before the wheel is commissioned. This document specifies, in particular, the assessment to be performed in order to use wheels on a European network which, in addition, have quality requirements in conformity with those specified in EN 13262:2020.

This assessment requires that the conditions of use for the wheel are defined and this document provides a method for defining those conditions.

The assessment of the design covers four aspects:

- a geometrical aspect: to allow interchangeability of different solutions for the same application;
- a thermomechanical aspect: to manage wheel deformations and to ensure that braking will not cause wheels to fracture;
- a mechanical aspect: to ensure that no fatigue cracks occur in the wheel web and that no permanent deformation occurs under exceptional loading;
- an acoustic aspect: to ensure that the solution chosen is as good as the reference wheel.

This document does not cover assessment of the hub or the rim.

This document has been drawn up for wheels of non-powered tread-braked wheelsets and applies in full to this type of wheel. For wheels on which mounted brake discs are mounted or toothed transmission wheels or even wheels with noise reduction devices, the requirements may be amended or supplemented.

For urban railway vehicles, other standards or documents may be used.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13103-1:2017+A1:2022, *Applications ferroviaires - Essieux montés et bogies - Partie 1: Méthode de conception des essieux-axes avec fusées extérieures*

EN 13262:2020, *Applications ferroviaires - Essieux montés et bogies - Roues - Prescriptions pour le produit*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**