

STN	Železnice Vykurovacie, ventilačné a klimatizačné systémy koľajových vozidiel Časť 4: Konštrukčné parametre, skúšobné a kontrolné položky jednotiek HVAC (ISO 19659-4: 2026)	STN EN ISO 19659-4 28 7201
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Railway applications - Heating, ventilation and air conditioning systems for rolling stock - Part 4: Design parameters, and test and inspection items for the HVAC unit (ISO 19659-4:2026)

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/26

Obsahuje: EN ISO 19659-4:2026, ISO 19659-4:2026

142752

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2026
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19659-4

April 2026

ICS 45.060.01

English Version

**Railway applications - Heating, ventilation and air
conditioning systems for rolling stock - Part 4: Design
parameters, and test and inspection items for the HVAC
unit (ISO 19659-4:2026)**

Applications ferroviaires - Systèmes de chauffage,
ventilation et climatisation pour le matériel roulant -
Partie 4: Paramètres de conception et éléments d'essai
et d'inspection pour l'unité HVAC (ISO 19659-4:2026)

Bahnanwendungen - Heizung, Lüftung und
Klimatisierung von Schienenfahrzeugen - Teil 4:
Grundlegende Auslegungsparameter, Messungen und
Prüfungen für die HLK-Einheit (ISO 19659-4:2026)

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EN ISO 19659-4:2026 (E)

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European foreword

This document (EN ISO 19659-4:2026) has been prepared by Technical Committee ISO/TC 269 "Railway applications" in collaboration with Technical Committee CEN/TC 256 "Railway applications" the secretariat of which is held by DIN.

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International Standard

ISO 19659-4

Railway applications — Heating, ventilation and air conditioning systems for rolling stock —

Part 4: Design parameters, and test and inspection items for the HVAC unit

*Applications ferroviaires — Systèmes de chauffage, ventilation et
climatisation pour le matériel roulant —*

*Partie 4: Paramètres de conception et éléments d'essai et
d'inspection pour l'unité HVAC*

**First edition
2026-04**

ISO 19659-4:2026(en)



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Published in Switzerland

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ISO 19659-4:2026(en)**Foreword**

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 269, *Railway applications*, Subcommittee SC 2, *Rolling stock*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 256, *Railway applications*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 19659 series can be found on the ISO website.

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Introduction

Since the heating, ventilation and air conditioning (HVAC) unit is one of the main components of the HVAC system, its quality and performance is a key issue to improve thermal comfort and energy efficiency for rolling stock.

The purpose is:

- to develop a common International Standard for the validation of a HVAC unit,
- to establish methodologies and requirements on a component basis to demonstrate conformity with the technical specifications of the HVAC unit,
- to establish a clear scope of responsibility in case performance issues occur after mounting the HVAC unit on the rolling stock.

The justification is:

- currently, there is no common International Standard for the validation of a HVAC unit;
- generally, existing national and regional HVAC unit standards are designed for air-conditioning systems in buildings; there only a few standards for rolling stock;
- therefore, there is a need to unify the methodologies of the HVAC unit standards into one single document;
- this will not affect any existing national or regional standard.

Railway applications — Heating, ventilation and air conditioning systems for rolling stock —

Part 4: Design parameters, and test and inspection items for the HVAC unit

1 Scope

This document specifies requirements and guidelines for:

- the design parameters to be provided to the heating, ventilation and air conditioning (HVAC) unit manufacturer by the rolling stock manufacturer (“Customer”) and the railway operator,
- the test and inspection items, requirements and methods used by the HVAC unit manufacturer to verify that the HVAC unit conforms with the design parameters.

This document is applicable to HVAC units for the passenger area and driver’s cabs in urban (metro, tramway), suburban, regional and main line vehicles.

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.

ISO 3743-1, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for small movable sources in reverberant fields — Part 1: Comparison method for a hard-walled test room*

ISO 3743-2, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, movable sources in reverberant fields — Part 2: Methods for special reverberation test rooms*

ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 3745, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Precision methods for anechoic rooms and hemi-anechoic rooms*

ISO 3746, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 3747, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering/survey methods for use in situ in a reverberant environment*

ISO 9614-2, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning*

ISO 19659-1, *Railway applications — Heating, ventilation and air conditioning systems for rolling stock — Part 1: Terms and definitions*

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ISO 19659-2, *Railway applications — Heating, ventilation and air conditioning systems for rolling stock — Part 2: Thermal comfort*

ISO 19659-3, *Railway applications — Heating, ventilation and air conditioning systems for rolling stock — Part 3: Energy efficiency*

IEC 60077-1, *Railway applications — Electric equipment for rolling stock — Part 1: General service conditions and general rules*

IEC 60077-2, *Railway applications — Electric equipment for rolling stock — Part 2: Electrotechnical components — General rules*

IEC 61373, *Railway applications — Rolling stock equipment — Shock and vibration tests*

IEC 62236-3-2, *Railway applications — Electromagnetic compatibility — Part 3-2: Rolling stock — Apparatus*

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