National Standards Authority of Ireland

IRISH STANDARD

ENV 12299:1999

ICS 45.060.20

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RAILWAY APPLICATIONS - RIDE COMFORT FOR PASSENGERS - MEASUREMENT AND EVALUATION

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English version

Railway applications - Ride comfort for passengers - Measurement and evaluation

Applications ferroviaires - Confort de marche des voyageurs - Mesurage et évaluation

Bahnanwendungen - Fahrkomfort für Fahrgäste - Messung und Auswertung

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The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN*.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This ENV takes into account the documents listed below for the following:

UIC 513	Evaluation of Mean Comfort indices and definition of filters
ISO 2631	Definitions
BRR TR DOS 018 5/86	Comfort on Curve Transitions Comfort on Discrete Events
UIC 518	Selected testing procedures and track characteristics
List of normative clauses and annexes	Clauses 1, 2, 3, 4 Normative Annexes A, B, C, D
List of informative clauses and annexes	Foreword, Introduction, Clauses 5, 6 Informative Annexes E, F, G, H, K, L, M, N, P, Q, R, S

Introduction

a) General

The comfort of passengers in a railway vehicle is influenced by a number of different factors (temperature, noise, vibration etc). This European Prestandard considers only that part of the comfort influenced by the dynamic behaviour of the vehicle. This is described as Ride Comfort or as Comfort.

This European Prestandard summarizes the relevant works on the matter:

- taking into account, in mandatory form, the effects on Ride comfort for passengers of vibration exposure measured on the carbody floor (the simplified method for Mean Comfort evaluation);
- taking into account, (as recommendation), the vibration exposure measured on the interfaces (the complete method for Mean Comfort evaluation);
- taking into account, (as recommendation), the effects on Ride comfort for passengers of:
  - discrete events (Comfort on Discrete Events);
  - running on curve transitions (Comfort on Curve Transitions).

The standard is published as European Prestandard (ENV), due to

- the lack of experience in the application of the Mean Comfort measurement and evaluation criteria, based on UIC-leaflet 513, up to now experimentally approved in UIC, both for the normative part (N_{MV}) and for the informative part (N_{VA}, N_{VD});
- the lack of experience in the application of the recommended P_{DE}, P_{CT} comfort indexes, up to now based on the technical experience in studies and direct tests given mainly in Great Britain and in indirect tests performed by Italy, Germany and Switzerland.

Railway transport exposes passengers to vibrations related to the dynamic movements of the carbody.

The movements of the carbody transmit their effects to the human body through the following interfaces:

- in the standing position:
  - floor - feet
- in the seated position:
  - headrest - neck
  - arm rest - upper arms
  - seat - hip
  - seat - back
  - floor - feet

The type of transmission is whole-body transmission (see 3.4), which acts on the whole body through the interfaces (see 3.3).

The effect produced by the carbody movements considered in this ENV is:

- discomfort (effect on comfort, see 3.2), associated with relatively low levels of acceleration.

Other effects, not included in the standard, are associated with higher acceleration levels:

- health risk effect: physical damage and psychological deterioration.

This ENV applies to passengers in good health.