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TECHNICAL SPECIFICATION

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CLC/TS 50591

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ICS 45.060.10

English version

Specification and verification of energy consumption for railway rolling stock

Spécification et vérification de la consommation d'énergie pour le matériel roulant ferroviaire

Spezifikation und Überprüfung des Energieverbrauchs von Schienenfahrzeugen

This Technical Specification was approved by CENELEC on 2013-11-05.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This document (CLC/TS 50591:2013) has been prepared by CLC/TC 9X/WG 11, "Energy Measurement on-board trains", of CLC/TC 9X "Electrical and electronic applications for railways".

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1 Scope

This Technical Specification is applicable to the specification and verification of energy consumption of railway rolling stock.

It establishes a criterion for the energy consumption of rolling stock to calculate the total net energy consumed, either at pantograph or from the fuel tank, over a predefined service profile, in order to assure that the results are directly comparable or representative of the real operation of the train. For this purpose this document takes into account the energy consumed and regenerated by the rolling stock.

This Technical Specification provides the framework which gives guidance on the generation comparable energy performance values for trains and locomotives on a common basis and thereby supports benchmarking and improvement of the energy efficiency of rail vehicles.

This Technical Specification does not cover specification for comparison of energy consumption with other modes of transportation, or even for comparison between diesel and electric traction, dealing only with the energy consumption of the Railway rolling stock itself. Consequently, this document is not applicable to the evaluation of the carbon foot print of the railway transportation system.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 590, *Automotive fuels — Diesel — Requirements and test methods*

EN 13129-2, *Railway applications — Air conditioning for main line rolling stock — Part 2 : Type tests*

EN 15663:2009, *Railway applications — Definition of vehicle reference masses*

EN 50163, *Railway applications — Supply voltages of traction systems*

EN 50463 (all parts), *Railway applications — Energy measurement on board trains*