SLOVENSKI STANDARD
SIST EN 13146-8:2012

01-september-2012

Nadomešča:
SIST EN 13146-8:2004
SIST EN 13146-8:2004/A1:2007

Železniške naprave - Zgornji ustroj - Preskušanje pritrdilnih sistemov - 8. del: Preskusni odsek

Railway applications - Track - Test methods for fastening systems - Part 8: In service testing

Bahnanwendungen - Oberbau - Prüfverfahren für Schienenbefestigungssysteme - Teil 8: Betriebserprobung

Applications ferroviaires - Voie - Méthodes d'essai pour les systèmes de fixation - Partie 8 : Essai en service

Ta slovenski standard je istoveten z: **EN 13146-8:2012**

ICS:

93.100	Gradnja železnic	Construction of railways

SIST EN 13146-8:2012 **en,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13146-8

April 2012

ICS 93.100

Supersedes EN 13146-8:2002

English Version

Railway applications - Track - Test methods for fastening systems - Part 8: In service testing

Applications ferroviaires - Voie - Méthodes d'essai pour les systèmes de fixation - Partie 8: Essai en service

Bahnanwendungen - Oberbau - Prüfverfahren für Schienenbefestigungssysteme - Teil 8: Betriebserprobung

This European Standard was approved by CEN on 26 November 2011.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 13146-8:2012: E

Contents

Page

Foreword

This document (EN 13146-8:2012) 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 October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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

This document supersedes EN 13146-8:2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

No major changes have been made in this revision of EN 13146-8:2002.

This European Standard is one of the series EN 13146 "*Railway applications — Track — Test methods for fastening systems*" which consists of the following parts:

— *Part 1: Determination of longitudinal rail restraint;*

— *Part 2: Determination of torsional resistance;*

— *Part 3: Determination of attenuation of impact loads;*

— *Part 4: Effect of repeated loading;*

— *Part 5: Determination of electrical resistance;*

— *Part 6: Effect of severe environmental conditions;*

— *Part 7: Determination of clamping force;*

— *Part 8: In service testing;*

— *Part 9: Determination of stiffness.*

These support the requirements in the series EN 13481 "Railway applications — Track — Performance requirements for fastening systems".

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

As fastening systems are safety critical, there is a need to have a standardized procedure to evaluate their performance in normal use. Performance in track is not always completely predicted from the laboratory tests in EN 13146, Parts 1 to 7 and 9.

The test described in this part of EN 13146 is intended to provide a procedure which can be used to compare the performance in track of new or modified fastening systems with systems whose performance is known.

In accordance with EN 13481-2:2012, EN 13481-3:2012, EN 13481-4:2012, EN 13481-5:2012 and EN 13481-7:2012, this test has to be performed when required by the user.

1 Scope

This European Standard specifies a procedure for the comparative testing of fastening systems in track. The test procedure is applicable to fastening systems which in all other respects conform to EN 13481-2:2012, EN 13481-3:2012, EN 13481-4:2012, EN 13481-5:2012 and EN 13481-7:2012.

This test applies to complete fastening assemblies.

It is only used for comparative testing of such fastening systems installed at the same time on the type of support for which they are intended.

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 13146-9:2009, *Railway applications — Track — Test methods for fastening systems — Part 9: Determination of stiffness*

EN 13481-1:2012, *Railway applications — Track — Performance requirements for fastening systems — Part 1: Definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13481-1:2012 apply.

4 Principle

The fastening system under test is installed in track at the same time as a reference fastening system, on sleepers, bearers or slab track of the same material and design. Location in track is arranged so that the test and reference fastening systems are in track with similar geometry and service conditions.

5 Test conditions

The performance of a fastening system, systems or variants of a system under test shall be compared with a reference fastening system. Test and reference fastening systems shall be installed in one track in lengths containing not less than 500 sleepers each or 200 sleepers each on metro systems or their equivalent for slab track. Installation shall be within a period not exceeding 7 days. All fastening systems in any test shall be installed on the type of sleeper for which they are designed and only one type of sleeper shall be used in a test. Each fastening system in a test shall be installed in track with similar conditions of formation, ballast support, curvature, gradient and cant, and with similar traffic conditions including traffic volume, type, speed, braking and acceleration.

If installation has involved a change in sleepers the track shall be consolidated mechanically, or by the passage of 1×10^5 t (gross) traffic, prior to commencement of the test. The following shall be recorded.

— method of installing sleepers, bearers or slab;

— method of installing fastening components;

— method of installing rail;

— weather conditions during installation.

Rail used in the test shall be the same grade and section for the whole test length. The head shall be free of defects and consistent throughout the test lengths, and the foot shall be smooth on its underside.

Any welded or bolted joints shall be suspended or supported in accordance with the normal practice of the user. During the test all mechanical joints shall be properly maintained. All track maintenance of the test lengths shall be done concurrently.

6 Procedure

6.1 Duration of test

The minimum test period shall be that necessary for the following traffic to pass over the test track and shall be not less than 1 year.

For category A and B fastening systems 10×10^6 t (gross)

For category C, D and E fastening systems 20×10^6 t (gross)

NOTE Categories of fastening systems are defined in EN 13481-1:2012.

6.2 Maintenance

During the test each fastening system shall be maintained in accordance with the manufacturer's instructions.

6.3 Inspection

Prior to the commencement of measurements, behaviour of the fastening system shall be visually observed and recorded during installation and consolidation of the track.

At the commencement, at any specified intermediate stage and at the end of the test the following shall be measured or observed for all systems being tested, including the reference system:

a) track gauge;

b) longitudinal movement of rail, relative to the sleeper or slab support, and maximum daily temperature range;

c) effect on performance of signalling systems;

d) clamping force, on not less than 10 assemblies, using the manufacturer's recommended test method for use in track;

e) rail pad static stiffness on not less than 10 pads, if required by the purchaser, measured in accordance with EN 13146-9:2009;

f) details of installation methods and weather during installation;

g) security of attachment to the sleepers;

h) condition of the rail head;

i) condition of sleepers including rail seat area;

j) condition of individual fastening components;

k) ease of assembly and removal using the tools recommended by the manufacturer.

For items (d), (i), (j) and (k) not less than 2 % of the assemblies shall be selected at random for examination. The assemblies selected shall be the same each time the measurement or observation is repeated.

7 Test report

The test report shall include at least the following information:

a) railway organization involved, location and dates of test;

b) description of the fastening system including manufacturer's designation;

c) description and manufacturer's designation of reference fastening system;

d) details of the track used for the test, including sleeper type, rail type, formation, ballast type and depth, gradient, curvature and cant;

e) rail pad static stiffness on not less than 10 pads, if required by the purchaser;

f) details of installation methods and weather during installation;

g) duration of test, type and quantity and speed of traffic;

h) results of inspection and testing described in 6.3;

i) an assessment of the performance of the fastening system under test relative to the reference fastening system;

j) maintenance record of the track and the fastening assembly during test period.