



**SLOVENSKI STANDARD**  
**SIST EN 13146-8:2004**

**01-marec-2004**

---

**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

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**  
<https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>

**Ta slovenski standard je istoveten z: EN 13146-8:2002**

---

**ICS:**

93.100            Gradnja železnic            Construction of railways

**SIST EN 13146-8:2004**            **en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 13146-8:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/d2498815-f1d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13146-8**

August 2002

ICS 93.100

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

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

This European Standard was approved by CEN on 10 May 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13146-8:2004](https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004)

<https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

	page
Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions.....	5
4 Principle .....	5
5 Test conditions .....	6
6 Procedure .....	6
6.1 Duration of test.....	6
6.2 Maintenance .....	6
6.3 Inspection .....	6
7 Test report .....	7

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

[SIST EN 13146-8:2004](https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004)

<https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>

## Foreword

This document EN 13146-8:2002 has been prepared by Technical Committee CEN/TC 256 "Railway applications - Track", 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 February 2003, and conflicting national standards shall be withdrawn at the latest by February 2003.

No European Standard is superseded.

This document has been prepared under mandates (M/024<sup>1</sup>, M/275<sup>2</sup>) given to CEN by the European Commission and the European Free Trade Association..

This European Standard is one of the series EN 13146 "Railway applications — Track — Test methods for fastening systems" as listed below:

— 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.

These support the requirements in the series prEN 13481 *Railway applications — Track — Performance requirements for fastening systems — Parts 1 to 7*.

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

---

<sup>1</sup> Railway equipment.

<sup>2</sup> Standardization in the field of Railway Equipment on the Interoperability of the Trans-European High-Speed Rail System.

**EN 13146-8:2002 (E)****Introduction**

As fastening systems are safety critical there is a need to have a standardised 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.

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 prEN 13481 Parts 2 to 7, this test has to be performed when required by the user.

**iTeh STANDARD PREVIEW  
(standards.iteh.ai)**

[SIST EN 13146-8:2004](https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004)

<https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>

## 1 Scope

This Part of 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 comply with prEN 13481 Parts 2 to 7.

This test applies to complete fastening assemblies.

It is only to be 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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

EN 13481-2, *Railway applications — Track — Performance requirements for fastening systems — Part 2: Fastening systems for concrete sleepers.*

EN 13481-3, *Railway applications — Track — Performance requirements for fastening systems — Part 3: Fastening systems for wood sleepers.*

EN 13481-4, *Railway applications — Track — Performance requirements for fastening systems — Part 4: Fastening systems for steel sleepers.*

EN 13481-5, *Railway applications — Track — Performance requirements for fastening systems — Part 5: Fastening systems for slab track.*

ENV 13481-6, *Railway applications — Track — Performance requirements for fastening systems — Part 6: Special fastening systems for attenuation of vibration.*

prEN 13481-7, *Railway applications — Track — Performance requirements for fastening systems — Part 7: Special fastening systems for switches and crossings and check rails.*

## 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13481-1 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.

**EN 13146-8:2002 (E)****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. 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  $1 \times 10^5$  t (gross) traffic, prior to commencement of the test.

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.

Fastening systems intended for use in track with maximum axle loads  $> 100$  kN

$20 \times 10^6$  t (gross)

<https://standards.iteh.ai/catalog/standards/sist/d2498815-fl d3-47ef-b2b8-322e6ac33508/sist-en-13146-8-2004>

Fastening systems intended for use in metro system track with axle loads  $\leq 100$  kN

$10 \times 10^6$  t (gross)

**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) security of attachment to the sleepers;