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Railway infrastructure — Rail fastening systems — Two directional test method for resistance to repeated loading

Infrastructure ferroviaire — Systèmes d'attache — Méthode d'essai bidirectionnel pour la determination de résistance aux charges répétitives

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Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Symbols **1**
5 Principle **3**
6 Apparatus **4**
6.1 General arrangement 4
6.2 Rail 4
6.3 Actuator 5
6.4 Load application head 6
6.5 Displacement measuring instruments 6
6.5.1 Calibration procedure 6
6.5.2 Calibration requirement 6
6.5.3 Fixtures for mounting displacement measuring instruments 6
6.6 Force measuring instruments 6
6.6.1 Instruments 6
6.6.2 Verification of calibration 6
6.7 Strain gauges for rail clips 6
7 Test specimens **6**
8 Test procedure **7**
8.1 General 7
8.2 Preparation for test 7
8.3 Clamping force and uplift stiffness 7
8.4 Longitudinal rail restraint 7
8.5 Vertical stiffness 7
8.6 Lateral stiffness 7
8.7 Calculation of test loads and test loading angles 8
8.8 Two directional static load test 8
8.8.1 Preparation for the static load test 8
8.8.2 Loading procedure 10
8.8.3 Results required from the static load test 11
8.9 Two directional repeated load test 12
8.9.1 Preparation for the repeated load test 12
8.9.2 Loading conditions of the repeated load test 12
8.9.3 Results required from the repeated load test 13
8.9.4 Repeat tests 13
9 Test report **14**
Annex A (normative) **Test method for lateral stiffness** **15**
Annex B (informative) **Calculation method of test loads and test loading angles** **19**
Bibliography **28**

Foreword

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This document was prepared by Technical Committee ISO/TC 269, *Railway applications*, Subcommittee SC 1, *Infrastructure*.

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Railway infrastructure — Rail fastening systems — Two directional test method for resistance to repeated loading

1 Scope

This document describes a test procedure for the determination of resistance to repeated loading by – amongst others – applying out-of-phase load cycles which generate forces in two directions, representative of those caused by traffic on railway track, taking into account the effect of two consecutive axles of passing railway vehicles.

The document applies to surface mounted rail on sleepers, bearers and slab track.

The test procedure applies to a complete fastening assembly.

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 22074-1, *Railway infrastructure — Rail fastening systems — Part 1: Vocabulary*

ISO 22074-2, *Railway infrastructure — Rail fastening systems — Part 2: Test method for longitudinal rail restraint*

ISO 22074-4:2022, *Railway infrastructure — Rail fastening systems — Part 4: Test methods for resistance to repeated loading*

ISO 22074-7, *Railway infrastructure — Rail fastening systems — Part 7: Test method for clamping force and uplift stiffness*

ISO 22074-8:2022, *Railway infrastructure — Rail fastening systems — Part 8: Test method for vertical stiffness*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22074-1 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Symbols

Symbol	Description	First appearance
h_N	height of loading position for normal rail, in mm;	6.2
h_T	height of loading position for test rail, in mm;	6.2
P_0	clamping force, in kN;	8.3
F	maximum axial load on the rail without non-elastic displacement occurring, in kN;	8.4
F_{SA1}	the lower limit of force for determining the static stiffness, in kN;	8.5