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English Version

Railway applications - Infrastructure - Resilient element for floating slab system

Applications ferroviaires - Infrastructure - Élément
élastique pour système de dalle flottante (REFS)

Bahnanwendungen - Infrastruktur - Elastisches
Element für Unterbodenmattensystem

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European foreword

This document (FprEN 17682:2022) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the Formal Vote.

Introduction

In a track for railway vehicles, the Resilient Element for Floating Slab (REFS) is a product which is placed between the substructure and the ballastless track. This document applies to the performance-related properties of this element.

1 Scope

This document is applicable to Resilient Elements for Floating Slab system (REFS) – Elements used in floating slab and defines the test procedures and their acceptance criteria.

The document covers not only those parameters related to the effectiveness of a track structure in mitigating vibrations, that is, to reduce the emission of vibrations and structure-borne noise, but also the parameters that are needed for the static analysis and for the verification of track safety.

Floating slab track systems in the form of track base plates and track troughs are individual solutions in which there is considerable variation in the engineering design and the types of resilient elements used. For this reason, a floating slab track system is always an individual engineering solution and therefore, it is not possible to define all specific conditions for the resilient elements in the present document.

The most typical types of resilient elements are:

- Full surface bearings,
- Strip bearings,
- Discrete bearings (including the helical steel spring element),
- Vertical bearings.

This document provides particular information in the following areas:

- test methods, test arrangements and acceptance criteria,
- data supplied by the purchaser and by the supplier,
- definition of general process of design approval tests,
- definition of routine tests.

This document defines the specific test procedures for REFS:

- stiffness tests,
- fatigue tests,
- severe environmental condition test.

This document also sets out procedures for testing fitness for purpose and provides information on quality monitoring as part of quality assurance procedures. This document does not, however, contain requirements pertaining to the functions of Resilient Element for Floating Slab system. It is the responsibility of the purchaser to define these requirements and to choose the optional tests.

This document is not applicable for fastening system and for booted concrete block and sleeper completed with boots covered by EN 13481-5.