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Railway applications - Bolting of railway vehicles and components

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Bahnanwendungen - Verschrauben von Schienenfahrzeugen und -fahrzeugteilen

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Contents

Page

European foreword

This document (prEN 17976:2023) 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 CEN Enquiry.

Introduction

Screwed and bolted joints are often used to assemble safety-critical components on rail vehicles. This document sets out key considerations for design and assembly of such joints, based on an assessment of their criticality.

The application of this document results in an appropriate safety level for bolted joints in railway applications considering design, assembling and service phase.

This document applies to the selection and application of bolted joints for rail vehicles with mechanical and electrical applications.

The function of a bolted joint is to connect two or more parts in a sufficient and safe manner over the intended service life under the conditions of the railway environment. The bolted joint is designed to transmit forces between the connected components safely and without separation or relative movement. For this purpose, the parts are held together by the preload of the bolt.

This document specifies the safety levels of bolted joints and gives an overview of the resulting requirements.

It specifies standards for the design and verification of bolted joints. Design includes aspects such as joint dimensions, layout, securing of bolted joints and corrosion protection.

It is intended to support the designer in the basic selection of bolted joints for familiarisation with the necessary systematics and terms.

Furthermore, this document specifies requirements for assembly, quality and maintenance.