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**Railway applications –
Track –
Safety protection on the track during work –
Part 1: Railway risks and common principles for protection of fixed
and mobile work sites;
English version EN 16704-1:2016+A1:2021,
English translation of DIN EN 16704-1:2022-01**

Bahnanwendungen –
Oberbau –
Sicherungsmaßnahmen während Gleisbauarbeiten –
Teil 1: Eisenbahngefährdungen und allgemeine Prinzipien zum Schutz ortsfester
und ortsveränderlicher Baustellen;
Englische Fassung EN 16704-1:2016+A1:2021,
Englische Übersetzung von DIN EN 16704-1:2022-01

Applications ferroviaires –
Voie –
Protection et sécurité durant des travaux sur la voie –
Partie 1: Risques ferroviaires et principes communs de protection des chantiers
fixes et mobiles;
Version anglaise EN 16704-1:2016+A1:2021,
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In case of doubt, the German-language original shall be considered authoritative.

A comma is used as the decimal marker.

National foreword

This document (EN 16704-1:2016+A1:2021) has been prepared by Technical Committee CEN/TC 256 “Railway applications” (Secretariat: DIN, Germany).

The responsible German body involved in its preparation was *DIN-Normenausschuss Fahrweg und Schienenfahrzeuge* (DIN Standards Committee Railway), Subcommittee NA 087-00-01-09 UA “Safety protection on the track during work”.

This document contains National footnotes in 3.24, 3.25, and H.3.2.2 that provide references to editorial errors in the English reference version.

For current information on this document, please go to DIN’s website (www.din.de) and search for the document number in question.

Amendments

This standard differs from DIN EN 16704-1:2017-11 as follows:

- a) Clause 2 “Normative references” has been updated;
- b) updated normative references have been replaced in the text;
- c) Annex ZA has been added.

Previous editions

DIN EN 16704-1: 2017-07, 2017-11

English Version

Railway applications -
Track -
Safety protection on the track during work -
Part 1: Railway risks and common principles for protection
of fixed and mobile work sites

Applications ferroviaires -
Voie -

Protection et sécurité durant des travaux sur la voie -
Partie 1: Risques ferroviaires et principes communs
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Bahnanwendungen -
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Sicherungsmaßnahmen während Gleisbauarbeiten -
Teil 1: Eisenbahngefährdungen und allgemeine Prinzipien
zum Schutz ortsfester und ortsveränderlicher Baustellen

This European Standard was approved by CEN on 10 September 2016 and includes Amendment 1 approved by CEN on 9 August 2021.

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European foreword

This document (EN 16704-1:2016+A1:2021) 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 April 2022, and conflicting national standards shall be withdrawn at the latest by April 2022.

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 A1 EN 16704-1:2016 A1.

This document includes Amendment 1 approved by CEN on 9 August 2021.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

A1 This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document. A1

The purpose of this standard is to define a common approach to the safety of workers regarding the railway risks in relation to work on or in proximity of the track in the European Community.

National safety rules (for example national standards or company rules) should gradually be harmonized in line with this standard or be replaced by rules contained in this standard but according to directive 89/391/EEC it is not allowed to reduce the existing level of safety measures given by national safety rules. The current situation, in which, national safety rules continue to play a role, should be regarded as a transitional stage, leading ultimately to a situation in which, European rules described here after, will apply.

This European Standard is one of the series EN 16704 “*Railway applications – Track – Safety protection on the track during work*” as listed below:

- *Part 1: Railway risks and common principles for protection of fixed and mobile work sites*
- *Part 2-1: Common solutions and technology – Technical requirements for Track Warning Systems (TWS)*
- *Part 2-2: Common solutions and technology – Technical requirements for barriers*
- *Part 3: Competences of personnel related to work on or near the railway track*

A1 Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website. A1

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard provides requirements and measures to deal with the significant and specific railway risks during works on or in proximity of the track and with common principles for the protection of fixed and mobile work sites with trains and/or machines circulating on the working track and trains circulating on the adjacent track(s). Railway risks and protection measures for access and egress to/from the work site are considered in the same way as railway risks and protection measures for work itself.

This European Standard is applicable to all operations related to work activities on rail guided systems. Infrastructure of metro, tram and other light rail systems is excluded from the scope¹⁾.

The following specific railway risks are taken into consideration:

- Risk 1: Personnel being struck by a train or injured due to wind drag from a train on open working track (safety of the worker);

NOTE 1 Risk 1 includes injuring of a worker by machines, material or equipment being struck by a train on the working track.

- Risk 2: Personnel being struck by a train or injured due to wind drag from train on adjacent track (safety of the worker);
- Risk 3: Personnel being struck by machine or train on blocked track (safety of the worker);
- Risk 4: Machines, material or equipment being struck by a train on the adjacent track (safety of the operation/safety of the worker);
- Risk 5: Personnel being electrified or electrocuted by fixed electrical equipment (safety of the worker).

NOTE 2 Risk 5 includes hazards caused by pantographs of passing trains.

This European Standard also provides requirements to the process of installing basic preventive measures when planning new infrastructure or installing corrective measures when adapting existing infrastructure.

This European Standard may be extended to third parties when it is considered appropriate and reasonable by the infrastructure manager, if one or more of the five significant risks described inside this standard, arise as a result of their activities in proximity of the track.

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 14033-2:2017, *Railway applications - Track - Railbound construction and maintenance machines - Part 2: Technical requirements for travelling and working*

EN 14033-3:2017, *Railway applications - Track - Railbound construction and maintenance machines - Part 3: General safety requirements*

EN 15746-2:2020, *Railway applications - Track - Road-rail machines and associated equipment - Part 2: General safety requirements*

¹⁾ See Directive 2008/57/EC.