



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN ISO 3691-4:2023

Industrial trucks - Safety requirements and verification - Part 4: Driverless industrial trucks and their systems (ISO 3691-4:2023)

Chariots de manutention - Exigences de
sécurité et vérification - Partie 4: Chariots
sans conducteur et leurs systèmes (ISO
3691-4:2023)

Flurförderzeuge - Sicherheitstechnische
Anforderungen und Verifizierung - Teil 4:
Fahrerlose Flurförderzeuge und ihre
Systeme (ISO 3691-4:2023)

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National Foreword

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**Industrial trucks - Safety requirements and verification -
Part 4: Driverless industrial trucks and their systems (ISO
3691-4:2023)**

Chariots de manutention - Exigences de sécurité et
vérification - Partie 4: Chariots sans conducteur et
leurs systèmes (ISO 3691-4:2023)

Flurförderzeuge - Sicherheitstechnische
Anforderungen und Verifizierung - Teil 4: Fahrerlose
Flurförderzeuge und ihre Systeme (ISO 3691-4:2023)

This European Standard was approved by CEN on 5 May 2023.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN ISO 3691-4:2023) has been prepared by Technical Committee ISO/TC 110 "Industrial trucks" in collaboration with Technical Committee CEN/TC 150 "Industrial Trucks - Safety" the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 3691-4:2020.

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

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 3691-4:2023 has been approved by CEN as EN ISO 3691-4:2023 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request "M/396 Mandate to CEN and CENELEC for Standardisation in the field of machinery" to provide one voluntary means of conforming to essential requirements of Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2006/42/EC

The relevant Essential Requirements of Directive 2006/42/EC (MD)	Clause(s)/ subclause(s) of this EN	Remarks/ Notes
1.1.2 (a). Principles of safety integration	4,5,6	
1.1.2 (c). Principles of safety integration	4,5,6	
1.1.2 (d). Principles of safety integration	4,5,6	
1.1.2 (e). Principles of safety integration	4,5,6	
1.1.3. Materials and products	4.1.4	
1.1.5. Design of machinery to facilitate its handling	4.1.16	
1.1.6. Ergonomics	4.1, 4.9, A.2.3.1, A.2.3.2, A.2.4.1, A.2.4.2	
1.1.8. Seating	4.1.17	
1.2.1. Safety and reliability of control systems	4.2, 4.3, 4.5, 4.6, 4.8, 4.9, 4.11	
1.2.2. Control devices	4.9, 4.14	
1.2.3. Starting	4.1.3, 4.1.14, 4.9	
1.2.4.1 Normal stop	4.1.3, 4.1.14, 4.1.26, 4.8.2	
1.2.4.2 Operational stop	4.1.27	
1.2.4.3 Emergency stop	4.8.1	
1.2.5. Selection of control or operating modes	4.9	
1.2.6. Failure of the power supply	4.1.3, 4.1.14, 4.2	
1.3.1. Risk of loss of stability	4.7, 5.3	
1.3.2. Risk of break-up during operation	4.1.1, 5.4, 6.3	
1.3.3. Risks due to falling or ejected objects	4.1.4, 4.5	

The relevant Essential Requirements of Directive 2006/42/EC (MD)	Clause(s)/ subclause(s) of this EN	Remarks/ Notes
1.3.4. Risks due to surfaces, edges or angles	4.1.5	
1.3.6. Risks related to variations in operating conditions	4.9	
1.3.7. Risks related to moving parts	4.1.6, 4.1.7	
1.3.8.1 Choice of protection against risks arising from moving parts / Moving transmission parts	4.1.6, 4.1.7, 4.1.9, 4.13.2	
1.3.8.2 Choice of protection against risks arising from moving parts / Moving parts involved in the process	4.1.6, 4.1.7, 4.13.2, Annex A	
1.3.9. Risks of uncontrolled movements	4.1.14, 4.2	
1.4.1. Required characteristics of guards and protective devices / General requirements	4.1.6, 4.1.7, 4.1.9, Annex A	
1.4.2.1 Special requirements for guards / Fixed guards	4.1.6, 4.1.9, Annex A	
1.4.2.2 Special requirements for guards / Interlocking movable guards	4.1.7, Annex A	
1.4.2.3 Special requirements for guards / Adjustable guards restricting access	Annex A	
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1.5.1. Electricity supply	4.1.3, 4.4	
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1.5.4 Errors of fitting	4.1.25	
1.5.5 Extreme temperatures	4.1.19	
1.5.6. Fire	4.1.3	
1.5.7. Explosion	4.1.3, 6.3	
1.5.8. Noise		not covered
1.5.9 Vibrations		not covered
1.5.10 Radiation (ionising and non-ionising)		not covered
1.5.11 External radiation	4.12	
1.5.12. Laser radiation		not covered
1.5.13 Emissions of hazardous materials and substances	4.1.20	
1.5.14 Risk of being trapped in a machine	4.1.21	
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1.6.1. Machinery maintenance	4.1.3	

The relevant Essential Requirements of Directive 2006/42/EC (MD)	Clause(s)/ subclause(s) of this EN	Remarks/ Notes
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1.7.4.1 General principles for the drafting of instructions	6.1	
1.7.4.2 Contents of the instructions	6.2, 6.3	
1.7.4.3 Sales literature		not covered
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3.2.3 Positions for other persons	4.1.5 a), 4.9.2.1, 4.9.2.3	
3.3. Control systems	4.9.1, 4.9.4	
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3.5.1. Batteries	4.1.3, 4.4	
3.5.2. Fire	4.1.3	
3.6.1. Signs, signals and warnings	4.8.2, 4.14, 6.3	
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3.6.3.1 Instructions / Vibrations		not covered

The relevant Essential Requirements of Directive 2006/42/EC (MD)	Clause(s)/ subclause(s) of this EN	Remarks/ Notes
4.1.2.1 Risks due to lack of stability	4.5, 4.7, 5.2, 5.3, 5.4	
4.1.2.3 Mechanical strength	4.1.1, 4.1.2, 4.5, 4.7, 4.9.3, 5.2, 5.3, 5.4	
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WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.