

DIN EN 620



ICS 53.040.10

Supersedes
DIN EN 620:2011-07

**Continuous handling equipment and systems –
Safety requirements for fixed belt conveyors for bulk materials;
English version EN 620:2021,
English translation of DIN EN 620:2022-02**

Stetigförderer und Systeme –
Sicherheitsanforderungen an ortsfeste Gurtförderer für Schüttgut;
Englische Fassung EN 620:2021,
Englische Übersetzung von DIN EN 620:2022-02

Équipements et systèmes de manutention continue –
Prescriptions de sécurité pour les transporteurs à courroie fixes pour produits en vrac;
Version anglaise EN 620:2021,
Traduction anglaise de DIN EN 620:2022-02

Document comprises 63 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

A comma is used as the decimal marker.

National foreword

This standard includes safety requirements.

This document (EN 620:2021) has been prepared by Technical Committee CEN/TC 148 “Continuous handling equipment and systems — Safety” (Secretariat: AFNOR, France).

The responsible German body involved in its preparation was *DIN-Normenausschuss Maschinenbau* (DIN Standards Committee Mechanical Engineering), Working Committee NA 060-22-31 AA “Tail lifts” of Section “Materials handling technology”. Representatives of manufacturers and users of continuous handling equipment for bulk materials, and of the employers' liability insurance associations contributed to this standard.

This standard contains specifications which give detail to the essential requirements set out in Annex I of the “Machinery Directive”, Directive 2006/42/EC, and which apply to machines that are either first placed on the market or commissioned within the EEA. This standard serves to facilitate proof of compliance with the essential requirements of that directive.

Once this standard is cited in the Official Journal of the European Union, it is deemed a “harmonized” standard and thus, a manufacturer applying this standard may assume compliance with the requirements of the Machinery Directive (“presumption of conformity”).

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 620:2011-07 as follows:

- a) the Scope has been rendered more precise;
- b) normative references have been updated;
- c) definitions have been added;
- d) the list of significant hazards has been updated and moved to an informative annex;
- e) the safety requirements have been updated in many places;
- f) a new normative annex has been included to define the performance level;
- g) new requirements have been included in terms of noise reduction;
- h) a new Annex ZA in accordance with the template for harmonized machinery standards has been included;
- i) the harmonization in relation to the EMC Regulation has been deleted.

Previous editions

DIN EN 620: 2002-08, 2011-07

English Version

Continuous handling equipment and systems - Safety requirements for fixed belt conveyors for bulk materials

Équipements et systèmes de manutention continue -
Prescriptions de sécurité pour les transporteurs à
courroie fixes pour produits en vrac

Stetigförderer und Systeme -
Sicherheitsanforderungen an
orts feste Gurtförderer für Schüttgut

This European Standard was approved by CEN on 18 July 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword.....	4
Introduction	6
1 Scope	7
2 Normative references	8
3 Terms and definitions	10
4 Safety requirements and /or measures for belt conveyors	16
4.1 General	16
4.1.1 Introduction	16
4.1.2 Zone concept	16
4.1.3 Requirements for restricted zone	17
4.2 Requirements for guards	17
4.2.1 General	17
4.2.2 Fixed guard	18
4.2.3 Interlocking guard	21
4.2.4 Inspection cover	21
4.2.5 Nip guard	21
4.3 Measures for protection against mechanical hazards	24
4.3.1 General requirements	24
4.3.2 Crushing and shearing hazards	24
4.3.3 Control cabin	27
4.3.4 Entanglement, drawing-in and trapping hazards	27
4.3.5 Hazards arising from ejection of parts (of machinery or handled materials)	30
4.3.6 Means of access	31
4.4 Measures for protection against electrical hazards	34
4.4.1 General	34
4.4.2 Environment	34
4.4.3 Electrostatic charges	34
4.5 Measures for protection against hydraulic hazards	34
4.6 Measures for protection against pneumatic hazards	34
4.7 Measures for protection against thermal hazards	35
4.7.1 Burns and scalds by a possible contact of persons with parts or materials at high temperature	35
4.7.2 Health damaging effects by hot or cold work environment	35
4.8 Measures for protection against fire and explosion hazards	35
4.8.1 Belt friction	35
4.8.2 Transported material	35
4.9 Neglected ergonomic principles in machine design (mismatch of machinery with human characteristics and abilities)	36
4.9.1 Unhealthy postures or excessive efforts	36
4.9.2 Isolated work places	37
4.10 Measures in case of failure of energy supply and other functional disorders	37
4.10.1 Uncontrolled motion	37
4.10.2 Failure or malfunction of safety related parts of control systems	37
4.11 Measures for protection against hazards arising during inspection, maintenance and cleaning	40

4.12	Noise reduction at design stage.....	40
5	Verification of safety requirements and/or measures	41
5.1	General	41
5.2	Electrical equipment	43
5.3	Fire or explosion hazards	43
6	Information for use.....	43
6.1	Instruction handbook	43
6.1.1	General	43
6.1.2	Instructions for the installation of the equipment.....	44
6.1.3	Instructions for the operation of the equipment	44
6.1.4	Noise declaration	45
6.1.5	Instructions for maintenance.....	45
6.1.6	Training.....	47
6.1.7	Decommissioning and dismantling.....	47
6.2	Marking	47
Annex A	(informative) List of significant hazards	48
A.1	General	48
A.2	Mechanical hazards	48
A.3	Electrical hazards	49
A.4	Thermal hazards.....	50
A.5	Fire or explosion hazards	50
A.6	Hazards generated by neglected ergonomic principals in machine design.....	50
A.7	Hazards arising from failure of the energy supply and other functional disorders.....	51
A.8	Hazards caused by the presence of stored energy	51
A.9	Hazards arising during inspection, maintenance and cleaning.....	51
Annex B	(normative) Specification or required performance level (PLr)	52
Annex C	(normative) Noise Test Code	54
C.1	General	54
C.2	Operating conditions during measurements	54
C.3	Determination of A-weighted emission sound pressure level	54
C.4	Measurement positions.....	54
C.5	Information to be recorded	55
C.6	Information to be reported.....	55
C.7	Noise emission declaration	55
C.8	Example of noise declaration	56
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC aimed to be covered.....	57
Bibliography	60

European foreword

This document (EN 620:2021) has been prepared by Technical Committee CEN/TC 148 “Continuous handling equipment and systems - Safety”, the secretariat of which is held by AFNOR.

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 shall not be held responsible for identifying any or all such patent rights.

This document will supersede EN 620:2002+A1:2010.

The main changes with respect to EN 620:2002+A1:2010 are as follows:

- Scope was clarified;
- Normative references were updated;
- Definitions were added;
- List of significant hazards updated and removed in an informative Annex;
- Overall safety requirements was updated;
- New normative annex relating to specification of performance level;
- New requirements relating to noise reduction;
- New Annex ZA in line with template of Machinery harmonized standard;
- De-harmonization to EMC regulation.

This document is part of a series of five standards the titles of which are given below:

- EN 617 “Continuous handling equipment and systems — Safety and EMC requirements for the equipment for the storage of bulk materials in silos, bunkers, bins and hoppers”;
- EN 618 “Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors”;
- EN 619 “Continuous handling equipment and systems — Safety requirements for equipment for mechanical handling of unit loads”;
- EN 620 “Continuous handling equipment and systems — Safety requirements for fixed belt conveyors for bulk materials”;
- EN 741 “Continuous handling equipment and systems — Safety requirements for systems and their components for pneumatic handling of bulk materials”.

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.

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.

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.

Introduction

This European Standard is a type C standard as stated in EN ISO 12100:2010.

The products concerned and the extent to which hazards are covered are indicated in the scope of this document.

While producing this document it was assumed that:

- For specific purpose machinery, clarifications occur between the manufacturer and the purchaser concerning particular conditions for the operation and location of the machinery (typically considering adjacent machinery, means of access, guarding concept, control systems, etc) related to health and safety. An agreement is needed between the manufacturer and purchaser about belt material, considering specific risk e.g. fire and the establishment of zones;
- only suitably trained persons operate this machinery;
- the machinery will be kept in good repair and working order, in accordance with the manufacturer's instructions, to retain specified health and safety characteristics throughout its working life;
- the place of installation is adequately illuminated;
- the place of installation will allow safe operation of the machinery;
- by design of the load bearing elements, the safe operation of the system and components is ensured for loading ranging from zero to 100 % of the rated capacities and during testing;
- all parts of the machinery without specific requirements, will be:
 - a) made from materials of adequate strength and durability and of suitable quality for their intended purpose;
 - b) designed in accordance with the usual engineering practice and engineering codes, taking account of all failure modes and incorporating appropriate safety factors;
- the establishment of the different zones is defined between the user and the manufacturer.