

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)



BSI Standards Publication

Safety of machinery — Safety requirements for the design and construction of paper making and finishing machines

Part 1: Common requirements

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN 1034-1:2021. It supersedes BS EN 1034-1:2000+A1:2010, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/3/9, Paper and printing machines - Safety.

A list of organizations represented on this committee can be obtained on request to its committee manager.

This publication has been prepared under a mandate given to the European Standards Organizations by the European Commission and the European Free Trade Association and is intended to support essential requirements of the EU legislation detailed in the European foreword. Annex ZA/ZZ describes how the publication relates to the legislation.

For the Great Britain market (England, Scotland and Wales), if the UK Government has designated this publication for conformity with UKCA marking legislation and has not amended the essential requirements of that legislation, Annex ZA/ZZ and any references to EU law in the publication should be read in accordance with the designation as applying to UK legislation in the same way as to EU law. Further information on designated standards can be found at www.bsigroup.com/standardsandregulation.

For the Northern Ireland market, UK law will continue to implement relevant EU law subject to periodic confirmation. References to EU legislation are therefore still valid.

More information on legislation can be found at www.gov.uk.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2021
Published by BSI Standards Limited 2021

ISBN 978 0 539 05031 8

ICS 13.110; 85.100

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2021.

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

Amendments/corrigenda issued since publication

Date

Text affected

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

EUROPÄISCHE NORM

May 2021

ICS 85.100; C

Supersedes EN 1034-1:2000+A1:2010

English Version

Safety of machinery - Safety requirements for the design and construction of paper making and finishing machines - Part 1: Common requirements

Sécurité des machines - Exigences de sécurité pour la
conception et la construction de machines de
fabrication et de finition du papier - Partie 1 :
Exigences communes

Sicherheit von Maschinen - Sicherheitstechnische
Anforderungen an Konstruktion und Bau von
Maschinen der Papierherstellung und Ausrüstung - Teil
1: Gemeinsame Anforderungen

This European Standard was approved by CEN on 12 April 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

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

European foreword.....	4
Introduction	6
1 Scope	7
2 Normative references.....	7
3 Terms and definitions	10
4 List of significant hazards	14
5 Safety requirements and/or measures	14
5.1 General requirements and requirements for safety devices	14
5.2 Safety devices on power transmission elements.....	15
5.3 Crushing hazards.....	16
5.4 Drawing-in hazards on rollers, cylinders, rolls, felts and wires or trapping hazards at reel fronts.....	16
5.4.1 General requirements	16
5.4.2 Safety measures on inrunning nips	16
5.4.3 Safety measures on wrapping points.....	17
5.4.4 Safety measures at trapping points at reel fronts	20
5.5 Workplaces, access stairs, walkways, passageways.....	22
5.6 Start-up warning device.....	25
5.7 Emergency stop device.....	26
5.8 Isolation and energy dissipation, prevention of unexpected start-up	26
5.9 Equipment for make-ready and maintenance, lubrication points.....	28
5.10 Equipment for cleaning and removal of broke and waste	29
5.11 Circular knives	29
5.12 Stationary knives (severing knives, tail cutters, water-jet knives)	29
5.13 Explosion protection.....	29
5.14 Control systems and actuators.....	29
5.15 Noise	30
5.15.1 Noise reduction.....	30
5.15.2 Noise emission measurement and declaration	31
5.16 Emission of hazardous substances	31
5.17 Hot surfaces.....	32
5.18 Integrated lighting.....	32
5.19 Fire.....	32
5.20 Radiation caused by measuring devices.....	32
5.21 Laser equipment.....	32
5.22 Ergonomic principles.....	32
5.23 Electrical equipment.....	32
5.24 Hydraulic equipment.....	33
5.25 Pneumatic equipment	33
5.26 Pumps.....	33
6 Verification of compliance with safety requirements and/or measures.....	33
7 Information for use	35

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

7.1	General	35
7.2	Marking	35
7.3	Instruction handbook	35
7.4	Sales literature	37
Annex A (informative) Trilingual alphabetical list of paper making and paper finishing machines		
		38
Annex B (informative) List of Significant Hazards		
		40
Annex ZA (informative) Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered		
		43
Bibliography		
		46

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN 1034-1:2021) has been prepared by Technical Committee CEN/TC 198 "Printing and paper machinery - Safety", 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 May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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 1034-1:2000+A1:2010.

In comparison with the previous edition, the following technical modifications have been made:

- a) In Clause 3, the term "Paper converting machines" was defined;
- b) In 3.4, a tolerance for crawl speed was specified;
- c) In Clause 3, the term "running machine" has been deleted;
- d) In 3.6.3, addition of a definition for trapping points;
- e) In 5.1.2, clarification on the use of signal colours;
- f) In 5.4.4, addition of safety requirements for trapping points at reel fronts;
- g) In 5.5, requirements for means of access, walkways and guard-rails adapted to the revised EN ISO 14122 (all parts), sector-specific deviations will still to be taken into account;
- h) In 7.3, the requirements for the instruction handbook have been extended: all requirements previously contained in Clause 5 in relation to the instruction handbook have been transferred to 7.3;
- i) In 5.9.5, addition of requirements for crawl speed;
- j) In 5.14.1, addition of requirements for positioning of control devices;
- k) In 5.14.2, amendment of Table 5: Determination of approximate SIL or PL;
- l) In 5.14.6, reference to EN ISO 13849-2:2012 for validation of safety functions added;
- m) In 7.3, Addition of information regarding noise emission values and hearing protection equipment in the instruction handbook;
- n) In 5.23, Deletion of the notice on standards for high-voltage equipment;
- o) Review of Annex ZA.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directives.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

This document is part 1 of a standard for the technical safety requirements for the design and construction of paper making and finishing machines which consists of the following parts:

- *Part 1: Common requirements*
- *Part 2: Barking drums*
- *Part 3: Rereelers and winders*
- *Part 4: Pulpers and their loading facilities*
- *Part 5: Sheeters*
- *Part 6: Calenders*
- *Part 7: Chests*
- *Part 8: Refining plants*
- *Part 13: Machines for de-wiring bales and units*
- *Part 14: Reel splitter*
- *Part 16: Paper and board making machines*
- *Part 17: Tissue making machines*
- *Part 21: Coating machines*
- *Part 22: Wood grinders*
- *Part 26: Roll packaging machines*
- *Part 27: Roll handling systems*

CEN/TC 198 intends to prepare further parts to cover the paper making and finishing machines listed in Annex A.

Requirements in this document with reference to ISO 14122-2, ISO 14122-3 and ISO 14122-4 are applicable in conjunction with ISO 14122-1.

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.

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This document is a type-C standard as stated in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

This is a preview of "BS EN 1034-1:2021". [Click here to purchase the full version from the ANSI store.](#)

1 Scope

This document specifies safety requirements.

This document is applicable to paper making and paper finishing machines. It contains definitions and requirements that apply to all paper making and paper finishing machines listed in Annex A and is intended to be used in connection with the specific part applicable for the respective machine listed in Annex A. Specific parts can contain additional requirements or deviations from EN 1034-1 in which case the specific stipulations take precedence over the specification made in EN 1034-1. This document deals with the hazards listed in Annex B.

This document deals with all significant hazards, hazardous situations or hazardous events relevant to paper making and paper finishing machines, when they are used as intended and under conditions of misuse that are reasonably foreseeable by the manufacturer.

This document does not apply to machines used in paper converting. See EN 1010-1 to EN 1010-5.

This document is not applicable to paper making and paper finishing machines manufactured before the date of its publication.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitute requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 4413:2010, *Hydraulic fluid power - General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power - General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 7731:2008, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 11688-1:2009, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13732-1:2008, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1:2015, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2015)*

EN ISO 13849-2:2012, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13850:2015, *Safety of machinery - Emergency stop function - Principles for design (ISO 13850:2015)*

EN ISO 13854:2019, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*