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BSI Standards Publication

## Plastics and rubber machines — Extruders and extrusion lines

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Part 3: Safety requirements for haul-offs

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## National foreword

This British Standard is the UK implementation of EN 1114-3:2019. It supersedes BS EN 1114-3:2001+A1:2008, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/3/2, Rubber and plastics machine - Safety.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

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English Version

## Plastics and rubber machines - Extruders and extrusion lines - Part 3: Safety requirements for haul-offs

Machines pour les matières plastiques et le caoutchouc  
- Extrudeuses et lignes d'extrusion - Partie 3 :  
Prescriptions de sécurité pour les extracteurs

Kunststoff- und Gummimaschinen - Extruder und  
Extrusionsanlagen - Teil 3: Sicherheitsanforderungen  
für Abzüge

This European Standard was approved by CEN on 28 July 2019.

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.

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

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

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## European foreword

This document (EN 1114-3:2019) has been prepared by Technical Committee CEN/TC 145 "Plastics and rubber machines", the secretariat of which is held by UNI.

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 March 2020 and conflicting national standards shall be withdrawn at the latest by March 2020.

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 1114-3:2001+A1:2008.

Compared with the previous version EN 1114-3:2001+A1:2008, the following significant technical changes have been made:

- the performance levels of safety related parts of control systems have been specified in accordance with EN ISO 13849-1:2015;
- the annex for noise measurement has been revised;
- the revision of type-A and type-B standards have been considered;
- the list of significant hazards has been moved to an informative annex;
- the safety requirements and protective measures have been modified by taking into consideration the technological progress in the plastics and rubber industry and the continuous development of the safety technology.

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 Directive(s).

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

EN 1114, *Plastics and rubber machines — Extruders and extrusion lines*, currently comprises the following parts:

- *Part 1: Safety requirements for extruders;*
- *Part 3: Safety requirements for haul-offs.*

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.

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## Introduction

This document is a type-C standard as stated in EN ISO 12100:2010.

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.

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## 1 Scope

This document deals with all significant hazards, hazardous situations and events relevant to haul-offs for cable, cable core, profiles and pipes for processing plastic and rubber, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex A). The hazards have been identified taking into account all phases of the machine life cycle according to EN ISO 12100:2010, 5.4.

The following kinds of haul-offs are covered:

- caterpillar haul-offs;
- belt haul-offs;
- capstan haul-offs;
- belt capstan haul-offs;
- roller haul-offs.

The haul-off can function independently and begins at the product inlet opening and ends at the product outlet.

Cutting units which are integrated with or attached to the haul-off are not covered.

Take-off devices used on film or sheet lines are not covered.

This document is not applicable to haul-offs that are 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 constitutes 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 349:1993+A1:2008, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body*

EN 60204-1:2006, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2005)*<sup>1)</sup>

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*<sup>2)</sup>

EN 61000-6-2:2019, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2:2016)*

EN 61000-6-4:2019, *Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments (IEC 61000-6-4:2018)*

EN 61496-1:2013, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:2012)*

EN 61496-2:2013, *Safety of machinery - Electro-sensitive protective equipment - Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2013)*

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1) This document is currently impacted by the amendment EN 60204-1:2006/A1:2009.

2) This document is currently impacted by the amendments EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013.