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Irish Standard
I.S. EN 1114-1:2011

Plastics and rubber machines - Extruders and extrusion lines - Part 1: Safety requirements for extruders

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EUROPEAN STANDARD
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English Version

Plastics and rubber machines - Extruders and extrusion lines - Part 1: Safety requirements for extruders

Machines pour les matières plastiques et le caoutchouc - Extrudeuses et lignes d'extrusion - Partie 1 : Prescriptions de sécurité pour les extrudeuses

Kunststoff- und Gummimaschinen - Extruder und Extrusionsanlagen - Teil 1: Sicherheitsanforderungen für Extruder

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Foreword

This document (EN 1114-1:2011) 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of an identical text or by endorsement, at the latest by April 2012, and conflicting national standards shall be withdrawn at the latest by April 2012.

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 EN 1114-1:1996.

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

This is the first in a series of standards on the safety of extruders and extrusion lines.

Part 2 deals with die face pelletisers.

Part 3 deals with haul-offs.

NOTE Part 2 (EN 1114-2) was cancelled in 2010.

List of significant technical changes since the last edition:

— partially modified requirements and/or protective measures of extruders, feeding systems and ancillary equipment by taking into account the technological changes in the plastics and rubber industry and the development of the safety technology;

— modified requirements for the safety related parts of the machine control of extruders, feeding systems and ancillary equipment;

— the requirements and/or protective measures concerning the electrical equipment are specified in greater detail;

— addition of a noise test code.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This document is a type C standard as stated in EN ISO 12100. The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

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

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1 Scope

This European Standard specifies all significant hazards, hazardous situations and events relevant to all types of screw extruders for plastics and rubber, when they are used as intended and under conditions of misuse which are foreseeable by the manufacturer (see Clause 4).

This European Standard additionally covers the following feeding systems:

— hoppers;

— single roller feed;

— double roller feed;

— crammer feeder;

and the following ancillary equipment which form part of or are attached to the extruder:

— screen changers;

— melt/gear pumps;

— melt pipes and adaptors;

— static mixers;

— extruder head that give initial shape to the extruded material.

NOTE Metering devices are not covered by this standard.

This European Standard does not deal with hazards caused by the processing of materials and which may lead to a risk of fire or release of health hazardous materials.

An extruder conforming to this document is not regarded as a pressure vessel as defined in the Pressure Equipment Directive 97/23/EC.

Extruders usually do not produce explosive atmospheres. Where materials are processed, which may cause an explosive atmosphere, the Directive 94/9/EC on the Equipment intended for use in Potentially Explosive Atmospheres (ATEX) should be applied. Explosion hazards are not dealt with in this document.

This European Standard is not applicable to extruders which are manufactured before the date of its publication as EN.

2 Normative references

The following referenced documents are indispensable for the application 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 574:1996+A1:2008, *Safety of machinery — Two-hand control devices — Functional aspects — Principles for design*

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