ICS 83.200 SLOVENSKÁ TECHNICKÁ NORMA Január 2021

STN	**Plastárske a gumárske stroje Vstrekovacie stroje Bezpečnostné požiadavky (ISO 20430: 2020)**	**STN EN ISO 20430** 69 1700

Plastics and rubber machines - Injection moulding machines - Safety requirements (ISO 20430:2020)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/20

Obsahuje: EN ISO 20430:2020, ISO 20430:2020

Oznámením tejto normy sa 31. 07. 2022 ruší
STN EN 201 (69 1700) z apríla 2010

131587

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20430

July 2020

ICS 83.200 Supersedes EN 201:2009

English Version

Plastics and rubber machines - Injection moulding machines - Safety requirements (ISO 20430:2020)

Machines pour les matières plastiques et le caoutchouc - Machines de moulage par injection - Prescription de sécurité (ISO 20430:2020)

Kunststoff- und Gummimaschinen - Spritzgießmaschinen - Sicherheitsanforderungen (ISO 20430:2020)

This European Standard was approved by CEN on 26 April 2020.

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

Ref. No. EN ISO 20430:2020 E

Contents

Page

European foreword

This document (EN ISO 20430:2020) has been prepared by Technical Committee ISO/TC 270 "Plastics and rubber machines" in collaboration with 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 January 2021, and conflicting national standards shall be withdrawn at the latest by July 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 supersedes EN 201:2009.

Compared with EN 201:2009, the following significant technical changes have been made:

— modification of the scope;

— cancellation of the safety requirements for magnetic clamping systems;

— cancellation of the safety requirements for other ancillary requirements;

— adaption of the normative references and referring to ISO standards;

— consideration of revised type-A and type-B standards;

— moving of the list of significant hazards to an informative annex;

— modification of the safety requirements and protective measures by taking into consideration the technological progress in the plastics and rubber industry and the continuous development of the safety technology;

— modification of all annexes;

— fundamental modification of the annexes specifying the protective types and addition of further examples of application;

— moving of the annex indicating the relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC to informative Annex ZA;

— cancellation of the annex indicating the relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC.

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

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, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 20430:2020 has been approved by CEN as EN ISO 20430:2020 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	4, 5, 6	
1.1.3	4.1, 4.8.2, 6.2.23	
1.2.1	4.1.1	
1.2.2	4.1.5, 4.2.1.3, 4.2.3.2, 4.2.7, 4.2.8, 4.8.10, Annex E, Annex F	
1.2.3	4.1.2, 4.2.4	
1.2.4.1	4.1.2.2	
1.2.4.2	4.1.2.2	
1.2.4.3	4.1.3	
1.2.5	4.2.3.2, 4.5.1, 4.6.1	
1.2.6	4.1.2.3, 4.8.10	
1.3.2	4.8.1, 4.8.2, 4.9.4	
1.3.3	4.5, 4.9.4, Annex H	
1.3.7	4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8.10, 4.9, Annex B, Annex C, Annex D, Annex E, Annex F	
1.3.8	4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8.10, 4.9, Annex B, Annex C, Annex D, Annex E, Annex F	

EN ISO 20430:2020 (E)

The relevant Essential Requirements of Directive 2006/42/EC (MD)	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.3.9	4.1.8, 4.2.6, 4.3.2, 4.3.3, Annex B, Annex C, Annex D, Annex E	
1.4	4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8.10, 4.9	
1.5.1	4.8.4	
1.5.3	4.8.9	
1.5.4	4.8.3	
1.5.5	4.2.5, 4.5, 4.6.2, 4.6.3, 4.8.5	
1.5.8	4.8.6, Annex I	
1.5.10	4.8.4	
1.5.11	4.8.4	
1.5.13	4.8.1, 4.8.2, 4.8.7	
1.5.14	4.2.7, 4.2.8	
1.5.15	4.8.8	
1.6.1	4.2.6, 4.3.2, 4.8.3, 4.8.8	
1.6.2	4.8.8	
1.6.3	4.1.1	
1.7.1	4.8.8, 6.1, 6.4, 6.5	
1.7.1.2	4.2.3.2, 4.8.11, 4.9.3, 4.9.4.3, 4.9.4.4, 6.5, Annex F, F.2	
1.7.2	4.2.3.2, 4.8.11, 6.4	
1.7.3	6.2.21, 6.3, Annex H	
1.7.4.1	6.1	
1.7.4.2	6.2, Annex I	
1.7.4.3	6.2.24, Annex I	

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.

INTERNATIONAL STANDARD

ISO 20430

First edition
2020-04

Plastics and rubber machines — Injection moulding machines — Safety requirements

Machines pour les matières plastiques et le caoutchouc — Machines de moulage par injection — Prescription de sécurité

Reference number
ISO 20430:2020(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 270, *Plastics and rubber machines*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 145, *Plastics and rubber machines*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is a type-C standard as stated in 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 distributors, resellers, rebuilders and integrators;

— machine users/employers (small, medium and large enterprises);

— machine operators/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises).

The above-mentioned stakeholder groups have been given the possibility to participate in 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.

INTERNATIONAL STANDARD **ISO 20430:2020(E)**

Plastics and rubber machines — Injection moulding machines — Safety requirements

1 Scope

This document specifies the essential safety requirements for the design and construction of injection moulding machines for the processing of plastics and/or rubber and provides information for their safe use.

This document is applicable only to injection moulding machines with hydraulic and/or electrical drives for platen movement.

This document deals with all significant hazards, hazardous situations and events relevant to injection moulding machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex A) during the life cycle of the machinery (see ISO 12100:2010, 5.4).

The following are not covered:

— machines on which the clamping unit can only be operated by the physical force of the operator;

— machines for which the hydraulic jack can only be manually operated;

— injection blow moulding machines;

— machines for reaction injection moulding;

— compression moulding machines and transfer moulding machines;

— direct-on sole moulding machines, unit sole and footwear component moulding machines, full shoe and boot moulding machines;

— design of an exhaust system;

— design and construction of the mould.

NOTE Moulds and exhaust systems are not part of the machinery.

This document is not applicable to injection moulding machines which 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.

ISO 1402:2009, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 3747:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering/survey methods for use in situ in a reverberant environment*

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 7751:2016, *Rubber and plastics hoses and hose assemblies — Ratios of proof and burst pressure to maximum working pressure*

ISO 11201:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*

ISO 11202:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*

ISO 11204:2010, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

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

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

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

ISO 13850:2015, *Safety of machinery — Emergency stop function — Principles for design*

ISO 13851:2002, *Safety of machinery — Two-hand control devices — Functional aspects and design principles*

ISO 13855:2010, *Safety of machinery — Positioning of safeguards with respect to the approach speeds of parts of the human body*

ISO 13856-1:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors*

ISO 13856-2:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14118:2017, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119:2013, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

ISO 14120:2015, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

ISO 14122-1:2016, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means and general requirements of access*

ISO 14122-2:2016, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways*

ISO 14122-3:2016, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails*

ISO 14122-4:2016, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders*

IEC 60204-1:2016, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60947-5-3:2013, *Low-voltage switchgear and controlgear — Part 5-3: Control circuit devices and switching elements — Requirements for proximity devices with defined behaviour under fault conditions (PDDB)*

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

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

IEC 61496-3:2008, *Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for active opto-electronic protective devices responsive to diffuse Reflection (AOPDDR)*

IEC 61800-5-1:2007, *Adjustable speed electrical power drive systems — Part 5-1: Safety requirements — Electrical, thermal and energy*

IEC 61800-5-2:2016, *Adjustable speed electrical power drive systems — Part 5-2: Safety Requirements — Functional*