



SLOVENSKI STANDARD

SIST EN 1612-1:2000

01-april-2000

Rubber and plastics machines - Reaction moulding machines - Part 1: Safety requirements for metering and mixing units

Rubber and plastics machines - Reaction moulding machines - Part 1: Safety requirements for metering and mixing units

Gummi- und Kunststoffmaschinen - Reaktionsgießmaschinen - Teil 1: Sicherheitsanforderungen an Misch- und Dosiereinheiten

Machines pour le caoutchouc et les matières plastiques - Machines de moulage par réaction - Partie 1: Prescriptions de sécurité relatives aux unités de dosage et de mélange

Ta slovenski standard je istoveten z: EN 1612-1:1997

ICS:

83.200	Oprema za gumarsko industrijo in industrijo polimernih materialov	Equipment for the rubber and plastics industries
--------	---	--

SIST EN 1612-1:2000

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1612-1:2000](https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000)

<https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000>

CONTENTS

Foreword		Page
0	Introduction	3
1	Scope	3
2	Normative references	4
3	Definitions	4
4	List of hazards	6
5	Safety requirements and/or measures	7
6	Verification of the safety requirements and/or measures	11
7	Information for use	12
Annex ZA (Informative):	Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	14

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 1612-1:2000](https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000)

<https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000>



Foreword

This European Standard has been prepared by Technical Committee CEN/TC 145 "Rubber and plastics machines - Safety", 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of an identical text or by endorsement, at the latest by February 1998, and conflicting national standards shall be withdrawn at the latest by February 1998.

This European Standard 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 standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

0 Introduction

This European Standard is a type C Standard as defined in EN 292.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with EN 292 for hazards which are not covered by this standard.

1 Scope

This standard specifies the health and safety requirements for the design of metering and mixing units for reaction moulding machines. The significant and specific hazards are listed in clause 4 and are dealt with in this standard.

<https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000>

This standard does not cover completely the hazards arising from the use of highly flammable additives, for example pentane used as a blowing agent (see 4.7), because these hazards depend to a large extent on the additives and processes used.

This standard does not cover the hazards arising from the assembly of separate units not supplied at the same time by the same manufacturer.

This standard does not cover the hazards arising from the movement of powered mixing heads; for these, see prEN 1612-2.

This standard applies to metering and mixing units manufactured after the date of publication of this standard.

2 Normative references

This standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1: 1991	Safety of Machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology
EN 292-2: 1991/ A1:1995	Safety of Machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications
EN 418: 1992	Safety of Machinery - Emergency stop equipment, functional aspects - Principles for design
EN 563	Safety of Machinery - Temperatures of touchable surfaces - Ergonomics data to establish limit values for hot surfaces
EN 954-1	Safety of Machinery - Safety-related parts of control systems - Part 1: General principles for design
prEN 1005	Safety of machinery - Human physical performance
EN 60204-1: 1992	Safety of Machinery - Electrical equipment of machines Part 1: General requirements (IEC 204-1:1992, modified)

3 Definitions

For the purposes of this standard, the following definitions apply (see figure 1):

3.1 working tank

A tank which is part of the metering and mixing unit and contains one of the components.

3.2 metering unit

A unit for metering the components.

3.3 mixing head

The part of the metering and mixing unit for mixing and delivery which can be manually operated or powered (if powered, see prEN 1612-2).

3.4 highly flammable additive

An additive with a flash point $\leq 21^{\circ}\text{C}$.

NOTE: For the moment there is no European Directive or Standard in existence.

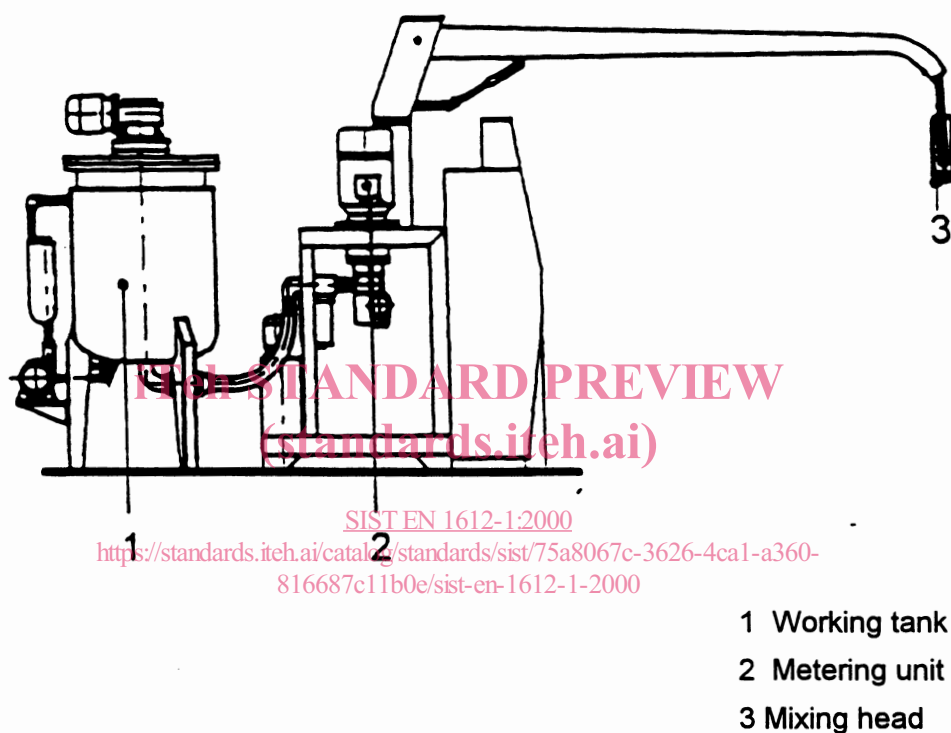


Figure 1 : Example of a metering and mixing unit

4 List of hazards**4.1 Hazards due to moving couplings****4.2 Hazards due to instability****4.3 Hazards due to whiplash of hoses following rupture or disconnection****4.4 Hazards due to fluid ejection****4.5 Hazards due to overpressure****4.6 Hazards due to elevated temperatures of manually operated mixing heads which can cause either burns or unexpected reactions on the part of the operator****4.7 Hazards due to contact with the components, additives or a mixture of them or due to the inhalation of gases dangerous to health**

- during manual filling of the working tanks
- due to leakage
- during delivery of product through the mixing head

4.8 Hazards due to incorrect connection of hoses**4.9 Hazards due to explosion where highly flammable additives are used****4.10 Hazards due to neglect of ergonomic principles****4.11 Electrical hazards****4.12 Hazards due to failure of the control circuit**

iTech STANDARD PREVIEW

(standards.iteh.ai)

SIST EN 1612-1:2000

https://standards.iteh.ai/catalog/standards/sist-en-1612-1-2000/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000

5 Safety requirements and/or measures

5.1 Hazards due to moving couplings

The exposed couplings between pumps and motors shall be protected by fixed guards

5.2 Hazards due to instability

Where independent fixings are used to support the mixing head they shall be bolted to the floor. See also clause 7.

5.3 Hazards due to whiplash of hoses

Whiplash of hoses shall be prevented, for example by:

- binding the hoses together
- attaching the hoses to a fixed part

This shall be done at least every 75 cm.

In addition, flexible hoses and their connections shall be designed to prevent tearing from their fittings and unintentional detachment from connection points.

Flexible hoses shall not be used to support the mixing head.

5.4 Hazards due to fluid ejection

Hose assemblies shall be marked at their connection points with the nominal pressure, month and year of manufacture and the name of the manufacturer.

Because of the need to replace hoses (see clause 7) a shot counter shall be provided for metering and mixing units which work at a pressure of more than 30 bar.

<https://standards.iteh.ai/catalog/standards/sist/75a8067c-3626-4ca1-a360-816687c11b0e/sist-en-1612-1-2000>

Adjustment devices on the mixing head, for example screws or pins shall be designed in such a way that they are retained in the head so that unintentional complete removal of these devices and the resulting outflow of fluids is prevented