

**Kummi- ja plastitöötlusmasinad.
Peenestusmasinad. Osa 4: Paagutamisseadmete
ohutusnõuded KONSOLIDEERITUD TEKST**

Plastics and rubber machines - Size reduction
machines - Part 4: Safety requirements for
agglomerators CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12012-4:2006+A1:2008 sisaldab Euroopa standardi EN 12012-4:2006+A1:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 27.10.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 03.09.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12012-4:2006+A1:2008 consists of the English text of the European standard EN 12012-4:2006+A1:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 27.10.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 03.09.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

**Plastics and rubber machines - Size reduction machines - Part
4: Safety requirements for agglomerators**

Machines pour les matières plastiques et le caoutchouc -
Machines à fragmenter - Partie 4: Prescriptions de sécurité
relatives aux agglomérateurs

Kunststoff- und Gummimaschinen -
Zerkleinerungsmaschinen - Teil 4:
Sicherheitsanforderungen für Agglomeratoren

This European Standard was approved by CEN on 11 October 2006 and includes Amendment 1 approved by CEN on 8 June 2008.

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 Management Centre or to any CEN member.

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
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Foreword

This document (EN 12012-4:2006+A1:2008) 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 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2008-06-08. The main changes compared to the previous version are:

- addition of Annex ZB
- minor changes of Foreword, sub-clause 7.2, second and third indents, Annex A, A.7, 2nd indent.

This document supersedes EN 12012-4:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**

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.

A1 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. **A1**

This is the fourth in a series of standards on the safety of size reduction machines.

Part 1 deals with blade granulators.

Part 2 deals with strand pelletisers.

Part 3 deals with shredders.

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, 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 United Kingdom.

Introduction

This European Standard is a type C standard as stated in EN ISO 12100:2003.

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

When provisions of this type C standard are different from those that 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 in accordance with the provisions of this type C standard.

1 Scope

This European Standard specifies the essential safety requirements applicable to the design and construction of agglomerators used to densify plastic scrap, reducing its size and/or volume.

The limits of the agglomerator are as follows:

- the outer edge of the feed opening, or outer edge of the fixed feed device (e.g. hopper) or the interface between the feed system (e.g. conveyor) and the agglomerator chamber and
- the outer edge of the discharge opening of the agglomerator chamber or the interface between the agglomerator chamber and the discharge system.

Only the significant hazards listed in Clause 4 and dealt with in Clause 5 are subject to this European Standard.

This European Standard does not deal with hazards caused by processing materials (such as Expanded Polystyrene (EPS) and Polyurethane (PU) foam) which, when heated, may lead to a risk of fire and release of toxic gases.

This European Standard does not deal with hazards caused by upstream and/or downstream equipment.

This European Standard is not applicable to agglomerators manufactured before the date of its approval 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 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

EN 418:1992, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 811:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs*

EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and moveable guards*

EN 954-1:1996, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

EN 1037:1995, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005 modified)*

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

EN ISO 9614-1:1995, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points (ISO 9614-1:1993)*

EN ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN 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 13732-1:2006)*

EN ISO 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*

EN ISO 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply.

3.1

agglomerator

machine (sometimes called densifier) for reducing the size and volume of thermoplastic scrap in a chamber. The material is cut or kneaded, mixed, heated by friction and, thus, densified, if required by using water. Feeding the scrap can be by hand or by feed system

3.2

opening in the agglomerator chamber

opening designed and constructed for feeding the material, discharging the material, inspecting the process inside the agglomerator chamber and/or maintaining the blades

3.3

blade

cutting/kneading tool, that can be fixed or rotating and is used to cut/knead and heat by friction the material being processed

3.4

feed system

power operated equipment (conveyor belts, nip roll feeders, feed screws etc.) used to feed the agglomerator