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**BSI Standards Publication**

## **Safety of packaging machines**

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Part 3: Form, fill and seal machines; fill and seal machines

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## National foreword

This British Standard is the UK implementation of EN 415-3:2021. It supersedes BS EN 415-3:1999+A1:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/3/3, Packaging machines.

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

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## EUROPÄISCHE NORM

October 2021

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Supersedes EN 415-3:1999+A1:2009

English Version

## Safety of packaging machines - Part 3: Form, fill and seal machines; fill and seal machines

Sécurité des machines d'emballage - Partie 3 :  
Machines d'emballage à former, remplir et sceller ;  
machines d'emballage à remplir et sceller

Sicherheit von Verpackungsmaschinen - Teil 3: Form-,  
Füll- und Verschleißmaschinen; Füll- und  
Verschleißmaschinen

This European Standard was approved by CEN on 6 September 2021.

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**

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<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>5</b>
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>7</b>
<b>3 Terms and definitions</b> .....	<b>9</b>
<b>3.1 Definitions of terms</b> .....	<b>9</b>
<b>3.2 Definitions of machines covered by this document</b> .....	<b>13</b>
<b>3.3 Definitions of machines which have similar hazards to those machines covered by this document</b> .....	<b>20</b>
<b>4 Safety requirements</b> .....	<b>24</b>
<b>4.1 General requirements</b> .....	<b>24</b>
<b>4.2 Safety requirements for a flow-wrapping machine</b> .....	<b>32</b>
<b>4.3 Safety requirements for a vertical form, fill and seal machine</b> .....	<b>39</b>
<b>4.4 Safety requirements for a horizontal sachet form, fill and seal machine</b> .....	<b>42</b>
<b>4.5 Safety requirements for a thermoform, fill and seal machine</b> .....	<b>44</b>
<b>4.6 Safety requirements for a tubular bag form, fill and seal machine</b> .....	<b>51</b>
<b>4.7 Safety requirements for a mandrel form, fill and seal machine</b> .....	<b>53</b>
<b>4.8 Safety requirements for a pre-made bag fill and close machine</b> .....	<b>57</b>
<b>4.9 Safety requirements for a cup or tub fill and seal machine</b> .....	<b>59</b>
<b>4.10 Safety requirements for a sack fill and seal machine</b> .....	<b>62</b>
<b>4.11 Safety requirements for an auger filler</b> .....	<b>67</b>
<b>4.12 Safety requirements for a volumetric cup filler</b> .....	<b>69</b>
<b>4.13 Safety requirements for a nett weigher</b> .....	<b>71</b>
<b>4.14 Safety requirements for a multi-head weigher</b> .....	<b>73</b>
<b>5 Verification of safety requirements</b> .....	<b>75</b>
<b>5.1 General</b> .....	<b>75</b>
<b>5.2 Visual inspections with the machine stopped</b> .....	<b>75</b>
<b>5.3 Measurements with the machine stopped</b> .....	<b>76</b>
<b>5.4 Visual inspections with the machine running</b> .....	<b>76</b>
<b>5.5 Measurements or tests with the machine running</b> .....	<b>76</b>
<b>5.6 Verification procedures</b> .....	<b>76</b>
<b>6 Information</b> .....	<b>80</b>
<b>6.1 General</b> .....	<b>80</b>
<b>6.2 Marking</b> .....	<b>80</b>
<b>6.3 Warning of residual risks</b> .....	<b>81</b>
<b>6.4 Instructions</b> .....	<b>81</b>
<b>Annex A (informative) List of significant hazards</b> .....	<b>87</b>
<b>Annex B (normative) Noise test code</b> .....	<b>120</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC aimed to be covered</b> .....	<b>123</b>
<b>Bibliography</b> .....	<b>127</b>

This is a preview of "BS EN 415-3:2021". [Click here to purchase the full version from the ANSI store.](#)

## European foreword

This document (EN 415-3:2021) has been prepared by Technical Committee CEN/TC 146 "Packaging 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 April 2022, and conflicting national standards shall be withdrawn at the latest by April 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 has been prepared under a Standardization Request 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.

This document supersedes EN 415-3:1999+A1:2009.

The following significant changes have been made:

- Scope now includes fill and seal machines and multi-head weighers;
- Cartoning machines have been removed from the scope;
- Safety requirements have been rewritten so they are in line with EN 415-10:2014;
- Normative references have been changed to reflect the many changes that have been made to B1 and B2 standards.

EN 415, *Safety of packaging machines* consists of the following parts:

- *Part 1: Terminology and classification of packaging machines and associated equipment;*
- *Part 2: Pre-formed rigid container packaging machines;*
- *Part 4: Palletizers and depalletizers;*
- *Part 5: Wrapping machines;*
- *Part 6: Pallet wrapping machines;*
- *Part 7: Cartoning and case-packing machines;*
- *Part 8: Strapping machines;*
- *Part 9: Noise measurement methods for packaging machines, packaging lines and auxiliary equipment, grade of accuracy 2 and 3;*
- *Part 10: General requirements.*

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Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

Form, fill and seal machines and fill and seal machines are used extensively in Europe, in an increasingly wide range of industries. They contain many hazards and have the potential to cause serious injury.

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

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);

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 establishes safety requirements for the main types of form, fill and seal machines, fill and seal machines and the filling machines which are frequently fitted to these machines.

Form fill and seal machines within the scope of this document are:

- flow wrapping machine;
- vertical form, fill and seal machine;
- horizontal sachet form, fill and seal machine;
- thermoform, fill and seal machine;
- tubular bag form, fill and seal machine;
- mandrel form, fill and seal machine.

Fill and seal machines within the scope of this document are:

- pre-made bag, erect, fill and seal machine;
- cup or tub fill and seal machine;
- sack fill and seal machine.

Filling machines commonly fitted to form, fill and seal machines and fill and seal machines within the scope of this document are:

- auger filler;
- volumetric cup filler;
- nett weigher;
- multi-head weigher.

Other types of form, fill and seal machine which are described in 3.3 have similar hazards to these machines and Clause 4 indicates which clauses of this document are applicable to these machines.

This document covers the safety requirements for machine design, construction and all phases of life of the machines including installation, commissioning, operation, adjustment, maintenance and cleaning.

This document applies to machines manufactured after the date of publication of this document.

This document does not apply to:

- blow mould fill and seal machines;
- bulk container fill and seal machines;
- cartoning machines;
- food depositors, including volumetric piston depositors in the scope of EN 15180;
- thermoforming machines in the scope of EN 12409.