

BS EN 415-1:2014



BSI Standards Publication

Safety of packaging machines

Part 1: Terminology and classification
of packaging machines and associated
equipment

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National foreword

This British Standard is the UK implementation of EN 415-1:2014. It supersedes BS EN 415-1:2000+A1:2009 which is withdrawn.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 secretary.

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Sécurité des machines d'emballage - Partie 1: Terminologie et classification des machines d'emballage et de l'équipement associé

Sicherheit von Verpackungsmaschinen - Teil 1: Terminologie und Klassifikation von Verpackungsmaschinen und zugehörigen Ausrüstungen

This European Standard was approved by CEN on 4 January 2014.

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Foreword

This document (EN 415-1:2014) 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of an identical text or by endorsement, at the latest by January 2015 and conflicting national standards shall be withdrawn at the latest by January 2015.

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 415-1:2000+A1:2009.

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

This part 1 of EN 415, *Safety of packaging machines* belongs to a series of documents, the other parts of which are the following:

- *Part 2: Pre-formed rigid container packaging machines*
- *Part 3: Form, fill and seal machines*
- *Part 4: Palletisers and depalletisers*
- *Part 5: Wrapping machines*
- *Part 6: Pallet wrapping machines*
- *Part 7: Group and secondary packaging machines*
- *Part 8: Strapping machines*
- *Part 9: Noise measurement methods for packaging machines, packaging lines and associated equipment, grade of accuracy 2 and 3*
- *Part 10: General requirements*

Standards for packaging machines

The appropriate standard to find safety requirements for a particular packaging machine defined in Clause 3, is indicated in Annex A of this standard.

NOTE In most cases the safety requirements will be found in another part of EN 415, however for a few machines the safety requirements will be found in another type of 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, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Packaging 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.

There are an enormous variety of packaging machines, but hitherto there has been no internationally agreed nomenclature. This has led to confusion when reporting accidents and interpreting accident and trade statistics. The purpose of this standard is to name and define each group of packaging machines uniquely. In most cases, these names will already be in common use, however in some cases the commonly used name is ambiguous, a trade name, or used to describe more than one significantly different type of machine. In these cases, a less familiar name will be defined. The identification of specific types of packaging machines and their definition assists in the correct application of the EN 415 series of standards and other standards that may be relevant for packaging machines. Machine designers, manufacturers, suppliers, importers, users, enforcing authorities and other interested bodies are encouraged to use the nomenclature in this type "C" standard to improve communication and to avoid confusion, particularly when reporting accidents and preparing the documentation required by EU Directives.

1 Scope

This European Standard defines the field of packaging machines. The machines defined fall within the following general groups:

- filling machines;
- closing machines;
- labelling, decorating and coding machines;
- cleaning, sterilizing, cooling and drying machines;
- fill and seal machines;
- inspection machines;
- container and packaging component handling machines;
- form, fill and seal machines;
- carton erecting, carton closing and cartoning machines;
- wrapping machines;
- group or secondary packaging machines;
- palletizers, depalletizers and ancillary equipment;
- pallet wrapping machines;
- strapping machines.

This part of EN 415 indicates the relevant machine specific part of EN 415, or another relevant standard, where safety requirements for dealing with the hazards associated with these machines can be found.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 415-2, *Packaging machines safety — Part 2: Pre-formed rigid container packaging machines*

EN 415-3, *Safety of packaging machines — Part 3: Form, fill and seal machines*

EN 415-4, *Safety of packaging machines — Part 4: Palletisers and depalletisers*

EN 415-5, *Safety of packaging machines — Part 5: Wrapping machines*

EN 415-6, *Safety of packaging machines — Part 6: Pallet wrapping machines*

EN 415-7, *Safety of packaging machines — Part 7: Group and secondary packaging machines*

EN 415-8, *Safety of packaging machines — Part 8: Strapping machines*

EN 415-10, *Safety of packaging machines — Part 10: General requirements*

EN 422, *Plastics and rubber machines — Blow moulding machines — Safety requirements*

EN 619, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of unit loads*

EN ISO 10821, *Industrial sewing machines — Safety requirements for sewing machines, units and systems (ISO 10821)*

EN ISO 11553-1, *Safety of machinery — Laser processing machines — Part 1: General safety requirements (ISO 11553-1)*

EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.0

packaging machine

machine used to package a product

3.1 Filling machines

This group of packaging machines measures out a product from bulk by some predetermined value, e.g. volume, level in a container, mass or count. The terms listed below describe the method of measuring out or dosing the product. The filling machine may comprise one or a number of dosing devices which may be arranged with or without a mechanism to control containers or packages as they are filled.

Filling machines of all kinds are typically supplied in three main forms:

- a) single head machines;
- b) in-line machines - with several filling heads arranged side by side;
- c) rotary machines - with several filling heads arranged on a rotating carousel.

NOTE The term filling machine will generally be used when the product is being dispensed into a package, however the identical machine may also be termed a dosing machine or depositor when the product is dispensed into something other than a package, e.g. onto a tray to form part of a ready meal.

3.1.1 Volumetric filling machines

This group of filling machines measures out the product using a means of measuring volume which does not relate to the volume of the container in which they are placed e.g. measuring the volume in a cup, a piston or with a flowmeter.

3.1.1.1

volumetric cup filling machine

filling machine which measures out a product, usually free-flowing solids or powder, in a cup of predetermined volume

3.1.1.2

volumetric piston filling machine

filling machine which measures out a product, usually a liquid, paste or gas, using a reciprocating piston of predetermined volume

3.1.1.2.1

displacement filling machine

filling machine which measures out a product, usually liquid, by displacing a predetermined volume of product with a loose fitting piston

3.1.1.2.2

aerosol gassing machine

volumetric piston filling machine designed specifically to fill propellant gas into an aerosol or gas canister

3.1.1.3

rotating chamber filling machine

filling machine which measures out a product, usually a liquid, paste or gas, using a metering pump which operates for a predetermined number of cycles

3.1.1.4

flow meter filling machine

filling machine which measures out a product, usually a liquid, using a flow meter

3.1.1.5

auger filling machine

filling machine which measures out a product, usually a powder, using an auger which rotates for a predetermined number of revolutions

3.1.2 Level filling machines

This group of filling machines measure out the product using the level of product in the container in which the product is being packed as an approximation to a required volume of product.

3.1.2.1

vacuum filling machine

filling machine which fills a product, usually a liquid or powder, to a predetermined level in a rigid container, flow being initiated by applying a vacuum to the container

3.1.2.2

gravity filling machine

filling machine which fills a product, usually a liquid or powder, to a predetermined level in a container, the product flowing under gravity

3.1.2.3

pressure filling machine

filling machine which fills a liquid product under gravity, to a predetermined level in a rigid container, with the product under pressure

3.1.3

timed flow filling machines

filling machines which measure out a product, usually a liquid or powder, by controlling the product flow duration to a predetermined value

3.1.4 Gravimetric filling machines

This group of filling machines measure out the product by mass.

3.1.4.1

nett weighing machine

filling machine which measures out a predetermined mass of product, usually free-flowing solids, before dispensing it as a fill

3.1.4.1.1

multi-head weigher; selective combination weighing machine

nett weighing machine with multiple weighing units, which computes an appropriate combination of loads to achieve the predetermined mass and discharges them together as a fill

3.1.4.2

gross weighing machine

filling machine which measures out a predetermined mass of product, directly into the package, while the package rests on a weighing instrument which controls the filling operation

Note 1 to entry: The product may be liquid, powder, gas or solid.

3.1.5

count filling machine

filling machine which measures out solids according to a predetermined count

3.2 Closing machines

These packaging machines seal or close filled packages and may be supplied as stand-alone machines or integrated with one of the types of filling machine listed in 3.1 as a combined filling and closing machine.

3.2.1 Closing machines which do not use a closure or closing material

This group of closing machines closes packages by folding, crimping, heat-sealing or welding without the need for a closure like a cap or closing material like sewing thread or staples.

3.2.1.1

fold closing machine

closing machine which seals a package, usually a bag or collapsible tube, by folding

3.2.1.2

tuck closing machine

closing machine which closes a package, usually a carton, by engaging pre-cut tabs in slots

Note 1 to entry: A similar machine is defined in 3.9.2.1.

3.2.1.3

crimp closing machine

closing machine which closes a package, usually a bag or collapsible tube, by crimping

3.2.1.4

weld sealing machine

sealing machine which seals a package, usually metal, by welding

3.2.1.5

fusion sealing machine

sealing machine which seals a package, usually glass, by fusion welding

3.2.1.6

solder sealing machine

sealing machine which seals a package, usually made from metal, by soldering

3.2.1.7

heat sealing machine

sealing machine which seals a package by the application of heat

3.2.1.7.1

blister sealing machine

sealing machine which seals a filled plastic blister to a piece of coated cartonboard, by the application of heat

3.2.1.7.2

rigid container sealing machine

sealing machine which seals a lid or flexible film to a tray, cup, bottle or other container by the application of heat

3.2.1.7.3

bag sealing machine

sealing machine which seals a bag by the application of heat

3.2.1.7.4

sack sealing machine

sealing machine which seals a sack by the application of heat

3.2.1.8

induction sealing machine

sealing machine which seals a foil laminate lid to a container in an electromagnetic field

3.2.2 Closing machines which use a closure

This group of closing machines closes packages using a closure like a cap, cork or lid.

Closing machines of this type are typically supplied in three main forms:

- a) single head machines;
- b) rotary machines - with several closing heads arranged on a rotating carousel;
- c) combined rotary filling and closing machines.

3.2.2.1

screw capping machine

closing machine which applies a threaded cap or lid, usually to a rigid container

3.2.2.2

steam capping machine

closing machine which injects steam between the cap and the top of the filled rigid container before closing, to create a vacuum in the closed container after cooling

3.2.2.3

plugging; corking machine

closing machine which pushes a plug or cork into the mouth of a rigid container

3.2.2.4

press-on lidding machine

closing machine which pushes a lid, usually metal, plastic or other material, on to a rigid container

3.2.2.5

crowd capping machine

closing machine which places a pre-formed metal cap over the mouth of a rigid container, before crimping the edges of the cap to secure it to the container

3.2.2.6

roll-on capping machine

closing machine which places a deformable closure over the mouth of a rigid container, before rolling the capsule to form a thread and securing the capsule to the container

3.2.2.7

can seaming machine

closing machine which places a pre-formed lid onto the mouth of a can, before rolling the edges of the lid and can together to form a seal

3.2.2.8

cork wiring machine

closing machine which applies a wire cage to the neck and cork of a rigid container, to prevent the cork being pushed out by gas pressure in the container

3.2.2.9

aerosol valve closing machine

closing machine which places an aerosol valve actuator and a cap onto the aerosol container

3.2.2.10

pump applicator

closing machine which places a dispensing pump into the mouth of a rigid container before attaching the pump to the container

3.2.2.11

syringe assembling machine

closing machine which places a plunger into a pre-filled syringe

3.2.3 Closing machines which use a closing material

This group of closing machines closes packages using closing materials like staples or adhesive tape.

3.2.3.1

staple closing machine

closing machine which closes packages, usually corrugated cases, with metal staples

Note 1 to entry: See also 3.11.3.3.

3.2.3.2

nail closing machine

closing machine which closes packages, usually wooden boxes, with nails

3.2.3.3

rivet closing machine

closing machine which closes packages, usually metal, with rivets

3.2.3.4

clip closing machine

closing machine which closes packages, usually flexible packages or rigid containers, with metal clips

3.2.3.5

sewing machine

closing machine which closes packages, usually paper sacks, by sewing

3.2.3.6

glue sealing machine

sealing machine which seals packages, usually bags, cartons or corrugated board cases, with an adhesive

Note 1 to entry: A similar machine is defined in 3.11.3.1.

3.2.3.7

gummed tape sealing machine

sealing machine which seals packages with pre-gummed tape

Note 1 to entry: A similar machine for sealing cases is defined in 3.11.3.2.2.

3.2.3.8

tape sealing machine

sealing machine which seals packages with self-adhesive tape

Note 1 to entry: A similar machine for sealing cases is defined in 3.11.3.2.1.

3.2.3.9

twist-tie closing machine

closing machine which closes packages, usually bags, by twisting a wire closure around the neck of the package

3.2.3.10

foil sealing machine

machine which applies a reel fed foil or plastic cover to a rigid container, sealing it to the container by the application of heat

3.3 Labelling, decorating and coding machines

3.3.1 Labelling machines

This group of packaging machines all apply a label to a package.

Labelling machines are typically supplied in two main forms:

- a) single head machines;
- b) in-line machines - with two or more labelling heads arranged side by side;
- c) rotary machines - where containers are transported past one or more labelling heads on a rotating carousel.

3.3.1.1

wet glue labelling machine

labelling machine which applies labels, usually to a rigid container, using an adhesive which is liquid at room temperature

3.3.1.2

hot melt glue labelling machine

labelling machine which applies labels, usually to a rigid container, using an adhesive which is solid at room temperature

Note 1 to entry: The glue is activated on the machine by the application of heat.

3.3.1.3

self-adhesive labelling machine

labelling machine which applies pre-glued labels, which are supplied on a reel of release paper or film

3.3.1.4

heat seal labelling machine

labelling machine which applies labels coated with a heat sealable material

Note 1 to entry: The adhesive is activated on the machine by the application of heat.

3.3.1.5

pre-gummed labelling machine

labelling machine which applies pre-gummed labels to packages

Note 1 to entry: Water is applied to the label on the machine to activate the glue.

3.3.1.6

print and apply labelling machine

labelling machine on which a label is first printed and then applied to a package

3.3.1.7

shrink labelling machine

machine which places a tube of printed thermoplastic material over the neck of a rigid container, before shrinking it with hot air or steam so that it closely fits the container

3.3.2 Decorating machines

This group of packaging machines applies some form of decoration like a foil or tag to a package.

Decorating machines are typically supplied in three main forms:

- a) single head machines;
- b) in-line machines - with two or more decorating heads arranged side by side;
- c) rotary machines - where containers are transported past one or more labelling heads on a rotating carousel;
- d) combined labelling and decorating machine.

3.3.2.1

tag labelling machine

machine which applies a tag, usually to a rigid container, either by placing it over the neck of the container, or by fixing it to the container with adhesive

3.3.2.2

foiling machine

machine which applies a decorative foil to the neck of a closed rigid container

3.3.2.3

shrink sleeving machine

machine which places a tube of plain or printed thermoplastic material over the neck of a rigid container, before shrinking it with hot air or steam so that it closely fits the container

3.3.2.4

capsuling machine

machine which applies a decorative capsule to the neck of a rigid container

3.3.2.5

stretch sleeving machine

machine which stretches a tube of plain or printed plastic material over the neck of a rigid container

3.3.3 Coding equipment

This group of machine attachments apply a code to a package, packaging component or material.

3.3.3.1

emboss coder

machine attachment which marks a package by embossing or debossing with raised type

3.3.3.2

wet ink coder

machine attachment which marks a package by printing it with liquid ink

3.3.3.3

hot foil coder

machine attachment which marks a package by transferring dry ink, carried on a reel of film, with a heated die

3.3.3.4

solid ink coder

machine attachment which marks a package by transferring dry ink from a solid block, with a heated die

3.3.3.5

ink jet coder

machine attachment which marks a package by jetting ink in a predetermined pattern

3.3.3.5.1

drop-on-demand ink jet coder

ink jet coder which prints a character by jetting ink from a matrix of nozzles

3.3.3.5.2

continuous stream ink jet coder

ink jet coder which prints a character by applying varying electrostatic charges to droplets of ink

3.3.3.6

laser coder

machine attachment which marks a package with a laser

3.4 Cleaning, sterilising, cooling and drying machines

3.4.1 Cleaning machines

This group of packaging machines is typically used to clean pre-formed rigid containers, plastic trays or crates.

3.4.1.1

air cleaning machine; air rinsing machine

machine which cleans the inside of rigid containers by injecting a gas, usually air, into the inverted containers

3.4.1.2

rinsing machine

machine which cleans the inside of a rigid container by injecting a liquid, usually water, into the inverted container

3.4.1.3

bottle washing machine

machine which cleans the inside and outside of rigid containers, usually with water and detergent

3.4.1.4

crate washing machine

machine which cleans crates, usually with water and detergent

3.4.1.5

capsule cleaning machine

machine which cleans preformed gelatine capsules

3.4.2 Sterilising machines

This group of packaging machines kills micro-organisms on packaging components, like glass bottles or inside packaged products like filled and seamed cans.

3.4.2.1

container sterilising machine

machine which kills micro-organisms on empty rigid containers, before they are filled

Note 1 to entry: This process does not necessarily produce a completely sterile component.

3.4.2.2

continuous steriliser

machine which kills micro-organisms inside packaged products by heating and then cooling them continuously under controlled conditions

Note 1 to entry: This process does not necessarily produce a completely sterile product.

3.4.2.3

batch steriliser

machine which kills micro-organisms in packaged products by heating and then cooling them under controlled conditions in a batch process

Note 1 to entry: This process does not necessarily produce a completely sterile product.

3.4.3 Pasteurising machines

This group of packaging machines kills microorganisms, using the pasteurisation process, inside packaged products like filled and seamed cans and bottled liquids.

3.4.3.1

continuous pasteuriser

machine which kills micro-organisms in packaged products by heating and then cooling them continuously under controlled conditions

Note 1 to entry: In the pasteurisation process not all of the micro-organisms in products are killed.

3.4.3.2

batch pasteuriser

machine which kills micro-organisms in packaged products by heating and then cooling them under controlled conditions in a batch process

Note 1 to entry: In the pasteurisation process, not all of the micro-organisms are killed.

3.4.4 Cooling, warming and drying machines

This group of packaging machines cools, warms or dries packed products like filled and seamed cans or bottled liquids.

3.4.4.1

cooling machine

machine which reduces the temperature of empty or filled and sealed packages

3.4.4.2

drying machine

machine which removes surface moisture from empty containers or filled and sealed packages

3.4.4.3

warming machine

machine which raises the temperature of empty or filled and sealed packages

3.5 Fill and seal machines

Many of the filling machines described in 3.1 and closing machines described in 3.2 are combined together and supplied as fill and seal machines. The following machines are typically supplied as combined fill and seal machines.

3.5.1 Rigid container fill and close machines

This group of fill and seal machines handles pre-formed rigid containers like ampoules, pharmaceutical capsules, vials, glass bottles, cans, barrels, casks and kegs.

3.5.1.1

ampoule/vial fill and close machine

machine in which glass ampoules or vials are first filled with a liquid and then fitted with a closure or fusion sealed

3.5.1.2

bottle fill and cap machine

machine in which bottles are first filled with a product, usually liquid, and then fitted with a cap or other closure or assembly of components

3.5.1.3

can fill and seam machine

machine in which cans are first filled with a product and then seamed

3.5.1.4

cask or keg fill and seal machine

machine in which casks, barrels or kegs are first filled with a product and then closed

3.5.1.5

capsule filling machine

machine in which pharmaceutical capsules are filled with a product and then closed

3.5.2 Flexible package fill and seal machines

This group of fill and seal machines fills and seals pre-made flexible packages.

NOTE They should not be confused with form, fill and seal machines described in 3.8, which form the package in the machine before it is filled and sealed.

3.5.2.1 bag fill and seal machine

machine in which a pre-made bag is taken from a magazine, opened, filled with product and then sealed

3.5.2.1.1 reel fed bag fill and seal machine

machine in which a bag is separated from a reel of pre-made bags, before being opened, filled with product and then sealed

3.5.2.2 sack fill and close machine

machine in which a pre-made sack is taken from a magazine, before being opened, filled with product and then sealed or stitched with a sewing machine

3.5.2.3 tube fill and seal machine

machine in which collapsible tubes are taken from a magazine, filled and then folded, crimped or heat sealed

3.5.2.4 cup/tub fill and seal machine

machine in which a pre-made cup or tub is taken from a magazine, filled and then closed with a heat sealed foil or a press-on lid

3.5.2.5 blister fill and seal machine

machine in which a pre-formed plastic blister is taken from a magazine, filled with product and then sealed to a backing card

3.5.2.6 liquid bag-in-box fill and seal machine

machine in which a pre-made bag is filled with liquid before being placed into a carton which is then sealed

3.6 Inspection machines

This group of machines inspects products, packages or packaging components, for a particular attribute, e.g. colour, size, mass, and reject items which fall outside pre-set values.

3.6.1 Inspection machines for products

This group of machines inspects both packaged and unpackaged products.

3.6.1.1 checkweigher

measuring instrument which measures the mass of a package or product, usually as it travels on a conveyor, records the mass of the item and rejects any that fall outside pre-set values

3.6.1.1.1 weight classifying machine

checkweigher which divides products into groups according to their mass

3.6.1.1.2

weigh price labelling machine

checkweigher which weighs filled packages, calculates the selling price, prints a label with the mass and price and then applies the label to the package

3.6.1.2

fill height inspection machine

machine which detects the level of fill in a container, and rejects containers which fall outside pre-set values

3.6.1.3

foreign body detecting machine

inspection machine which detects the presence of unwanted particles in a product, and rejects them

3.6.1.3.1

metal detecting machine

inspection machine which detects the presence of metal in products and rejects the product or the packaging in which it is contained

3.6.1.3.2

X-ray inspection machine

inspection machine which detects the presence of foreign bodies in products or products in a package using X-rays and rejects the products or packages which are out of specification

3.6.2 Inspection machines for packages

This group of machines inspects packaged products, packaging materials and packaging components.

3.6.2.1

aerosol testing machine

inspection machine which checks filled aerosol cans for leaks

3.6.2.2

cap inspection machine

inspection machine which inspects filled and closed rigid containers for the presence of a cap, and rejects containers without caps

3.6.2.3

empty bottle inspection machine

machine which inspects empty bottles for some attribute, e.g. size, wall thickness, cleanliness, and rejects bottles which fall outside pre-set values

3.6.2.3.1

empty bottle sorting machine

machine which inspects empty bottles and sorts them according to size, colour or some other attribute

3.6.2.4

label inspection machine

inspection machine which detects labels on packages and checks that they comply with pre-set requirements e.g. orientation, print quality, alignment

3.6.2.5

open flap detector

inspection machine which detects the presence of an open flap on a carton or case and rejects them

3.6.2.6

seal checking machine

inspection machine which tests the integrity of package seals and rejects faulty packages

3.7 Container and packaging component handling machines

This group of packaging machines arranges and dispenses packages, packaging materials and packing components.

3.7.1 Arranging machines

This group of packaging machines unscrambles, reduces to a single line and orients rigid containers and packing components.

3.7.1.1

rigid container unscrambler

machine which accepts a bulk supply of randomly oriented containers, usually plastic bottles, and dispenses the containers in a predetermined orientation

3.7.1.2

component unscrambler

machine which accepts a bulk supply of packaging components, and dispenses them in a predetermined orientation

Note 1 to entry: Packaging components include caps, capsules and pharmaceutical capsules

3.7.1.3

rigid container single liner

machine comprising a series of slatband conveyors which accepts a bulk flow of rigid containers and discharges them as a single line of containers

3.7.1.4

rigid container orienter

machine which accepts a line of rigid containers with random rotary orientation, and dispenses them with the same rotary orientation

3.7.2 Dispensing machines

This group of packaging machines dispenses or forms and dispenses packaging materials or components.

3.7.2.1

rigid container denester

machine which dispenses rigid containers, usually cups, tubs or trays, from a stack or magazine

Note 1 to entry: A similar machine is defined in 3.11.5.1.

3.7.2.2

leaflet feeder

machine or attachment which dispenses a leaflet, card or coupon from a stack or magazine

3.7.2.3

bag presenting machine

machine which removes a pre-made bag from a magazine and opens it ready for filling

3.7.2.3.1

sack presenting machine

machine which removes a pre-made sack from a magazine and opens it ready for filling

3.7.2.4

sack seal and present machine

machine which from a reel of tubular film, forms the base of a sack by heat sealing, separates the sack from the reel and opens it ready for filling

3.7.2.5

straw applicator

machine or machine attachment which applies a pre-wrapped straw to a package

3.7.2.6

tear tape applicator

machine attachment which applies a strip of tear tape to film, usually on a wrapping machine

3.7.2.7

handle applicator

machine or attachment to a packaging machine which applies a handle to a package

3.7.2.8

spoon applicator

machine attachment which applies a spoon to a package

3.7.2.9

key applicator

machine which attaches an opening key to a package

3.8 Form, fill and seal machines

This group of packaging machines produces a variety of different types of package by forming, filling and sealing the package in the same machine.

3.8.1 Bag form, fill and seal machines

This group of form, fill and seal machines forms a bag shaped package from a reel of flexible packaging material before filling it with the product and sealing the package in the same machine.

3.8.1.1

flow-wrapping machine

horizontally operating form, fill and seal machine with material reel mounted above the operating level, the product loaded horizontally and a longitudinal seal formed below the pack

3.8.1.2

lower reel flow-wrapping machine

horizontally operating form, fill and seal machine, with film reel mounted below the operating level, the product placed on to the film web and a longitudinal seal formed above the pack

3.8.1.3

vertical form, fill and seal machine

machine which uses flexible packaging material to form a tube, which is then filled vertically with product and sealed in a sequence of operations whilst the film is transported vertically downwards

3.8.1.3.1

vertical form, fill and seal machine for cartonboard

vertically operating form fill and seal machine which uses a cartonboard laminate, which is formed, filled with product and sealed to produce a pack resembling a carton usually filled with a liquid

3.8.1.3.2

stick packing machine

vertical form fill and seal machine which produces small cross-section stick shaped packs

Note 1 to entry: Machines typically produce several lanes of packages at the same time.

3.8.1.4

mandrel flexible package form fill & seal machine

machine which forms packs from a reel of flexible material, on one or a number of mandrels, before filling the packs with product and sealing their tops within the machine

3.8.1.5

tubular bag form, fill and seal machine

machine which forms a bag from a reel of lay flat tubular flexible packaging film which is then filled with product and sealed within the machine

3.8.1.5.1

tubular sack form, fill and seal machine

machine which forms a sack from a reel of lay flat tubular flexible packaging film which is then filled with product and sealed either within the machine or by separate machines

3.8.2 Sachet form, fill and seal machines

This group of form, fill and seal machines forms a flat sachet shaped package from a reel fed flexible packaging material before filling it with the product and sealing the package in the same machine.

3.8.2.1

edge sealing machine

horizontally operating form, fill and seal machine in which product is placed on a horizontal web of film before being sealed on 3 or 4 sides to an upper web of film

Note 1 to entry: Machines can have one or two reels of film and can produce one or more lanes of packs.

3.8.2.2

horizontal sachet form, fill and seal machine

horizontally operating form, fill and seal machine in which packs are formed, sealed on 2 or 3 sides, filled vertically with product and sealed on the remaining side whilst the film web is moved horizontally with the pack vertical

3.8.2.3

vertical sachet form, fill and seal machine

vertically operating form, fill and seal machine which uses one or two webs of film which are formed vertically, filled with product and sealed to produce a 3 or 4 side sealed sachet

Note 1 to entry: Machines can have one or two reels of film and can produce one or more lanes of packs.

3.8.2.4

strip packing machine

vertically operating sachet form, fill and seal machine which produces strips of individually sealed packs joined together in predetermined lengths

3.8.3 Deep draw form, fill and seal machines

This group of packaging machines uses a deformable or thermoformable packaging material, to form a package which is then filled and sealed in a sequence of operations to form a deep drawn pack.

3.8.3.1

deep draw machine

machine in which a web of deformable material is formed under pressure in a die press, before being filled vertically with product, sealed with a top film or magazine fed lid, and finally cut to produce individual packs

Note 1 to entry: Machines can produce one or more lanes of packs.

3.8.3.2

thermoform, fill and seal machine

machine in which a web of thermoformable material is heated and formed with pressure and/or vacuum, before being filled vertically with product, sealed with a top film or magazine fed lid and finally cut to produce individual packs

Note 1 to entry: Machines can produce one or more lanes of packs and may incorporate equipment to evacuate packages before they are sealed.

3.8.4

blow mould fill and seal machine

machine in which plastic granules are melted, extruded, blow moulded to form a container, filled with product and sealed within the machine

3.9 Carton erecting, carton closing and cartoning machines

This group of packaging machines erects, fill and close packages made from cartonboard or similar material.

3.9.1 Carton erecting machines

This group of packaging machines erect, packages made from cartonboard or similar material.

3.9.1.1

carton blank erecting machine

machine which forms cartonboard blanks into cartons and secures them by engaging pre-cut tabs and slots, by applying adhesive or by applying heat to pre-coated board

3.9.1.2

skillet erecting machine

machine which erects pre-glued cartonboard skillets and secures them by engaging pre-cut tabs and slots, by applying adhesive or by applying heat to pre-coated board

3.9.2 Carton closing machines

This group of packaging machines closes packages made from cartonboard or similar material.

3.9.2.1

end flap carton closing machine

machine which closes the end flaps of cartons and secures them by engaging pre-cut tabs and slots, by applying adhesive or by applying heat to pre-coated board

3.9.2.2

three flap carton closing machine

packaging machine which closes top load cartons and secures them with adhesive or by the application of heat to pre-coated board

3.9.3 Carton form, fill and seal machines

This group of packaging machines erect, fill and close packages made from cartonboard or similar material in a single machine.

3.9.3.1

mandrel carton form, fill and seal machine

cartoning machine which forms cartons either from magazine fed or reel fed carton blanks, around one or a number of mandrels, before filling the cartons with product and closing them in the machine

3.9.3.2

mandrel bag-in-box machine

cartoning machine which forms a bag, made from a reel of flexible material on a mandrel, around which a carton blank is formed to produce a bag-in-box package, the package is then filled with product before first the bag and then the carton are closed

3.9.3.3

horizontal end load cartoner

cartoning machine which erects a folded and side seam sealed carton and places it on a horizontal mechanism so that the carton can be filled with product horizontally through an open end flap of the carton before being closed

3.9.3.4

vertical cartoner

cartoning machine which erects a folded and side seam sealed carton and places it on a horizontal mechanism so that the carton can be filled with product vertically through the top flaps of the carton before being closed

3.9.3.4.1

pre-made bag-in-box cartoner

vertical cartoner which erects side seam sealed and folded cartons which contain a tube of flexible film

Note 1 to entry: The base of the tube is sealed before it is filled vertically with product after filling the top of the tube is sealed before the carton flaps are closed.

3.9.3.4.2

reel fed bag-in-box cartoner

vertical cartoner which erects a side seam sealed and folded carton before forming a bag from a reel of flexible film and placing it in the carton

Note 1 to entry: The bag is filled vertically with product before the top of the bag is sealed and the carton flaps are closed.

3.9.3.5

tray erect load and seal machine

cartoning machine in which a carton tray blank is partly formed before being loaded horizontally with product, after loading the carton tray is fully formed and sealed within the machine

3.9.3.6

top load carton form, fill and seal machine

cartoning machine in which a carton blank is partly formed into an open top carton before being loaded vertically with product, after loading the carton is fully formed and closed within the machine

3.9.3.7

wraparound cartoner

cartoning machine which wraps a cartonboard blank around a product, usually with the aid of a mandrel, before closing the carton with adhesive or by tucking

3.9.3.8

wraparound sleeving machine

cartoning machine which wraps a cartonboard blank around a product, or group of products, securing it by engaging pre-cut tabs and slots or by the application of adhesive

3.10 Wrapping machines

This group of packaging machines wrap a flexible packaging material, e.g. paper, aluminium or plastic film, around a product or group of products.

3.10.1 Wrapping machines which partially wrap products

This group of wrapping machines wraps film or a band around a product leaving unwrapped ends like the classic shrink-wrap package.

3.10.1.1

banding machine

wrapping machine which wraps a band of material around a product or group of products and secures it with adhesive or by the application of heat

3.10.1.2

sleeve wrapping machine

wrapping machine which wraps a band of thermoplastic material loosely around a product or group of products, before the pack is passed through a shrink tunnel to form a shrink-wrap pack

Note 1 to entry: The band may be formed from one or two reels of film.

3.10.1.2.1

sleeve wrapping machine with tray erecting assembly

wrapping machine which places a group of products onto a piece of corrugated board or forms a corrugated board tray around the collation and then wraps a band of film loosely around the pack before the pack is passed through a shrink tunnel to form a shrink-wrap pack

Note 1 to entry: The band is typically formed from one reel of film.

3.10.1.3

stretch banding machine

wrapping machine which wraps a band of film tightly around a product or group of products

3.10.1.4

stretch film bundling machine

wrapping machine which wraps a web of film tightly around a product or group of products, in a series of turns while the product is conveyed through the machine

3.10.2 Wrapping machines which form a complete wrap without sealing

This group of wrapping machines wraps film, foil or paper around the whole of a product without sealing the material.

3.10.2.1

fold wrapping machine

wrapping machine which wraps a product in a deformable material e.g. aluminium foil or paper, in a series of folding operations

3.10.2.1.1

extruded product wrapping machine

fold wrapping machine for an extruded product (e.g. butter or edible fat) which is cut to size and then wrapped in a deformable material

3.10.2.2

twist wrapping machine

wrapping machine which closes the open ends of the wrap by twisting

3.10.3 Wrapping machines which form a complete wrap with sealing

This group of wrapping machines, wraps and seals film, foil or paper around the whole of a product.

3.10.3.1

overwrapping machine

wrapping machine which wraps a product or group of products in flexible packaging material with a series of folding, heat sealing or gluing operations

3.10.3.2

roll wrapping machine

wrapping machine which wraps a cylindrical product or group of products, in a series of folding, heat sealing or gluing operations, to form a roll shaped pack

3.10.3.3

foil and band wrapping machine

wrapping machine which wraps a product in aluminium foil, before applying a paper band to complete the pack

3.10.3.4

pleat wrapping machine

wrapping machine which gathers and folds flexible material around a product and seals it at one point by applying a label

3.10.3.5

stretch film wrapping machine

wrapping machine which pulls a web of stretch film around a product, before gathering and heat sealing the film edges below the product

3.10.3.6

L-sealing machine

wrapping machine which uses thermoplastic film folded in half along its length, products or groups of products are placed between the two halves of film, before the film is sealed around the product with an L shaped sealing bar, to produce a fully enclosed pack, sealed on three sides

3.10.3.7

fold over wrapping machine

wrapping machine which folds a web of thermoplastic film around a rigid pack, overlapping but not sealing the edges of the film under the pack while the pack is being transported horizontally, transverse seals are then made in front and behind the pack before the pack is passed to a shrink tunnel where the material shrinks and the overlapped material under the pack forms a seal

3.10.4

skin packing machines

wrapping machines which seal products placed on cartonboard blanks, with a web of thermoplastic film which is heated and then sealed around the product

3.10.5 Shrinking equipment

This group of packaging machines applies heat to products wrapped in thermoplastic film so that the film shrinks tightly around the product.

3.10.5.1

shrink tunnel

machine which shrinks thermoplastic film around a product or group of products, as they pass through a heated tunnel

Note 1 to entry: The heating medium may be hot air, radiant heat, hot water or steam.

3.10.5.2

shrink oven

machine which shrinks thermoplastic film around a product or group of products, in a heated chamber

3.10.5.3

shrink frame

machine which shrinks thermoplastic film around a product or group of products, as it is moved over the surface of the product

3.10.5.4

dip tank

packaging machine which uses a tank of hot water to shrink thermoplastic packages by dipping them in the water

3.11 Group or secondary packaging machines

The packaging machines in this group are all involved in the process of grouping together collations of products for transit purposes and placing them into a group package. Group packages include cases, trays, crates and cartonboard sleeves.

3.11.1 Group package erecting machines

This group of machines forms a group package like a corrugated board tray or case from a flat blank or folded side-seamed case.

3.11.1.1

tray erecting machine

machine that erects trays, usually from pre-cut corrugated board or cartonboard blanks

3.11.1.2

case erecting machine

machine which erects case blanks or side seamed cases, usually made from corrugated board

3.11.1.3

division inserting machine

machine which assembles and places pre-cut divisions into a group package, usually a corrugated board case

3.11.2 Group package loading/unloading machines

This group of machines collates and loads products into a group package like a corrugated board tray or case.

3.11.2.1

drop packing machine

machine that assembles groups of products and loads them into group packages by gravity

3.11.2.2

place packing/unpacking machine

machine that grips groups of products and either places them vertically into or removes them from group packages

3.11.2.3

horizontal case loading machine

machine that assembles groups of products and loads them horizontally into group packages, usually pre-erected cases

3.11.3 Group package sealing machines

This group of machines closes group packages using adhesive tape, glue or a wraparound lid.

3.11.3.1

case gluing machine

machine that closes cases, usually made from corrugated board, and seals them with adhesive

3.11.3.2 Case tapers

3.11.3.2.1

self-adhesive tape sealing machine

machines that close cases, generally made from corrugated board, and seals them with self-adhesive tape

3.11.3.2.2

pre-gummed tape sealing machine

machine which closes cases, usually made from corrugated board, and seals them with pre-gummed tape

3.11.3.3

case stapling machine

machine which closes cases, usually made from corrugated board, and seals them with metal staples

3.11.3.4

wraparound lidding machine

machine that closes group packages, usually deep wall trays, by folding a corrugated board blank around the open top of the package and secures it with adhesive

3.11.4 Group package form, fill and seal machines

This group of machines forms, fills and seals group packages in the same machine.

3.11.4.1

plastic ringing machine

machine which groups rigid containers and holds them together with pre-cut plastic, supplied to the machine in reel form

3.11.4.2

wraparound tray packing machine

machine that groups products together and forms a pre-cut tray blank around them

3.11.4.3

wraparound case packing machine

machine that groups packages together and forms a pre-cut case blank around them

3.11.4.4

horizontal case packing machine

machine that groups products together and loads them horizontally into side seamed cases which are then closed within the machine

3.11.4.5

top load case packing machine

machine that groups products together and loads them vertically through the top of side seamed cases which are then closed within the machine

3.11.4.6

bottom load case packing machine

machine that groups products together and loads them vertically through the bottom of side-seamed cases which are closed within the machine

3.11.5 Group package handling machines

This group of machines stacks or unstacks group packages like plastic trays and crates.

3.11.5.1

tray denesting machine

machine which dispenses trays from a stack

Note 1 to entry: The trays will typically be made from plastic or fibre board.

3.11.5.2

crate stacking/unstacking machine

machine which stacks or unstacks crates, which may be full or empty

3.11.5.3

tray stacker

machine which stacks trays

Note 1 to entry: The trays may be filled or empty.

3.12 Palletizers, depalletizers and ancillary equipment

This group of packaging machines forms or dismantles pallet loads or is associated with machines which perform these functions.

3.12.1 Palletizing machines

This group of packaging machines places group packages or rigid containers onto pallets or other pallet load supports.

3.12.1.1

low level palletizer

palletizer in which layers of packages are formed at one level transferred by pushing onto a stripper plate which raises or lowers to the appropriate level and transfers the layer onto the pallet load

Note 1 to entry: The pallet remains at one level while it is being formed.

3.12.1.2

pick and place palletizer

palletizer in which layers of packages or empty rigid containers are formed at one level, usually a low level, the layer is then gripped, lifted, transferred and then lowered onto the pallet load

Note 1 to entry: The pallet remains at one level while it is being formed.

3.12.1.3

high level palletizer

palletizer in which layers of packages are formed at one level usually a high level, and transferred onto the pallet load which is raised and then lowered as the pallet load forms

3.12.1.4

column pick and place palletizer

palletizer in which the package lifting device is supported on a column and can move up and down the column or rotate with the column, column palletizers can pick up packages one at a time, a row at a time or a layer at a time

Note 1 to entry: In some installations, column palletizers are moved on rails to work in different palletizing positions.

3.12.1.5

robot palletizer

palletizer which uses a multi-axis industrial robot to perform some or all of the palletizing functions

Note 1 to entry: Robot palletizers can pick up products one at a time, a row at a time or a layer at a time. In some installations the robot also positions the pallet and layer pads.

3.12.1.6

stack palletizer

palletizer which creates stacks of group packages e.g. crates which are then transferred to the pallet as a group

3.12.1.7

multi-station palletizer

palletizer in which two or more pallet loads of different products are formed simultaneously in the same machine

3.12.2 Depalletizers

This group of packaging machines removes group packages or rigid containers from pallet loads.

3.12.2.1

low level sweep-off depalletizer

depalletizer in which layers of packages are gripped and swept from a pallet onto a stripper plate which then moves to the level of a receiving table where the layer is deposited

Note 1 to entry: The pallet load remains in a fixed position while it is being dismantled.

3.12.2.2

pick and place depalletizer

depalletizer in which layers of packages or empty rigid containers are gripped, lifted, transferred and then lowered onto a receiving table

Note 1 to entry: The pallet load remains at one level while it is being dismantled.

3.12.2.3

high level sweep-off depalletizer

depalletizer in which layers of containers are gripped and swept from the pallet load directly onto a high level receiving table, the pallet load is raised up so that each layer of containers is at the correct height for transfer to the receiving table

3.12.2.4

column pick and place depalletizer

pick and place depalletizer in which the layer lifting device is supported on a column and can move up and down the column or rotate with the column

3.12.2.5

robot depalletizer

depalletizer which can be programmed to dismantle a pallet load in a variety of ways and generally picks up packages one at a time or a row at a time from a pallet load which remains in one position as it is being dismantled

3.12.2.6

stack depalletizer

depalletizer which removes column stacks of packages from a pallet load and then dismantles the stacks

3.12.3 Ancillary equipment for palletizers and depalletizers

This group of packaging machines is typically supplied with palletizers or depalletizers to form complex pallet handling systems.

3.12.3.1

pallet magazine; pallet de-stacker

machine which dispenses pallets from a stack or accepts single pallets and places them in a stack

3.12.3.2

pallet stacker/unstacker

machine which stacks or unstacks pallet loads

3.12.3.3

pallet changer

machine which removes a pallet load from a pallet so that it can be placed on another pallet

3.12.3.4

layer pad inserter/remover

machine or attachment which places layer pads onto layers of products as pallet loads are formed or removes layer pads as a pallet load is dismantled

3.13 Pallet wrapping machines

This group of packaging machines wraps film around pallet loads and other large products.

3.13.1 Pallet stretchwrapping machines

This group of packaging machines applies stretch film to pallet loads or other large products.

3.13.1.1

rotating table pallet stretchwrapper

machine which wraps stretch film drawn from a reel around a product placed on a rotating table

3.13.1.2

self driving pallet stretchwrapper

self-propelled machine which can apply stretch film around a product by travelling around the product

3.13.1.3

rotating arm pallet stretchwrapper

machine which wraps film drawn from a reel which is rotated around the stationary product

3.13.1.3.1

ring pallet stretchwrapper

variant of a rotating arm pallet stretchwrapper which supports the film reel assembly from a ring

3.13.1.4

curtain pallet stretchwrapper

machine which wraps stretch film around a product as the product passes through the machine, the film which is the height of the product is drawn from two vertically mounted reels and is sealed together both in front and behind the product with a vertical sealing mechanism

3.13.1.5

hood stretching machine

machine which stretches and places a film hood over a product, the hood can be preformed or can be formed from a reel of lay flat tubular film on the machine

3.13.2 Pallet shrinkwrappers

This group of packaging machines apply shrink wrapping film loosely to pallet loads or other large products which is then shrunk to the shape of the product using heat in a separate machine.

3.13.2.1

vertical pallet sleeve wrapper

machine which wraps shrink film around a product as the product passes through the machine, the film which is wider than the width of the product is drawn from two reels one mounted above the product and the other below the product, the film is sealed together both in front and behind the product with a horizontal sealing mechanism

3.13.2.2

horizontal pallet sleeve wrapper

machine which wraps shrink film around a product as the product passes through the machine, the film which is higher than the product is drawn from two vertically mounted reels is sealed together both in front and behind the product with a vertical sealing mechanism

3.13.2.3

shrink hood applicator

machine which places a shrink film hood over a product, the hood can be preformed or can be formed from a reel of lay flat tubular film on the machine

3.13.2.4

pallet shrink oven

heated chamber which shrinks thermoplastic film around a product

3.13.2.5

pallet shrink tunnel

heated chamber which shrinks thermoplastic film around a product, as the product moves on a conveyor through the tunnel

3.13.2.6

pallet shrink frame

machine which shrinks shrink film around a product, by moving a heated frame or hood over the surface of the film

3.13.2.7

top sheet dispenser

machine or attachment which places a sheet of film on top of a pallet load before it is stretch wrapped

3.14 Strapping machines

This group of packaging machines applies a strap to a product or package. The strap will typically be made from plastic, metal or paper.

3.14.1

powered hand strapping tool

strapping tool in which at least one mechanism is powered e.g. by electricity or compressed air

3.14.2

semi-automatic strapping machine

strapping machine that tensions and seals a strap around a product or a group of products, once an operator has placed the strap around the product and inserted the strap back into the machine manually

Note 1 to entry: The strap will typically be made from plastic or paper.

3.14.3

automatic strapping machine

strapping machine that applies a strap automatically around a product or a group of products, the product may be positioned under the strap arch either manually or automatically

Note 1 to entry: The strap will typically be made from plastic, metal or paper.

3.14.4

horizontal pallet strapping machine

strapping machine that applies one or more straps horizontally around a pallet load

Note 1 to entry: Machines of this type will typically be fully automatic.

Note 2 to entry: The strap will typically be made from plastic or metal.

3.14.5

vertical pallet strapping machine

strapping machine that applies one or more straps vertically around a pallet load

Note 1 to entry: The strap will typically be made from plastic or metal. Machines of this type will typically be fully automatic. The strapping head may be located above or to the side of the product being strapped.

3.14.6

compression strapping machine

strapping machine in which the product is compressed before straps are applied

Note 1 to entry: Most of the types of strapping machine identified in 3.14 can be equipped with attachments to compress the product and may be termed compression strapping machines.

3.15 Terms used in this standard and other parts of EN 415

3.15.1

ampoule

small container in which liquids for injections are hermetically sealed

3.15.2

bag-in-box

package comprising a carton containing a bag which closely fits the carton and contains the product

3.15.3

band

strip of packaging material

3.15.4

bead seal

seal in which the two edges of the material are welded together along a very narrow strip without overlap

3.15.5

blister

thermoformed clear plastic shape which is used to make a blister pack

3.15.6

blister pack

package which usually comprises a clear plastic shape containing a product, which is then joined to a backing card or film

3.15.7

block bottom bag

flexible package with a tucked and sealed base which allows the filled and sealed pack to stand on its base

3.15.8

capsule

secondary seal placed over a primary closure, typically used on wine bottles

3.15.9

carton board

material made from one or more layers of fibrous cellulose material to form a rigid or semi-rigid construction, generally 0,25 mm to 1,0 mm thick

3.15.10

carton

container which is made from carton board, generally between 0,25 mm and 1,0 mm in thickness, and is usually delivered to the user in the form of a carton blank or side seam glued skillet

3.15.11

carton blank

individual carton in the flat after cutting and creasing and with the strippings removed

3.15.12

carton tray

rectangular open carton with sides and ends made from carton board generally between 0,25 mm and 1,0 mm in thickness and usually delivered to the user in the form of a carton blank

3.15.13

case

package which is generally made from corrugated board and used to contain a group of packages and is delivered to the user in the form of a glued or stitched case or a flat blank

3.15.14

change parts

machine parts designed to handle a specific product, packaging material or pack size that need to be changed when the machine is set up to handle a different product, packaging material or pack size

3.15.15

closure

packaging component used to close a container or package

3.15.16

cold adhesive

adhesive that is liquid at room temperature

EXAMPLE PVA adhesive.

3.15.17

collapsible tube

container for pastes, usually made from a malleable metal or plastic

3.15.18

container

package, e.g. bottle or jar that can contain a product

3.15.19

corrugated board

material comprising one or more sheets of fluted paper stuck between flat sheets of paper

3.15.20

crate

rigid group package used to contain a group of packages

Note 1 to entry: A crate can be made of different materials, e.g. plastic, wood, metal or corrugated board.

3.15.21

crimping

mechanical distortion of the edges of a deformable material

3.15.22

crown closure

metal closure containing a sealing wad, which is crimped to the neck of a bottle

3.15.23

cup/tub

thin walled tapered container

3.15.24

de-palletizing

process of unloading products or unit loads from a pallet load

3.15.25

deformable material

material which can be formed by the application of pressure alone

3.15.26

dolly

horizontal platform fitted with wheels used to support a pallet load allowing it to be moved without the need for a fork lift or pallet truck

3.15.27

film clamp

device to hold the film at the product for the first wrap, also called film fixture

3.15.28

film compensator; tension roller assembly

device which maintains tension in the film during the intermittent motion of the wrapping cycle

3.15.29

film reel; packaging material reel

continuous sheet of paper, carton board, plastics film, metal foil or flexible laminate wound on a cylindrical core

3.15.30

film web

continuous sheet of paper, plastics film, metal foil or laminate

3.15.31

fin seal

seal in which the two edges of the material are joined together inner surface to inner surface

3.15.32

flexible packaging material

relatively thin paper, plastic film or flexible laminate

3.15.33

fold wrapping

wrapping process which uses a material, like aluminium foil with a dead fold characteristic which keeps the fold without the need for sealing

3.15.34

group package

package containing a number of products, grouped together for distribution

Note 1 to entry: Group packages include cases, trays, crates and carton board sleeves.

3.15.35

gusset

inwardly folded portion of a flexible package, usually a bag or sack

3.15.36

hot melt adhesive

adhesive that is solid at room temperature and which is melted and applied at elevated temperature

3.15.37

in-line

machine construction in which containers or packages are conveyed to and from several mechanisms e.g. filling heads, pick and place heads

3.15.38

keg

rigid container usually made from metal used to contain a large volume of liquid or powder

3.15.39

layer pad

sheet of material used to stabilize a pallet load

3.15.40

layer pattern

arrangement of unit loads in a pallet load layer

3.15.41

lay flat tubular film

continuous tube of plastic film usually supplied wound on a core

3.15.42

longitudinal seal

seal made on a package in line with the direction of material travel in the machine

3.15.43

magazine

mechanical assembly designed to hold stacks of cartons, carton blanks, leaflets, labels, lids or stackable containers

3.15.44

mandrel

mechanical assembly around which a bag or carton is formed

3.15.45

manual operation

machine functions or modes where the only power source is directly applied manual effort

3.15.46

manual control

functional mode of the machine where powered machine operations are controlled by the operator using actuators while the automatic mode is disabled

3.15.47

modified atmosphere

atmosphere where the normal atmosphere within a package is completely or partially replaced by one or more selected gases

Note 1 to entry: Usually the objective is to extend shelf or storage life of the packaged products.

3.15.48

overlap seal

seal in which the two edges of the material are joined together inner surface to outer surface

3.15.49

pack, package

assembly of product and packaging materials produced by a packaging machine

3.15.50

packaging component

pre-made item used to form a package or applied to a package

EXAMPLE Cap, cork, straw.

3.15.51

packaging material

material used to make a package

EXAMPLE Corrugated board, carton board, stretch film, paper, polypropylene.

3.15.52

packaging material transport mechanism

mechanical assembly which transports packaging material through the packaging machine

3.15.53

pallet

horizontal platform used to support a pallet load so it can be lifted by a fork lift or pallet truck

3.15.54

pallet load

group of products or unit loads assembled together for transport and usually supported by a pallet, slip sheet or dolly

3.15.55

pallet load layer

assembly of unit loads in a horizontal plane in a pallet load

3.15.56

palletizing

process of arranging products or unit loads into a pallet load

3.15.57

paper laminate

paper that has been coated or bonded to one or a number of other materials e.g. polyethylene or aluminium foil

3.15.58

pre-formed rigid container

rigid container formed into its final shape before it is handled in a packaging machine

Note 1 to entry: Examples of pre-formed rigid containers are: bottles, cans, cups, jars, pots, ampoules, vials, kegs, casks and barrels, which can be made from different materials e.g. glass, metal, plastics, fibreboard, wood, ceramic or composite materials.

3.15.59

pre-gummed tape

tape usually made from paper, which is coated with an adhesive that forms a bond when water and pressure are applied

3.15.60

pre-made bag

pre-formed flat or gusseted flexible container longitudinally seamed and closed at one end made from paper, plastic film, foil, laminate or a woven material

3.15.61

pre-made sack

pre-formed flat or gusseted sack longitudinally seamed and closed at one or both ends made from paper, plastic film, laminate, or a woven material

3.15.62

product

substance, article pack or package that is handled in the packaging machine

3.15.63

PVA adhesive

water dispersible emulsion adhesive made from polyvinyl acetate

3.15.64

rigid container

container which is rigid e.g. ampoule, barrel, bottle, can, cup, drum, jar, keg, pail, tub, vial,...

3.15.65

roll wrapping

wrap of cylindrical products with a roll shaped form

3.15.66

roll-on closure

straight-sided aluminium closure which is rolled over the neck of a bottle to form the screw thread

3.15.67

rotary

machine construction in which containers or packages are transported within the machine on a rotating mechanism or active mechanisms e.g. filling or capping heads are mounted on a rotating mechanism

3.15.68

row

horizontal line of unit loads in a pallet load

3.15.69

sachet

flat package which when formed from two webs of flexible material is sealed on four sides and when formed from one web is sealed on three or four sides

3.15.70

secondary package

package comprising one or a number of products, grouped together for distribution

Note 1 to entry: Secondary packages include cases, trays, crates and carton board sleeves.

3.15.71

self-adhesive tape

tape usually made from a thin plastic film, which is coated in an adhesive that requires only pressure to form a bond

3.15.72

scroll

mechanism used to separate and accurately position rigid containers, usually comprising a solid plastic cylinder with a helical groove cut in it to accept the containers

3.15.73

shrink film

plastic film which shrinks when heated

3.15.74

shrinkwrapping

process in which a package is wrapped in a thermoplastic film which is then heated so that the film shrinks to closely fit the package

3.15.75

skin packaging

packaging process in which a product is placed on a porous cartonboard sheet, covered by a piece of transparent film which is sealed closely around the product to the cartonboard

3.15.76

star wheel

mechanism used to accurately position rigid containers, usually comprising a solid plastic wheel with machined pockets to accept the containers

3.15.77

side seam seal

longitudinal seal which is made by stitching, heatsealing or applying adhesive, when a carton blank is formed into a flat carton

3.15.78

single head

machine construction in which containers or packages are moved past a single operating mechanism e.g. filling head, capping head, labelling head

3.15.79

skillet

carton blank which has been folded and side seam glued

3.15.80

slip sheet

horizontal platform used to support a pallet load but unsuitable for moving the pallet load with a fork lift or pallet truck

3.15.81

stack

assembly of unit loads placed one on top of each other

3.15.82

staples

U shaped metal closures that are forced through a material and then bent over to form a seal

3.15.83

strap

tape of material, usually made from mild steel, polypropylene or polyester, which is passed around a group of products, tensioned and then sealed to hold the products together

3.15.84

stretch film

flexible elastic plastic film which can be pulled tightly around a package to form an envelope

Note 1 to entry: It may stick to itself on contact or may require heat sealing.

3.15.85

stretchwrapping

process in which a package is wrapped in stretch film

3.15.86

suction cup

cup made of an elastic material to which a vacuum can be applied to lift a product

3.15.87

tear tape

plastic tape which is sealed to a packaging material, usually plastic film, to assist opening of the pack

3.15.88

thermoformable material

material which when heated can be formed by pressure and/or vacuum

3.15.89

thermoplastic film

plastic film which shrinks when heated

3.15.90

top load carton

one piece carton which is partially erected by tucking or gluing before being loaded with the product from the top and is then closed by folding and gluing flaps on three of the carton's sides

3.15.91

top sheet

piece of packaging material which is applied to the top of a pallet load e.g. to achieve water and dust protection

3.15.92

transverse seal

seal made on a package at right angles to the direction of material travel in the machine

3.15.93

tray

open topped container, typically made from cartonboard or corrugated board and supplied to the user as a flat blank or pre-glued and folded

3.15.94

tuck erection

process in which carton board or corrugated board packages are formed or closed by pushing pre-cut tabs into slots

3.15.95

twist wrap

wrap closed by twisting the open end

3.15.96

unit load

smallest indivisible unit in the palletizing or de-palletizing operation

Note 1 to entry: A unit load can be a group package like a shrink-wrap pack or crate or a single keg or empty can.

3.15.97

vial

small bottle for liquids

3.15.98

vacuum plate

perforated plate to which a vacuum is applied to lift one or a number of products

Note 1 to entry: The plate can be made of various materials, e.g. sintered bronze, ceramic, aluminium, plastic.

3.15.99

wraparound case

case, usually made from corrugated board, which is supplied to the user as a flat blank and is folded and glued around the product in a wraparound case packing machine to produce the finished pack

3.15.100

wraparound lid

lid, usually made from corrugated board or cartonboard, which is supplied to the user as a flat blank and is folded and glued around a group package in a wraparound lidding machine to produce the finished transit pack

3.15.101

wraparound sleeve

package, usually made from either cartonboard or corrugated board, which is supplied to the user as a flat blank and is folded around the product in a wraparound sleeving machine to produce the finished pack

3.15.102

wraparound tray

tray, usually made from corrugated board, which is supplied to the user as a flat blank and is folded and glued around the product in a wraparound tray packing machine to produce the finished pack

Annex A (normative)

Safety requirements for packaging machines

The safety requirements for the majority of packaging machines defined in this standard are to be found in subsequent parts of EN 415. Column 3 indicates which standard should be referred to for a given machine. Where the reference is followed by an astrix, this indicates that the standard mentioned does not refer to the machine in question specifically, but describes hazards and safety requirements for similar machines, which may be appropriate.

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.1	Filling machines	
3.1.1	<i>Volumetric filling machines</i>	
3.1.1.1	Volumetric cup filling machine	EN 415-3
3.1.1.2	Volumetric piston filling machine	EN 415-2
3.1.1.2.1	Displacement filling machine	EN 415-2*
3.1.1.2.2	Aerosol gassing machine	EN 415-10*
3.1.1.3	Rotating chamber filling machine	EN 415-2*
3.1.1.4	Flow meter filling machine	EN 415-2
3.1.1.5	Auger filling machine	EN 415-3
3.1.2	<i>Level filling machines</i>	
3.1.2.1	Vacuum filling machine	EN 415-2
3.1.2.2	Gravity filling machine	EN 415-2
3.1.2.3	Pressure filling machine	EN 415-2
3.1.3	<i>Timed flow filling machines</i>	EN 415-2*
3.1.4	<i>Gravimetric filling machines</i>	
3.1.4.1	Nett weighing machine	EN 415-3
3.1.4.1.1	Multihead weigher; Selective combination weighing machine	EN 415-3
3.1.4.2	Gross weighing machine	EN 415-10*
3.1.5	<i>Count filling machine</i>	EN 415-3*
3.2.	Closing machines	
3.2.1	<i>Closing machines which do not use a closure or closing material</i>	
3.2.1.1	Fold closing machine	EN 415-5
3.2.1.2	Tuck closing machine	EN 415-3*
3.2.1.3	Crimp closing machine	EN 415-2*
3.2.1.4	Weld sealing machine	EN 415-10*
3.2.1.5	Fusion sealing machine	EN 415-10*
3.2.1.6	Solder sealing machine	EN 415-10*
3.2.1.7	Heat sealing machine	EN 415-10*

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.2.1.7.1	Blister sealing machine	EN 415-10*
3.2.1.7.2	Rigid container sealing machine	EN 415-2
3.2.1.7.3	Bag sealing machine	EN 415-10*
3.2.1.7.4	Sack sealing machine	EN 415-10*
3.2.1.8	Induction sealing machine	EN 415-10*
3.2.2	<i>Closing machines which use a closure</i>	
3.2.2.1	Screw capping machine	EN 415-2
3.2.2.2	Steam capping machine	EN 415-2
3.2.2.3	Plugging; corking machine	EN 415-2
3.2.2.4	Press-on lidding machine	EN 415-10*
3.2.2.5	Crown capping machine	EN 415-2
3.2.2.6	Roll-on capping machine	EN 415-2
3.2.2.7	Can seaming machine	EN 415-2
3.2.2.8	Cork wiring machine	EN 415-10*
3.2.2.9	Aerosol valve closing machine	EN 415-10*
3.2.2.10	Pump applicator	EN 415-2
3.2.2.11	syringe assembling machine	EN 415-10*
3.2.3	<i>Closing machines which use a closing material</i>	
3.2.3.1	Staple closing machine	EN 415-10*
3.2.3.2	Nail closing machine	EN 415-10*
3.2.3.3	Rivet closing machine	EN 415-10*
3.2.3.4	Clip closing machine	EN 415-10*
3.2.3.5	Sewing machine	EN ISO 10821
3.2.3.6	Glue sealing machine	EN 415-10*
3.2.3.7	Gummed tape sealing machine	EN 415-7
3.2.3.8	Tape sealing machine	EN 415-7
3.2.3.9	Twist-tie closing machine	EN 415-10*
3.2.3.10	Foil sealing machine	EN 415-5
3.3	Labelling, decorating and coding machines	
3.3.1	<i>Labelling machines</i>	
3.3.1.1	Wet glue labelling machine	EN 415-2
3.3.1.2	Hot melt glue labelling machine	EN 415-2
3.3.1.3	Pressure sensitive labelling machine	EN 415-2
3.3.1.4	Heat seal labelling machine	EN 415-2
3.3.1.5	Pre-gummed label applicator	EN 415-2*
3.3.1.6	Print and apply labelling machine	EN 415-10*
3.3.1.7	Shrink labelling machine	EN 415-2
3.3.2	<i>Decorating machines</i>	
3.3.2.1	Tag labelling machine	EN 415-10*

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.3.2.2	Foiling machine	EN 415-2
3.3.2.3	Shrink sleeving machine	EN 415-2
3.3.2.4	Capsuling machine	EN 415-2
3.3.2.5	Stretch sleeving machine	EN 415-2
3.3.3	Coding equipment	
3.3.3.1	Emboss coder	EN 415-10*
3.3.3.2	Wet ink coder	EN 415-10*
3.3.3.3	Hot foil coder	EN 415-10*
3.3.3.4	Solid ink coder	EN 415-10*
3.3.3.5	Ink jet coder	EN 415-10*
3.3.3.5.1	Drop on demand ink jet coder	EN 415-10*
3.3.3.5.2	Continuous stream ink jet coder	EN 415-10*
3.3.3.6	Laser coder	EN ISO 11553-1
3.4	Cleaning, sterilising, cooling and drying machines	
3.4.1	Cleaning machines	
3.4.1.1	Air cleaning machine	EN 415-2
3.4.1.2	Rinsing machine	EN 415-2
3.4.1.3	Bottle washing machine	EN 415-2
3.4.1.4	Crate washing machine	EN 415-2
3.4.1.5	Capsule cleaning machine	EN 415-2*
3.4.2	Sterilising machines	
3.4.2.1	Container sterilising machine	EN 415-2
3.4.2.2	Continuous steriliser	EN 415-2
3.4.2.3	Batch steriliser	EN 415-2*
3.4.3	Pasteurising machines	
3.4.3.1	Continuous pasteuriser	EN 415-2
3.4.3.2	Batch pasteuriser	EN 415-2*
3.4.4	Cooling, warming and drying machines	
3.4.4.1	Cooling machine	EN 415-10*
3.4.4.2	Drying machine	EN 415-10*
3.4.4.3	Warming machine	EN 415-10*
3.5	Fill and seal machines	
3.5.1	Rigid container fill and close machines	
3.5.1.1	Ampoule/vial fill and close machine	EN 415-10*
3.5.1.2	Bottle fill and cap machine	EN 415-2
3.5.1.3	Can fill and seam machine	EN 415-2
3.5.1.4	Cask or keg fill and seal machine	EN 415-2
3.5.1.5	Capsule filling machine	EN 415-2*
3.5.2	Flexible package fill and seal machines	

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.5.2.1	Bag fill and seal machine	EN 415-3
3.5.2.1.1	Reel fed bag fill and seal machine	EN 415-3*
3.5.2.2	Sack fill and close machine	EN 415-10*
3.5.2.3	Tube fill and seal machine	EN 415-10*
3.5.2.4	Cup/tub fill and seal machine	EN 415-10*
3.5.2.5	Blister fill and seal machine	EN 415-3*
3.5.2.6	Liquid bag-in-box fill and seal machine	EN 415-10*
3.6	Inspection machines	
3.6.1	Inspection machines for products	
3.6.1.1	Checkweigher	EN 415-10*
3.6.1.1.1	Weight classifying machine	EN 415-10*
3.6.1.1.2	Weigh price labelling machine	EN 415-2*
3.6.1.2	Fill height inspection machine	EN 415-2
3.6.1.3	Foreign body detecting machine	EN 415-10*
3.6.1.3.1	Metal detecting machine	EN 415-10*
3.6.1.3.2	X-ray inspection machine	EN 415-10*
3.6.2	Inspection machines for packages	
3.6.2.1	Aerosol testing machine	EN 415-10*
3.6.2.2	Cap inspection machine	EN 415-2
3.6.2.3	Empty bottle inspection machine	EN 415-2
3.6.2.3.1	Empty bottle sorting machine	EN 415-2*
3.6.2.4	Label inspection machine	EN 415-2
3.6.2.5	Open flap detector	EN 415-10*
3.6.2.6	Seal checking machine	EN 415-10*
3.7	Container and packaging component handling machines	
3.7.1	Arranging machines	
3.7.1.1	Rigid container unscrambler	EN 415-2
3.7.1.2	Component unscrambler	EN 415-2
3.7.1.3	Rigid container single liner	EN 619*
3.7.1.4	Rigid container orienter	EN 415-2
3.7.2	Dispensing machines	
3.7.2.1	Rigid container denester	EN 415-10*
3.7.2.2	Leaflet feeder	EN 415-3
3.7.2.3	Bag presenting machine	EN 415-3*
3.7.2.3.1	Sack presenting machine	EN 415-3*
3.7.2.4	Sack seal and present machine	EN 415-3*
3.7.2.5	Straw applicator	EN 415-10*
3.7.2.6	Tear tape applicator	EN 415-5
3.7.2.7	Handle applicator	EN 415-10*

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.7.2.8	Spoon applicator	EN 415-10*
3.7.2.9	Key applicator	EN 415-10*
3.8	Form fill and seal machines	
3.8.1	Bag form fill and seal machines	
3.8.1.1	Flow-wrapping machine	EN 415-3
3.8.1.2	Lower reel flow-wrapping machine	EN 415-3
3.8.1.3	Vertical form, fill and seal machine	EN 415-3
3.8.1.3.1	Vertical form, fill and seal machine for cartonboard	EN 415-3
3.8.1.3.2	Stick packing machine	EN 415-3
3.8.1.4	Mandrel flexible package form fill and seal machine	EN 415-3
3.8.1.5	Tubular bag form fill and seal machine	EN 415-3*
3.8.1.5.1	Tubular sack form fill and seal machine	EN 415-3*
3.8.2	Sachet form, fill and seal machines	
3.8.2.1	Edge sealing machine	EN 415-3*
3.8.2.2	Horizontal sachet form, fill and seal machine	EN 415-3*
3.8.2.3	Vertical sachet form, fill and seal machine	EN 415-3*
3.8.2.4	Strip packing machine	EN 415-3*
3.8.3	Deep draw form, fill and seal machines	
3.8.3.1	Cold form, fill and seal machine	EN 415-3*
3.8.3.2	Thermoform, fill and seal machine	EN 415-3
3.8.4	Blow mould, fill and seal machines	EN 422*
3.9	Carton erecting, carton closing and cartoning machines	
3.9.1	Carton erecting machines	
3.9.1.1	Carton blank erecting machine	EN 415-7
3.9.1.2	Skillet erecting machine	EN 415-3*
3.9.2	Carton closing machines	
3.9.2.1	End flap carton closing machine	EN 415-3*
3.9.2.2	Three flap carton closing machine	EN 415-3*
3.9.3	Carton form fill and seal machines	
3.9.3.1	Mandrel carton form fill and seal machine	EN 415-3
3.9.3.2	Mandrel bag-in-box machine	EN 415-3
3.9.3.3	Horizontal end load cartoner	EN 415-3
3.9.3.4	Vertical cartoner	EN 415-3
3.9.3.4.1	Pre-made bag-in-box cartoner	EN 415-3
3.9.3.4.2	Reel fed bag-in-box cartoner	EN 415-3
3.9.3.5	Tray erect load and seal machine	EN 415-3
3.9.3.6	Top load carton form, fill and seal machine	EN 415-3

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.9.3.7	Wraparound cartoner	EN 415-3
3.9.3.8	Wraparound sleeving machine	EN 415-3
3.10	Wrapping machines	
3.10.1	Wrapping machines which partially wrap products	
3.10.1.1	Banding machine	EN 415-5
3.10.1.2	Sleeve wrapping machine	EN 415-5
3.10.1.2.1	Sleeve wrapping machine with tray erecting assembly	EN 415-5*
3.10.1.3	Stretch banding machine	EN 415-5
3.10.1.4	Stretch film bundling machine	EN 415-5
3.10.2	Wrapping machines which form a complete wrap without sealing	
3.10.2.1	Fold wrapping machine	EN 415-5
3.10.2.1.1	Extruded product wrapping machine	EN 415-5
3.10.2.2	Twist wrapping machine	EN 415-5
3.10.3	Wrapping machines which form a complete wrap with sealing	
3.10.3.1	Overwrapping machine	EN 415-5
3.10.3.2	Roll wrapping machine	EN 415-5
3.10.3.3	Foil and band wrapping machine	EN 415-5
3.10.3.4	Pleat wrapping machine	EN 415-5
3.10.3.5	Stretch film wrapping machine	EN 415-5
3.10.3.6	L-sealing machine	EN 415-5
3.10.3.7	Fold over wrapping machine	EN 415-5
3.10.4	Skin packing machines	EN 415-5
3.10.5	Shrinking equipment	
3.10.5.1	Shrink tunnel	EN 415-5
3.10.5.2	Shrink oven	EN 415-6
3.10.5.3	Shrink frame	EN 415-6
3.10.5.4	Dip tank	EN 415-5*
3.11	Group or secondary packaging machines	
3.11.1	Group package erecting machines	
3.11.1.1	Tray erecting machine	EN 415-7
3.11.1.2	Case erecting machine	EN 415-7
3.11.1.3	Division inserting machine	EN 415-7
3.11.2	Group package loading/unloading machines	
3.11.2.1	Drop packing machine	EN 415-7
3.11.2.2	Place packing/unpacking machine	EN 415-7
3.11.2.3	Horizontal packing machine	EN 415-7

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.11.3	<i>Group package sealing machines</i>	
3.11.3.1	Case gluing machine	EN 415-7
3.11.3.2	Case taper	EN 415-7
3.11.3.2.1	Self-adhesive tape sealing machine	EN 415-7
3.11.3.2.2	Pre-gummed tape sealing machine	EN 415-7
3.11.3.3	Case stapling machine	EN 415-7
3.11.3.4	Wraparound lidding machine	EN 415-7
3.11.4	<i>Group package form fill and seal machines</i>	
3.11.4.1	Plastic ringing machine	EN 415-7*
3.11.4.2	Wraparound tray packing machine	EN 415-7*
3.11.4.3	Wraparound case packing machine	EN 415-7
3.11.4.4	End load case packing machine	EN 415-7
3.11.4.5	Top load case packing machine	EN 415-7
3.11.4.6	Bottom load case packing machine	EN 415-7
3.11.5	<i>Group package handling machines</i>	
3.11.5.1	Tray denesting machine	EN 415-7*
3.11.5.2	Crate stacking/unstacking machine	EN 415-7*
3.11.5.3	Tray stacker	EN 415-7*
3.12	<i>Palletizers, depalletizers and ancillary equipment</i>	
3.12.1	<i>Palletizing machines</i>	
3.12.1.1	Low level palletizer	EN 415-4
3.12.1.2	Pick and place palletizer	EN 415-4
3.12.1.3	High level palletizer	EN 415-4
3.12.1.4	Column pick and place palletizer	EN 415-4
3.12.1.5	Robot palletizer	EN 415-4*
3.12.1.6	Stack palletizer	EN 415-4
3.12.1.7	multi-station palletizer	EN 415-4*
3.12.2	<i>Depalletizers</i>	
3.12.2.1	Low level sweep-off depalletizer	EN 415-4
3.12.2.2	Pick and place depalletizer	EN 415-4
3.12.2.3	High level sweep-off depalletizer	EN 415-4
3.12.2.4	Column pick and place depalletizer	EN 415-4
3.12.2.5	Robot depalletizer	EN 415-4*
3.12.2.6	Stack depalletizer	EN 415-4
3.12.3	<i>Ancillary equipment for palletizers and depalletizers</i>	
3.12.3.1	Empty pallet magazine	EN 415-4
3.12.3.2	Pallet stacker / unstacker	EN 415-10
3.12.3.3	Pallet changer	EN 415-10*

Definition reference	Packaging machine names	Standard which provides safety requirements for this machine
3.12.3.4	Layer pad inserter/remover	EN 415-4*
3.13	Pallet wrapping machines	
3.13.1	<i>Pallet stretchwrapping machines</i>	
3.13.1.1	Rotating table pallet stretchwrapper	EN 415-6
3.13.1.2	Self driving pallet stretchwrapper	EN 415-6
3.13.1.3	Rotating arm pallet stretchwrapper	EN 415-6
3.13.1.3.1	Ring pallet stretchwrapper	EN 415-6
3.13.1.4	Curtain pallet stretchwrapper	EN 415-6
3.13.1.5	Hood stretching machine	EN 415-6
3.13.2	<i>Pallet shrink wrappers</i>	
3.13.2.1	Vertical pallet sleeve wrapper	EN 415-6
3.13.2.2	Horizontal pallet sleeve wrapper	EN 415-6
3.13.2.4	Shrink hood applicator	EN 415-6
3.13.2.4	Pallet shrink oven	EN 415-6
3.13.2.5	Pallet shrink tunnel	EN 415-6
3.13.2.6	Pallet shrink frame	EN 415-6
3.13.2.7	Top sheet dispenser	EN 415-4*
3.14	Strapping machines	
3.14.1	Powered hand strapping tool	EN 415-8
3.14.2	Semi-automatic strapping machine	EN 415-8
3.14.3	Automatic strapping machine	EN 415-8
3.14.4	Vertical pallet strapping machine	EN 415-8
3.14.5	Horizontal pallet strapping machine	EN 415-8
3.14.6	Compression strapping machine	EN 415-8

Annex B
(informative)

Packaging machine names in English, French, German and Italian

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.1	Filling machines	Remplisseuses (machines à remplir)	Füllmaschinen	Macchine riempitrici
3.1.1	Volumetric filling machines	Remplisseuses volumétriques	Volumetrische Füllmaschinen	Macchine riempitrici volumetriche
3.1.1.1	Volumetric cup filling machine	Remplisseuse par gobelet gradué	Meßbecher-Füllmaschine	Macchina riempitrice volumetrica a tazze
3.1.1.2	Volumetric piston filling machine	Remplisseuse volumétrique à piston	Kolben-Füllmaschine	Macchina riempitrice volumetrica a siringa
3.1.1.2.1	Displacement filling machine	Remplisseuse par déplacement	Verdränger-Füllmaschine	Macchina riempitrice a spostamento
3.1.1.2.2	Aerosol gassing machine	Remplisseuse de gaz	Aerosol-Gasfüllmaschine	Macchina per introdurre gas nei contenitori aerosol
3.1.1.3	Rotating chamber filling machine	Remplisseuse par chambres rotatives	Rotationskammer-Füllmaschine	Macchina riempitrice a pompa dosatrice
3.1.1.4	Flow meter filling machine	Remplisseuse par débitmètre	Volumenstrom-Füllmaschine	Macchina riempitrice a flusso misurato
3.1.1.5	Auger filling machine	Remplisseuse à hélice	Schnecken-Füllmaschine	Macchina riempitrice a coclea
3.1.2	Level filling machines	Remplisseuses selon niveau	Füllstands-Füllmaschinen	Macchine riempitrici a livello
3.1.2.1	Vacuum filling machine	Remplisseuse par dépression	Unterdruck-Füllmaschine	Macchina riempitrice a depressione
3.1.2.2	Gravity filling machine	Remplisseuse par gravité	Schwerkraft-Füllmaschine	Macchina riempitrice a gravità
3.1.2.3	Pressure filling machine	Remplisseuse par surpression	Überdruck-Füllmaschine	Macchina riempitrice a pressione
3.1.3	Timed flow filling machines	Remplisseuses par minutage	Zeit-Füllmaschinen	Macchine riempitrici a flusso temporizzato
3.1.4	Gravimetric filling machines	Remplisseuses gravimétriques	Wäge-Füllmaschinen	Macchine riempitrici a peso
3.1.4.1	Nett weighing machine	Balance selon poids net	Netto-Wäge-Füllmaschine	Macchina riempitrice a peso netto
3.1.4.1.1	Multi-head weigher; Selective combination weighing machine	Balance à tête multiple; Balance à combinaison sélective	Mehrkopfwäge; Auswahl-Kombinationswäge-Füllmaschine	Macchina pesatrice a combinazione selettiva
3.1.4.2	Gross weighing machine	Remplisseuse selon poids brut	Brutto-Wäge-Füllmaschine	Macchina riempitrice a peso lordo
3.1.5	Count filling machine	Remplisseuse par comptage	Zähl-Füllmaschine	Macchine riempitrici a conteggio

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.2	Closing machines	Fermeuses	Verschließmaschinen	Macchine chiuditrici
3.2.1	<i>Closing machines which do not use a closure or closing material</i>	<i>Fermeuses sans moyen fermant</i>	<i>Maschinen zum Verschließen ohne Verschließmittel</i>	<i>Macchine chiuditrici senza elementi di chiusura</i>
3.2.1.1	Fold closing machine	Fermeuse par pliage	Falt-Verschließmaschine	Macchina chiuditrice a piegatura
3.2.1.2	Tuck closing machine	Fermeuse par pliage insérant	Einsteck-Verschließmaschine	Macchina chiuditrice di pattine
3.2.1.3	Crimp closing machine	Fermeuse par sertissage	Falz-Verschließmaschine	Macchina chiuditrice per aggraffatura (crimp)
3.2.1.4	Weld sealing machine	Scelleuse par soudage	Schweiß-Verschließmaschine	Macchina chiuditrice con saldatura
3.2.1.5	Fusion sealing machine	Scelleuse par fusion	Schmelzschweiß-Verschließmaschine	Macchina chiuditrice per fusione
3.2.1.6	Solder sealing machine	Scelleuse par brasage	Löt-Verschließmaschine	Macchina chiuditrice per saldatura a stagno
3.2.1.7	Heat sealing machine	Thermoscelleuse	Heißsiegel-Verschließmaschine	Macchina sigillatrice a caldo
3.2.1.7.1	Blister sealing machine	Scelleuse de « blisters »	Blister-Verschließmaschine	Macchina sigillatrice di blister
3.2.1.7.2	Rigid container sealing machine	Scelleuse de contenants rigides	Verschließmaschine für formstabile Behälter	Macchina sigillatrice di contenitori rigidi
3.2.1.7.3	Bag sealing machine	Scelleuse de sacs	Beutel-Verschließmaschine	Macchina sigillatrice di buste
3.2.1.7.4	Sack sealing machine	Scelleuse de poches	Sack-Verschließmaschine	Macchina sigillatrice di sacchi
3.2.1.8	Induction sealing machine	Scelleuse à induction	Induktionsschweiß-Verschließmaschine	Macchina sigillatrice a induzione
3.2.2	<i>Closing machines which use a closure</i>	<i>Fermeuses à moyen fermant</i>	<i>Maschinen zum Verschließen mit Verschließmittel</i>	<i>Macchine chiuditrici che usano un elemento di chiusura</i>
3.2.2.1	Screw capping machine	Boucheuse à vis	Schraub-Verschließmaschine	Macchina chiuditrice con capsula a vite
3.2.2.2	Steam capping machine	Boucheuse à vapeur	Dampf-Kappenaufsetzmaschine	Macchina chiuditrice con chiusura sterilizzata a vapore
3.2.2.3	Plugging; corking machine	Bondeuse, bouchonneuse	Stöpsel-Verschließmaschine, Verkorkmaschine	Macchina chiuditrice con tappi di sughero
3.2.2.4	Press-on lidding machine	Operculeuse par pression	Anpress-Verschließmaschine	Macchina chiuditrice a pressione sul coperchio
3.2.2.5	Crown capping machine	Sertisseuse de capsule	Kronkorken-Verschließmaschine	Macchina chiuditrice con tappi corona
3.2.2.6	Roll-on capping machine	Bordeleuse de capsule	Anroll-Verschließmaschine	Macchina chiuditrice con ghiera
3.2.2.7	Can seaming machine	Rouleuse de fermeture des boîtes	Dosenbördelmaschine	Macchina chiuditrice per bordatura

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.2.2.8	Cork wiring machine	Museleuse par fil des bouchons	Kork-Verdrahtungsmaschine	Macchina legatrice di tappi
3.2.2.9	Aerosol valve closing machine	Fermeuse pour valve d'aérosol	Aerosol-Sprühventil-Montiermaschine	Macchina chiuditrice con valvola per aerosol
3.2.2.10	Pump applicator	Applicateur de pompe	Pumpen-Montiermaschine	Macchina chiuditrice con dispensatore
3.2.2.11	Syringe assembling machine	Machine d'assemblage de seringue	Spritzenfertigungs-maschine	Astinatrici per siringhe pre-riempite
3.2.3	<i>Closing machines which use a closing material</i>	<i>Machines à fermer par moyen complémentaire de fermeture</i>	<i>Verschließmaschinen, die Verschließhilfsmittel verwenden</i>	<i>Macchine chiuditrici con mezzi ausiliari</i>
3.2.3.1	Staple closing machine	Agrafeuse pour fermer	Heft-Verschließmaschine	Macchina chiuditrice con graffette
3.2.3.2	Nail closing machine	Cloueuse pour fermer	Nagel-Verschließmaschine	Macchina chiuditrice con chiodi
3.2.3.3	Rivet closing machine	Riveteuse pour fermer	Niet-Verschließmaschine	Macchina chiuditrice con rivetti
3.2.3.4	Clip closing machine	Clipeuse pour fermer	Clip-Verschließmaschine	Macchina chiuditrice con fermaglio
3.2.3.5	Sewing machine	Machine à coudre	Näh-Verschließmaschine	Macchina chiuditrice con cucitura
3.2.3.6	Glue sealing machine	Colleuse pour fermer	Klebstoff-Verschließmaschine	Macchina chiuditrice con colla
3.2.3.7	Gummed tape sealing machine	Colleuse pour fermer par bande gommée	Nassklebeband-Verschließmaschine	Macchina chiuditrice con nastro gommato
3.2.3.8	Tape sealing machine	Colleuse pour fermer par bandes adhésives	Haftklebeband-Verschließmaschine	Macchina chiuditrice con nastro autoadesivo
3.2.3.9	Twist-tie closing machine	Tortilleuse	Drill-Verschließmaschine	Macchina chiuditrice con filo annodato
3.2.3.10	Foil sealing machine	Operculeuse par clinquant	Folien-Verschließmaschine	Macchina sigillatrice con lamina
3.3	Labelling, decorating and coding machines	Étiqueteuses, décoreuses et codeuses	Etikettier-, Dekorier- und Codiermaschinen	Macchine etichettatrici, decoratrici e marcatrici
3.3.1	<i>Labelling machines</i>	<i>Étiqueteuses</i>	<i>Etikettiermaschinen</i>	<i>Macchine etichettatrici</i>
3.3.1.1	Wet glue labelling machine	Étiqueteuse à colle liquide	Kaltleim-Etikettiermaschine	Macchina etichettatrice con colla
3.3.1.2	Hot melt glue labelling machine	Étiqueteuse à colle thermofusible	Heißleim-Etikettiermaschine	Macchina etichettatrice con colla a caldo
3.3.1.3	Self-adhesive labelling machine	Étiqueteuse à étiquettes auto-adhésives	Selbstklebe-Etikettiermaschine	Macchina etichettatrice con etichette adesive
3.3.1.4	Heat seal labelling machine	Étiqueteuse par thermocollage	Heißsiegel-Etikettiermaschine	Macchina etichettatrice, sigillatrice a caldo
3.3.1.5	Pre-gummed labelling machine	Étiqueteuse à étiquettes gommées	Etikettiermaschine für vorgummierte Etiketten, Nassklebe-Etikettiermaschine	Macchina etichettatrice con etichette pre-gommate

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.3.1.6	Print and apply labelling machine	Imprimante /étiqueteuse	Etiketten-Druck- und -Appliziermaschine	Macchina stampatrice ed applicatrice di etichette
3.3.1.7	Shrink labelling machine	Étiqueteuse à étiquettes rétractables	Schrumpf-Etikettiermaschine	Macchina applicatrice di etichette termo-retraibili
3.3.2	Decorating machines	Décoreuses	Dekoriermaschinen	Macchine decoratrici
3.3.2.1	Tag labelling machine	Tagueuse	Anhängeetikett- Appliziermaschine	Macchina applicatrice di etichette
3.3.2.2	Foiling machine	Décoreuse à feuille pour goulot	Foliermaschine	Macchina applicatrice di lamina
3.3.2.3	Shrink sleeving machine	Manchonreuse à manchon rétractable	Schrumpfhülsen- Überziehmaschine	Macchina applicatrice di manicotti termoretraibili
3.3.2.4	Capsuling machine	Capsuleuse	Verkapselmaschine	Macchina applicatrice di capsule
3.3.2.5	Stretch sleeving machine	Manchoneuse à manchon étirable	Stretchhülsen- Überziehmaschine	Macchina applicatrice di manicotti stirabili
3.3.3	Coding equipment	Codeuses	Codiermaschinen	Macchine marcatrici
3.3.3.1	Emboss coder	Embosseuse	Prägecodierer	Codificatore a rilievo
3.3.3.2	Wet ink coder	Codeuse à encre liquide	Nasstintencodierer	Codificatore a inchiostro
3.3.3.3	Hot foil coder	Codeuse à feuille chaude	Heißfoliencodierer	Codificatore a caldo
3.3.3.4	Solid ink coder	Codeuse à encre solide	Festtintencodierer	Codificatore a inchiostro solido
3.3.3.5	Ink jet coder	Codeuse à jet d'encre	Tintenstrahlcodierer	Codificatore a getto d'inchiostro
3.3.3.5.1	Drop on demand ink jet coder	Codeuse à jet d'encre à la demande	Drop-On-Demand- Tintenstrahlcodierer	Codificatore a getto d'inchiostro intermittente
3.3.3.5.2	Continuous stream ink jet coder	Codeuse à jet d'encre en continu	Kontinuierlicher Tintenstrahlcodierer	Codificatore a getto d'inchiostro continuo
3.3.3.6	Laser coder	Codeuse laser	Lasercodierer	Codificatore a raggio laser
3.4	Cleaning, sterilising, cooling and drying machines	Laveuses, stérilisateurs (à enlever les micro-organismes), refroidisseurs et séchoirs	Reinigungs-, Sterilisier-, Kühl- und Trocknungsmaschinen	Macchine pulitrici, sterilizzatrici, raffreddatrici ed asciugatrici
3.4.1	Cleaning machines	Laveuses	Reinigungsmaschinen	Macchine pulitrici
3.4.1.1	Air cleaning machine	Laveuse à air	Ausblasma- Ausblasrinser	Macchina pulitrice con aria
3.4.1.2	Rinsing machine	Rinceuse	Rinser	Macchina risciacquatrice
3.4.1.3	Bottle washing machine	Laveuse de bouteilles	Flaschenreinigungsmaschine	Macchina lavatrice di bottiglie
3.4.1.4	Crate washing machine	Laveuse de caisses	Kistenreinigungsmaschine	Macchina lavatrice di cassette
3.4.1.5	Capsule cleaning machine	Nettoyeuse de capsules	Reinigungsmaschine für pharmazeutische Kapseln	Macchina per la pulizia di capsule

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.4.2	<i>Sterilising machines</i>	<i>Stérilisateurs (Machines à enrayer les micro-organismes)</i>	<i>Sterilisiermaschinen</i>	<i>Macchine sterilizzatrici</i>
3.4.2.1	Container sterilising machine	Stérilisateur de contenants	Behälter-Sterilisiermaschine	Macchina sterilizzatrice di contenitori
3.4.2.2	Continuous steriliser	Stérilisateur continu	Kontinuierliche Sterilisiermaschine	Macchina sterilizzatrice a ciclo continuo
3.4.2.3	Batch steriliser	Stérilisateur par lots	Chargen-Sterilisiermaschine	Macchina sterilizzatrice a lotti
3.4.3	<i>Pasteurising machines</i>	<i>Pasteurisateurs</i>	<i>Pasteurisierungsmaschinen</i>	<i>Macchine pastorizzatrici</i>
3.4.3.1	Continuous pasteuriser	Pasteurisateur continu	Kontinuierliche Pasteurisierungsmaschine	Macchina pastorizzatrice a ciclo continuo
3.4.3.2	Batch pasteuriser	Pasteurisateur par lots	Chargen-Pasteurisierungsmaschine	Macchina pastorizzatrice a lotti
3.4.4	<i>Cooling, warming and drying machines</i>	<i>Refroidisseurs, chauffeuses et séchoirs</i>	<i>Kühl-, Erwärmungs- und Trocknungsmaschinen</i>	<i>Macchine raffreddatrici, riscaldatrici e asciugatrici</i>
3.4.4.1	Cooling machine	Refroidisseur	Kühlmaschine	Macchina raffreddatrice
3.4.4.2	Drying machine	Séchoir	Trocknungsmaschine	Macchina asciugatrice
3.4.4.3	Warming machine	Chauffeuse	Erwärmungsmaschine	Macchina riscaldatrice
3.5	<i>Fill and seal machines</i>	<i>Remplisseuses - /scelleuse</i>	<i>Füll- und Verschließmaschinen</i>	<i>Macchine riempitrici e sigillatrici</i>
3.5.1	<i>Rigid container fill and close machines</i>	<i>Remplisseuses /fermeuse pour contenants rigides</i>	<i>Füll- und Verschließmaschinen für formstabile Behälter</i>	<i>Macchine riempitrici e sigillatrici di contenitori rigidi</i>
3.5.1.1	Ampoule/vial fill and close machine	Remplisseuse /fermeuse d'ampoules/ fioles	Ampullen-/Phiolenfüll- und -verschließmaschine	Macchina riempitrice e sigillatrice di fiale e flaconi
3.5.1.2	Bottle fill and cap machine	Remplisseuse /capsuleuse de bouteilles	Flaschenfüll- und -verschließmaschine	Macchina riempitrice e tappatrice di bottiglie
3.5.1.3	Can fill and seam machine	Remplisseuse /soudeuse de boîtes	Dosenfüll- und -verschließmaschine	Macchina riempitrice e aggraffatrice di lattine
3.5.1.4	Cask or keg fill and seal machine	Remplisseuse /fermeuse de tonneaux ou fûts	Fass- oder KEG-Füll- und Verschließmaschine	Macchina riempitrice e sigillatrice di fusti e barilotti
3.5.1.5	Capsule filling machine	Remplisseuse de gélules	Füllmaschine für pharmazeutische Kapseln	Macchina riempitrice di capsule (opercolatrice)
3.5.2	<i>Flexible package fill and seal machines</i>	<i>Remplisseuses /fermeuses pour emballages flexibles</i>	<i>Füll- und Verschließmaschinen für flexible Packungen</i>	<i>Macchine riempitrici e sigillatrici di imballaggi flessibili</i>
3.5.2.1	Bag fill and seal machine	Remplisseuse /fermeuse de sacs	Beutelfüll- und -verschließmaschine	Macchina per riempire e sigillare sacchetti pre-formati
3.5.2.1.1	Reel fed bag fill and seal machine	Remplisseuse /fermeuse de sacs à partir d'une bobine	Beutelfüll- und -verschließmaschine mit Beutelführung von der Rolle	Macchina riempitrice e sigillatrice di sacchetti da bobina

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.5.2.2	Sack fill and close machine	Remplisseuse /fermeuse de poches	Sackfüll- und -verschießmaschine	Macchina riempitrice e chiuditrice di sacchi
3.5.2.3	Tube fill and seal machine	Remplisseuse /fermeuse de tubes	Tubenfüll- und -verschießmaschine	Macchina riempitrice e sigillatrice di tubetti
3.5.2.4	Cup/tub fill and seal machine	Remplisseuse /fermeuse de gobelets et cuves	Becher-/Fass-Füll- und -verschießmaschine	Macchina riempitrice e sigillatrice di tazze e vaschette
3.5.2.5	Blister fill and seal machine	Remplisseuse /fermeuse de blisters	Blister-Füll- und -verschießmaschine	Macchina riempitrice e sigillatrice di blister
3.5.2.6	Liquid bag-in-box fill and seal machine	Remplisseuse /fermeuse de "sac en boîte" pour liquide	Bag-in-Box-Füll- und -verschießmaschine für Flüssigkeiten	Macchina riempitrice e sigillatrice per liquidi "bag-in-box"
3.6	Inspection machines	Testeurs (vérificateurs)	Inspektionsmaschinen	Macchine di controllo
3.6.1	Inspection machines for products	Testeurs de produits	Inspektionsmaschinen für Produkte	Macchine di controllo per prodotti
3.6.1.1	Checkweigher	Balance	Kontrollwaage	Macchina di controllo peso
3.6.1.1.1	Weight classifying machine	Balance classificatrice	Gewichts-Sortiermaschine	Macchina selezionatrice per peso
3.6.1.1.2	Weigh price labelling machine	Balance /étiqueteuse	Gewichts-Preisauszeichnungs-Etikettiermaschine	Macchina etichettatrice prezzo/peso
3.6.1.2	Fill height inspection machine	Testeur de niveau	Füllhöhen-Inspektionsmaschine	Rilevatore del livello di riempimento
3.6.1.3	Foreign body detecting machine	Détecteur de corps étranger	Fremdkörpererkennungsmaschine	Rivelatore di corpi estranei
3.6.1.3.1	Metal detecting machine	Détecteur de métal	Metall-Detektionsmaschine	Rivelatore di metalli
3.6.1.3.2	X-ray inspection machine	Machine d'inspection à rayons X	Röntgeninspektionsmaschine	Macchina per ispezionare a raggi X
3.6.2	Inspection machines for packages	Testeurs d'emballage	Inspektionsmaschinen für Packungen	Macchine di controllo per imballaggi
3.6.2.1	Aerosol testing machine	Testeur d'aérosol	Aerosoldosen-Inspektionsmaschine	Macchina per la prova «aerosol»
3.6.2.2	Cap inspection machine	Testeur de bouchage	Verschlusskappen-Inspektionsmaschine	Macchina ispezionatrice della chiusura
3.6.2.3	Empty bottle inspection machine	Testeur de bouteilles vides	Leerflaschen-Inspektionsmaschine	Macchina ispezionatrice per bottiglie vuote
3.6.2.3.1	Empty bottle sorting machine	Classificatrice de bouteilles vides	Leerflaschen-Sortiermaschine	Macchina selezionatrice di bottiglie vuote
3.6.2.4	Label inspection machine	Testeur d'étiquettes	Etiketten-Inspektionsmaschine	Macchina di controllo per etichette
3.6.2.5	Open flap detector	Détecteur de rabat	Stecklaschen-Inspektionsmaschine	Rivelatore di lembi aperti
3.6.2.6	Seal checking machine	Testeur de fermeture	Siegelnaht-Inspektionsmaschine	Macchina di controllo della chiusura

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.7	Container and packaging component handling machines	Machines de manutention pour les contenants ou les éléments d'emballage	Behälter- und Komponenten-Handhabungsmaschinen	Macchine per manipolare contenitori ed elementi di imballaggio
3.7.1	Arranging machines	Machines à arranger	Ausrichtmaschinen	Macchine ordinatrici
3.7.1.1	Rigid container unscrambler	Démélangeuse de contenants rigides	Schüttgut-Vereinzelungsmaschine für formstabile Behälter	Ordinatore di contenitori rigidi
3.7.1.2	Component unscrambler	Démélangeuse de composants	Schüttgut-Vereinzelungsmaschine für Packmittel	Ordinatore di elementi d'imballaggio
3.7.1.3	Rigid container single liner	Aligneuse monoligne pour contenants rigides	Linien-Vereinzelungsmaschine für formstabile Behälter	Allineatori di contenitori rigidi
3.7.1.4	Rigid container orienter	Orienteuse de contenants rigides	Ausrichtmaschine für formstabile Behälter	Orientatore di contenitori rigidi
3.7.2	Dispensing machines	Distributeurs (Approvisionneurs)	Verteilmaschinen	Macchine distributrici
3.7.2.1	Rigid container denester	Distributeur de contenants rigides	Entstapelmaschine für formstabile Behälter	Distributore di contenitori rigidi
3.7.2.2	Leaflet feeder	Distributeur d'étiquettes	Beipackzettel-Zuführmaschine	Alimentatore di fogli
3.7.2.3	Bag presenting machine	Distributeur de sacs	Beutel-Zuführmaschine	Macchina posizionatrice di buste e bustine
3.7.2.3.1	Sack presenting machine	Distributeur de poches	Sack-Zuführmaschine	Macchina posizionatrice di sacchi
3.7.2.4	Sack seal and present machine	Distributeur -scelleuse de poches	Sacksiegel- und zuführmaschine	Macchina sigillatrice e posizionatrice di sacchi
3.7.2.5	Straw applicator	Applicateur de pailles	Trinkhalm-Appliziermaschine	Applicatore di cannuccia
3.7.2.6	Tear tape applicator	Applicateur de bande arrachable	Aufreißstreifen-Appliziermaschine	Applicatore di nastrino a strappo
3.7.2.7	Handle applicator	Applicateur de poignée	Tragegriff-Appliziermaschine	Applicatore di maniglia
3.7.2.8	Spoon applicator	Applicateur de cuillère	Löffel-Appliziermaschine	Applicatore di cucchiaio
3.7.2.9	Key applicator	Applicateur de clé	Öffner-Appliziermaschine	Applicatore di chiavetta
3.8	Form fill and seal machines	Formeuses/remplisseuses /scelleuses	Form-, Füll- und Verschließmaschinen	Macchine formatrici, riempitrici e sigillatrici
3.8.1	Bag form fill and seal machines	Formeuses/remplisseuses /scelleuses pour sacs	Beutelform-, -füll- und verschließmaschinen	Macchine formatrici, riempitrici e sigillatrici di buste
3.8.1.1	Flow-wrapping machine	Enveloppeuse en continu	Horizontale Oberfolienschlauchbeutelmaschine	Macchina confezionatrice «flowrap»
3.8.1.2	Lower reel flow-wrapping machine	Enveloppeuse en continu avec rouleau dessous	Horizontale Unterfolienschlauchbeutelmaschine	Macchina confezionatrice «flowrap» con bobina dal basso

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.8.1.3	Vertical form, fill and seal machine	Formeuse /remplisseuse /scelleuse verticale	Vertikale Schlauchbeutelmaschine	Macchine formatrice, riempitrice e sigillatrice verticale
3.8.1.3.1	Vertical form, fill and seal machine for cartonboard	Formeuse /remplisseuse /scelleuse verticale pour cartons	Vertikale Schlauchbeutelmaschine für Kartonagen	Macchina formatrice, riempitrice e sigillatrice verticale di scatole
3.8.1.3.2	Stick packing machine	Formeuse /remplisseuse /scelleuse pour petits tubes	Stick-Verpackungsmaschine	Macchina formatrice, riempitrice, sigillatrice di tubetti
3.8.1.4	Mandrel flexible package form fill and seal machine	Formeuse /remplisseuse /scelleuse à mandrin pour paquets souples	Dornradform-, -füll- und Verschließmaschine für flexible Packungen	Macchina formatrice a mandrino per imballo flessibile
3.8.1.5	Tubular bag form fill and seal machine	Formeuse /remplisseuse /scelleuse pour sac tube	Folienschlauchbeutelform-, -füll- und verschließmaschine	Macchina formatrice, riempitrice e sigillatrice di buste tubolari
3.8.1.5.1	Tubular sack form fill and seal machine	Formeuse /remplisseuse /scelleuse pour sachet tube	Folienschlauchsackform-, -füll- und verschließmaschine	Macchina formatrice, riempitrice e sigillatrice di sacchetti tubolari
3.8.2	Sachet form, fill and seal machines	Formeuse /ensacheuse /scelleuse	Siegelrandbeutelform-, -füll- und verschließmaschine	Macchine formatrici, riempitrici e sigillatrici di sacchetti
3.8.2.1	Edge sealing machine	Scelleuse de bordure	Längssiegelmaschine	Macchina sigillatrice dei bordi
3.8.2.2	Horizontal sachet form, fill and seal machine	Formeuse / ensacheuse /scelleuse horizontale	Horizontale Siegelrandbeutelform-, -füll- und verschließmaschine	Macchina formatrice, riempitrice e sigillatrice orizzontale di sacchetti
3.8.2.3	Vertical sachet form, fill and seal machine	Formeuse / ensacheuse /scelleuse verticale	Vertikale Siegelrandbeutelform-, -füll- und verschließmaschine	Macchina formatrice, riempitrice e sigillatrice verticale di sacchetti
3.8.2.4	Strip packing machine	Enveloppeuse en ruban	Streifenform-, -füll- und -verschließmaschine	Macchina confezionatrice di strisce (strip)
3.8.3	Deep draw form, fill and seal machines	Formeuses par déformation /remplisseuses /scelleuses	Tiefziehform-, -füll- und verschließmaschinen	Macchine per imbutire, riempire e sigillare
3.8.3.1	Deep draw machine	Formeuse par déformation	Kaltform-, -füll- und verschließmaschine	Macchina per formare a freddo, riempire e sigillare
3.8.3.2	Thermoform, fill and seal machine	Thermoformeuse /remplisseuse /scelleuse	Thermoform-, -füll- und verschließmaschine	Macchina termoformatrice, riempitrice e sigillatrice
3.8.4	Blow mould, fill and seal machines	Mouleuse par soufflage /remplisseuse /scelleuse	Blasform-, -füll- und verschließmaschinen	Macchine stampatrici, riempitrici e sigillatrici
3.9	Carton erecting, carton closing and cartoning machines	Encartonneuses	Faltschachtelaufrecht- und verschließmaschinen, Kartoniermaschinen	Macchine astucciatrici e cartonatrici
3.9.1	Carton erecting machines	Machines pour préparer un carton	Faltschachtelaufrichtmaschinen	Macchine formatrici di astucci
3.9.1.1	Carton blank erecting machine	Machine pour préparer un carton à partir d'une ébauche	Faltschachtelzuschnitt-Aufrichtmaschine	Macchina formatrice di fustellati

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.9.1.2	Skillet erecting machine	Machine pour préparer un poêlon	Halbschachtel-Aufrichtmaschine	Macchina formatrice di fustellati tipo «skillet»
3.9.2	Carton closing machines	Fermeuses de cartons	Faltschachtelverschließmaschinen	Macchine chiuditrici di astucci e cartoni
3.9.2.1	End flap carton closing machine	Fermeuse de dernier rabat des cartons	Endlaschen-Verschließmaschine	Macchina chiuditrice di lembi di astucci e cartoni
3.9.2.2	Three flap carton closing machine	Fermeuse de carton à trois rabats	Drei-Laschen-Faltschachtelverschließmaschine	Macchina chiuditrice di astucci e cartoni con tre lembi di chiusura
3.9.3	Carton form fill and seal machines	Formeuses de cartons /remplisseuses /scelleuses	-Faltschachtelform-, -füll- und verschließmaschinen	Macchine formatrici, riempitrici e chiuditrici di astucci e cartoni
3.9.3.1	Mandrel carton form fill and seal machine	Formeuse de cartons à mandrin /remplisseuse /scelleuse	Dornrad-Faltschachtelform-, -füll- und -verschließmaschine	Macchina formatrice a mandrino, riempitrice e chiuditrice di astucci
3.9.3.2	Mandrel bag-in-box machine	Encartonneuse à mandrin pour "sac en boîte"	Dornrad-Bag-in-Box-Kartoniermaschine	Macchina formatrice con mandrino di sacchetti in scatole
3.9.3.3	Horizontal end load cartoner	Encartonneuse horizontale par le bout	Horizontale Kartoniermaschine	Macchina astucciatrice orizzontale
3.9.3.4	Vertical cartoner	Encartonneuse verticale	Vertikale Kartoniermaschine	Macchina astucciatrice verticale
3.9.3.4.1	Pre-made bag-in-box cartoner	Encartonneuse pour "sac en boîte" préformé	Bag-in-Box-Kartoniermaschine für vorgefertigte Beutel	Macchina astucciatrice con sacchetto interno pre-formato
3.9.3.4.2	Reel fed bag-in-box cartoner	Encartonneuse pour "sac en boîte" à partir de bobine	Bag-in-Box-Kartoniermaschine mit von der Rolle zugeführtem Beutel	Macchina astucciatrice con sacchetto interno da bobina
3.9.3.5	Tray erect load and seal machine	Formeuse de plateaux /remplisseuse /scelleuse	Tray-Aufricht-, -Füll- und -Verschließmaschine	Macchina formatrice, riempitrice e sigillatrice di vassoi
3.9.3.6	Top load carton form, fill and seal machine	Formeuse de cartons /remplisseuse par le dessus/scelleuse	Faltschachtelform-, -füll- und verschließmaschine mit Befüllung von oben	Macchina formatrice, riempitrice dall'alto e sigillatrice di astucci
3.9.3.7	Wraparound cartoner	Encartonneuse fardeleuse	Wraparound-Kartoniermaschine	Macchina incartonatrice «wraparound»
3.9.3.8	Wraparound sleeving machine	Encartonneuse manchonneuse	Wraparound-Banderoliermaschine	Macchina avvolgitrice a manica
3.10	Wrapping machines	Fardeleuses	Einschlagmaschinen	Macchine avvolgitrici
3.10.1	Wrapping machines which partially wrap products	Fardeleuses partielles	Teil-Einschlagmaschinen	Macchine avvolgitrici che avvolgono parzialmente i prodotti
3.10.1.1	Banding machine	Banderoleuse	Banderoliermaschine	Macchina fascettatrice
3.10.1.2	Sleeve wrapping machine	Banderoleuse par film rétractable	Schrumpfmanschetten-Einschlagmaschine	Macchina avvolgitrice con tubolare
3.10.1.2.1	Sleeve wrapping machine with tray erecting assembly	Formeuse de plateaux /Placeuse / Banderoleuse par film rétractable	Schrumpfmanschetten-Einschlagmaschine mit Tray-Aufrichtung	Macchina avvolgitrice con tubolare con formazione di vassoi

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.10.1.3	Stretch banding machine	Banderoleuse par film étirable	Stretchfolien-Banderoliermaschine	Macchina avvolgitrice a stiramento
3.10.1.4	Stretch film bundling machine	Banderoleuse spirale	Strechfolien-Spiralbanderoliermaschine	Macchine avvolgitrici a spirale
3.10.2	Wrapping machines which form a complete wrap without sealing	Enveloppeuses totales sans scellage	Volleinschlagmaschinen ohne Verschließen	Macchine avvolgitrici che formano una confezione/imballo completi senza saldatura
3.10.2.1	Fold wrapping machine	Enveloppeuse plieuse	Falteinschlagmaschine	Macchina avvolgitrice a pieghe
3.10.2.1.1	Extruded product wrapping machine	Enveloppeuse de produit extrudé	Einschlagmaschine für extrudiertes Produkt	Macchina avvolgitrice per prodotti estrusi
3.10.2.2	Twist wrapping machine	Enveloppeuse tordeuse	Dreheinschlagmaschine	Macchina avvolgitrice a fiocco
3.10.3	Wrapping machines which form a complete wrap with sealing	Fardeleuses /enveloppeuses totales avec scellage	Volleinschlagmaschinen mit Verschließen	Macchine avvolgitrici che formano una confezione/imballo completi con saldatura
3.10.3.1	Overwrapping machine	Suremballeuse	Volleinschlagmaschine	Macchina sovravvolgitrice
3.10.3.2	Roll wrapping machine	Fardeleuse rouleau	Rolleneinschlagmaschine	Macchina avvolgitrice per prodotti cilindrici
3.10.3.3	Foil and band wrapping machine	Enveloppeuse à feuille et bande	Metallfolien-Einschlag und Banderoliermaschine	Macchina avvolgitrice e fascettatrice
3.10.3.4	Pleat wrapping machine	Enveloppeuse plieuse	Plissiermaschine	Macchina plissettatrice
3.10.3.5	Stretch film wrapping machine	Enveloppeuse à film étirable	Stretchfolien-Einschlagmaschine	Macchina avvolgitrice con film estensibili
3.10.3.6	L-sealing machine	Scelleuse en L	Einschlagmaschine mit Winkelschweißung	Macchina avvolgitrice con sigillatura a «L»
3.10.3.7	Fold over wrapping machine	Enveloppeuse par pliage	Oberfolien-Einschlagmaschine	Macchina per avvolgere con piegature
3.10.4	Skin packing machines	Enveloppeuse au plus près	Skin-Verpackungsmaschinen	Macchine per imballaggio «skin»
3.10.5	Shrinking equipment	Équipement de rétreint	Schrumpfeinrichtungen	Apparecchiature di termoretrazione
3.10.5.1	Shrink tunnel	Tunnels de rétractation	Schrumpftunnel	Tunnel di termoretrazione
3.10.5.2	Shrink oven	Four de rétractation	Schrumpfofen	Forno di termoretrazione
3.10.5.3	Shrink frame	Cadre de rétractation	Schrumpfraumen	Telaio di termoretrazione
3.10.5.4	Dip tank	Rétractation par cuve au trempé	Schrumpftank	Vasche per immersione
3.11	Group or secondary packaging machines	Formeuses d'emballages collectifs	Sammelpack- oder Umverpackungsmaschinen	Macchine per imballaggi multipli
3.11.1	Group package erecting machines	Formeuses de contenant de groupe	Sammelpackungs-Aufrichtmaschinen	Macchine formatrici di contenitori per imballaggi multipli
3.11.1.1	Tray erecting machine	Formeuse de plateau	Tray-Aufrichtmaschine	Macchina formatrice di vassoi

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.11.1.2	Case erecting machine	Formeuse de caisse	Kartonaufrichtmaschine	Macchina formatrice di casse
3.11.1.3	Division inserting machine	Inséreuse de séparations	Stegeinsetzmaschine	Macchina per inserire separatori
3.11.2	Group package loading/unloading machines	Chargeuses /déchargeuses de contenant de groupe	Sammelpackungsbe- und -entlademaschinen	Macchine riempitrici e svuotatrici di imballaggi multipli
3.11.2.1	Drop packing machine	Chargeuse par lâcher	Fallpackmaschine	Macchina per imballare a gravità
3.11.2.2	Place packing/unpacking machine	Chargeuse /déchargeuse ponctuelle	Setzein-/auspackmaschine	Macchina per imballare o disimballare per posizionamento
3.11.2.3	Horizontal case loading machine	Chargeuse horizontale	Horizontale Kartonfüllmaschine	Macchina imballatrice orizzontale
3.11.3	Group package sealing machines	Fermeuses de contenant collectif	Sammelpackungs-Verschließmaschinen	Macchine sigillatrici di imballaggi multipli
3.11.3.1	Case gluing machine	Colleuses de caisses	Klebstoff-Verschließmaschine	Macchina per incollare casse
3.11.3.2	Case tapers	Colleuse de caisses à bande	Klebeband-Verschließmaschine	Macchina nastratrice di cassette
3.11.3.2.1	Self-adhesive tape sealing machine	Colleuse de caisses à bande auto-adhésive	Haftklebeband-Verschließmaschine	Macchina applicatrice di nastro adesivo
3.11.3.2.2	Pre-gummed tape sealing machine	Colleuse de caisses à bande gommée	Nassklebeband-Verschließmaschine	Macchina applicatrice di nastro adesivo pre-gommato
3.11.3.3	Case stapling machine	Agrafeuse de caisses	Heftklammer-Verschließmaschine	Macchina aggraffatrice di casse
3.11.3.4	Wraparound lidding machine	Coiffeuse fardeleuse	Wraparound-Deckel-Maschine	Macchina avvolgitrice a spirale
3.11.4	Group package form fill and seal machines	Formeuses remplisseuses scelleuses de contenant collectif	Sammelpackform-, -füll- und -verschließmaschinen	Macchine per formare, riempire e sigillare imballaggi multipli
3.11.4.1	Plastic ringing machine	Cercleuse plastique	Kunststoffring--Sammelpackmaschine	Macchina avvolgitrice con film plastici
3.11.4.2	Wraparound tray packing machine	Encaisseuse sur plateau	Wraparound-Tray-Verpackungsmaschine	Macchina avvolgitrice per vassoi
3.11.4.3	Wraparound case packing machine	Encaisseuse fardeleuse	Wraparound-Karton-Verpackungsmaschine	Macchina avvolgitrice di casse tipo «wraparound»
3.11.4.4	Horizontal case packing machine	Encaisseuse horizontale par le bout	Karton-Verpackungsmaschine mit horizontaler Zuführung	Macchina incartonatrice con alimentazione del contenuto da una estremità
3.11.4.5	Top load case packing machine	Encaisseuse par dessus	Karton-Verpackungsmaschine mit Zuführung von oben	Macchina incartonatrice con alimentazione del contenuto dall'alto
3.11.4.6	Bottom load case packing machine	Encaisseuse par dessous	Karton-Verpackungsmaschine mit Zuführung von unten	Macchina incartonatrice con alimentazione del contenuto dal basso

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.11.5	Group package handling machines	Manipulateurs de contenant collectif	Sammelpack-Handhabungsmaschinen	Macchine per manipolare imballaggi multipli
3.11.5.1	Tray denesting machine	Distributeur de plateaux	Tray-Entstapelmaschine	Macchina distributrice di vassoi
3.11.5.2	Crate stacking/unstacking machine	Empileur dépileur de caisses	Kasten-Stapel-/Entstapelmaschine	Macchina impilatrice/disimpilatrice di cassette
3.11.5.3	Tray stacker	Empileur de plateaux	Tray-Stapler	Macchina impilatrice di vassoi
3.12	Palletizers, depalletizers and ancillary equipment	Palettiseurs, dépalettiseurs et assureuses de palettes	Palettierer, Depalettierer und Zusatzausrüstung	Macchine per pallettizzare, depallettizzare e apparecchiature ausiliarie
3.12.1	Palletizing machines	Palettiseurs	Palettierer	Pallettizzatori
3.12.1.1	Low level palletizer	Palettiseur par le bas	Untenpalettierer	Pallettizzatore con impilaggio del carico dal basso
3.12.1.2	Pick and place palletizer	Palettiseur groupe et place	Pick-and-Place-Palettierer	Pallettizzatore pick and place
3.12.1.3	High level palletizer	Palettiseur par le haut	Obenpalettierer	Pallettizzatore con impilaggio del carico dall'alto
3.12.1.4	Column pick and place palletizer	Palettiseur à colonne	Säulen-Pick-And-Place-Palettierer	Pallettizzatore a colonna pick and place
3.12.1.5	Robot palletizer	Robot palettiseur	Palettierroboter	Robot pallettizzatore
3.12.1.6	Stack palletizer	Palettiseur par piles	Stapelpalettierer	Pallettizzatore a colonna
3.12.1.7	multi-station palletizer	Palettiseur multipositions	Multistations-Palettierer	Macchine per pallettizzare
3.12.2	Depalletizers	Dépalettiseurs	Depalettierer	Depallettizzatori
3.12.2.1	Low level sweep-off depalletizer	Dépalettiseur vers le bas par le dessus	Unten-Depalettierer	Depallettizzatore con disimpilaggio del carico dal basso
3.12.2.2	Pick and place depalletizer	Dépalettiseur déplace et dé groupe	Pick-and-Place-Depalettierer	Depallettizzatore pick and place
3.12.2.3	High level sweep-off depalletizer	Dépalettiseur par le haut	Oben-Depalettierer	Depalettizzatore con disimpilaggio del carico dall'alto
3.12.2.4	Column pick and place depalletizer	Dépalettiseur à colonne	Säulen-Pick-And-Place-Depalettierer	Depallettizzatore a colonna pick and place
3.12.2.5	Robot depalletizer	Robot dépalettiseur	Depalettierroboter	Robot depallettizzatore
3.12.2.6	Stack depalletizer	Dépalettiseur par piles	Stapel-Depalettierer	Depallettizzatore a colonna

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	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.12.3	<i>Ancillary equipment for palletizers and depalletizers</i>	<i>Équipements auxiliaires pour palettiseurs/dépalettiseurs</i>	<i>Zusatzausrüstungen für Palettenhandhabung</i>	<i>Apparecchiature ausiliarie per pallettizzatori e depallettizzatori</i>
3.12.3.1	Empty pallet magazine	Magasin de palettes nues	Leerpalettenmagazin	Magazzino per pallet
3.12.3.2	Pallet stacker / unstacker	Empileur / dépileur de palettes	Palettenstapler/-entstapler	Impilatore di pallet
3.12.3.3	Pallet changer	Échangeur de palettes	Palettenwechsler	Scambiatore di pallet
3.12.3.4	Layer pad inserter/remover	Distributeur /ôteur d'intercalaires	Zwischenlagenaufleger/-abnehmer	Distributore di strati intermedi
3.13	Pallet wrapping machines	Machines d'emballage de palettes	Paletteneinschlagmaschinen	Macchine avvolgitrici di pallet
3.13.1	<i>Pallet stretchwrapping machines</i>	<i>Fardeleuses par bande étirable</i>	<i>Paletten-Stretchfolieneinschlagmaschinen</i>	<i>Macchina avvolgitrice di pallet con film estensibile</i>
3.13.1.1	Rotating table pallet stretchwrapper	Fardeleuses par bande étirable à table rotative	Drehtellermaschine	Macchina avvolgitrice di pallet rotante con film estensibile
3.13.1.2	Self driving pallet stretchwrapper	Fardeleuses par bande étirable automotrice	Selbstfahrende Paletten-Stretchfolieneinschlagmaschine	Robot avvolgitore con film estensibile
3.13.1.3	Rotating arm pallet stretchwrapper	Fardeleuses par bande étirable à bras rotatif	Dreharmmaschine	Macchina avvolgitrice di pallet fermo con film estensibile
3.13.1.3.1	Ring pallet stretchwrapper	Fardeleuses par bande étirable à chemin en anneau	Ringläufermaschine	Macchina avvolgitrice di pallet con film estensibile
3.13.1.4	Curtain pallet stretchwrapper	Machine étireuse rideau	Vorhang-Stretchmaschine	Macchina avvolgitrice di pallet con film estensibile
3.13.1.5	Hood stretching machine	Housseuses par film étirable	Haubenstretchmaschine	Macchina per incapsulare con film estensibile
3.13.2	<i>Pallet shrink wrappers</i>	<i>Fardeleuses de palettes par film rétractable</i>	<i>Paletten-Schrumpffolien-Einschlagmaschinen</i>	<i>Macchina avvolgitrice di pallet con film termoretraibile</i>
3.13.2.1	Vertical pallet sleeve wrapper	Housseuse à tube verticale	Vertikale Palettenbanderoliermaschine	Avvolgitrice a manica verticale
3.13.2.2	Horizontal pallet sleeve wrapper	Housseuse à tube horizontale	Horizontale Palettenbanderoliermaschine	Avvolgitrice a manica orizzontale
3.13.2.4	Shrink hood applicator	Installateur de housse rétractable	Schrumpfhäuben-Überziehmaschine	Macchina per incapsulare con film termoretraibile
3.13.2.4	Pallet shrink oven	Four de rétractation pour palettes	Paletten-Schrumpfofen	Forno di termoretrazione per pallet
3.13.2.5	Pallet shrink tunnel	Tunnel de rétractation pour palettes	Paletten-Schrumpftunnel	Tunnel di termoretrazione per pallet
3.13.2.6	Pallet shrink frame	Cadre de rétractation pour palettes	Paletten-Schrumpfrahen	Macchina di termoretrazione per pallet

	ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO
	Packaging machine names	Noms des machines d'emballage	Bezeichnung der Verpackungsmaschinen	NOMI DELLE MACCHINE D'IMBALLAGGIO
3.13.2.7	Top sheet dispenser	Distributeur de coiffe	Deckblattaufleger	Macchina mettifoglio
3.14	Strapping machines	Cercleuse	Umreifungsmaschinen	Reggettarici
3.14.1	Powered hand strapping tool	Cercleuse motorisée portable	Angetriebenes Handumreifungsgerät	Reggettarice manuale motorizzata
3.14.2	Semi-automatic strapping machine	Cercleuse semi-automatique	Halbautomatische Umreifungsmaschine	Reggettarice semiautomatica
3.14.3	Automatic strapping machine	Cercleuse automatique	Automatische Umreifungsmaschine	Macchina reggettarice automatica
3.14.4	Horizontal pallet strapping machine	Cercleuse horizontale	Horizontal-Paletten-Umreifungsmaschine	Macchina reggettarice orizzontale per pallet
3.14.5	Vertical pallet strapping machine	Cercleuse verticale	Vertikal-Paletten-Umreifungsmaschine	Macchina reggettarice verticale per pallet
3.14.6	Compression strapping machine	Cercleuse comprimante	Kompressions-Umreifungsmaschine	Macchina reggettarice di pallet con compressione del carico

Annex C
(informative)

New Machines and Definitions

Requests to add a packaging machine definition to this standard or to alter or delete an existing term or definition should be addressed to the Secretary of CEN/TC 146 at the Italian Standards Organization UNI.

UNI
Via Sannio 2
20137 Milano
Italy

All requests should be sent with photographs and leaflets illustrating the function of the machine concerned and will be considered by the committee members of working group 4 of CEN/TC 146.

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive Machinery 2006/42/EC.

Once this standard is cited in the Official Journal of the European Union under that directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

NOTE Compliance with the relevant standard identified in Annex A of this standard is required to achieve presumption of conformity with the Essential Requirements in accordance with the conditions specified in Annex ZA of that standard.

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