



SLOVENSKI STANDARD

SIST EN 16252:2013

01-junij-2013

Stroji za stiskanje odpadkov ali reciklrnih materialov - Vodoravno delujoče stiskalnice za bale - Varnostne zahteve

Machines for compacting waste materials or recyclable fractions - Horizontal baling presses - Safety requirements

Maschinen zum Verdichten von Abfällen oder recyclebaren Materialien - Horizontal arbeitende Ballenpressen - Sicherheitsanforderungen

Machines de compactage pour déchets ou matières recyclables - Presses à balles horizontales - Prescriptions de sécurité

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EUROPEAN STANDARD

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Machines for compacting waste materials or recyclable fractions - Horizontal baling presses - Safety requirements

Machines de compactage pour déchets ou matières
recyclables - Presses à balles horizontales - Prescriptions
de sécurité

Maschinen zum Verdichten von Abfällen oder recyclebaren
Materialien - Horizontal arbeitende Ballenpressen -
Sicherheitsanforderungen

This European Standard was approved by CEN on 3 November 2012.

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Foreword

This document (EN 16252:2012) has been prepared by Technical Committee CEN/TC 397 "Project Committee - Baling presses - Safety requirements", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, 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.

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Introduction

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

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

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards for machines that have been designed and built in accordance with the provisions of this type C standard.

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EN 16252:2012 (E)**1 Scope**

This European Standard specifies the safety requirements for the design, manufacture and information for safe use of horizontal baling presses for compacting waste material or recyclable fractions (e.g. paper, plastics, textiles, cans, cardboard, mixed waste), hereafter referred to as materials. It covers only machines fed by conveyors or by feed hoppers where the bales are bound manually or automatically. The feed hoppers covered by this European Standard are only fed mechanically or by hand.

The scope of this European Standard includes any mechanical feed equipment, such as belt type loading and feed conveyors or bin lifts, forming an integral part of the baling press assembly. However, pneumatic conveying systems are outside the scope of this European Standard.

This European Standard does not apply to cranes, lift trucks or other mobile plant used to load materials into the feed hopper. Nor does it apply to hazards arising from loading the feed hopper using cranes, lift trucks or other mobile plant.

This European Standard does not apply to pre-conditioning equipment connected at the inlet side of the feed hopper (e.g. sorter, shredder, stand-alone perforator), nor to equipment at the outlet side of the baling press.

This European Standard does not deal with suction and de-dusting mechanisms.

This European Standard does not apply to hazards arising from the materials being processed (e.g. asbestos, clinical waste, aerosol containers).

This European Standard does not cover risks arising from installation of baling presses in places accessible to the public.

All hazards mentioned in Clause 4 are dealt with in this European Standard.

This European Standard is not applicable for horizontal baling presses which are manufactured before the date of its publication as an European Standard.

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 349:1993+A1:2008, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 620:2002+A1:2010, *Continuous handling equipment and systems — Safety and EMC requirements for fixed belt conveyors for bulk materials*

EN 953:1997+A1:2009, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 1088:1995+A2:2008, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

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

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60947-5-1:2004, *Low-voltage switchgear and control gear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices (IEC 60947-5-1:2003)*

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

EN 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) (IEC 62262:2002)*

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

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

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

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

EN ISO 4871:2009, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

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

EN ISO 11200:2009, *Acoustics — Noise emitted by machinery and equipment — Guidelines for the use of basic standards for the determination of emission sound pressure levels at a work station and at other specified positions (ISO 11200:1995, including Cor 1:1997)*

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

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

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

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

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

EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

EN ISO 13855:2010, *Safety of machinery — Positioning of protective equipment with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

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

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

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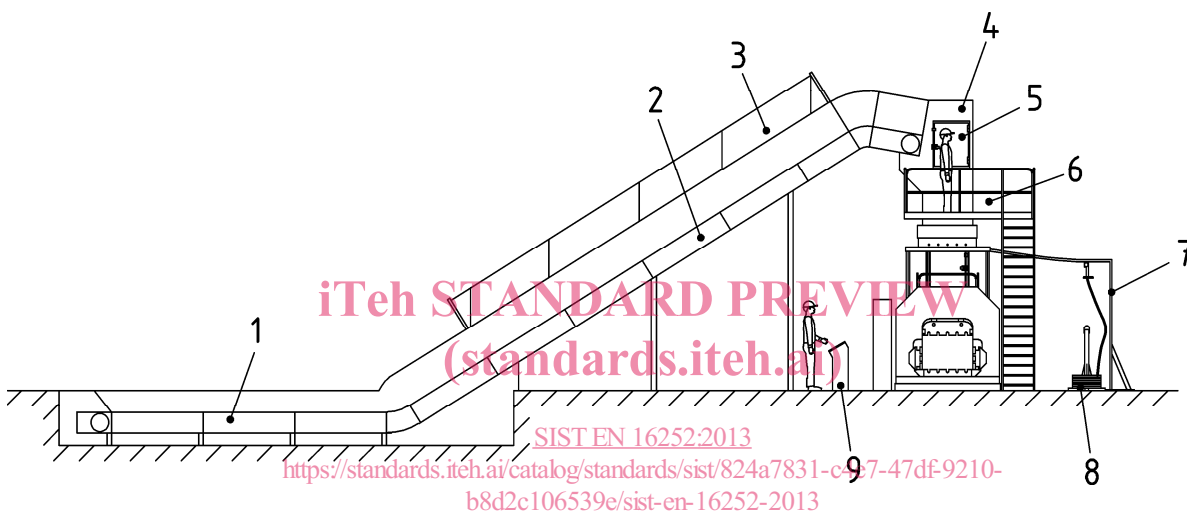
EN ISO 14122-2, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2)*

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

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

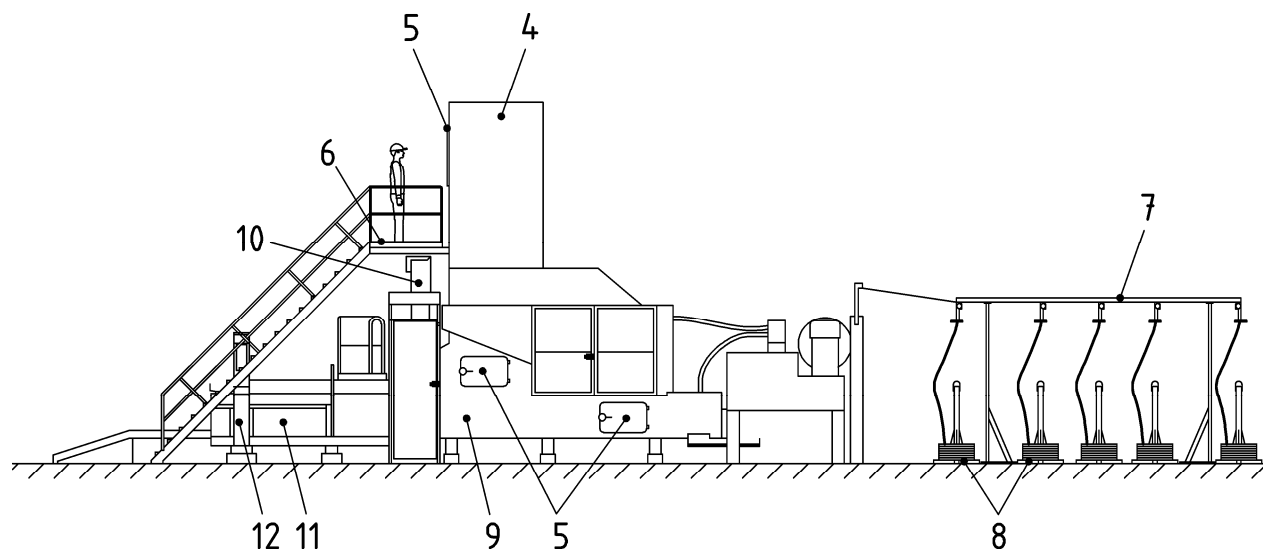
3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and the following apply.

**Key**

- 1 loading conveyor
- 2 feed conveyor
- 3 emergency stop actuator
- 4 feed hopper
- 5 access door
- 6 access platform
- 7 wire guidance zone
- 8 wire coils
- 9 control station

Figure 1a — Horizontal baling press, front view



Key

- 4 feed hopper
- 5 access door
- 6 access platform
- 7 wire guidance zone
- 8 wire coils
- 9 control station
- 10 bale tying equipment
- 11 bale channel
- 12 counter pressure device

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Figure 1b — Horizontal baling press, side view

3.1

baling press

plant for pressing and binding loose materials into a bale (materials can include paper, plastics, textiles, cans, cardboard or mixed waste)

Note 1 to entry: A baling press can consist of a control system and control station, feed equipment, feed hopper, distributor, pressing equipment, bale tying equipment, wire-decoiling equipment and bale channel.

3.2

horizontal baling press

baling press as defined in 3.1 on which the compacting pressure is applied horizontally

Note 1 to entry: See Figure 1.

3.3

feed equipment

equipment used for feeding materials to be baled to the pressing equipment

Note 1 to entry: Feed equipment usually consists of a loading conveyor and a feed conveyor or a bin lift. Loading and feed conveyors can also be designed as one single conveying unit.

Note 2 to entry: Other types of feed equipment sometimes used to feed horizontal baling presses include cranes, lift trucks and other items of mobile plant that load the material directly into the feed hopper or into the baling chamber but these, and the hazards arising from using them, are outside the scope of this standard.

EN 16252:2012 (E)**3.4****loading conveyor**

conveyor onto which materials are deposited and transported to the feed conveyor

Note 1 to entry: Loading conveyors are usually recessed into the floor at the loading area.

Note 2 to entry: The loading conveyor and the feed conveyor can be one and the same conveyor.

3.5**feed conveyor**

conveyor that transports materials to the feed hopper

Note 1 to entry: The loading conveyor and the feed conveyor can be one and the same conveyor.

3.6**bin (sometimes called skip)**

container, usually fitted with wheels, in which materials may be collected ready for feeding into the baling press

3.7**bin lift (sometimes called skip hoist)**

mechanical device for lifting a bin containing materials and tipping the contents into the feed hopper or baling chamber of the baling press

3.8**mechanical feeding**

loading materials into the feed hopper or baling chamber by mechanical means, e.g. conveyors, bin lifts

3.9**manual feeding**

loading materials directly into the feed hopper by hand

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3.10**feed hopper**

single or multiple chutes through which materials from the feed equipment are guided into the baling chamber

3.11**distributor (also known as ruffler)**

device for breaking up and distributing compacted material (e.g. books, newspaper packs) before it enters the baling chamber

Note 1 to entry: This device can be inserted into, and retracted from, the feed hopper.

3.12**perforator**

device used to pierce empty containers (e.g. plastic bottles) to be compacted before they enter the baling chamber

Note 1 to entry: This device can be inserted into, and retracted from, the feed hopper.

3.13**pressing equipment**

all components directly involved in compressing the material into bales (e.g. hydraulic system, pre-compression plate, compression plate, baling chamber and bale channel)

3.14**pre-compression plate(s)**

pivoting plate(s) that level(s) the materials and close(s) the top of the baling chamber

3.15**rear ram housing**

area behind the compression plate where the hydraulic and mechanical moving parts are for the compression plate

3.16**compression plate**

plate that moves horizontally by a powered ram that applies pressure to the material to be compacted

3.17**baling chamber**

chamber receiving the loose material either directly or from the feed hopper and in which the compression plate moves to compress the material

Note 1 to entry: The chamber extends from the point at which the compression plate is fully retracted to the point at which it is fully extended or, in the case of baling presses that compact the material against a bale discharge door, from the point at which the compression plate is fully retracted to the bale discharge door.

3.18**bale channel**

channel, extending from the point at which the compression plate is fully extended to the point at which the bales are discharged, through which the bales travel from the baling chamber to reach the discharge point

Note 1 to entry: The output cross section of the channel may reduce progressively towards the discharge end to generate the counter pressure required for forming the bales.

3.19**counter pressure device**

device located at the end of the bale channel and enabling to adjust the bale density by compressing it, e.g. using a pantograph or a pressing plate

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3.20**bale tying equipment**

equipment for binding individual bales

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3.21**wire guidance zone**

zone outside the body of the baling press, in which the bale tying wires are fed from coils and guided into the bale tying mechanism

3.22**bale discharge door**

door through which a completed bale is discharged from the baling chamber

Note 1 to entry: On some baling presses, the compression plate compacts the materials directly against the bale discharge door at the end of the baling chamber. The door, when closed, is held closed by a clamping/retaining mechanism.

3.23**control station**

place from which the baling press is started, stopped or manually controlled

3.24**cycle of the compression plate**

complete forward and reverse movement of the compression plate

3.25**automatic initiation of cycles**

operating mode in which the successive cycles of the compression plate are initiated by either a sensing device detecting the presence of materials to be compacted or by time delay