



**SLOVENSKI STANDARD**  
**SIST EN 1010-2:2006/kFprA1:2010**

**01-februar-2010**

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Safety of machinery - Safety requirements for the design and construction of printing and paper converting machines - Part 2: Printing and varnishing machines including pre-press machinery

Sicherheit von Maschinen - Sicherheitsanforderungen an Konstruktion und Bau von Druck- und Papierverarbeitungsmaschinen - Teil 2: Druck- und Lackiermaschinen einschließlich Maschinen der Druckvorstufe

Sécurité des machines - Prescriptions de sécurité pour la conception et la construction de machines d'impression et de transformation du papier - Partie 2: Machines d'impression et de vernissage y compris les équipements de pré-press

**Ta slovenski standard je istoveten z: EN 1010-2:2006/FprA1**

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**ICS:**

37.100.10	Reprodukcijska oprema	Reproduction equipment
85.100	Oprema za papirno industrijo	Equipment for the paper industry

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English Version

**Safety of machinery - Safety requirements for the design and  
construction of printing and paper converting machines - Part 2:  
Printing and varnishing machines including pre-press machinery**

Sécurité des machines - Prescriptions de sécurité pour la  
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Sicherheit von Maschinen - Sicherheitsanforderungen an  
Konstruktion und Bau von Druck- und  
Papierverarbeitungsmaschinen - Teil 2: Druck- und  
Lackiermaschinen einschließlich Maschinen der  
Druckvorstufe

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 198.

This draft amendment A1, if approved, will modify the European Standard EN 1010-2:2006. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 1010-2:2006/FprA1:2009) has been prepared by Technical Committee CEN/TC 198 "Printing and paper machinery - Safety", the secretariat of which is held by DIN.

This document is currently submitted to the Unique Acceptance Procedure.

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 Annexes ZA, ZB and ZC, which are integral parts of this document.

**EN 1010-2:2006/FprA1:2009 (E)****1 Modification to the Contents**

Add the following:

"Annex A – Emission levels of sheet-fed presses resulting from tests"

**2 Modification to Clause 2, Normative references**

Delete "EN 954-1:1996, *Safety of machinery — Safety related parts of control systems — Part 1: General principles for design*" and add "EN ISO 13849-1:2008, *Safety of machinery — Safety related parts of control systems — General principles for design (ISO 13849-1:2006)*".

Add "EN 1088, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*".

Replace "EN 1010-1:2004" with "EN 1010-1:2004+A1". In the text, replace everywhere "EN 1010-1:2004" with "EN 1010-1:2004+A1".

Delete "EN 1050:1996, *Safety of machinery — Principles for risk assessment*" and add "EN ISO 14121-1:2007, *Safety of machinery — Risk assessment — Part 1: Principles (ISO 14121-1:2007)*".

Replace "EN 1127-1:1997" with "EN 1127-1:2007".

Replace "EN 60204-1:1997, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:1997)*" with "EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*". In the text, replace everywhere "EN 60204-1:1997" with "EN 60204-1:2006".

Replace "EN 60825-1:1994, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide (IEC 60825-1:1993)*" with "EN 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1:2007)*".

Replace "EN 60950-1:2001, *Information technology equipment — Safety — Part 1: General requirements (IEC 60950-1:2001, modified)*" with "EN 60950-1:2006, *Information technology equipment — Safety — Part 1: General requirements (IEC 60950-1:2005, modified)*".

Add "EN 62061:2005, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems (IEC 62061:2005)*".

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

**3 Modification to Clause 4, List of significant hazards**

Replace the existing test in 4.2 with the following:

**4.2** "It is of great importance that the manufacturer, takes into account the following principal aspects in accordance with EN ISO 14121-1:2007:"

*In Table 1, last column, in the heading, replace "EN 1050:1996 Annex A" with "EN ISO 14121-1:2007 Table A.1".*

*In Table 1, in the row regarding "Slipping, tripping, falling", replace in the last column "19" with "1".*

*In Table 1, in the row regarding "Ejection of parts", replace in the last column "1.1.4" with "1".*

*In Table 1, in the row regarding "Hazards from substances and material used for processing, machine operation or which are emitted during the process/Hazards resulting from contact with or inhalation of harmful fluids, gases, fumes, dusts", replace in the last column "7.1" with "7".*

*In Table 1, in the row regarding "Hazards from ignition and explosion", replace in the last column "7.2" with "7.3".*

#### **4 Modification to Clause 5, Safety requirements and/or measures**

*Replace the existing text in 5.2.2 with the following:*

**5.2.2** "Parts of the electric/electronic control system of pre-press machinery shall comply with 5.2.6.3 of EN 1010-1:2004+A1.

Parts of the electric/electronic control system of machines and equipment for the preparation of printing forms may be designed in accordance with PL<sub>r</sub> c of EN ISO 13849-1:2008 or SIL 1 of EN 62061:2005 as a deviation from 5.2.6.3 of EN 1010-1:2004+A1. The control systems of interlocking devices for safety devices that prevent access to laser radiation class 3B or 4, classified according to EN 60825-1:2007, shall be designed to comply with PL<sub>r</sub> d of EN ISO 13849-1:2008 or SIL 2 of EN 62061:2005."

##### **5.2.11**

*Last indent, replace "5.8.4" with "5.2.8.4".*

*Replace the sentence after the last indent with*

"The control system of the machine shall comply with 5.2.6.3 of EN 1010-1:2004+A1."

##### **5.3.2**

*Replace the first paragraph with the following:*

"Where inrunning nips on cylinders in the vicinity of points on the machine that are directly accessible after the interlocking guards have been opened and where frequent interventions need to be carried out which cannot be done with the machine at standstill (such as cleaning and setting-up or changing of printing plates), trip devices in accordance with 5.2.10.1 of EN 1010-1:2004+A1 shall be used. For such trip devices, the requirements of PL<sub>r</sub> d of EN ISO 13849-1:2008 or SIL 2 of EN 62061:2005 shall be satisfied and the interlocking system shall be designed such that the requirements for stopping paths specified in 5.2.10.2 of EN 1010-1:2004+A1 are satisfied. Trip devices shall be designed such that cylinder gaps cannot be accessed without operating the trip device to stop cylinder movement before the inrunning nip is reached, if necessary using cylinder covers to control access around the trip device."

**EN 1010-2:2006/FprA1:2009 (E)**

*Replace the fourth paragraph with the following:*

"Where not all danger points are safeguarded by trip devices or guards according to 5.2.1.1 b) of EN 1010-1:2004+A1, sheet-fed printing presses and varnishing machines shall only be allowed to be started under hold-to-run control according to 5.2.3.2 a)1) of EN 1010-1:2004+A1 with a limitation of displacement of 25 mm maximum or with a speed limited to 1 m/min maximum. As a deviation, the machines may be started under hold-to-run control according to 5.2.3.2 a)2) of EN 1010-1:2004+A1 with a limitation of displacement of 75 mm maximum or with a speed limited to 5 m/min maximum if direct access to unprotected inrunning nips on cylinders or unprotected danger points on the sheet transport system is not possible. Starting for continuous runs shall not be possible."

**5.3.3**

*Replace the existing text with the following:*

"The machine control system shall comply with 5.2.6.3 of EN 1010-1:2004+A1."

**5.3.9.1.2**

*In c), replace the last paragraph with the following:*

"With regard to the above-mentioned light beams, requirements for electrical interlocking are fulfilled if the auxiliary device, or similar device, is interlocked such that the auxiliary device, when being run in, will automatically actuate the safety switch. The control system of the switch shall comply with PL<sub>r</sub> d of EN ISO13849-1:2008 or SIL 2 of EN 62061:2005."

*Replace the NOTE under c) with the following:*

"NOTE As auxiliary devices may consist of metal bars or wooden boards which are removed from the machine and may be used on more than one machine, it is not possible to use encoded safety switches and actuators unique to each machine or auxiliary device."

*In e), replace the text in the last indent with the following:*

- "automatic reactivation of the lowermost light beam (Figure 3, item 1) is ensured after the maximum bypassing period."

**5.3.14**

*Replace the 4<sup>th</sup> indent with the following:*

- "hold-to-run control in accordance with 5.2.3.2.a) 2 of EN 1010-1:2004+A1;"

*Replace the last sentence with the following:*

"For trip devices, the requirements of PL<sub>r</sub> d of EN ISO 13849-1:2008 or SIL 2 of EN 62061:2005 shall be satisfied."



**5.3.17**

*Replace the second paragraph with the following:*

"Trip devices shall satisfy the requirements of 5.2.10 of EN 1010-1:2004+A1 and PL<sub>d</sub> of EN ISO 13849-1:2008 or SIL 2 of EN 62061:2005."

**5.3.23**

*Add the following sub-clause:"*

**5.3.23** The machine shall be designed in such a way that risks from hazardous materials and substances, for example by inhalation or skin or eye contact, will be avoided. This shall be achieved by closed technical processes or exhaust systems for ink mist, varnish mist in the area of the printing and coating units and for ozone in the area of the drying systems. The measuring location shall be at a distance of 1 m and at a height of 1,65 m from the face of the delivery. Typical emission values for hazardous materials and substances and the measurement conditions are given in Annex A."

**5.4.7**

*Replace the existing text with the following:*

"The control system of the machine shall comply with 5.2.6.3 of EN 1010-1:2004+A1."

**5.4.14**

*Replace the last paragraph with the following:*

"Signal processing of the button, the reduced printing speed and the time limitation shall comply with 5.2.6.3.1 of EN 1010-1:2004+A1."

**5.5.1**

*Replace the 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs with the following:*

"The use of screen printing inks with a flash point below 40°C, shall be in accordance with 5.2.4 of EN 1010-1:2004+A1."

**5.5.8**

*Replace the 2<sup>nd</sup> paragraph with the following:*

"ESPDs shall be provided over the entire machine length (without feeding and delivery) on the drive as well as on the operating side. The ESPD light beams shall be arranged such that reaching through, over and around is prevented. EN ISO 13857:2008 shall be complied with. For ink replenishment during production runs, time-limited muting of the ESPD shall not exceed 2 min. The requirements for muting given in EN 61496-1 shall be satisfied."

**EN 1010-2:2006/FprA1:2009 (E)****5.5.10**

*Replace the 1<sup>st</sup> sentence with the following:*

"The safety-related parts of the control system shall comply with at least 5.2.6.3 of EN 1010-1:2004+A1."

**5.5.11**

*Replace the 1<sup>st</sup> and 2<sup>nd</sup> indent with the following:*

- "The safety-related parts of the control system shall comply with at least 5.2.6.4 of EN 1010-1:2004+A1;
- trip devices shall satisfy PL<sub>r</sub> e of EN ISO 13849-1:2008 or SIL 3 of EN 62061:2005 in addition to the requirements in 5.5.8;"

**5.6.1**

*Replace the 1<sup>st</sup> sentence of the last paragraph with the following:*

"The safety-related parts of the control system shall comply with at least 5.2.6.3 of EN 1010-1:2004+A1."

**5.6.3.1**

*Replace the last indent with the following:*

- "by providing, in accordance with 6.2.3.3 of EN 1127-1:2007, an exhaust in compliance with 5.2.4.5, 5.2.4.8, 5.2.4.11 and 5.2.6.3.1.1 of EN 1010-1:2004+A1, which dilutes the vapour/air mixture below 50 % LEL, thus reducing the risk of explosion."

**5.6.3.2**

*In the first indent, replace "EN 1127-1:1997" with "EN 1127-1:2007".*

**5.6.3.8**

*Replace the 2<sup>nd</sup> paragraph with the following:*

"The function of the exhaust system shall be monitored, i. e. failures in the exhaust system shall cause automatic stopping of the substrate feeding system (for example, feeders on sheet-fed printing presses) or printing shall be stopped (for example, on web-fed rotary printing presses). It shall be ensured that the drying device stops automatically after the drying of the substrate (for example, the last sheet) is finished. The control system for monitoring the function of the exhaust system shall satisfy at least PL<sub>r</sub> c of EN ISO 13849-1:2008 or SIL 1 of EN 62061:2005."