



**SLOVENSKI STANDARD**  
**SIST EN 13113:2003+A1:2010**  
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**Strojarski stroji - Stroji za nanos z valjem - Varnostne zahteve**

Tannery machines - Roller coating machines - Safety requirements

Gerberei-Maschinen - Walzenauftragmaschinen - Sicherheitsanforderungen

Machines de tannerie - Machines d'enduction à rouleaux - Prescriptions de sécurité

**Ta slovenski standard je istoveten z: EN 13113:2002+A1:2010**

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**ICS:**

59.140.40	Stroji in oprema za proizvodnjo usnja in krzna	Machines and equipment for leather and fur production
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13113:2002+A1**

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English Version

## Tannery machines - Roller coating machines - Safety requirements

Machines de tannerie - Machines d'enduction à rouleaux -  
Prescriptions de sécurité

Gerberei-Maschinen - Walzenauftragmaschinen -  
Sicherheitsanforderungen

This European Standard was approved by CEN on 27 December 2001 and includes Amendment 1 approved by CEN on 22 July 2010.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Contents

	page
Foreword.....	4
Introduction.....	5
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	7
4 <b>A<sub>1</sub></b> List of significant hazards <b>A<sub>1</sub></b> .....	9
4.1 Mechanical hazards .....	10
4.1.1 Single roller contra-rotating machine.....	10
4.1.2 Single roller contra-rotating machine with spreading belts.....	10
4.1.3 Single roller synchronised machine .....	10
4.1.4 Single roller synchronised machine with spreading belts.....	11
4.1.5 Single roller synchronised machine with rubberised roller.....	11
4.1.6 Single roller contra-rotating / synchronised machine (combined machine) – Contra-rotating working configuration.....	11
4.1.7 Single roller contra-rotating / synchronised machine (combined machine) – Synchronised working configuration.....	11
4.2 High pressure fluid ejection .....	12
4.3 Electrical hazard .....	12
4.4 Slip trip and fall hazard .....	12
4.5 Noise .....	12
4.6 Thermal hazard .....	13
4.7 Roller changing.....	13
4.8 Disassembly.....	13
4.9 Belt washing system .....	13
4.10 Sides access .....	13
5 Safety requirements and/or measures .....	14
5.1 General.....	14
5.2 Common requirements concerning Roller coating machines .....	14
5.2.1 Mechanical equipment .....	14
5.2.2 High pressure fluid ejection .....	15
5.2.3 Electrical equipment (for all machines).....	15
5.2.4 Slip, trip and fall hazard .....	15
5.2.5 Noise .....	15
5.2.6 Control system.....	16
5.2.7 Emergency stop equipment.....	16
5.2.8 Maintenance and cleaning .....	17
5.2.9 Hot surfaces .....	18
5.2.10 Coating roller changing .....	18
5.2.11 Disassembly.....	18
5.2.12 Belt washing system .....	18
5.2.13 Sides access .....	18
5.3 Requirements concerning hazards in the working zone.....	18
5.3.1 Single roller- contra-rotating machine with feeding table (see Figure 2a) .....	18
5.3.2 Single roller- contra-rotating machine with spreading belt (see Figure 2b).....	19
5.3.3 Single roller synchronised machine with feeding table (see Figure 3a).....	19
5.3.4 Single roller synchronised machine with spreading belts (see Figure 3b).....	20
5.3.5 Single roller synchronised machine with rubberised roller (see Figure 3c).....	20
5.3.6 Single roller contra-rotating /synchronised machine (combined machine) - Contra-rotating working configuration (see Figure 4a) .....	20

5.3.7	Single roller contra-rotating /synchronised machine (combined machine) - Synchronised working configuration (see Figure 4b) .....	21
6	Verification of the safety requirements and/or measures .....	21
7	Information for use .....	29
7.1	General.....	29
7.2	Signal and warning devices .....	29
7.3	Instruction handbook .....	29
7.3.1	Machine.....	29
7.3.2	Installation of the machine .....	30
7.3.3	Transportation and Storage of the machine and machine parts .....	30
7.3.4	Use of the machine.....	30
7.3.5	Maintenance .....	31
7.4	Marking .....	31
Annex A	(normative) Machinery description.....	37
Annex ZA	(informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC  .....	38
Bibliography	.....	39

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**EN 13113:2002+A1:2010 (E)****Foreword**

This document (EN 13113:2002+A1:2010) has been prepared by Technical Committee CEN/TC 200 "Tannery machinery - 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 February 2011, and conflicting national standards shall be withdrawn at the latest by February 2011.

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 includes Amendment 1, approved by CEN on 2010-07-22.

This document supersedes EN 13113:2002.

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

A1 This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document. A1

Annex A is normative.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## Introduction

**A1** This document 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 according to the provisions of this type C standard. **A1**

## 1 Scope

This European Standard deals with the following roller coating machines (see Figures 2 to 4 and normative annex A for description):

- a) single and multi-roller contra-rotating machines (see Figure 2);
- b) single and multi-roller synchronised machines (see Figure 3);
- c) single and multi roller- contra-rotating /synchronised machines, so-called combined machines (see Figure 4).

The machines are not intended to be used during transportation.

This standard specifies safety requirements for design, construction and operation

It takes account of intended use, foreseeable misuse, component and systems failure.

This standard takes account of material feeding and handling devices which, when attached to the machine, become an integral part.

**A1** This document is not applicable to the roller coating machines which are manufactured before the date of its publication as EN. **A1**

This standard does not establish any requirements for electromagnetic disturbances.

NOTE Directive 94/9/EC concerning equipment and protective systems intended for use in potentially explosive atmospheres can be applicable to the type of machine or equipment covered by this European Standard. The present standard does not necessarily comply with Directive 94/9/EC. Additional safety requirements in a future revision of this standard can be necessary to satisfy Directive 94/9/EC.

## 2 Normative references

**A1** The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. **A1**

**A1** *deleted text* **A1**

**A1** EN 349 **A1**, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

**A1** EN 388, *Protective gloves against mechanical risks* **A1**

**A1** *deleted text* **A1**

## EN 13113:2002+A1:2010 (E)

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

deleted text

EN 982:1996+A1:2008, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996+A1:2008, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 999, *Safety of machinery — The positioning of protective equipment in respect of approach speeds of parts of the human body*

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

deleted text

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

EN 1760-2:2001+A1:2009, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN ISO 3743-1, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, movable sources in reverberant fields — Part 1: Comparison method for hard-walled test rooms (ISO 3743-1:1994)*

EN ISO 3743-2, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, movable sources in reverberant fields — Part 2: Methods for special reverberation test rooms (ISO 3743-2:1994)*

EN ISO 3744, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 3746, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995, including Cor 1:1995)*

EN ISO 3747, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Comparison method in situ (ISO 3747:2000)*

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

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

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

EN ISO 9614-3, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 3: Precision method for measurement by scanning (ISO 9614-3:2002)*

EN ISO 11201, *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, *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 11203, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level (ISO 11203:1995)*

EN ISO 11204, <sup>A1</sup> *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)* <sup>A1</sup>

EN ISO 11688-1, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 11688-2, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 2: Introduction to the physics of low-noise design (ISO/TR 11688-2:1998)*

<sup>A1</sup> EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)* <sup>A1</sup>

<sup>A1</sup> EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* <sup>A1</sup>

<sup>A1</sup> EN ISO 13732-1:2008, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces (ISO 13732-1:2006)* <sup>A1</sup>

<sup>A1</sup> EN ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2006)* <sup>A1</sup>

<sup>A1</sup> EN ISO 13850:2008, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)* <sup>A1</sup>

<sup>A1</sup> EN ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2008)* <sup>A1</sup>

<sup>A1</sup> EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)* <sup>A1</sup>

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

<sup>A1</sup> EN 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)* <sup>A1</sup>

<sup>A1</sup> EN 61496-1, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)* <sup>A1</sup>

<sup>A1</sup> CLC/TS 61496-2:2006, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2006)* <sup>A1</sup>

### 3 Terms and definitions

<sup>A1</sup> For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003 and the following apply. <sup>A1</sup>

#### 3.1

##### **roller coating machines (see Figure 1)**

machines which are used to apply liquid coated substances on hides or skins. The substances are applied from a reservoir formed by the coating roller and a doctor blade. The hides or skins are fed to the coating roller either directly or by means of a transport belt

#### 3.2

##### **accessible zone**

any danger zone except the working zone

**EN 13113:2002+A1:2010 (E)****3.3****belt washing system with brush roller and scraper rubber blade**

system used to clean the transport belt from substances, not applied to hides or skins, that would otherwise cause contamination

**3.4****coating roller**

roller that applies the substances contained in the colour space, onto the hides or skins

**3.5****colour space**

zone which collects the material to be coated. It is formed by the contact between the doctor blade and the coating roller

**3.6****doctor blade**

blade that uniformly distributes the substances on the coating roller

**3.7****drive roller**

roller that moves the transport belt

**3.8****feeding-in table**

table that allows hides or skins to be introduced into the working area

**3.9****rubberised counter pressure roller**

roller used to adjust the pressure hand gap in which the skin is processed

**3.10****spreading belt**

belt used to spread the skin before it is passed between the working rollers

**3.11****transport belt**

belt that feeds-in the hides or skins into the working area

**3.12****transmission parts**

parts in motion acting singly or in combination which transmit motion to the working parts

**3.13****turning device with coating roller**

device that carries non working rollers and whose rotation executes roller change

**3.14****working parts**

parts carrying out the process for which this machine was designed

**3.15****working zone**

zone around a power driven working part in which the work process takes place for the treatment and processing or manufacturing of products

**3.16****feed-in zone**

part of the working zone, which has particular hazards and needs appropriate safety devices, in which the operators place the material to be split

#### 4 **A1** List of significant hazards **A1**

**A1** This clause contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this document, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

The significant hazards at roller coating machines are outlined in 4.1 to 4.10.

The danger zones which give rise to mechanical hazards are illustrated in Figures 2, 3, 4. The figures are informative only. **A1**

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Table 1 – List of significant hazards

Danger Zone	Source of hazard	Hazard	Zone	Figure	Safety requirements
<b>4.1 Mechanical hazards</b>					
<b>4.1.1 Single roller contra-rotating machine</b>					
The feed-in zone	Coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping	A	2a	5.2.1.2 and 5.3.1.1
Colour space	Doctor blade	Cutting Trapping	F	2a	5.2.1.2 and 5.3.1.2
Drive roller	Drive roller rotation	Crushing Entanglement Trapping	D	2a	5.2.1.2
<b>4.1.2 Single roller contra-rotating machine with spreading belts</b>					
The feed-in zone	Spreading belts movements	Crushing Entanglement Trapping Friction/Abrasion	B	2b	5.2.1.2 and 5.3.2.1
For zones D, F see 4.1.1 of this standard					
<b>4.1.3 Single roller synchronised machine</b>					
The feed-in zone	Coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping	A	3a	5.2.1.2 and 5.3.3.1
Colour space	Doctor blade	Cutting Trapping	F	3a	5.2.1.2 and 5.3.3.2
Drive roller	Drive roller rotation	Crushing Entanglement Trapping	D	3a	5.2.1.2

Danger Zone	Source of hazard	Hazard	Zone	Figure	Safety requirements
<b>4.1.4 Single roller synchronised machine with spreading belts</b>					
The feed-in zone	coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping Friction/Abrasion	B	3b	5.2.1.2 and 5.3.4.1
For zones D, F see 4.1.3 of this standard					
<b>4.1.5 Single roller synchronised machine with rubberised roller</b>					
The feed-in zone	coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping Friction/Abrasion	A	3c	5.2.1.2 and 5.3.4.1
For zones A, F see 4.1.3 of this standard					
<b>4.1.6 Single roller contra-rotating / synchronised machine (combined machine) – Contra-rotating working configuration</b>					
The feed-in zone	Coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping	A	4a	5.2.1.2 and 5.3.6.1
Colour space	Doctor blade	Cutting Trapping	F	4a	5.2.1.2 and 5.3.6.2
Drive roller	Drive roller rotation	Crushing Entanglement Trapping	D	4a	5.2.1.2
<b>4.1.7 Single roller contra-rotating / synchronised machine (combined machine) – Synchronised working configuration</b>					
The feed-in zone	Coating roller and rubberised counter pressure roller rotation	Crushing Entanglement Trapping	A	4b	5.2.1.2 and 5.3.7.1
Colour space	Doctor blade	Cutting Trapping	F	4b	5.2.1.2 and 5.3.7.2
Drive roller	drive roller rotation	Crushing Entanglement Trapping	D	4b	5.2.1.2