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Valsverk – Varmvalsverk för platta produkter – Säkerhetskrav

Safety of Machinery – Safety requirements for hot flat rolling mills

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EUROPEAN STANDARD

EN 15093

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2008

ICS 77.180

English Version

Safety of Machinery - Safety requirements for hot flat rolling mills

Sécurité des machines - Prescriptions de sécurité relatives
aux laminoirs à chaud pour produits plats

Sicherheit von Maschinen - Sicherheitsanforderungen an
Warmflachwalzwerke

This European Standard was approved by CEN on 16 August 2008.

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SS-EN 15093:2008 (E)

Foreword

This document (EN 15093:2008) has been prepared by Technical Committee CEN/TC 322 "Equipment for making and shaping of metals - 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of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by April 2009.

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 EC Directive(s).

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

This European Standard has been elaborated by CEN/TC 322/WG 3, comprising experts from: Denmark, Germany, Italy, Sweden and the United Kingdom.

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, 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 the United Kingdom.

Introduction

This European Standard is a type C standard as stated in EN ISO 12100:2003.

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

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.

Where for clarity an example of a preventative measure is given in the text, this should not be considered as the only possible solution. Any other solution leading to the same risk reduction is permissible if an equivalent level of safety is achieved.

This European Standard assumes that the equipment is operated and maintained by trained personnel.

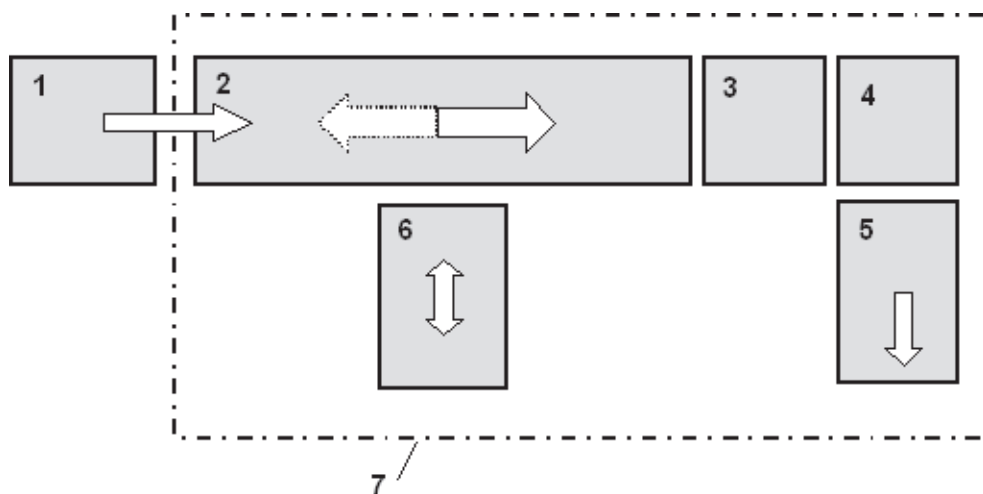
SS-EN 15093:2008 (E)

1 Scope

This European Standard defines the general safety requirements for hot rolling mills for flat products as defined in 3.1.

This European Standard deals with significant hazards, hazardous situations and events relevant to hot rolling mills for flat products. It deals not only with circumstances where the machinery is used as intended, but also includes other conditions foreseen by the manufacturer, such as foreseeable faults, malfunctions or misuse (see Clauses 4 and 5).

This European standard applies to: Machinery and equipment used for the manufacturing of metal hot rolled flat products from the material supply from (1), via the mill stands (2), to the exit (5) (see Figure 1).



Key

- | | | | |
|---|--|---|--------------------------------|
| 1 | e. g., continuous casting machine (according to EN 14753) or furnace (according to EN 746-1) | 4 | coiler/cooling bed |
| 2 | mill stands | 5 | coil or plate transport |
| 3 | roller tables | 6 | roll changing device |
| | | 7 | border of the hot rolling mill |

Figure 1 — Exemplary layout of a hot flat rolling mill

The following equipment is outside the scope of this standard:

- furnaces in accordance with EN 746-1, EN 746-2 and EN 746-3;
- continuous casting machines according to EN 14753;
- hook conveyors according to EN 619;
- roll shop equipment;
- storage equipment (e. g., high-bay warehouses);
- cranes, fork lifts, trucks and railway trucks and other vehicles.

This European standard is not applicable to hot rolling mills for flat products, manufactured before the date of publication of this standard by CEN.

2 Normative References

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.

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

EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

EN 626-1, *Safety of machinery — Reduction of risks to health from hazardous substances emitted by machinery — Part 1: Principles and specifications for machinery manufacturers*

EN 842, *Safety of machinery — Visual danger signals - General requirements, design and testing*

EN 894-1, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

EN 894-2, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 2: Displays*

EN 894-3, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 3: Control actuators*

EN 953, *Safety of machinery — Guards - General requirements for the design and construction of fixed and movable guards*

EN 981, *Safety of machinery — System of auditory and visual danger and information signals*

EN 982, *Safety of machinery — Safety requirements for fluid power systems and their components - Hydraulics*

EN 983, *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 1037:1995, *Safety of machinery — Prevention of unexpected start-up*

EN 1063, *Glass in building — Security glazing — Testing and classification of resistance against bullet attack*

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

EN 1299, *Mechanical vibration and shock – Vibration isolation of machines — Information for the application of source isolation*

EN 1837, *Safety of machinery — Integral lighting of machines*

EN 12094-1, *Fixed firefighting systems — Components for gas extinguishing systems — Part 1: Requirements and test methods for electrical automatic control and delay devices*

EN 12198-3, *Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 3: Reduction of radiation by attenuation or screening*

EN 12254, *Screens for laser working places — Safety requirements and testing*

EN 12464-1, *Light and lighting — Lighting of work places — Part 1: Indoor work places*