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Stroji za obdelovanje cestišč – Varnostne zahteve

Road surface treatment machines - Safety requirements

Maschinen für die Straßenoberflächenbehandlung - Sicherheitsanforderungen

Machines pour le traitement des surfaces routieres - Prescriptions de sécurité

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Machines pour le traitement des surfaces routières - Prescriptions de sécurité

Maschinen für die Straßenoberflächenbehandlung - Sicherheitsanforderungen

This European Standard was approved by CEN on 10 September 2004.

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Contents

page

Foreword

This document (EN 13020:2004) has been prepared by Technical Committee CEN/TC 151 “Construction equipment and building material machines — Safety”, 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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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 organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This document is a type C standard as stated in EN 1070.

The machinery concerned and the extent to which hazards, hazardous situations and 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.

1 Scope

This document applies to road surface treatment machines, which are in particular:

sprayers;

aggregate spreaders;

machines for surface repairs (spot mix patching units);

mastics asphalt mixers;

hot asphalt containers;

cold asphalt laying / micro-asphalt-paving machines;

(see also Clause 3).

Road surface treatment machines can be mounted on a carrier vehicle, trailer or articulated truck, combining to form an integral unit. It is also possible to mount a road surface treatment machine on its own chassis construction and propulsion system (self-propelled or pedestrian-controlled). In all cases the machine and chassis form an integral unit.

Directives and standards for the vehicular truck chassis aspects, termed 'carrier vehicle' in this document, would be those relative to that equipment, even where specific modifications have been made to realize the road surface treatment application. The use in public road traffic is governed by the national regulations.

This document deals with all significant hazards identified through a risk assessment relevant to road surface treatment machines when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4). This document does not deal with significant hazards associated with pressurized tanks, noise and EMC. This document specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards associated with machine operation, setting and adjustments, load discharge and routine maintenance.

This document does not include requirements for the carrier vehicles or special constructions. These are covered in directives related to the construction of vehicles. Demountable bodywork systems (e.g. demountable containers) are specified in other standards.

This document does not deal with the risks associated with the operation of the machines in potentially explosive atmospheres.

This document applies to machines which are manufactured after the date of approval 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 500-1:1995, *Mobile road construction machinery — Safety — Part 1: Common requirements.*

EN 563:1994, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces.*

EN 811:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs.*

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

EN 1070:1998, *Safety of machinery — Terminology.*

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

EN ISO 2860, *Earth-moving machinery — Minimum access dimensions (ISO 2860:1992).*

EN ISO 2867, *Earth-moving machinery — Access systems (ISO 2867:1994).*

EN ISO 3457:2003, *Earth-moving machinery — Guards — Definitions and requirements (ISO 3457:2003).*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-0:2003).*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003).*

ISO 6750:1984, *Earth-moving machinery — Operation and maintenance — Format and content of manuals.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1070:1998 and the following apply.

3.1
sprayer
machine used for distributing binder (bitumen/emulsion). Storage of the binder is provided by tanks (tank type sprayers) or barrels (direct from barrel type sprayers) incorporated into the machine

3.2
aggregate spreader
machine used for distributing aggregates

3.3
spot-mix patching unit
machine used for coating roads with binder (bitumen/emulsion) and with aggregates in a single operation

3.4
mastic asphalt mixer
machine consisting of a tank with horizontal or vertical mixer (agitating shaft and stirrer arms) for preparing the mastic asphalt with direct or indirect heating

3.5
hot asphalt container
machine used to store hot asphalt mixes, with means for heating and discharging of material

3.6
cold asphalt laying machine/ micro-asphalt paving machine
machine used to produce a new road surface with a cold-laying system, the materials of which are mixed during laying in the machine

3.7
demountable equipment
equipment that intended to be demounted from and remounted to the carrier vehicle

4 List of significant hazards

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

Table 1 – List of significant hazards

Hazards		Relevant clauses				
		Sprayer	Aggregate spreader	Spot-mix patching unit	Mastic asphalt mixer and Hot asphalt container	Cold asphalt laying machine/ micro-asphalt paving machine
1.1	Crushing hazard	5.2.6 5.2.7	5.2.6 5.2.7 5.4.2	5.2.6 5.2.7	5.2.6 5.2.7	5.2.6 5.2.7
1.2	Entanglement hazard	5.2.14.2	5.2.14.2	5.2.14.2	5.2.14.2 5.6.4 5.6.5	5.2.14.2 5.7.1 5.7.2
1.3	High pressure fluid ejection hazard	5.2.1 5.3.1 5.3.5 5.3.6 7.4	5.2.1	5.2.1 5.3.1 5.3.5	5.2.1	5.2.1
1.4	Loss of stability (of machinery and machine parts)	5.2.5 5.2.6	5.2.5 5.2.6		5.2.5 5.2.6	5.2.5 5.2.6
1.5	Slip, trip and fall hazards in relationship with machinery (because of their mechanical nature)	5.2.10 5.2.11 5.2.12 5.3.2 5.3.3	5.2.10 5.2.11 5.2.12 5.4.1	5.2.10 5.2.11 5.2.12 5.3.2 5.3.3 5.4.1	5.2.10 5.2.11 5.2.12 5.6.1	5.2.10 5.2.11 5.2.12 5.7.3
2.1	Burns and scalds, by a possible contact of persons, by flames or explosions and also by the radiation of heat sources	5.2.2 5.2.3 5.2.13 5.3.1 5.3.4 5.3.5 5.3.9 7.3	5.2.2 5.2.3	5.2.2 5.2.3 5.2.13 5.3.4 5.3.9 7.3	5.2.2 5.2.3 5.2.13 5.6.1 5.6.6	5.2.2 5.2.3
3.1	Hazards resulting from contact with or inhalation of harmful fluids, gases, mists, fumes and dusts.	5.2.4 7.3	5.2.4	5.2.4 7.3	5.2.4	5.2.4
3.2	Fire or explosion hazard	5.2.13.1 5.3.4 5.3.7 5.3.8		5.2.13.1 5.3.4 5.3.7 5.3.8	5.2.13.1 5.6.1	