

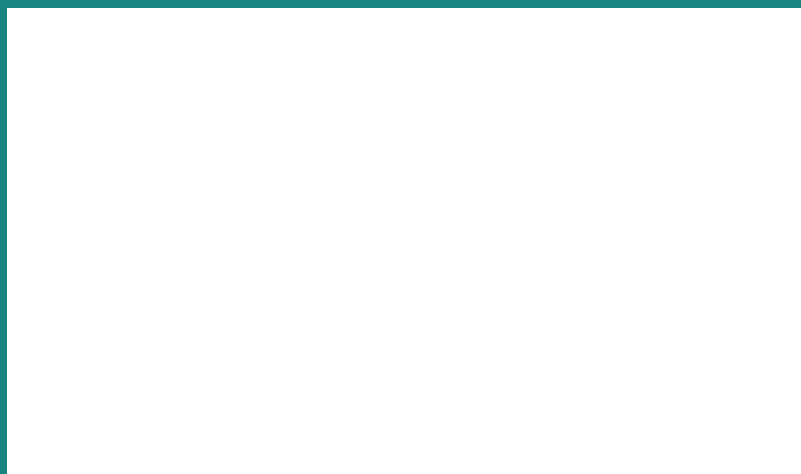
SVENSK STANDARD

SS-EN 13525:2005+A2:2009

Fastställt/Approved: 2009-11-02
Publicerad/Published: 2009-12-14
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 14.210; 65.060.80

Skogsmaskiner – Flishugg – Maskinsäkerhet

Forestry machinery – Wood chippers – Safety



SWEDISH
STANDARDS
INSTITUTE

Hitta rätt produkt och ett leveranssätt som passar dig

Standarder

Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster

Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på.

På så sätt är du säker på att du alltid arbetar efter rätt utgåva.

e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt

Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter

Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement".

Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt

Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards

By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services

Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.

e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery

You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products

We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements.

Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project

You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Europastandarden EN 13525:2005+A2:2009 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 13525:2005+A2:2009.

Denna standard ersätter SS-EN 13525:2005+A1:2007, utgåva 1.

The European Standard EN 13525:2005+A2:2009 has the status of a Swedish Standard. This document contains the official English version of EN 13525:2005+A2:2009.

This standard supersedes the Swedish Standard SS-EN 13525:2005+A1:2007, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00.

Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.

Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.

E-mail: sis.sales@sis.se Internet: www.sis.se

EUROPEAN STANDARD

EN 13525:2005+A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2009

ICS 65.060.80

Supersedes EN 13525:2005+A1:2007

English Version

Forestry machinery - Wood chippers - Safety

Machines forestières - Déchiqueteuses - Sécurité

Forstmaschinen - Buschholzhacker - Sicherheit

This European Standard was approved by CEN on 8 December 2004 and includes Amendment 1 approved by CEN on 13 April 2007 and Amendment 2 approved by CEN on 17 August 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.



CEN members are the national standards bodies of 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 United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

	Page
Foreword.....	4
0 Introduction	5
1 Scope	6
2 Normative references	7
3 Terms and definitions	8
4 Safety requirements and/or measures	10
4.1 General.....	10
4.2 Operator controls.....	10
4.2.1 General.....	10
4.2.2 Starting the machine	10
4.2.3 Stopping the machine	11
4.2.4 Infeed stop control.....	11
4.2.5 Safety and reliability of control systems.....	15
4.3 Protection against mechanical hazards	16
4.3.1 Stability	16
4.3.2 Risk of break-up during operation	16
4.3.3 Hazards related to infeed components and chipping components	17
4.3.4 Risks due to ejected objects	19
4.3.5 Protection against access to moving power transmission parts.....	19
4.4 Protection against non-mechanical hazards	20
4.4.1 Noise	20
4.4.2 Hydraulic components	21
4.4.3 Hot surfaces	21
4.4.4 Electrical hazards	21
4.5 Preparation for transport and maintenance.....	22
5 Verification of the safety requirements and/or measures	23
5.1 General.....	23
5.2 Stability	23
5.3 Chipping components risk of break-up.....	24
5.4 Hot surfaces	24
5.4.1 Temperature measuring equipment.....	24
5.4.2 Test method.....	24
5.4.3 Test acceptance	25
5.5 Verification of requirements on noise – Measurement of noise emission	25
6 Information for use	25
6.1 Instruction handbook	25
6.2 Marking	27
6.3 Warnings.....	27
Annex A (normative) List of significant hazards	29
Annex B (normative) Noise test code - Engineering method (grade 2)	33
Annex C (normative)  Machines with integrated feed chain conveyor 	37
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC, amended by Directive 98/79/EC	40

Annex ZB (informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC 	41
Bibliography	42

Foreword

This document (EN 13525:2005+A2:2009) has been prepared by Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry”, the secretariat of which is held by AFNOR.

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 2010 and conflicting national standards shall be withdrawn at the latest by April 2010.

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 2007-04-13 and Amendment 2, approved by CEN on 2009-08-17.

This document supersedes A2 EN 13525:2005+A1:2007 A2.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 and A2 A2.

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).

A2 For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral parts of this document. A2

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 United Kingdom.

0 Introduction

This document is a type C standard as stated in EN ISO 12100-1.

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 specifies safety requirements and their verification for design and construction of transportable, i.e. self-propelled, mounted, semi-mounted and trailed, wood chippers used in forestry, agriculture, horticulture and landscaping.

A1 This document applies to chippers, used when stationary, which are manually loaded with wood through a horizontal or near horizontal infeed chute and where the infeed action is performed by the chipping components acting as infeed components or by separate integrated infeed components such as rollers or chain conveyors integral to the infeed chute. The included wood chippers may be powered either by an external power take-off, hydraulics etc. or by an integral power source such as an internal combustion engine. **A1**

This document does not cover:

- requirements relating to national road regulations arising from transport between work sites;
- hazards arising from any self-propelled function;
- hazards arising from the transmission of power from an external power source – e.g. power take-off drive shafts;
- **A1** any machines where the infeed chute is fitted with an extension table or the integrated chain conveyor is protruding beyond the outermost lower edge of the infeed chute; **A1**
- hazards arising from the engine pull starting of an integral power source;
- hazards arising from mechanical loading;
- vertical infeed chute chippers;
- electromagnetic aspects of the chippers;
- shredders/chippers to be covered by EN 13683;
- **A1** any machines where the infeed chute is fitted with a belt type conveyor;
- mechanical discharge systems. **A1**

This document deals with all significant hazards, hazardous situations and events relevant to wood chippers, when they are used as intended and under the conditions foreseen by the manufacturer (see Annex A).

In addition, it specifies the type of information to be provided by the manufacturer on the safe use of these machines.

It is not applicable to environmental hazards (except noise).

This document is not applicable to wood chippers which are manufactured before the date of publication of this document 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 294:1992, *Safety of machinery – Safety distance to prevent danger zones being reached by the upper limbs*

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 953:1997, *Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards*

EN 954-1:1996, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

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

EN 1175-2:1998, *Safety of industrial trucks – Electrical requirements – Part 2: General requirements of internal combustion engine powered trucks*

EN 10025-2:2004, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 60204-1:1997, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements (IEC 60204-1:1997)*

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

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

EN ISO 3744:1995, *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 4871:1996, *Acoustics – Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 9614-1:1995, *Acoustics – Determination of sound power levels of noise sources using sound intensity – Part 1: Measurements at discrete points (ISO 9614-1:1993)*

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 11201:1995, *Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Engineering method in an essentially free field over a reflecting plane (ISO 11201:1995)*

EN ISO 11204:1995, *Acoustics – Noise emitted by machinery and equipment – Measurement of emission sound pressure levels at a work station and at other specified positions – Method requiring environmental corrections (ISO 11204:1995)*