



<p><b>General Secretariat SASFL Sub-Directorate for Employment and Social Welfare Office for Occupational Health and Safety 78 rue de Varenne 75349 Paris 07 SP Telephone: +33 (0)1 49 55 52 27 78 rue de Varenne 75349 Paris 07 SP +33 (0)1 49 55 49 55</b></p>	<p><b>Technical Directive SG/SAFSL/SDTPS/2016-700 31 August 2016</b></p>
<p>+33 (0)1 49 55 49 55</p>	

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Please note that only the original french version has a legal value

**Re:** Directive on the safety of in-service wood chippers (extract)

#### **Recipients for implementation**

Directors of Regional Directorates for Enterprises, Competition Policy, Consumer Affairs, Labour and Employment (DIRECCTE), Pôle Travail managers

**Abstract:** This directive reviews the situation and context that prompted the European Commission's decision on 17 December 2014 to withdraw the standard on manually-loaded wood chippers with horizontal infeed chutes from the list of harmonized standards. It presents the consequences of such withdrawal on machines currently in use. After reiterating the obligations binding upon manufacturers, distributors, rental firms and user employers in pursuance of the Labour Code, it describes the action plan that needs to be implemented, including the deadlines for ensuring safe operation whenever necessary. Finally, this directive presents and defines the policy pursued by the governmental services.

**Reference documents:** Sections L.4321-2 of the Labour Code and R.4322-1 of the Labour Code.



**Ministry of Agriculture, Agrifood and Forestry**

General Secretariat  
Department for Financial, Social and Logistics Affairs,  
Sub-Directorate for Employment and Social Welfare,  
Office for Occupational Health and Safety

78 rue de Varenne – 75349 Paris 07  
SP Telephone: +33 (0)1 49 55 52 27

**Ministry of Labour, Employment,  
Vocational Training and Social Dialogue**

Directorate-General of Labour  
Department for Labour Relations and Working Conditions - SRCT  
Sub-Directorate for Working Conditions and Occupational Health and  
Safety - CT  
Office for Workplaces and Amenities - CT3

39 / 43, Quai André Citroën 75902 PARIS CEDEX 15  
Telephone: +33 (0)1 44 38 26 80  
Fax: +33 (0)1 44 38 27 15

For the attention of:

Directors of Regional Directorates for Enterprises, Competition  
Policy, Consumer Affairs, Labour and Employment  
(DIRECCTE), Pôle Travail managers

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**Keywords:** compliance, wood chippers, machinery, safety, young workers

A spate of serious or fatal work-related accidents has occurred in recent years, which has revealed that several models of manually-loaded wood chippers fail to conform to applicable occupational health and safety regulations.

In particular, it has been highlighted that there is a serious risk of operators becoming entangled in the infeed chute after being drawn in by the machine's moving parts.

This situation has prompted the need to implement an action plan to improve the safety of wood chippers during use.

The purpose of this directive is to provide a reminder of applicable legislation, review the different nonconformities reported that relate to the entanglement hazard, describe the measures to correct such nonconformities, and finally define and present the action taken by the governmental services.

## **I – Review of the situation and context**

### *1) Presentation of the types of machine concerned*

This document only applies to the wood chippers covered by the scope of the EN 13525:2005+A2:2009 standard "Forestry machinery - Wood chippers - Safety", which became effective on 25 December 2009.

These machines reduce branches into chips. They are especially used by the forestry and landscaping industries. According to estimates, several thousands of wood chippers are in use throughout France.

With these machines, branches are manually loaded through a horizontal or near horizontal infeed chute. These machines may be powered by a tractor power take-off or a motor fitted to the chipper.

Wood chippers are considered to be transportable work equipment and are generally used in a stationary position, some of which may be self-propelled or remote-controlled.

The operating principle and the main characteristics of such machinery with regard to safety are described in APPENDIX A.

### *2) Accident analysis<sup>1</sup>*

Several serious or fatal work-related accidents have occurred in recent years involving the use of wood chippers.

Victims have become entangled in the infeed rollers at the back of the chute and have been injured or killed by the chipping components. In some cases, the victim has climbed into the infeed chute to clear the machine or push plant litter towards the infeed rollers, and in doing so has been entangled by the hand or foot. In other cases, victims have been drawn into the infeed chute by their clothing or gloves, which have been snagged on a branch. In all cases, victims have been unable to actuate the existing protective devices, or such devices have failed to work.

Furthermore, some cases have been reported where the rope from the victim's harness has been snagged on a branch and drawn into the chipper with the branch while the worker was still attached to the rope.

### *3) France's formal objection and the European Commission's decision*

Due to the occurrence of such accidents and in light of the difficulty in bringing about changes to the content of the applicable standard, France, acting on the initiative of the Ministry of Agriculture, Agrifood and Forestry, the public authority responsible for carrying out market surveillance for this type of machinery, lodged a formal objection in July 2012 to dispute the harmonized status of the EN 13525:2005+A2:2009 standard in accordance with the procedure specified in Article 10 of the Directive 2006/42/EC on machinery.

After examination, France's objection prompted the European Commission to take a decision on 17 December 2014, which was published in the Official Journal of the European Union (OJEU) on 19

<sup>1</sup> For more information, refer to the detailed report of recent accidents in APPENDIX B.

December 2014.<sup>2</sup> This decision removed the reference of the EN 13525:2005+A2:2009 standard from the list of harmonized standards published in the OJEU. Such withdrawal became effective in the new list of harmonized standards published in the OJEU on 13 March 2015.

The reason for this decision is as follows: "*The Commission concluded that the standard fails to meet the essential health and safety requirements provided for in points 1.3.7 Risks related to moving parts and 1.3.8.2 Moving parts involved in the process of Annex I to Directive 2006/42/EC, for the reason that the machines designed to comply with those requirements present major risks for operators and third parties, fatal accidents having been already encountered*".

#### 4) *Consequences of withdrawing the standard on machine conformity*

The consequence of the European Commission's decision is as follows: compliance with EN 13525:2005+A2:2009 no longer confers a presumption of conformity with the essential requirements of the Directive 2006/42/EC on machinery. Manufacturers can no longer rely solely on this standard for placing their wood chippers on the European market. They must comply with the provisions of Directive 2006/42/EC, especially Sections 1.3.7 and 1.3.8.2 of Annex I.

The standard still exists, and only its legal significance has changed.<sup>222</sup>

The fact that the standard has been withdrawn from the list of harmonized standards does not mean that all wood chippers currently in operation are not in compliance with applicable legislation. Each machine must be examined to check whether or not it fulfils the applicable requirements when placed on the market, especially those provisions requiring manufacturers to eliminate any risk of contact with moving parts. The different categories of applicable rules depend on the generation of machine and are provided in APPENDIX D for information purposes.

What is certain, however, is that several machines will require varying degrees of remedial work to improve their safety in accordance with applicable regulations.

For information, APPENDIX E contains a list of key points that require close attention and which relate to the most frequently encountered cases of nonconformity.

Another standard on wood chippers is currently being prepared at the European level in the wake of the European Commission's decision and could be published within the next two years.

(...)

### III – Safety of in-service wood chippers

Any wood chipper that is currently in use and which fails to meet applicable provisions for ensuring protection against access to moving parts must be made safe according to the terms described below.

#### 1) *Evaluation of compliance for in-service machines*

The user employer must examine each machine to determine whether it conforms to applicable regulations depending on the generation to which it belongs<sup>3</sup>. This examination must be carried out as part of a complete risk assessment in accordance with the provisions of Section L. 4121-3 of the Labour Code.

The machine's generation can be determined from its marking and its declaration of conformity, which should indicate the date on which it was placed on the market. No CE marking presumably means that the machine was not subject to design rules when placed on the market.<sup>j</sup>

APPENDIX E of this directive contains a table of the main nonconformities reported following a work-related accident or the inspections carried out by the health and safety authorities, especially in relation to the risk of the operator becoming entangled or drawn into the moving infeed and chipping components.

Furthermore, user employers must ensure that all warnings of residual risks as specified in Section 1.7.2 of Annex I to the Directive, and stipulated in Section R. 4312-1 of the Labour Code, are displayed in an appropriate location on the machine (particularly concerning the entanglement hazard: warning about the risk of being pulled into the feed mechanism, on the inside and outside of the infeed chute; warning not to climb into the infeed chute, on the inside and outside of the infeed chute; warning about the risk of cutting, and on the access to infeed and/or chipping components)<sup>4</sup>.

#### 2) *Deadlines for ensuring the safety of in-service machines*

In-service machines must be made safe within no more than eighteen months of the publication of this directive in the Official Gazette of the Ministry of Agriculture, Agrifood and Forestry. Furthermore, a notice will be published in the Official Journal of the French Republic to notify all stakeholders accordingly and draw their attention to the subject matter of this document.

APPENDIX E provides an indication of the main points that are likely to be subject to corrective actions in relation to the entanglement hazard.

Machines must be made safe while ensuring that no new hazards are created. In this respect, special care must be taken to maintain the machine's stability.

In any case and until such time as machines have been made safe, employers must take all interim safety measures to guarantee the operator's safety or otherwise prevent the machine from being used.

The most dangerous machines exposing operators directly to an entanglement hazard must be made safe within no more than twelve months of the publication of this document.

The following machines are concerned:

- Machines that can be used by a single operator, where the height of the chute above the ground and/or the depth of the chute are insufficient, thereby giving the operator easy access to the hazardous parts, either through contact with the hand or foot.

- Machines where the position of the protective device in relation to the edge of the infeed chute cannot be involuntarily actuated by the operator if drawn into the chute.

3 Refer to the table in APPENDIX D.

4 Refer to Section 6.3 of EN 13525:2005+A2:2009 for further details.

- Machines where adjustment of the protective device requires excessive force on its horizontal or vertical parts, meaning that it is difficult or impossible to voluntarily or involuntarily actuate the device if the operator becomes entangled.

- Machines without infeed components and whose chipping components are directly accessible to the operator and cannot be brought to an immediate stop.

### 3) *Machines used by young workers, young vocational students and workers in training*

Furthermore, with respect to the risks faced by young workers or young vocational students and the specific protection that they require, principals of agricultural colleges and higher education facilities in which wood chippers are used by non-adult learners (pupils, students, apprentices and interns) are requested to prevent such machines from being used where a risk assessment has revealed a safety problem and until such time as the necessary corrective action has been taken.

Principals are asked to take the same measures to protect adult learners, in light of the significant risks to which they are exposed, the professional knowledge required to operate such machinery and the safety knowledge that they are in the process of acquiring.

In case of work placements and vocational training for pupils and students, principals shall inform employers or tutors by means of a specific letter and in the internship agreement that the student may only use a wood chipper once the machine has been assessed for conformity and made safe if applicable.

In view of the foregoing considerations relating to the protection of young people and the specific vulnerability of students, an employer may not assign a young worker, vocational student or worker in training to a machine whose safety has not been established.

Employers are reminded that wood chippers, as a "*machine containing moving parts involved in the work process that are accessible during their operation*", may only be used by non-adult persons if the employer - or principal when the machine is used in a college workshop or project - has issued a statement of exemption in accordance with the provisions of Sections D. 4153-28 and R. 4153-41 of the Labour Code.

The organization receiving the vocational student or young worker warrants to the college principal that a statement of exemption has been issued to the relevant authorities.

The declarant may only issue the statement after checking that the machine covered by the statement is safe.

Furthermore, in case of wood chippers for which a statement of exemption has been issued before the publication of this directive, the declarant shall ensure that they are safe and in compliance with applicable regulations. If an assessment reveals that a machine requires remedial work to ensure its safety, the declarant must prevent that machine from being used by non-adult students until such time as the remedial work has been carried out.

The declarant shall notify the health and safety authorities that such a modification has been made and, if applicable, the principal of the college at which the young worker is a student when the declarant is an employer.

### 4) *In-service machines placed on the market after the European Commission's decision has become effective*

Following the European Commission's decision of 17 December 2014, which was published in the OJEU on 19 December 2014, the standard on wood chippers was withdrawn from the list of harmonized standards published in the OJEU of 13 March 2015. In France, the special agricultural committee of the COCT (Advisory Board on Working Conditions), which is made up of representatives from agricultural trade organizations and unions, was notified of the decision during its meeting on 9 March 2015.

Machines that manufacturers have placed on the market after this decision became effective must fulfil the requirements of Sections 1.3.7 and 1.3.8.2 of Annex I to the Machinery Directive 2006/42/EC, and manufacturers must have made the necessary changes to the models marketed if applicable.

Therefore, the deadlines specified in III 2/ do not apply to these machines.

#### *5) Role of manufacturers / importers / distributors / rental firms*

Manufacturers are invited to assess the compliance of the machines that they have placed on the market and provide users with remedial solutions to ensure that those machines fulfil the applicable requirements of the Machinery Directive.

Importers, retailers, distributors and rental firms must make sure that the machines imported, sold, distributed or rented satisfy the same requirements.

#### *6) Role of user employers*

User employers are responsible for the safety of the machines used by their employees. They must ensure that such machines comply with applicable regulations, or otherwise carry out the necessary remedial work with assistance from the manufacturer if applicable, according to the terms specified above in Paragraphs 1 to 5 of III<sup>5</sup>.

If in doubt, they may seek the advice of the health and safety authorities and/or appoint a relevant organization or person to carry out a verification of conformity.

If a machine purchased less than a year ago proves to be nonconforming, they may use the defeasance clause (see § II-3 *above*).

Furthermore, users are reminded that they must regularly check that the machine's safety devices are in correct working order, especially the safety guard, in accordance with their obligation to maintain the machine's compliance with applicable regulations, as specified in Sections R. 4322-1 and -2 of the Labour Code. The level of force to be applied to the different parts of the safety guard must be regularly checked against the values specified in EN 13525:2005+A2:2009 by a suitably qualified person. These values will continue to be used as a baseline until such time as a new standard has been published.

#### *7) Role of college and higher education facility principals*

Principals are responsible for the machines used by students in their college's or facility's workshops.

They must ensure that such machines comply with applicable regulations, or otherwise carry out the necessary remedial work with assistance from the manufacturer if applicable, according to the terms specified above in Paragraphs 1 to 3 of III<sup>6</sup>.

If in doubt, they may seek the advice of the health and safety authorities and/or appoint a relevant organization or person to carry out a verification of conformity.

If a machine purchased less than a year ago proves to be nonconforming, they may use the defeasance clause (see § II-3 *above*).

Furthermore, users are advised to regularly check that the machine's safety devices are in correct working order, especially the safety guard, in accordance with their obligation to maintain the machine's compliance with applicable regulations, as specified in Sections R. 4322-1 and -2 of the Labour Code. The level of

<sup>5</sup> For more information, refer to the *Technical guidelines of 18 November 2014 for modifications to in-service machines*, which are available on the websites of the Ministry of Agriculture and the Ministry of Labour

<sup>6</sup> See note 5

force to be applied to the different parts of the safety guard must be regularly checked against the values specified in EN 13525:2005+A2:2009 by a suitably qualified person. These values will continue to be used as a baseline until such time as a new standard has been published.

*8) Information and training for workers*

The user employer (or college principal) shall accordingly inform the workers responsible for using or maintaining the machines, in pursuance of Section R. 4323-1 of the Labour Code.

Such information must be repeated and adapted after remedial work has been carried out to ensure the machine's safety. Notices must specify the terms for using and maintaining machinery, the instructions concerning the workers, especially those featured in the manufacturer's instruction guide, the appropriate conduct in response to a foreseeable abnormal situation, and the lessons learned for eliminating certain risks.

Furthermore, safety training for workers using or maintaining a safe machine must be repeated in accordance with Sections R. 4323-3 and -4 of the Labour Code.

(...)

## APPENDIX E

### Main safety problems encountered with wood chippers relating to the entanglement hazard

Relevant function or device of the machine	Applicable technical design specification (Section of Annex 1, as specified in Section R. 4312-1 of the Labour Code)  Or applicable technical requirement	Examples of nonconformities	Examples of preventive actions	Observations
<b>Machines presenting a direct entanglement hazard: to be made safe within 12 months</b>				
1	Protection against access to moving infeed parts  Section 1.3.7 Section 1.3.8.2  R. 4324-2 and -3 of the Labour Code	- Infeed chute not high enough above the ground - Infeed chute not deep enough	The height of the chute floor above the ground and the depth of the chute must at least be equal to the applicable values for type A machines in order to be considered sufficient (i.e. 600 mm and 1 500 mm respectively) <sup>7</sup>	Machines with a low chute height and/or overly low chute depth (especially type B machines) allow easy contact between the operator's hands or feet and the moving parts presenting a mechanical hazard.
2	Protection against access to moving chipping components  Section 1.3.7 Section 1.3.8.2 R. 4324-2 and -3 of the Labour Code	- No infeed rollers or similar devices	Fit the machines concerned with an infeed device that is located and designed in such a way that when in the stop position, operators cannot access the chipping components with any part of their body.  <u>Or:</u>	Some machines do not contain infeed rollers, but only chipping components. With these machines, an entangled operator cannot stop the hazardous movement, since the inertia of the rotor prevents the chipping rollers from being

<sup>7</sup> Compact machines with a narrow infeed chute, such as defined by EN 13525:2005+A2:2009 in Section 4.3.3.1.1 § 2 and in Figure 7 (width of the infeed chute less than 700 mm and distance between the outermost lower and upper edges not more than 400 mm, and height above the ground of the back of the chute at least 1 000 mm), must be analyzed and subject to a specific evaluation.

				The chipping components can be brought to an immediate stop by actuating the different stop devices.	brought to an immediate stop.
3	Nonconforming protective device (e.g. safety bar) against the entanglement hazard	Section 1.3.7 Section 1.3.8.2 Section 1.4.1 Section 1.4.3  R. 4324-3 of the Labour Code	<ul style="list-style-type: none"> <li>- No protective device on the lower horizontal part on the outside of the chute entry edge</li> <li>- No protective device on the top part of machines with an open infeed chute</li> <li>- Part of the protective device is not located on the outside of the chute entry edge</li> <li>- The protective device is adjusted in such a way that excessive force is required to actuate the guard</li> </ul>	<p>Fit each machine with a lower horizontal protective device and lateral vertical protective devices.</p> <p>If necessary, fit a protective device to the upper horizontal part. This device may be replaced by one or more emergency stop devices located in the same place.</p> <p>Position each part of the protective device towards the outside of the chute entry edge.</p> <p>The maximum forces are as specified in EN 13525:2005+A2:2009, namely 150 N for the horizontal parts and 200 N for the other vertical parts.</p>	<p>The protective device must be designed so that it is actuated involuntarily by any part of the operator's body if entangled in the infeed chute.</p> <p>Such is not the case when at least one of the protective device parts is not positioned on the outside of the chute entry edge (facing the rear of the machine) but is recessed or flush with the edge.</p> <p>Such is not the case either when there is no lower horizontal part or lateral vertical parts on the protective device.</p> <p>In case of machines with an open chute top, the position and characteristics of the protective device (or emergency stop device) on the upper horizontal part must be examined after an in-depth risk assessment to minimize the risk of operators climbing into the infeed chute.</p> <p>Note: Section 4.2.4.3.4 and Figure 2 of Section 4.2.4.2.1 in EN 13525:2005+A2:2009 state that the force required to stop the infeed rollers shall not exceed 150 N on the horizontal part of the safety guard and 200 N along 75% of the length of each of the lateral vertical parts, where the force required is measured in a horizontal direction <math>\pm 15^\circ</math>, or in the case of a pivoting device, in the tangential direction of its movement.</p>
<b>Other nonconformities associated with the entanglement hazard: to be made safe within 18 months</b>					
4	Nonconforming protective device (e.g.	Section 1.3.7	- The protective device can be modified using	Protective device designed in such a way that it cannot easily be bypassed or	

	safety bar) against the entanglement hazard	Section 1.3.8.2 Section 1.4.1  Section 1.4.3  R. 4324-3 of the Labour Code	a simple everyday tool or by removing a part that is easily accessible to the operator  - No device to prevent plant litter from building up or jamming at the back of the chute	disabled.  Fit a conveyor belt in the chute and/or provide a specially designed tool to safely push any plant litter towards the infeed rollers.	
5	Defective emergency stop	Section 1.2.4.3  R. 4324-15 of the Labour Code	No emergency stop on the machine	Fit emergency stop mechanisms to the machine that can be actuated by the operator, another operator or a third party if necessary.  These mechanisms should at least bring the infeed rollers to an immediate stop. If the machine is not fitted with infeed rollers, the emergency stop mechanism must bring the chipping components to an immediate stop.	No fewer than two emergency stop mechanisms must be fitted on each side of the chute, except where an emergency stop can be fitted that is easily accessible from either side of the chute.  One or more emergency stop mechanisms can be installed on the upper horizontal part to replace a protective device, especially on machines with an open chute roof.  Note that the protective device does not constitute an emergency stop mechanism.