

INAIL comments on Regulation (EU) No .../2012 of the European Parliament and of the Council on the approval and market surveillance of agricultural and forestry vehicles

Bruxelles 4 March 2013



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Comments on Annex I exclusions

Nr.	Article	Subject	Regulatory act reference	Motor vehicles	Vehicle categories																	
					T1a	T1b	T2a	T2b	T3a	T3b	T 4.1a	T 4.1b (+)	T 4.2a	T 4.2b (+)	T 4.3a	T 4.3b	Ca	Cb (++)	Ra	Rb	Sa	Sb
9	17.2(c)	Rear-view mirrors	RVFSR	Y	X	X	X	X	NA	X	X	X	X	X	X	X	I	I	NA	NA	NA	NA

T3a category: wheeled tractors with an unladen mass, in running order, of not more than 600 kg and a maximum design speed below or equal to 40 km/h

INAIL comment: T3a tractors can be used with interchangeable equipments or trailers as well as the other tractors categories.



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					T1a	T1b	T2a	T2b	T3a	T3b	T4.1a	T4.1b (+)	T4.2a	T4.2b (+)	T4.3a	T4.3b						
23	17.2(l)	Ballast masses	RVFSR		X	X	X	X	NA	NA	X	X	X	X	X	X	I	I	NA	NA	NA	NA

T3 category: wheeled tractors with an unladen mass, in running order, of not more than 600 kg

INAIL comment: T3 tractors can be used with interchangeable equipments rear and/or front mounted which require a ballast mass for grant the stability of the complex (tractor + equipment).



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37	18.2(a)	ROPS (static testing)	<i>RVCR (test report alternative to the one within the application field of OECD Code 4, as amended)</i>		X	X	NA	NA	NA	NA	NA	NA	NA	X	X	X	X	X	X	NA	NA	NA	NA

T4.1 category: (high-clearance tractors) comprises tractors designed for working with high-growing crops, such as vines.

INAIL comment: *T4.1 tractors present a roll-over risk higher than other tractor categories due to their raised configuration.*



Comments on Annex I trailers and interchangeable towed equipment inclusions

R category:
agricultural or forestry trailers.

S category:
interchangeable towed equipment.

Z item:
applicable only to interchangeable towed equipment falling in R-category due to technically permissible maximum laden mass to the unladen mass equal to or greater than 3,0 (Article 3, definition 9).

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					T1a	T1b	T2a	T2b	T3a	T3b	T4.1a	T4.1b (+)	T4.2a	T4.2b (+)	T4.3a	T4.3b	Ca	Cb (++)	Ra	Rb	Sa	Sb
18	17.2(f)	Devices to prevent unauthorised use	RVFSR	Y (only for T- and C-categories)	X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
51	18.2(l), 18.2(n), 18.2(q), 18.4	Operators manual	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
53	18.2(p)	Protection against mechanical hazards other than the ones mentioned in Art. 8.2 (a), (b), (g), (k), including protection against rupture of pipes carrying fluids and uncontrolled movement of the vehicle	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
54	18.2(r), 18.2(p)	Guards and protective devices	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
55	18.2(l), 18.2(s)	Information, warnings and	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X

Comments on Annex I trailers and interchangeable towed equipment inclusions

INAIL comment:
some subjects (numbers 18, 51, 53, 54 and 55) for interchangeable towed equipment seem to overlap with the essential safety requirements of Machinery Directive Annex I.

Thus it would be necessary that:

- these requirements are fully consistent with those of Machinery Directive; **or**
- they exclusively refers to road safety.

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					T1a	T1b	T2a	T2b	T3a	T3b	T4.1a	T4.1b (+)	T4.2a	T4.2b (+)	T4.3a	T4.3b	Ca	Cb (++)	Ra	Rb	Sa	Sb
18	17.2(j)	Devices to prevent unauthorised use	RVFSR	Y (only for T- and C- categories)	X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
51	18.2(l), 18.2(n), 18.2(q), 18.4	Operators manual	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
53	18.2(p)	Protection against mechanical hazards other than the ones mentioned in Art. 8.2 (a), (b), (g), (k), including protection against rupture of pipes carrying fluids and uncontrolled movement of the vehicle	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
54	18.2(r), 18.2(p)	Guards and protective devices	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X
55	18.2(l), 18.2(s)	Information, warnings and	RVCR		X	X	X	X	X	X	X	X	X	X	X	X	I	I	Z	Z	X	X

Uncontrolled movement *Art. 18.2 (p) - Annex I item number 53*

In Italy 10 fatal accidents per year occurred because of the uncontrolled movement of tractor while the operator was not at the controls.

Machinery Directive EHSR 3.3.2 first paragraph establishes that “all travel movements of self-propelled machinery with a ride-on driver must be possible only if the driver is at the controls”.

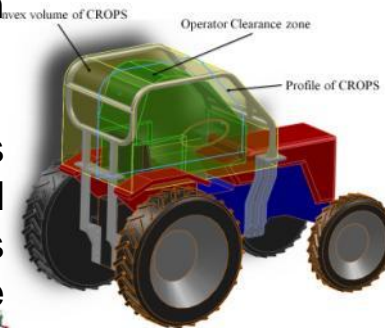


Foldable ROPS – foreseeable misuse Art. 18.2 (a) and 18.4

In Italy several fatal accidents occurred because of the use of tractors equipped with foldable ROPS while this one is not in safe configuration. In many of these cases the tractor was used under trees or in greenhouses where the height of ROPS in safe configuration did not allow to work properly. In other cases the ROPS once folded it is not more positioned in safe configuration because of its weight.

Machinery Directive EHSR 1.1.2 letter c) establishes that “when designing and constructing machinery and when drafting the instructions, the manufacturer or his authorised representative must envisage not only the intended use of the machinery but also any reasonably foreseeable misuse thereof”.

INAIL is developing a *research activity* in order to design and apply compact roll-over protective structures (CROPS) on old manufactured tractors to be used also during works under trees or in greenhouses.



Passenger seat – ROPS *Art. 18.2 (a) and (c) - Annex I items number 37 and 41*

Considering the next amendment procedure of EN 15694 it is necessary to take into account the new requirements concerning passenger roll-over protection by means of a ROPS.

Amendment to EN 15694

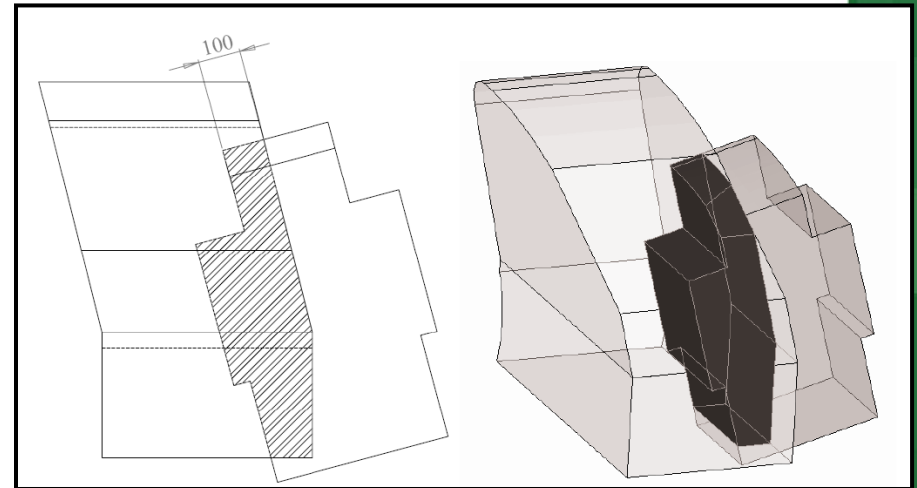
Document type: Public document

Date of document: 2013-01-11

Expected action: INFO

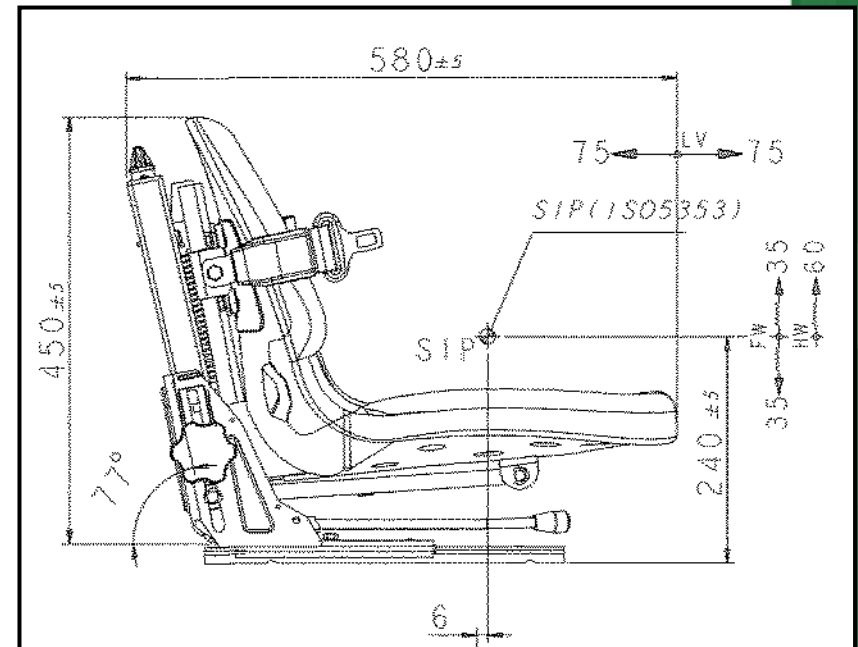
- Background:
1. CENTC 144/WG 2 agreed on to amend EN 15694 (paasenger seat).
 2. The attached TC 144 documents show the NWIP and the result of the NWI procedure (approval). TC 144 confirmed this NWI by decision 508.
 3. With respect to the available and well drafted proposal for amending EN 15694 and the small number of comments (more or less editorial) the CEN/TC 144/WG 2 secretary is proposing to initiate the CEN parallel enquiry without discussion in WG 2 (after having asked the project leader, Mr Leonardo Vita, to deal with the comments provided).
 4. WG 2 members will be asked to support this proposal (CIB).

Committee URL: <http://cen.iso.org/livelink/livelink/open/centc144wg2>



Seat belt anchorages *Art. 18.2 (i) - Annex I item number 47*

It is necessary to include anchorage location requirements as defined in ISO 3776-1 in order to avoid not ergonomic applications.

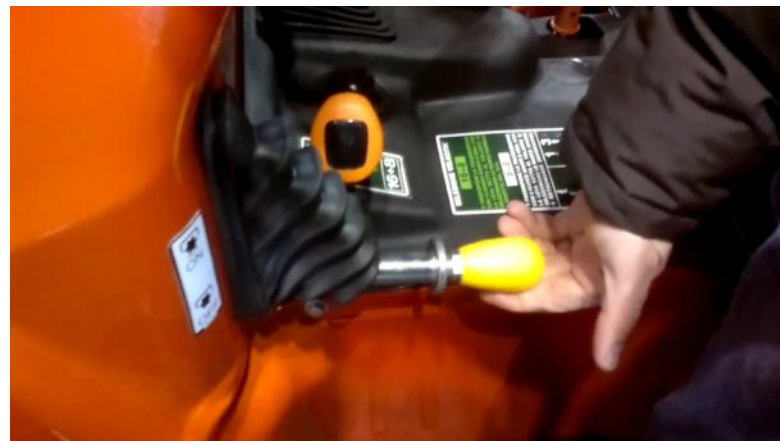


Safety and reliability of control system *Art. 18.2 (g) and (o) - Annex I items number 45 and 52*

In Italy accidents occurred as a result of unexpected motion of the power take-off (PTO) due to mechanical failure of the locking system of the PTO clutch control.

The failure of the locking system was due in many cases to mechanical wear and lack of positive action principle.

Machinery Directive EHSR 1.2.1 establishes that *“control systems must be designed and constructed in such a way as to prevent hazardous situations from arising. Above all, they must be designed and constructed in such a way that they can withstand the intended operating stresses and external influences”*.



Fire safety *Art. 18.4*

Collection of debris on hot surfaces and electrical short circuit are the main causes of fire activation.

Machinery Directive EHSR 1.5.6 establishes that “machinery must be designed and constructed in such a way as to avoid any risk of fire or overheating posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery” (clause 5.10 of EN 4254-7 could be applied).



Controls

Art. 18.2 (o) - Annex I item number 52

In Italy fatal accidents occurred while coupling interchangeable equipment to tractor three point hitch due to the uncontrolled movement of the lower arms of the rear lift.

The operator getting on the lower arms activated the rear lift control from outside the tractor.

The lower arms started moving up without stopping until they reach the position selected by the control causing the operator crushing between tractor and interchangeable equipment.

Emergency and automatic stop devices ***Art. 18.2 (g) and (o) - Annex I items number 45 and 52***

Machinery Directive EHSR 1.2.4.3 establishes that “*machinery must be fitted with one or more emergency stop devices to enable actual or impending danger to be averted*”.

Tractors when interchangeable equipments are fitted shall be equipped with an emergency stop outside the driver position.

Some tractors are already equipped with devices controlling movements of the PTO which have technical features similar to the functional requirements given in EN ISO 13850 Safety of machinery - Emergency stop - Principles for design.

Control ergonomic principles ***Art. 18.2 (o)***

Machinery Directive EHSR 1.2.2 third paragraph establishes that “control devices must be so arranged that their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles”.

Reverse gear audible warning device

Art. 17.2 (h) and (t) - Annex I items number 16 and 32

In Italy accidents occurred when ground operators are hit by tractor in case of movement in reverse gear. Generally the presence of large operating machines connected to tractor three point hitch does not guarantee an adequate visibility to the rear.

Machinery Directive EHSR 3.3.1 establishes that “the sixth paragraph of section 1.2.2, concerning acoustic and/or visual warning signals, applies only in the case of reversing”.

Machinery Directive EHSR 1.2.2 sixth paragraph establishes that “if neither of these possibilities is applicable, before the machinery starts, an acoustic and/or visual warning signal must be given. The exposed persons must have time to leave the danger zone or prevent the machinery starting up”.

Fitting errors

Art. 17.2 (v) - Annex I item number 34

Considering the wide number of interchangeable machines which use tractor hydraulic quick couplings, it is necessary to avoid by design a misleading fitting of the inlet and outlet pipes of the machine.

In fact, applying in reverse order hydraulic outlet/inlet pipes of the interchangeable machines causes the unexpected reverse action at the control.

Machinery Directive EHSR 1.5.4 third paragraph establishes that “where a faulty connection can be the source of risk, incorrect connections must be made impossible by design or, failing this, by information given on the elements to be connected and, where appropriate, on the means of connection”.

Vibration *Art. 18.4*

Directive 2010/52/UE amending Directive 2009/144/EC and Directive 76/763/EEC states that the instructions shall indicate the vibration level measured in accordance with Council Directive 78/764/EEC.

However the level of vibration measured in accordance with Directive 78/764/EEC, in particular for the types of tractors of category A, **does not represent the actual tractor emission value of vibration.**

In fact, the vibrational level referred to in that Directive is measured on the seat of the tractor **on test bench regardless of the tractor.** Furthermore, the vibrational level is measured only along the axis Z perpendicular to the seat and not also on the axes X and Y, respectively longitudinal and transverse to the direction of advance of the tractor, as provided by **Directive 2002/44/EC.**

Machinery Directive EHSR 3.6.3.1 establishes that “The instructions must give the following information concerning vibrations transmitted by the machinery to the hand-arm system or to the whole body:

- the vibration total value to which the hand-arm system is subjected, if it exceeds $2,5 \text{ m/s}^2$. Where this value does not exceed $2,5 \text{ m/s}^2$, this must be mentioned;
- the highest root mean square value of weighted acceleration to which the whole body is subjected, if it exceeds $0,5 \text{ m/s}^2$. Where this value does not exceed $0,5 \text{ m/s}^2$, this must be mentioned;
- the uncertainty of measurement.

Residual risks

Art. 18.2 (n) and (s) - Annex I items number 51 and 55

The warnings about the residual risks on tractor should be complementary to the information on residual risks to be provided in the manufacturer's instructions. The warnings are useful when operators and other exposed persons should be informed about special precautions regarding the residual risks when using tractor, such as, for example, the presence of a hot surface or the need to wear seat belts. Can also be useful to recall the need to wear PPE.

Machinery Directive EHSR 1.7.2 establishes that “where risks remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted, the necessary warnings, including warning devices, must be provided”.

Machinery Directive EHSR 1.7.4.2 letter (l) establishes that “information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted”.