CEN/TC 98/WG 3 N0001

Template for comments and secretariat observations

Date: 2015-10-19	Document: EN 1493:2010	Project: Revision

No.	MB/ NC[1]	Clause/ Subclause (e.g. 3.1)	Paragraph/ Figure/ Table/ (e.g. Table 1)	Type of comment[2]	Comments	Proposed change	Observations of the secretariat
1)	DE				It should be clarified that the synchronization systems will have an effect on the traction systems in case of fail.	**This can be re-discussed**	
2)	DE				Therefore the EN 1493 should clarify if synchronization systems must work as calculated for traction systems.	**To be discussed to introduce more details regarding synchronization ropes (and more general, synchronization devices) (see also 5.7.5.6)** **This can be re-discussed**	
3)	IT			te	Others issues that need to be treated: **a)** Potential conflicts between EN 1493 and Roadworthiness Directive (2014/45/EU), related with the presence of persons on the lift during roadworthiness inspection procedure and the possible need to have the vehicle engine running (to be able to steer the vehicle, e.g.: trucks) **b)** Issues related to the lifting of electric vehicles		
4)	FR	Introduction	2nd clause	ge/te	The project of standard says: "In addition, machinery should comply as appropriate with EN ISO 12100 for hazards which are not covered by this standard." If the standard anticipates that certain hazards are not covered, then annex ZA has to list them clearly.	Complete the Annex ZA which makes the relation between the European standard and the requirements of the European Directive 2006/42/EC.	
5)	FR	Introduction	5th clause	te	The project of standard says: « While elaborating this standard it was assumed that only authorized persons operate the vehicle lifts and that the working area is sufficiently lit. » The standard does not have to limit itself to a requirement but has to supply a level of lighting defined in a new paragraph.	Replace the sentence: « While elaborating this standard it was assumed that only authorized persons operate the vehicle lifts and that the working area is sufficiently lit. » by « While elaborating this standard it was assumed	

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					In France for example, the minimum of lighting for the lighting of working premises has to be of a minimum of 120 lux (article n°4223-4 of the French labour code)	that only authorized persons operate the vehicle lifts » And introduce the following sentence into new clause 5.21.6: « The minimum of lighting for the working area has to be of a minimum of 500 lux according to EN 1837+A1:2009 »	
6)	FR	Introduction	(new clause)	ge/te	The standard EN 1493:1998 says in its introduction: « Furthermore it was assumed that no persons are permitted to stand under the vehicle during lifting and lowering» but in FprEN 1493 this sentence disappeared. The users and the manufacturers are not applicants to work under the load in movement (and are not applicants of a wireless remote control).	- Reintroduce in the clause of Introduction the sentence: « Furthermore it was assumed that no persons are permitted to stand under the vehicle during lifting and lowering»	
7)	FR	1 scope	4th clause	te	The period of application of the Publication is inconsistent and not valid	Replace the sentence: « This document is not applicable to vehicle lifts which are manufactured ½ year after the date of its publication as EN. » by « This document is applicable to vehicle lifts which are manufactured ½ year after the date of its publication as EN. »	
8)	CH	2		ge	Standards has to be renewed: EN 982:1996+A1:2008, EN 983:1996+A1:2008, EN ISO 12100-1:2003,	**New Standards:** **EN ISO 4413** **EN ISO 4414** **EN ISO 12100:2010** **EN ISO 12100:2010**	

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					EN ISO 12100-2:2003,		
9)	CH	2		ge	RfU CNB/M/08.016 RfU CNB/M/08.018	They have to be integrated in the new standard	
10)	CH	2		ge	RfU CNB/N/08.xxx	There are probably other RfU which could be integrated in the new standard	
11)	FR	2	All clauses	ed	The normative references shall be revised.	Taking into account the revised standards and amendments, the revised list of normative references are: EN ISO 4413:2010, Hydraulic fluid power - General rules and safety requirements for systems and their components (ISO 4413:2010) EN ISO 4414:2010, Pneumatic fluid power - General rules and safety requirements for systems and their components (ISO 4414:2010) EN 60204-1:2009, Safety of machinery — Electrical equipment of machines — Part 1: General requirements EN 60204-32:2008, Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32:2008) EN 60529/A2:2013, Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989 + A1:1999 + A2:2013 EN 60947-5-1:2009, Low-voltage switchgear and control gear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices (IEC 60947-5-1:2003 + A1:2009 EN ISO 12100:2010, Safety of machinery -	

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						General principles for design - Risk assessment and risk reduction (ISO 12100:2010); EN ISO 13849-1/A1:2013 Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design - Amendment 1 (ISO 13849-1:2006/DAM 1:2013); EN ISO 13849-2:2012, Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012) EN ISO 13850:2008, Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006) ISO 4308-1:2003, Cranes and lifting appliances — Selection of wire ropes — Part 1: General	
12)	FR	3	(New clause)	te	The definition of the hold-to-run control disappeared from the project of standard. We have to reintroduce the former definition 3.17) written in prEN 1493.	Add a new definition 3.24 such as: « **3.17** **Hold-to-run control** control device which initiates and maintains operation of machine elements only as long as the manual control (actuator) is actuated and the manual control (actuator) automatically returns to the stop position when released »	
13)	FR	4	Table 1	te	If operator could be allowed to stand under the vehicle, the risk assessment should be reconsidered.	Table 1 "List of hazards" shall be revised for taking into account hazards due to use of the remote control. The specific risks about the use of the remote control are not identified in this table.	
14)	FR	4	Table 1	te	The hazard to the lightning disappeared while vehicle lifts can be used outside and while the	- Add the hazard of the lightning in the TABLE 1 with a part 2.5 such as:	

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					requirement "Lightning" of the Directive 2006/ 42/EC is a part of general essential requirements (1.5.16) We have to add this hazard in the table 1 and explain it in the body of the standard.	« 2.5 | Hazard of lightning | 5.21.5 » - Introduce a new clause 5.21.5 such as: « 5.21.5 All the elements of the electric equipment have to satisfy the requirements for the lightning of the standard EN 60204-32»	
15)	FR	4	Table 1	te	The hazard 12 of the Table 1 refers to the clauses 5.4.1 and 5.4.3 which do not clarify requirement of lighting	Delete the hazard 12.	
16)	FR	4	Table 1	te	The hazard 18 of the Table 1 refers to the clause 5.4.3 which does not clarify requirement of lighting	The hazard 18 has to refer to the requirement of the new clause 5.21.6 « The minimum of lighting for the working area has to be of a minimum of 500 lux according to EN 1837+A1:2009 »	
17)	DE	5.4	Sentence 3	ed	For the wireless remote control it's necessary, that a person pushing an additional release switch at the lift.	**In case of remote control (wireless or wired) the additional release control is not always compulsory.** **If remote control *operate within defined standing area which gives the operator a direct view to the load to be lifted/lowered (e.g. short cable, infrared control system)* the additional release switch is not compulsory** **NB: the need of additional release control is related only to the impossibility to have a complete view to the lifted load** **(see also 5.4.2)** **Rewrite the paragraph 5.4.1 and 5.4.2 integrating themselves in only one paragraph to focalize the relation with the visibility**	

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18)	FR	5.4.1	3th clause	te	The clause 5.4.1 introduces the use of remote controls (wireless or wired) but does not define the domain of application.	Limit the use of remote controls to the lifts of the following vehicles: trams, vehicles on rails and to forbid it for simple vehicle lifting. Write in 5.4.1: « The use of remote controls for vehicle lifts: - is forbidden for the simple vehicle lifts such as the categories of vehicle L, M1 and N1, »	
19)	FR	5.4.1	4th clause	te	The length of the cable shall be defined into 5.4.1	Introduce the sentence into 5.4.1: « The length of the cable does not have to allow the presence of the operator under the load in movement »	
20)	IT	**5.4.1** and 5.4.2		ge	Rewrite the paragraphs 5.4.1 and 5.4.2 integrating them into a single paragraph to focus the relationship with the visibility requirements.		
21)	NL	**5.4.1** 5.4.2 5.22		ge/te	**Control positions / Remote controls** **Current situation:** EN1493:2010 has the following in 5.4.1 and 5.4.2: a) Control devices shall be designed and arranged so that they are within easy reach of a **standing operator**, and so that the **operator is not jeopardized** by the load or the motion of the lift or parts of the lift. b) Remote control (wireless or wired) shall only be used if there exists an **additional release switch** at the vehicle lift which has to be pushed when using	Now the subparagraphs 5.4.1 and 5.4.2 contain examples of solutions “describing methods by which the requirements of the normative text can be fulfilled”. The structure of the standard is that these are gathered in annex B. At least the status of the additional release switch could be changed into ‘example of a solution’ and moved to Annex B. That would open the way for innovative solutions that solve the safety issues in a probably better way. Examples of such solutions are: - A load sensor on the lift that switches off the remote control when the load is on the lift. - Another solution is a limited lifting height of e.g. 300 mm, when using the remote control.	

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					the remote control. This additional switch shall be located so that the person pushing it has a **direct view to the load** to be lifted/lowered. c) The **additional release switch is not necessary** if the remote control system will only operate within a **defined standing area** which gives the operator a **direct view to the load** to be lifted/lowered (e.g. short cable, infrared control system). d) The **control position** to operate the vehicle lift shall be designed and arranged, so that the **operator can watch the load carrying device and the load** whilst in motion, as well as the **space under the load carrying device and the load**. This applies to the operation of both multiple and single lifting devices. e) If the vehicle lift *is intended to be used* so that the **hazardous area cannot be completely viewed from the operating position** (the use of tools like mirrors or cameras/monitors is acceptable), e.g. vehicle lifts for rail bound vehicles, **one or more additional release switch(es)** approving the commands for the lifting movements (on the side of the lifting system positioned **across from the**	With in-ground heavy duty vehicle lifts, it would be easier to position the adapters under the pick-up points of the vehicle this way. It has to be done lying on the floor to be able to watch the adapters and pick-up points and to move the adapters into the right position. *Without* the remote control, operators may tend to position the adapters 'in the ball park' and then raise the vehicle to see if the adapters are positioned well. ('foreseeable misuse')This can lead to dangerous situations. But	

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					control position) are required. **Comments:** a) This general requirement seems to refer to fixed control devices that are either mounted on the lift of in the vicinity of the lift. Therefore the risk of being jeopardized is present. An important aspect here, seems that the operator *has to be* close to the lift/load to operate the lift. The requirement could be achieved by positioning the control device away from the lift, or by using a remote control. The latter leaves the operator a choice to operate the lift from a convenient (safe) position. b) A remote control offers several advantages. One is mentioned above under a). Another is that it solves the problem of visibility mentioned under d) and e). The operator can walk around the lift and vehicle while operating it (in case of a wireless remote control), and thus has the possibility to view the whole area during lifting and lowering. This does not require an “additional release switch at the vehicle lift” which is potentially a more dangerous position. In general, the additional release switch is not doing what it’s meant for: offering safety. Actually it is blocking safer		

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					solutions like the remote control, because (as far as I know) hardly any manufacturer is using it and thus not (legally allowed to) using the remote control. Also, hardly any user will buy a lift that requires two people to operate it. c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control. d) This is exactly what the remote control offers. But, as stated under b), few manufacturers are willing to offer it conform EN1493, even fewer customers want to buy such a lift. e) It seems that it is the *type of vehicles* that are lifted (and therefore the lift type) which defines if the "hazardous area cannot be completely viewed from the operating position", rather than what "the vehicle lift is intended to be used" for. Therefore the whole matter of control devices could be better addressed by vehicle and lift type. This is actually already done in case of rail bound vehicles. **General:** Regarding the risk of the use of remote controls with lifting equipment, a comparison with overhead cranes and e.g. lifting equipment on		

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					vehicles might be useful. The remote control offers a great freedom to choose the best position for operating and watch the load and the area around it. The fact that it is possible to stand under the load while operating, does not prevent the use of remote controls. In training and warning, operators are told never to stand under the load. In vehicle lift land we have paragraph 5.22, where the additional release switch also does not offer more safety, because the reduced lowering speed and the additional requirement regarding unintentional lowering prevention is already taking care of that. In the US, there are no additional requirements regarding the use of remote controls, and the use of them with in-ground and other lifts is widespread. We never heard of (fatal) accidents related to the use of remote controls without additional release buttons on vehicle lifts.		
22)	DE	5.4.2	Sentence 2	ed		**When the complete view of the lifted vehicle is not guaranteed, also in the event of non-remote controls, devices should be present to stand in for it. (ex.: cameras) or an additional release switch (es) approving the commands for the lifting movements.** **Rewrite the paragraph 5.4.1 and 5.4.2 integrating themselves in only one paragraph to focalize the relation with the visibility**	
23)	FR	5.4.2	Note	te	A note of design cannot speak about negotiation (?) between the manufacturer and the user	Delete the note.	
24)	FR	5.4.1		te	The project of standard anticipates that the additional release switch is not necessary if the	Delete this argument which allows the use of a remote control without release switch or define	

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		5.4.2			device of remote control works only in an area of defined position. So it does not appear clearly how is realized the selection of the control modes (essential requirement 1.2.5 of the Directive 2006/ 42/EC)	how in the lack of this switch the selection of the modes of working is realized.	
25)	FR	5.4.2	Last clause	te	Clarify why « the space in front » in the sentence: « In addition if the vehicle lift is mobile the operator shall be able to observe the space in front of the vehicle lift. »		
26)	IT	5.4.1 and **5.4.2**		ge	Rewrite the paragraphs 5.4.1 and 5.4.2 integrating them into a single paragraph to focus the relationship with the visibility requirements.		
27)	NL	5.4.1 **5.4.2** 5.22		ge/te	**Control positions / Remote controls** **Current situation:** EN 1493:2010 has the following in 5.4.1 and 5.4.2: a) Control devices shall be designed and arranged so that they are within easy reach of a **standing operator**, and so that the **operator is not jeopardized** by the load or the motion of the lift or parts of the lift. b) Remote control (wireless or wired) shall only be used if there exists an **additional release switch** at the vehicle lift which has to be pushed when using the remote control. This additional switch shall be located so that the person pushing it has a **direct view to the load** to be lifted/lowered. c) The **additional release switch is not**	Now the subparagraphs 5.4.1 and 5.4.2 contain examples of solutions “describing methods by which the requirements of the normative text can be fulfilled”. The structure of the standard is that these are gathered in annex B. At least the status of the additional release switch could be changed into ‘example of a solution’ and moved to Annex B. That would open the way for innovative solutions that solve the safety issues in a probably better way. Examples of such solutions are: - A load sensor on the lift that switches off the remote control when the load is on the lift. - Another solution is a limited lifting height of e.g. 300 mm, when using the remote control. With in-ground heavy duty vehicle lifts, it would be easier to position the adapters under the pick-up points of	

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					necessary if the remote control system will only operate within a **defined standing area** which gives the operator a **direct view to the load** to be lifted/lowered (e.g. short cable, infrared control system). d) The **control position** to operate the vehicle lift shall be designed and arranged, so that the **operator can watch the load carrying device and the load** whilst in motion, as well as the **space under the load carrying device and the load**. This applies to the operation of both multiple and single lifting devices. e) If the vehicle lift *is intended to be used* so that the **hazardous area cannot be completely viewed from the operating position** (the use of tools like mirrors or cameras/monitors is acceptable), e.g. vehicle lifts for rail bound vehicles, **one or more additional release switch(es)** approving the commands for the lifting movements (on the side of the lifting system positioned **across from the control position**) are required. **Comments:** a) This general requirement seems to refer to fixed control devices that are either mounted on the lift of in the vicinity of the lift. Therefore the risk of being jeopardized is present. An important aspect here, seems	the vehicle this way. It has to be done lying on the floor to be able to watch the adapters and pick-up points and to move the adapters into the right position. *Without* the remote control, operators may tend to position the adapters 'in the ball park' and then raise the vehicle to see if the adapters are positioned well. ('foreseeable misuse')This can lead to dangerous situations. But	

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					that the operator *has to be* close to the lift/load to operate the lift. The requirement could be achieved by positioning the control device away from the lift, or by using a remote control. The latter leaves the operator a choice to operate the lift from a convenient (safe) position. b) A remote control offers several advantages. One is mentioned above under a). Another is that it solves the problem of visibility mentioned under d) and e). The operator can walk around the lift and vehicle while operating it (in case of a wireless remote control), and thus has the possibility to view the whole area during lifting and lowering. This does not require an “additional release switch at the vehicle lift” which is potentially a more dangerous position. In general, the additional release switch is not doing what it’s meant for: offering safety. Actually it is blocking safer solutions like the remote control, because (as far as I know) hardly any manufacturer is using it and thus not (legally allowed to) using the remote control. Also, hardly any user will buy a lift that requires two people to operate it. c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control.		

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					d) This is exactly what the remote control offers. But, as stated under b), few manufacturers are willing to offer it conform EN1493, even fewer customers want to buy such a lift. e) It seems that it is the *type of vehicles* that are lifted (and therefore the lift type) which defines if the "hazardous area cannot be completely viewed from the operating position", rather than what "the vehicle lift is intended to be used" for. Therefore the whole matter of control devices could be better addressed by vehicle and lift type. This is actually already done in case of rail bound vehicles. **General:** Regarding the risk of the use of remote controls with lifting equipment, a comparison with overhead cranes and e.g. lifting equipment on vehicles might be useful. The remote control offers a great freedom to choose the best position for operating and watch the load and the area around it. The fact that it is possible to stand under the load while operating, does not prevent the use of remote controls. In training and warning, operators are told never to stand under the load. In vehicle lift land we have paragraph 5.22, where the additional release switch also does not offer more safety, because the reduced lowering speed and the additional requirement regarding unintentional lowering prevention is already		

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					taking care of that. In the US, there are no additional requirements regarding the use of remote controls, and the use of them with in-ground and other lifts is widespread. We never heard of (fatal) accidents related to the use of remote controls without additional release buttons on vehicle lifts.		
28)	DE	5.7.1	Sentence 2	ed	What is the relationship between the values in Annex A and the number **22000 cycles**? How was this developed? Clarify. Define the load cycle. **Is Annex A just informative**? Annex A identifies the safety factors, why is it informative, it should be required. The statement "If this value is exceeded, fatigue….." We are assuming this to be the value 22000. However, is this statement referring to the values in Appendix A. What fatigue calculations are acceptable?	**The method of calculation is left to the manufacturer.** **Annex A is informative.** **The permissible stresses in Annex A refers to 22.000 cycles** **This refers to structures: a cycle correspond to a lifting or lowering stroke.** **As far as mechanisms are concerned (those that for each lifting cycle perform a much higher number of cycles) it is obviously necessary a fatigue calculation.** **This maybe can be re-discussed.**	
29)	DE	5.7.1	Sentence 3	ge	The **inclination angle of 1 degree** stated for the longitudinal axes is vague and not adequately defined with loading parameters.	**1° of inclination corresponds to a difference in level of about 17,5 mm per meter (1,7 %)** **These values are plausible (higher than) with the reality of the lifts in use, and specially for the platform lift for passenger vehicles. As far as truck lifts are concerned this same matter could be critical as there are more chances of the platforms to incline (as the load is more out of centre): in these cases it could be necessary to synchronize the different lifting elements that are present on each single**	

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						platform. (Cameling) **It was proposed also to reduce the allowable inclination from 1,7 % to 1%: this mainly to create problems to Chinese products that are less sturdy: this proposal need to be checked in order to avoid creating problems also for European manufacturer (inquiry with WG1 members).**	
30)	IT	5.7.1		Te	A correlation with the requirements for end stops should be included in the revision of the standard.		
31)	DE	5.7.4.2	Sentence 4	ed	Clarify or use another word for “Tracks” which is referring to track style road contact device. Earlier in this paragraph there is also reference to “vehicle track symmetry axis”	**Wheel track and wheel base of Table 4 refer to the vehicle and the meaning is further cleared by the dimensions WT and WB.** **Vehicle track symmetry axis: refers to the VEHICLE: it is the longitudinal symmetry axis coincident with geometrical axis in wheel alignment** **Wheel support symmetry axis: refers to the LIFT: it is the longitudinal symmetry axis related to the platform of the lift** **To summarize, the sentence** *The vehicle track symmetry axis and the wheel supports symmetry axis are coincidental*. **Establish that for calculation it has to be assumed that the vehicle is centred with the lift platform.** **Actually, to avoid misunderstanding, it should be better to use a different terms respect “track” to identify the platform of the lift. The drawing of the front view of the vehicle could be added to the Table with the dimensions WT**	

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						(referred to the tyre width centre line) **The drawing of the front view of the vehicle could be added to the Table with the dimensions WT (referred to the tyre width centre line)** **This maybe can be re-discussed**	
32)	DE	5.7.4.3	Paragraph a) and b)	te	The determining in a) and b): *On vehicle lifts with carrying arms the rated load shall be distributed on the four corners of a rectangle with the dimensions of 100 cm (width) with the maximum load at the maximum length of the longest arm and the short arm in the position which gives the worst condition.* This formulation in 5.7.4.3 generally leads but especially in asymmetric 2-post lifts to misunderstandings regarding design and testing. Compared to the previous EN 1493 the size of the load rectangle is set in the drive direction not by a measure, but by its worst position of the swivel arm. The fact possible unilateral centre of gravity of load is not practical. The solution of the manufacturer with additional tools to limit the swivel range or for the location of the load centre and thus potential rated load of the lift are poorly implemented in practice. A determination regarding the load rectangle in the length and the width **creates unique conditions for designing and testing** Even the RFU CNB/M/08.016 does not meet exactly the point:	**REVISION OF THE STANDARD** **NORMATIVE VEHICLE**	

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					Is it really correct to reduce the safety factor which raises the permissible strength as a consequence? This is contrary to 5.7.3 Load combinations (SF 1,5 = normal operation)! Proposal: Reduction of capacity in this position (see draft of RFU from 06/06/2012) by labelling which is also understandable for the user. Does it make sense to calculate with a reduced safety factor and to prohibit this position of the arms at the same time? (Contradiction)! And the lift could not be used for certain vehicles, pick up points wheelbase direction: SMARTfortwo => 850 mm Toyota iQ => 1012 mm		
33)	IT	5.7.4.3 "Load distribution in lift with arms"		te	The problem is in last sentence of 5.7.4.3 a) and b) that exclude the application of the concept of "Normative vehicle" for lifts with carrying arms. It was defined an RFU as temporary solution, awaiting the definitive one to be adopted in next revision of the standard. The aim is to keep even for this category of lifts the "Normative vehicle" (load rectangle) as reference for design and testing. Furthermore, the dimensions of „Normative vehicle“ probably need to be reconsidered to align them to the needs of vehicles on the road today.		
34)	NL	5.7.4.3 b		ed		Rectangular must be rectangle	
35)	DE	5.7.4.4	Sentence 1	ed	**The sentence** *Where the prescriptions of 5.7.4.2 and 5.7.4.3 cannot be applied* **should be better clarified pointing out that it refers to the case that the lift is dedicated to some special kind**	**This maybe can be re-discussed to evaluate text changes to improve the meaning and avoid misunderstanding**	

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					of vehicles for which the prescription cannot be applied or better for which the normative vehicle is not appropriate. **(See also remark on 5.7.4.1)**		
36)	IT	5.7.4.4		te	The sentence "*Where the prescriptions of 5.7.4.2 and 5.7.4.3 cannot be applied*" should be discussed to evaluate text changes to improve the meaning and avoid misunderstanding.		
37)	DE	5.7.5.2	Sentence 1	te	1.--- When you use principal cables the EN1493 is clarifying very well technical characteristics but **for synchronization** cables don't say anything: Number of threads, minimum resistance (we think EN1493 should clarify this point with technical characteristics for any cable).	**The paragraph is affected by the various changes introduced in previous releases of the standard.** **For rope calculation two possibilities are provided** **1) with reference to ISO4308-1:2003, where the distinction between main ropes and synchronization is considered** **2) Annex C (normative)** **Probably it should be better to rewrite the whole paragraph removing the prescription that can cause limitation in the choice of ropes with better performances (114 wire, at least 1 570 N/mm2 but not exceed 1 960 N/mm2) and making reference only to the standard ISO4308-1:2003** **Since 2 possibilities are provided Annex C has to be informative and not normative.** **This can be re-discussed**	
38)	DE	5.7.5.6		te	How do you define the worst loading situation? How do you define withstand?	**The issue cannot be handled differently than in general line as it is in the standard now** **It depends on type of lift and its safety**	

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						devices. **For example: scissor lifts with torsion bar: even in presence of a micro switch that stops the movement when the torsion angle become bigger than the allowed value, the torsion bar should withstand to a torsion angle corresponding with action of others safety devices (like hooks or latches)** **This can be re-discussed to give more info, maybe with examples, in annex "informative", to avoid misunderstanding.**	
39)	IT	5.7.5.6		te	"to withstand the worst loading situation" should be better defined maybe with examples, in an "Information Annex", to avoid any misunderstanding.		
40)	DE	5.8		te	Please define driving machinery.	**To be discussed to find the best definition and include it in paragraph 3 "terms and definition"**	
41)	NL	**5.9.2** 5.9.3 5.9.5		te	When the locking devices of carrying arms have to be designed to resist a horizontal force of min. 1500 N (5.9.5), that acts at the load carrying points, the forces at these points, mentioned in 5.9.2 and 5.9.3 should probably have the same value of 1500 N instead of 1000N.	Change the values of 1000 N into 1500 N in 5.9.2 and 5.9.3	
42)	NL	5.9.2 **5.9.3** 5.9.5		te	When the locking devices of carrying arms have to be designed to resist a horizontal force of min. 1500 N (5.9.5), that acts at the load carrying points, the forces at these points, mentioned in 5.9.2 and 5.9.3 should probably have the same value of 1500 N instead of 1000N.	Change the values of 1000 N into 1500 N in 5.9.2 and 5.9.3	
43)	NL	5.9.2 5.9.3		te	When the locking devices of carrying arms have to be designed to resist a horizontal force of min. 1500 N (5.9.5), that acts at the load carrying	Change the values of 1000 N into 1500 N in 5.9.2 and 5.9.3	

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		5.9.5			points, the forces at these points, mentioned in 5.9.2 and 5.9.3 should probably have the same value of 1500 N instead of 1000N.		
44)	UK	5.9.5		ge	Following test commissioned by the health & safety Executive in the UK, it was felt that the strength of arm locking devices, which is set out in the standard, needs to be reviewed.	The wording should be changed: Arm locking systems shall be designed to resist a force of 4,5 % of the capacity of the lift without permanent deformation, and to resist a force of 6,75 % of the capacity without breakage. The forces used however shall not be less than 1 500 N and 2 250 N respectively. Forces are assumed to act horizontally at the load carrying points, and in the most unfavourable direction, with the arms fully extended.	
45)	DE	5.9.6	Sentence 3	ge		**20% is considered too high and the possibilities to dimension the device resisting to a force of 30% of the rated load without breakage can lead to not correct design (bending could be accepted!)** **We propose to change as follows:** ***Each end stop shall be designed to resist a horizontal force of 10 % of the rated load, applied to the top, without permanent deformation.***	
46)	FR	5.9.6	3rd paragraph	te	It is more favourable to stay in the yield stress (and consequently to delete the following section of sentence « or to resist a force of 30 % of the rated load without breakage »)	Rewrite the 3rd paragraph such as: « Each end stop shall be designed to resist a horizontal force of 20 % of the rated load, applied to the top, without permanent deformation. »	
47)	IT	5.9.6 "Roll-off safety device"	Third paragraph	Te	20% is considered too high and the possibilities to dimension the device resisting to a force of 30% of the rated load without breakage can lead to not correct design.	It is proposed to change the sentence as follows: "*Each end stop shall be designed to resist a horizontal force of 10 % of the rated load, applied to the top, without permanent deformation.*"	

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48)	NL	5.9.6		te / ed	**Roll off safety** The text in paragraph **5.9.6** states that a horizontal force of 20% of the rated load has to be applied to the top of *each* end stop, without causing permanent deformation. To our opinion this 20% on each end stop is too much. The original calculations of Stertil showed a total horizontal stopping force of 19% of rated capacity for a 12 ton vehicle lift. In these calculations, *no* rolling resistance was included. Calculations of Maha showed 5% of rated load for a 5 ton rated capacity lift, but *with* rolling resistance. 1) The wording end stop is probably not clear enough. “End stop” can point to the total of stopping means at one end of the lift. It also can be defined as a single stop at the end of one runway. In the calculations of course the total is meant, as it also relates to the rated capacity of the lift as a whole. Therefore a better wording has to be found. 2) Stertil made new calculations (see Excel file), differentiated for the first 6 normative vehicles (a through f). These normative vehicles have different wheelbases, which, in combination with vehicle lifts with suitable runway lengths, results in different free distances that allow a vehicle to develop speed. This effect is limited with normative vehicles g	1) Refer to “end stop” as *the total of stopping means at one end of the lift*. Or define end stop as *a stopping device at the end of one runway*. 2) The stopping force should be defined as maximum 20% of rated capacity applied to the total of stopping devices at one end of the lift, or 10% on each end stop at the end of one runway. 3) The load on the end stop should not only be defined as a horizontal force. Maybe it is better to refer to it as a horizontal *resultant* force, which leaves the possibility to bring the other (resultant) forces into account.	

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					through l, because in most cases they just fit on a lift. Furthermore these vehicles have different wheel sizes, which give different angles at which the radial force is working. In the new calculations, also the rolling resistance is included, the stopping time is reduced from 1 second to the 0,8 second that Maha used in their calculation. This all results in total horizontal stopping forces from 8% to max 16% of rated capacity. Also a check is done on the height of the end stop: it should prevent the vehicle from driving over it. This is proven by the vertical resultant force that has to be smaller than the smallest *axle* load. 3) The expression 'horizontal force' needs to be changed. Since this horizontal force is a *resultant* of the radial force, it never works without the, also resultant, vertical force (see calculation in Excel file). When designing end stops, these forces are taken into account. Therefore the wording that is used to describe the load on the end stop should be changed as well.		

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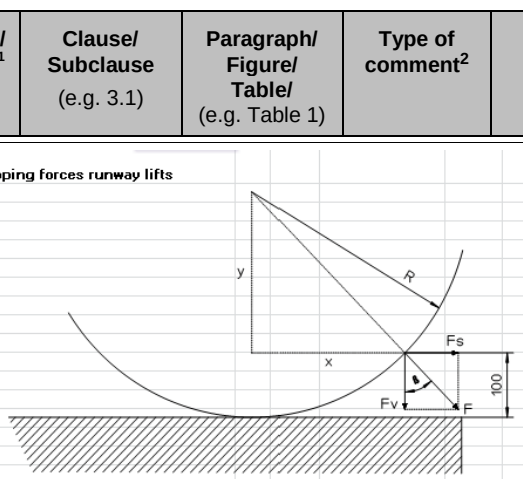
					Stopping forces runway lifts 		
49)	DE	5.12		ge	**There is no test for this or requirement for how much load the fixing device should withstand.**	**The paragraph does not take care about the strength of fixing device but it asks to prevent slack or free play of lifting element. This can happen in case of particular lift where the load**	

Normative vehicle				a	b	c	d	e	f
vehicle weight (max) = rated capacity	M	kg		2500	3500	7500	20000	30000	40000
wheelbase	WB	m		2,5	3	3	3,5	4	4,5
runway length	Lr	m		5,2	5,2	6,25	10	14,5	14,5
runway angle (max. see 5.15 c1+ c2)	°	α	[1+ASIN(100/(Lr*1000))]	1,02	1,02	1,02	1,01	1,01	1,01
runway angle (max. see 5.15 c1+ c2)	rad	α	[α*2π/360]	0,018	0,018	0,018	0,018	0,018	0,018
axle load 1	AL1	kg		1000	1400	2500	6667	10000	18000
axle load 2	AL2	kg		1500	2100	5000	13333	20000	22000
wheelload		kg		750	1050	1250	3333	2500	2750
loadindexnr.				98	110	117	150	140	144
average wheel radius	R	mm		379	387	392	467	475	540
contact angle	ß	°		42,60	42,13	41,85	38,20	37,86	35,43
contact angle	ß	rad		0,74	0,74	0,73	0,67	0,66	0,62
free distance	s	m	[Lr-WB]	2,7	2,2	3,25	6,5	10,5	10
gravitational constant	g	m/sec²		9,81	9,81	9,81	9,81	9,81	9,81
rolling resistance coefficient	c			0,01	0,01	0,01	0,01	0,01	0,01
rolling resistance	Fr	N	[c.g.M]	245	343	736	1962	2943	3924
maximum speed	v	m/s	[√(2*(g*sin(α)-Fr/M)*s)]	0,6423	0,5798	0,7021	0,9862	1,2490	1,2189
estimated stopping time	Δt	sec		0,8	0,8	0,8	0,8	0,8	0,8
total resulting stopping force	**Fs**	N	[M*wh]	**2007**	**2537**	**6583**	**24656**	**46838**	**60946**
percentage of rated capacity		%		*8*	*7*	*9*	*13*	*16*	*16*
total radial force on stop device	**F**	N	[Fs/sinß]	**2966**	**3781**	**9866**	**39871**	**76311**	**105130**
total resulting vertical force	**Fv**	N	[Fs/tanß]	**2183**	**2804**	**7349**	**31333**	**60245**	**85662**
percentage of minimal axle load		%		*22*	*20*	*30*	*48*	*61*	*43*

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						carrying device is not fixed to the lifting element but lean on these. **Here it is taken for granted that the load carrying device stops, without considering the forces that arise from this situation.** **Actually the issue could need in depth analysis, to consider also the different load condition that could arise for some parts of the lift (clearly different from the ones coming from the paragraph 5.5.2 load and forces)** **For example: platform scissor lift, obstacle at the end of one platform: normally NB do not ask for this test, the unintended blocking of load carrying device is related to unintended blocking of cylinder movement (i.e. due to unintended insertion of latches)** **But the issue can become really complex.**	
50)	DE	5.13.2		ge	1.--- Our experience says us that some hydraulic 2 post lifts at the market do not apply electrical and / or mechanical systems that detect a break and prevent the movement from the initial position. (Without electrical or mechanical safety is not possible to apply this point).	**This paragraph refers to safety systems alternative to safety catch, like second lifting element that normally works unloaded and takes load only in case of failure of main lifting element (i.e. safety nut).** **In case of two post lift with one cylinder per post and synchronization rope the question should be: do we need to provide a safety control that detects the breakage of synchronization rope?**	
51)	FR	**5.14.2** Annex E	Table E.1	te	Protection against leakage**:** The appendix E is the resumption of a former « Recommendation for Uses » (RfUs) CNB / .8.14 elaborated by the European coordination of the notified bodies	Some measures (no devices of protection against leakage) of this RfUs are not satisfactory and have to be revised* as indicated hereafter. Rewrite into the Appendix E: (1) (4) and (5) such as: « Applicable (latches are required in EN	

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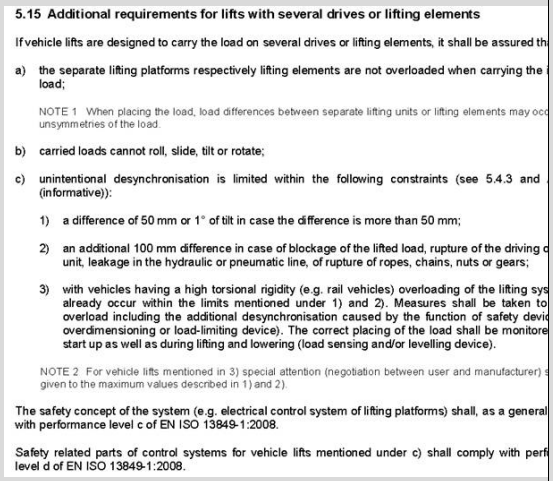
						1493)»	
52)	DE	5.15		ed	In the translated German version of EN1493: 2010 is in section 5.15 in the 3rd Paragraph states that when mentioned under c) lifts the safety related parts of control systems (mechanical synchronization monitoring as torsion bars, synchronization cables) are to be interpreted according to PL d ISO13849.The index c) does not exist in the translation. In the English version is defined analogously to that for all platforms (as subscript c) any) with synchronization control the safety-related parts of control systems (mechanical synchronization monitoring as torsion bars, synchronization cables) to Pl d ISO 13849 are interpreted.  **5.15 Additional requirements for lifts with several drives or lifting elements** If vehicle lifts are designed to carry the load on several drives or lifting elements, it shall be assured th a) the separate lifting platforms respectively lifting elements are not overloaded when carrying the load; NOTE 1 When placing the load, load differences between separate lifting units or lifting elements may occ unsymmetries of the load. b) carried loads cannot roll, slide, tilt or rotate; c) unintentional desynchronisation is limited within the following constraints (see 5.4.3 and (informative)): 1) a difference of 50 mm or 1° of tilt in case the difference is more than 50 mm; 2) an additional 100 mm difference in case of blockage of the lifted load, rupture of the driving unit, leakage in the hydraulic or pneumatic line, of rupture of ropes, chains, nuts or gears; 3) with vehicles having a high torsional rigidity (e.g. rail vehicles) overloading of the lifting sys already occur within the limits mentioned under 1) and 2). Measures shall be taken to overload including the additional desynchronisation caused by the function of safety devic overdimensioning or load-limiting device). The correct placing of the load shall be monitore start up as well as during lifting and lowering (load sensing and/or levelling device). NOTE 2 For vehicle lifts mentioned in 3) special attention (negotiation between user and manufacturer) s given to the maximum values described in 1) and 2). The safety concept of the system (e.g. electrical control system of lifting platforms) shall, as a general with performance level c of EN ISO 13849-1:2008. Safety related parts of control systems for vehicle lifts mentioned under c) shall comply with perf level d of EN ISO 13849-1:2008. The different assessment by the NB leads to a differentiated view of mechanical fasteners for synchronization control, as part of this general PL	The question is about the correct interpretation of next to last sentence of paragraph 5.15 ……. *The safety concept of the system (e.g. electrical control system of lifting platforms) shall, as a general, comply with **performance level c** of EN ISO 13849-1:2006.* *Safety related parts of control systems for vehicle lifts mentioned **under c)** shall comply with **performance level d** of EN ISO 13849-1:2006.* ……. Instead of “under c” this should be “**under c3)**”, that means that only vehicles with high torsional rigidity needs PL **d**, whereas the other vehicles need PL **c**. If the original sentence is correct it means that all vehicles needs PL d (but it is nonsense) **Probably it is an editing error**, due to the fact that in the previous version of EN1493 the reference points a),b),c) and 1),2),3) were reversed, and also the version here considered has wrong reference (with dots instead of a,b,c)	

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					d is required in accordance with EN 13849-1. The list with letters missing in the German version of EN 1493, there are only indents present. The demand for P Ld is referenced incorrectly in both the German and in the original English version. Here it must be: "Safety-related parts of control systems for the under 3) said vehicle lifts ..."		
53)	IT	5.15		Te	There is an editing error: the penultimate sentence should read: "Safety related parts of control systems for vehicle lifts mentioned under c3) shall comply with performance level d of EN ISO 13849-1:2006."		
54)	FR	5.17.2	(new clause)	te	In the distances of safety, only the distances for the passages of fingers and feet were kept.	Reintroduce the distances of safety for the passages of hands, legs, body. (Reintroduce 5.16.2 of the standard of 1998)	
55)	DE	5.22		ge	Is it performance level “d” or “c”?	**The standard asks for PL d**	
56)	NL	5.4.1 5.4.2 **5.22**		ge/te	**Control positions / Remote controls** **Current situation:** EN 1493:2010 has the following in 5.4.1 and 5.4.2: a) Control devices shall be designed and arranged so that they are within easy reach of a **standing operator**, and so that the **operator is not jeopardized** by the load or the motion of the lift or parts of the lift. b) Remote control (wireless or wired) shall only be used if there exists an **additional release switch** at the vehicle lift which has to be pushed when using the remote	Now the subparagraphs 5.4.1 and 5.4.2 contain examples of solutions “describing methods by which the requirements of the normative text can be fulfilled”. The structure of the standard is that these are gathered in annex B. At least the status of the additional release switch could be changed into ‘example of a solution’ and moved to Annex B. That would open the way for innovative solutions that solve the safety issues in a probably better way. Examples of such solutions are: - A load sensor on the lift that switches off the remote control when the load is on the lift. - Another solution is a limited lifting height of	

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					control. This additional switch shall be located so that the person pushing it has a **direct view to the load** to be lifted/lowered. c) The **additional release switch is not necessary** if the remote control system will only operate within a **defined standing area** which gives the operator a **direct view to the load** to be lifted/lowered (e.g. short cable, infrared control system). d) The **control position** to operate the vehicle lift shall be designed and arranged, so that the **operator can watch the load carrying device and the load** whilst in motion, as well as the **space under the load carrying device and the load**. This applies to the operation of both multiple and single lifting devices. e) If the vehicle lift *is intended to be used* so that the **hazardous area cannot be completely viewed from the operating position** (the use of tools like mirrors or cameras/monitors is acceptable), e.g. vehicle lifts for rail bound vehicles, **one or more additional release switch(es)** approving the commands for the lifting movements (on the side of the lifting system positioned **across from the control position**) are required.	e.g. 300 mm, when using the remote control. With in-ground heavy duty vehicle lifts, it would be easier to position the adapters under the pick-up points of the vehicle this way. It has to be done lying on the floor to be able to watch the adapters and pick-up points and to move the adapters into the right position. *Without* the remote control, operators may tend to position the adapters 'in the ball park' and then raise the vehicle to see if the adapters are positioned well. ('foreseeable misuse')This can lead to dangerous situations. But	

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					Comments: a) This general requirement seems to refer to fixed control devices that are either mounted on the lift of in the vicinity of the lift. Therefore the risk of being jeopardized is present. An important aspect here, seems that the operator *has to be* close to the lift/load to operate the lift. The requirement could be achieved by positioning the control device away from the lift, or by using a remote control. The latter leaves the operator a choice to operate the lift from a convenient (safe) position. b) A remote control offers several advantages. One is mentioned above under a). Another is that it solves the problem of visibility mentioned under d) and e). The operator can walk around the lift and vehicle while operating it (in case of a wireless remote control), and thus has the possibility to view the whole area during lifting and lowering. This does not require an “additional release switch at the vehicle lift” which is potentially a more dangerous position. In general, the additional release switch is not doing what it’s meant for: offering safety. Actually it is blocking safer solutions like the remote control, because (as far as I know) hardly any manufacturer is using it and thus not (legally allowed to) using the remote control. Also, hardly any user will buy a lift that		

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					requires two people to operate it. c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control. d) This is exactly what the remote control offers. But, as stated under b), few manufacturers are willing to offer it conform EN1493, even fewer customers want to buy such a lift. e) It seems that it is the *type of vehicles* that are lifted (and therefore the lift type) which defines if the "hazardous area cannot be completely viewed from the operating position", rather than what "the vehicle lift is intended to be used" for. Therefore the whole matter of control devices could be better addressed by vehicle and lift type. This is actually already done in case of rail bound vehicles. **General:** Regarding the risk of the use of remote controls with lifting equipment, a comparison with overhead cranes and e.g. lifting equipment on vehicles might be useful. The remote control offers a great freedom to choose the best position for operating and watch the load and the area around it. The fact that it is possible to stand under the load while operating, does not prevent the use of remote controls. In training and warning, operators are told never to stand under		

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					the load. In vehicle lift land we have paragraph 5.22, where the additional release switch also does not offer more safety, because the reduced lowering speed and the additional requirement regarding unintentional lowering prevention is already taking care of that. In the US, there are no additional requirements regarding the use of remote controls, and the use of them with in-ground and other lifts is widespread. We never heard of (fatal) accidents related to the use of remote controls without additional release buttons on vehicle lifts.		
57)	DE	5.22.3		ge	5.22.3 Speed lifting and lowering The reduction of the speed in this mode of operation (working under the load during lifting and lowering movement) for all vehicle lifts to 300 mm / min, it is not workable and hardly be executed technically. For vehicle lifts used to lifting and lowering rail vehicles the reduction to 300 mm / min is alright, but from our point of view for the remaining vehicle lifts would be a reduction to 600 till 1000 mm / min makes sense and quite sufficient to safety related requirements.	**The speed limit provided by the standard are** **(A) Standard lift 0,15m/sec 150mm/sec 9000mm/min** **(B) Lift for trains 0,015m/sec 15mm/sec 900mm/min** **(C) Lift where is permitted to stay under the load in movement 5mm/sec 300mm/min** **Referred to a stroke of 1800 mm the lifting time are respectively 12sec, 120sec, 360 sec.** **Probably (A) is too fast (the limit in practice is never achieved), (B) is correct, (C) is too slow if referred to a whole stroke but if it is referred to the possibility to handle two speed and select the low speed only for small adjustment in height (that ask for the operator under the load in movement) it can be justified.** **Obviously the double speed involves technical complications and cost but it has to be related**	

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						to the effective risk for the operator. **In TC98 WG3 the risk for the operator was considered as priority and so the low speed very conservative.** **But it can be discussed.**	
58)	NL	5.22.4		ed		"lowering of more *the*" must be "lowering of more *than*"	
59)	DE	6.1.1	Last sentence	ed	The standard should define a competent body.	**Competent body here means notified body?**	
60)	FR	**7.3.1** 7.3.2		ge	The instruction notice doesn't take into account the operator position under the vehicle.	The writing of instructions notice, limiting the use of a remote control according to the nature of the interventions (mounting of vehicle, maintenance or car repairs is an arrangement which can be envisaged and discussed in the WG.	
61)	FR	7.3.1	New clause	te	Fitness for purpose (according to the essential requirement of 4.1.3 of the Directive 2006/42 /EC)) is not defined in FprEN1493	Add in the instructions of use (7.3.1) the following sentence: « Tests of release to service shall be made by the user after repair. »	
62)	FR	7.3.1 **7.3.2**		ge	The instruction notice doesn't take into account the operator position under the vehicle.	The writing of instructions notice, limiting the use of a remote control according to the nature of the interventions (mounting of vehicle, maintenance or car repairs is an arrangement which can be envisaged and discussed in the WG.	
63)	FR	5.14.2 (and **Annex E**)	Table E.1	te	Protection against leakage: The appendix E is the resumption of a former « Recommendation for Uses » (RfUs) CNB / .8.14 elaborated by the European coordination of the notified bodies	**Some measures (no devices of protection against leakage) of this RfUs are not satisfactory and have to be revised* as indicated hereafter.** **Rewrite into the Appendix E: (1) (4) and (5) such as: « Applicable (latches are required in EN 1493)»**	

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