

CEN/TC 98/WG 3 N0007

Template for comments and secretariat observations

Date: 2015-10-27	Document: EN 1493:2010	Project: Revision
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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 <i>5.15 is still valid - no further supplements necessary</i>	nothing to do, withdrawn
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 <i>5.7.5.6 sufficiently describes requirements – no further supplements necessary</i>	withdrawn
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		following proposals were discussed for comment a: 1.to add in the scope: "This does not exclude a person, needed for assistance during testing of the vehicle, being in the vehicle during lifting and lowering providing a full risk assessment has been conducted Note: This may be subject to national regulations for the use" or 2. to add a special clause in the standard containing requirements for this use of the lift Mr Manganelli will prepare further information to this directive for the next meeting

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Grey marked comments are of editorial nature

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							comment b will be discussed together with the comments to 5.7.4
4)	FR	Introduction	2 nd clause	ge/te	<p>The project of standard says:</p> <p>“In addition, machinery should comply as appropriate with EN ISO 12100 for hazards which are not covered by this standard.”</p> <p>If the standard anticipates that certain hazards are not covered, then annex ZA has to list them clearly.</p>	Complete the Annex ZA which makes the relation between the European standard and the requirements of the European Directive 2006/42/EC.	to be done at the end of the revision, depending on the results
5)	FR	Introduction	5 th clause	te	<p>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. »</p> <p>The standard does not have to limit itself to a requirement but has to supply a level of lighting defined in a new paragraph.</p> <p>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)</p>	<p>Replace the sentence:</p> <p>« While elaborating this standard it was assumed that only authorized persons operate the vehicle lifts and that the working area is sufficiently lit. »</p> <p>by</p> <p>« While elaborating this standard it was assumed that only authorized persons operate the vehicle lifts »</p> <p>And introduce the following sentence into new clause 5.21.6:</p> <p>« The minimum of lighting for the working area has to be of a minimum of 500 lux according to EN 1837+A1:2009 »</p>	<p>use of lights in the ground or hand lamps is also acceptable. What is used is a decision of the user. Lights at the vehicle lifts are for some types of vehicle lifts available as an option</p> <p>rejected</p>
6)	FR	Introduction	(new clause)	ge/te	<p>The standard EN 1493:1998 says in its introduction:</p> <p>« Furthermore it was assumed that no persons are permitted to stand under the vehicle during lifting and lowering»</p>	<p>- Reintroduce in the clause of Introduction the sentence:</p> <p>« Furthermore it was assumed that no persons are permitted to stand under the vehicle during lifting and lowering»</p>	<p>for special kind of vehicle lifts it is allowed to stand under the lift during lifting or lowering (see clause 5.22)</p> <p>therefor the proposed change is</p>

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					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).		rejected but to be changed: In table 1 "List of hazards" the corresponding requirement to 15.4 is clause 5.22 (instead of "not applicable")
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. »	agreed
8)	CH	2		ge	Standards has to be renewed: EN 982:1996+A1:2008, EN 983:1996+A1:2008, EN ISO 12100-1:2003, EN ISO 12100-2:2003,	New Standards: EN ISO 4413 EN ISO 4414 EN ISO 12100:2010 EN ISO 12100:2010	agreed, to be done after having finished the revision
9)	CH	2		ge	RfU CNB/M/08.016 RfU CNB/M/08.018	They have to be integrated in the new standard	to be dealt together with the comments of notified bodies
10)	CH	2		ge	RfU CNB/N/08.xxx	There are probably other RfU which could be integrated in the new standard	see comment 9
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	see comment 8

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						<p>and their components (ISO 4413:2010)</p> <p>EN ISO 4414:2010, Pneumatic fluid power - General rules and safety requirements for systems and their components (ISO 4414:2010)</p> <p>EN 60204-1:2009, Safety of machinery — Electrical equipment of machines — Part 1: General requirements</p> <p>EN 60204-32:2008, Safety of machinery — Electrical equipment of machines — Part 32: Requirements for</p> <p>hoisting machines (IEC 60204-32:2008)</p> <p>EN 60529/A2:2013, Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989 + A1:1999 + A2:2013)</p> <p>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)</p> <p>EN ISO 12100:2010, Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010);</p> <p>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);</p> <p>EN ISO 13849-2:2012, Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012)</p> <p>EN ISO 13850:2008, Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)</p>	

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						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 »	EN ISO 12100 contains such a definition in 3.28.3: “ hold-to-run control device control device which initiates and maintains machine functions only as long as the manual control (actuator) is actuated“ rejected
12a	NB		3		A definition of the lifting height is necessary	Add 3.24 Lifting height is the vertical distance between the standing level of the operator and the load carrying device in the maximum raised position.	
12b	NB		3.23		Distinction to single wheel lifting devices	Lifting unit witch is used in conjunction with a pit or vehicle lift with platform lifting the whole vehicle and allows ALL the wheels to be removed SIMULTANEOUSLY	
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.	see comment 6 In table 1 "List of hazards" the corresponding requirement to 1 (mechanical hazards) clause 5.22 will be added
14)	FR	4	Table 1	te	The hazard to the lightning disappeared while vehicle lifts can be used outside and while the requirement "Lightning" of the Directive 2006/42/EC is a part of general essential requirements (1.5.16)	- Add the hazard of the lightning in the TABLE 1 with a part 2.5 such as: « 2.5 Hazard of lightning 5.21.5 » - Introduce a new clause 5.21.5 such as:	is already contained by reference to EN 60204-1 in clause 5.21.1 reference to 5.21.1 to be added

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					We have to add this hazard in the table 1 and explain it in the body of the standard.	« 5.21.5 All the elements of the electric equipment have to satisfy the requirements for the lightning of the standard EN 60204-32»	in the list of hazards
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.	see comment 5
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 »	see comment 5
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 <u>is not always compulsory</u>. 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 <u>is related only to the impossibility to have a complete view to the lifted load</u> (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	see comment 22 (proposed new wording)
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.	see comment 22

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						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 »	see comment 22
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.		see comment 22
21)	NL	5.4.1 5.4.2 5.22		ge/te	<p>Control positions / Remote controls</p> <p>Current situation:</p> <p>EN1493:2010 has the following in 5.4.1 and 5.4.2:</p> <ul style="list-style-type: none"> 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 	<p>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.</p> <p>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.</p> <p>Examples of such solutions are:</p> <ul style="list-style-type: none"> - 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 the vehicle this 	<p>for comments 17-21</p> <p>replace the 3. and 4. paragraph in 5.4.1 by:</p> <p>“Remote control systems (wireless or wired) are only allowed if they 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). If this requirement (direct view) cannot be fulfilled, other safety measures are necessary (see Annex B). If the position of the operator can be under the load, the requirements of 5.22 shall be fulfilled in addition.</p> <p>When more than one vehicle lift is installed in the workshop, all</p>

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					<p>the load to be lifted/lowered.</p> <p>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).</p> <p>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.</p> <p>e) If the vehicle lift <i>is intended to be used</i> 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.</p> <p>Comments:</p>	<p>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. <i>Without</i> 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.</p> <p>But</p>	<p>wireless controls shall be individually paired to the lift they operate. The pairing process shall be conducted by the operator and shall expire every 15 minutes.</p> <p>Annex B</p> <p>possible measures:</p> <ol style="list-style-type: none"> 1. 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. 2. A load sensor on the lift that switches off the remote control when the load is on the lift. 3. Limited lifting height of 300 mm, when using the remote control."

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					<p>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 <i>has to be</i> 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.</p> <p>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</p>		

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					<p>(legally allowed to) using the remote control. Also, hardly any user will buy a lift that requires two people to operate it.</p> <p>c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control.</p> <p>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.</p> <p>e) It seems that it is the <i>type of vehicles</i> 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.</p> <p>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</p>		

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					<p>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.</p> <p>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.</p> <p>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.</p>		
22)	DE	5.4.2	Sentence 2	ed		<p>When the complete view of the lifted vehicle is not guaranteed, <u>also in the event of non-remote controls</u>, devices should be present to stand in for it. (ex.: cameras) or an additional release switch (es) approving the commands for the lifting movements.</p> <p>Rewrite the paragraph 5.4.1 and 5.4.2 integrating themselves in only one paragraph to focalize the relation with the visibility</p> <p>Visibility</p> <p><i>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</i></p>	<p>The existing Text in 5.4.2 will be replaced by</p> <p>“The position of the lift’s control mechanism 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.</p> <p>If the vehicle lift is intended to be used so that the hazardous area cannot be completely viewed from the operating position</p>

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						<p><i>devices.</i></p> <p><i>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 railbound</i></p> <p>vehicles, one or more additional release switch(es) approving the commands for the lifting movements</p> <p><i>on the side of the lifting system positioned across from the control position are required.</i></p> <p>NOTE This needs negotiation between user and manufacturer respectively supplier of the vehicle lift.</p> <p><i>In addition if the vehicle lift is mobile the operator shall be able to observe the space especially in moving direction of the vehicle lift.</i></p>	<p>mirrors or cameras may be provided.</p> <p>However, with non-mobile vehicle lifts that are designed to lift vehicles that are over 6 metres long a second release switch or an audible/visual warning signal shall be manufactured into the lift.”</p> <p>This wording is to be discussed in the national mirror groups until the next meeting.</p> <p>For combination of 5.4.1 and 5.4.2 proposal was made by Mr. Manganelli (doc. N8) and will be discussed in the next meeting</p>
23)	FR	5.4.2	Note	te	A note of design cannot speak about negotiation (?) between the manufacturer and the user	Delete the note.	in the moment nothing to be done due to new wording of 5.4.2 (see comment 22)
24)	FR	5.4.1 5.4.2		te	The project of standard anticipates that the additional release switch is not necessary if the 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)	Delete this argument which allows the use of a remote control without release switch or define how in the lack of this switch the selection of the modes of working is realized.	solved by comment 21
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. »		because the driving direction (this is meant by the wording “the space in front of the vehicle lift”) is the hazard zone

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							nothing to be done
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.		see comment 22
27)	NL	5.4.1 5.4.2 5.22		ge/te	<p>Control positions / Remote controls</p> <p>Current situation:</p> <p>EN 1493:2010 has the following in 5.4.1 and 5.4.2:</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>d) The control position to operate the vehicle lift shall be designed and arranged, so that</p>	<p>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.</p> <p>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.</p> <p>Examples of such solutions are:</p> <ul style="list-style-type: none"> - 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 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. <i>Without</i> the remote control, operators may tend to position the adapters ‘in the ball park’ and then raise the vehicle to 	see comment 21

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					<p>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.</p> <p>e) If the vehicle lift <i>is intended to be used</i> 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.</p> <p>Comments:</p> <p>a) This general requirement seems to refer to fixed control devices that are either mounted on the lift or in the vicinity of the lift. Therefore the risk of being jeopardized is present. An important aspect here, seems that the operator <i>has to be</i> 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.</p>	<p>see if the adapters are positioned well. ('foreseeable misuse') This can lead to dangerous situations.</p> <p>But</p>	

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					<p>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.</p> <p>c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control.</p> <p>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.</p> <p>e) It seems that it is the <i>type of vehicles</i> that are lifted (and therefore the lift type) which</p>		

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					<p>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.</p> <p>General:</p> <p>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.</p> <p>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.</p> <p>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</p>		

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					additional release buttons on vehicle lifts.		
27a	NB	5.4.4			For better understanding	<i>Activation of any of the emergency stops shall immediately stop the motion of all the lifting devices without causing any new hazards. The stop-function shall comply with category 0 of 9.2.2 of EN 60204-1:2006.</i>	
27b	NB	5.4.5			For clarification	Each control position shall be equipped with a SEPARATE device ...	
27c	NB	5.6.2				The speed tilting measured at the end of the load carrying device which is furthest away from the turning centre SHALL BE SMOOTH WITHOUT EXCESSIVE BOUNCE AND should not exceed 0,1 m/s.	
28)	DE	5.7.1	Sentence 2	ed	<p>What is the relationship between the values in Annex A and the number 22000 cycles? How was this developed? Clarify.</p> <p>Define the load cycle.</p> <p>Is Annex A just informative? Annex A identifies the safety factors, why is it informative, it should be required.</p> <p>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.</p> <p>What fatigue calculations are acceptable?</p>	<p>The method of calculation is left to the manufacturer.</p> <p>Annex A is informative.</p> <p>The permissible stresses in Annex A refers to 22.000 cycles</p> <p>This refers to structures: a cycle correspond to a lifting or lowering stroke.</p> <p>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.</p> <p><u>This maybe can be re-discussed.</u></p> <p><i>With „Provided that the value has been exceeded...“ we emanate from the permissible voltage (STRESS!) stated in appendix A.</i></p>	<p>withdrawn (after explanation of wording "If this value is exceeded" in the second paragraph)</p>
28a	NB	5.7.1	Second section	te	What is meant by "exceptional situation"	Add , eg. during the activation of the safety device ore	add "e.g. during activation of a safety device in case of emergency or during static load"

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						during static test load,	test ³
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.	<p>1° of inclination corresponds to a difference in level of about 17,5 mm per meter (1,7 %)</p> <p>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 platform. (Cameling)</p> <p>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).</p>	rejected
29a	NB	5.7.1	Third section		A requirement for chassis supporting lifts is missing	<p>Add</p> <p>On chassis supporting vehicle lifts loaded with nominal load the inclination of the level of the pick up device shall not exceed 3 ° from the horizontal.</p>	<p>proposal was discussed on 2016-01-14.</p> <p>Manufacturers (especially of two-post-lift) will check possible reachable values</p>
30)	IT	5.7.1		Te	A correlation with the requirements for end stops should be included in the revision of the standard.		see comment 41
30a	NB	5.7.4		te	According section 4.2.2 Annex I MD machinery for lifting loads more than 1000kg must be fitted with devices to prevent overloading	The compliance with the maximum permissible load distribution and the maximum permissible total load must be monitored by a load measuring device. In case of exceeding the permissible loads or load moments the lifting movement has to be	

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						stopped by the control system. Only the lowering movement may be possible.	
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”	<p>Wheel track and wheel base of Table 4 refer to the vehicle and the meaning is further cleared by the dimensions WT and WB.</p> <p>Vehicle track symmetry axis: refers to the VEHICLE: it is the longitudinal symmetry axis coincident with geometrical axis in wheel alignment</p> <p>Wheel support symmetry axis: refers to the LIFT: it is the longitudinal symmetry axis related to the platform of the lift</p> <p>To summarize, the sentence <i>The vehicle track symmetry axis and the wheel supports symmetry axis are coincidental.</i></p> <p>Establish that for calculation it has to be assumed that the vehicle is centred with the lift platform.</p> <p>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 (referred to the tyre width centre line)</p> <p>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)</p> <p><i>DE to submit a draft with legend</i></p>	<p>definitions for wheel track and wheel base already contained in 3.21 and 3.22</p> <p>wording of 5.7.4.2 is clear and correct</p> <p>no further action needed</p>

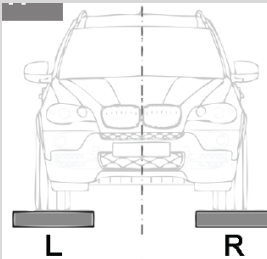
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31a	NB	5.7.4.2	Table 4	Mr. Florence NB CCQS UK Lt	<p>Table 4 — Normative vehicle</p> <p>This table is fundamentally flawed and requires major revision.</p> <p>I suspect that it originated from a table for weighbridge design. It is not fit for purpose here</p> <ul style="list-style-type: none"> - It appears to consider loaded vehicles. Take a look, in passenger car the majority of the weight is at the front if the vehicle is front engine. Same for trucks. - Nobody lifts articulated vehicles with the trailers attached except maybe articulated buses - There is no information for an articulated lorry tractor unit on its own (a very common lift) - It does not provide good coverage of heavier private vehicles like SUVs or pickups - It does not cover Quad bikes - It does not cover motorbikes <p>I have tried to obtain information about unloaded axle weights from vehicle manufacturers without success. Maybe someone with more influence</p>		<p>originally this is a comment of a NB from the UK.</p> <p>Mr Haase will provide Mr. Garratt with the contact data of Mr. Florence. Mr Garratt will discuss this comment first in the UK mirror group.</p> <p>To be discussed in the next meeting</p>

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					could get this information from vehicle manufacturers. It would be relatively simple to validate this information using a portable axle weigher. Suitable for a student project?		
32)	DE	5.7.4.3	Paragraph a) and b)	te	<p><i>The determining in a) and b):</i></p> <p><i>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.</i></p> <p>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.</p> <p>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</p> <p>Even the RFU CNB/M/08.016 does not meet exactly the point:</p> <p>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</p>	<p><i>The maximum load distribution at the pickup points on the supports must be adhered to at all times during the total lifting process. In the case of non-compliance the lifting procedure is not permitted and/or must be stopped immediately.</i></p> <p><i>The load forces resulting from the load distribution and position of the load center in relation to the lifting column is to be measured using a suitable device and compared to the maximum permitted value provided by the manufacturer. In the event of this value being exceeded, the lift procedure must be prevented or stopped by means of the control system.</i></p>	<p>add in the last sentence of 5.7.4.3 a and b: "...reaching the load rectangle."</p> <p>German delegation (Haase, Schmitt) will prepare a new proposal for overload sensing device</p>

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					<p>combinations (SF 1,5 = normal operation)!</p> <p>Proposal: Reduction of capacity in this position (see draft of RFU from 06/06/2012) by labelling which is also understandable for the user.</p> <p>Does it make sense to calculate with a reduced safety factor and to prohibit this position of the arms at the same time? (Contradiction)!</p> <p>And the lift could not be used for certain vehicles, pick up points wheelbase direction:</p> <p>SMARTfortwo => 850 mm</p> <p>Toyota iQ => 1012 mm</p>		
33)	IT	5.7.4.3 "Load distribution in lift with arms"		te	<p>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.</p> <p>It was defined an RFU as temporary solution, awaiting the definitive one to be adopted in next revision of the standard.</p> <p>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.</p>		see comment 32
34)	NL	5.7.4.3 b		ed		Rectangular must be rectangle	agreed
35)	DE	5.7.4.4	Sentence 1	ed	<p>The sentence <i>Where the prescriptions of 5.7.4.2 and 5.7.4.3 cannot be applied</i> should be better clarified pointing out that it refers to the case that the lift is dedicated to some special kind of vehicles for which the prescription cannot be applied or better for which the normative vehicle is not appropriate.</p>	<p>This maybe can be re-discussed to evaluate text changes to improve the meaning and avoid misunderstanding</p> <p>according 5.7.4.1</p>	see comment 36

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					(See also remark on 5.7.4.1)		
36)	IT	5.7.4.4		te	The sentence " <i>Where the prescriptions of 5.7.4.2 and 5.7.4.3 cannot be applied</i> " should be discussed to evaluate text changes to improve the meaning and avoid misunderstanding.		after longer discussion: nothing to be changed (such vehicle lifts have to be marked according to 7.2 b)
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/mm ² but not exceed 1 960 N/mm ²) 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	
37a	NB	5.7.5.2		Mr. Florence NB CCQS UK Lt	It should be recognised that on many 2 post lifts currently on the market, the pulleys are smaller than the requirements of ISO 4308-1. This leads to accelerated but not excessive rope wear. I think Annex C could be revised to reflect current practice which appears to be adequately safe.		

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37b	NB	5.7.5.3		ed	braking	brEaking	
37c	NB	5.7.5.5			Specific requirements for load bearing nuts of Plastics RfU from Notified Bodies	Add a sentence Load bearing nuts of plastic must carrying out minimum 30000 load cycles with nominal load. A safety factor of 6 against breaking shall be fulfilled. Safety nuts must be made of metal.	
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 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. <i>5.7.5.6 sufficiently describes requirements – no further supplements necessary</i>	withdrawn
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.		proposed wording to replace the existing clause: 5.7.5.6 Mechanical connections of several lifting elements If a mechanical synchronization device is used to control the height of lifting elements, this device, including any mechanical

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							devices must be able to remain safe and not cause hazard when subject to the worst load differences that can or will be possible between the lifting elements including failure of the lifting elements.
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” <i>driving machinery → driving mechanism</i>	
40a	NB	5.8.1		Ge Mr. Florence	It is unusual to find a 2 post lift or chassis supporting scissor lift with a safety catch which operates below 500mm (although some do and technically it would be quite easy on a 2 post, harder on a scissor due to geometry at low positions). This clause either needs to be revised to reflect common practice or the wording needs to be reinforced to make it clear that all chassis supporting lifts including scissors and 2 posts are included.		
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	see comment 41
43)	NL	5.9.2		te	When the locking devices of carrying arms have	Change the values of 1000 N into 1500 N in 5.9.2	

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		5.9.3 5.9.5			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.	and 5.9.3	see comment 41
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.	
44a	NB	5.9.5			The standard should also determine the horizontal free play of the arm locking system - 2 post lifts require the arm locks to release at ground level and this is normally automatic so they don't meet the criteria <i>Vehicle lifts designed to be used over pits or as a wheel free system shall fulfil this requirement throughout the travel of the load carrying device.</i> I think it is safe to release arms below 200mm vertical travel which would normally be taking up suspension travel rather than lifting, and this should be permitted for all lifts without the wheel free exception. - The strength test is important and our own tests and work by UK HSE indicate that the majority of 2 post lifts fail this criterion! The only locks which really work are those which provide 360 degree gear tooth engagement. - The standard does not address horizontal free	Add The free play of the locking system of the load carrying arm shall not exceed two pick up pad diameters. The play has to be measured with a horizontal force of 150 N at the pick up pad.	

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					<p>play. This is crucial. Some free play is desirable to allow a pick up,pad to be positioned in the correct location to support the vehicle with the arm locked in a fixed position but excessive free play means the arm lock might as well not be there.</p> <p>The ideal would be an arm lock position every ½ pad diameter and free play less than ½ pad diameter but this is not practicable.</p> <p>It is very difficult to design rigid arms and locks, but the standard should define some realistic criteria for free play. Free play tends to be elastic e.g. the harder you push it the further it goes, so it is essential that free play is defined in terms of distance with a certain force applied.</p> <p>I suggest that full side to side motion should not exceed two pick up pad diameters with a 150N (a reasonable manually applied force in each horizontal direction. It is important that the criterion in the standard is realistic!</p>		
45)	DE	5.9.6	Sentence 3	ge		<p>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!)</p> <p>We propose to change as follows:</p> <p>Each end stop shall be designed to resist a horizontal force of 10 % of the rated load, applied to the top, without permanent deformation.</p>	see comment 48
46)	FR	5.9.6	3 rd	te	It is more favourable to stay in the yield stress	Rewrite the 3 rd paragraph such as:	

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			paragraph		(and consequently to delete the following section of sentence « or to resist a force of 30 % of the rated load without breakage »)	« Each end stop shall be designed to resist a horizontal force of 20 % of the rated load, applied to the top, without permanent deformation. » <i>Proposed modification considered to be good.</i>	
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: <i>"Each end stop shall be designed to resist a horizontal force of 10 % of the rated load, applied to the top, without permanent deformation."</i>	see comment 48
48)	NL	5.9.6		te / ed	<p>Roll off safety</p> <p>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 <i>each</i> end stop, without causing permanent deformation.</p> <p>To our opinion this 20% on each end stop is too much.</p> <p>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, <i>no</i> rolling resistance was included. Calculations of Maha showed 5% of rated load for a 5 ton rated capacity lift, but <i>with</i> rolling resistance.</p> <p>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.</p>	<p>1) Refer to "end stop" as <i>the total of stopping means at one end of the lift</i>. Or define end stop as <i>a stopping device at the end of one runway</i>.</p> <p>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.</p> <p>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 <i>resultant</i> force, which leaves the possibility to bring the other (resultant) forces into account.</p>	

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					<p>2) Steril 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 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.</p> <p>3) The expression 'horizontal force' needs to be changed. Since this horizontal force is a <i>resultant</i> of the radial force, it never works without the, also resultant, vertical force (see calculation in Excel file). When designing end stops, these</p>		

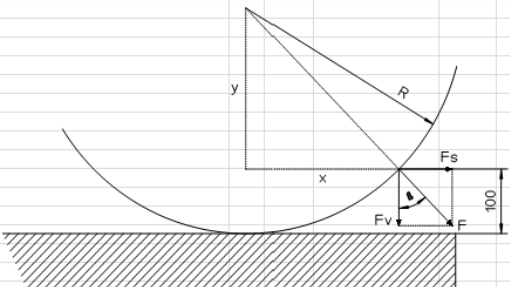
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					forces are taken into account. Therefore the wording that is used to describe the load on the end stop should be changed as well.																																																																																																																																																																																																																										
<p>Stopping forces runway lifts</p>  <table border="1"> <thead> <tr> <th colspan="3">Normative vehicle</th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> </tr> </thead> <tbody> <tr> <td>vehicle weight (max) = rated capacity</td> <td>M</td> <td>kg</td> <td>2500</td> <td>3500</td> <td>7500</td> <td>20000</td> <td>30000</td> <td>40000</td> </tr> <tr> <td>wheelbase</td> <td>WB</td> <td>m</td> <td>2,5</td> <td>3</td> <td>3</td> <td>3,5</td> <td>4</td> <td>4,5</td> </tr> <tr> <td>runway length</td> <td>Lr</td> <td>m</td> <td>5,2</td> <td>5,2</td> <td>6,25</td> <td>10</td> <td>14,5</td> <td>14,5</td> </tr> <tr> <td>runway angle (max. see 5.15 c1+ c2)</td> <td>*</td> <td>α</td> <td>[1+ASIN(100/(Lr*1000))]</td> <td>1,02</td> <td>1,02</td> <td>1,02</td> <td>1,01</td> <td>1,01</td> </tr> <tr> <td>runway angle (max. see 5.15 c1+ c2)</td> <td>rad</td> <td>α</td> <td>[a*2pi/360]</td> <td>0,018</td> <td>0,018</td> <td>0,018</td> <td>0,018</td> <td>0,018</td> </tr> <tr> <td>axle load 1</td> <td>AL1</td> <td>kg</td> <td>1000</td> <td>1400</td> <td>2500</td> <td>6667</td> <td>10000</td> <td>18000</td> </tr> <tr> <td>axle load 2</td> <td>AL2</td> <td>kg</td> <td>1500</td> <td>2100</td> <td>5000</td> <td>13333</td> <td>20000</td> <td>22000</td> </tr> <tr> <td>wheelload</td> <td></td> <td>kg</td> <td>750</td> <td>1050</td> <td>1250</td> <td>3333</td> <td>2500</td> <td>2750</td> </tr> <tr> <td>loadindexnr.</td> <td></td> <td></td> <td>98</td> <td>110</td> <td>117</td> <td>150</td> <td>140</td> <td>144</td> </tr> <tr> <td>average wheel radius</td> <td>R</td> <td>mm</td> <td>379</td> <td>387</td> <td>392</td> <td>467</td> <td>475</td> <td>540</td> </tr> <tr> <td>contact angle</td> <td>B</td> <td>°</td> <td>42,60</td> <td>42,13</td> <td>41,85</td> <td>38,20</td> <td>37,86</td> <td>35,43</td> </tr> <tr> <td>contact angle</td> <td>B</td> <td>rad</td> <td>0,74</td> <td>0,74</td> <td>0,73</td> <td>0,67</td> <td>0,66</td> <td>0,62</td> </tr> <tr> <td>free distance</td> <td>s</td> <td>m</td> <td>[Lr-WB]</td> <td>2,7</td> <td>2,2</td> <td>3,25</td> <td>6,5</td> <td>10,5</td> </tr> <tr> <td>gravitational constant</td> <td>g</td> <td>m/sec²</td> <td>9,81</td> <td>9,81</td> <td>9,81</td> <td>9,81</td> <td>9,81</td> <td>9,81</td> </tr> <tr> <td>rolling resistance coefficient</td> <td>c</td> <td></td> <td>0,01</td> <td>0,01</td> <td>0,01</td> <td>0,01</td> <td>0,01</td> <td>0,01</td> </tr> <tr> <td>rolling resistance</td> <td>Fr</td> <td>N</td> <td>[c.g.M]</td> <td>245</td> <td>343</td> <td>736</td> <td>1962</td> <td>2943</td> </tr> <tr> <td>maximum speed</td> <td>v</td> <td>m/s</td> <td>[-(2*(g*sin(a)-Fr*M)*s)]</td> <td>0,6423</td> <td>0,5798</td> <td>0,7021</td> <td>0,9862</td> <td>1,2490</td> </tr> <tr> <td>estimated stopping time</td> <td>Δt</td> <td>sec</td> <td></td> <td>0,8</td> <td>0,8</td> <td>0,8</td> <td>0,8</td> <td>0,8</td> </tr> <tr> <td>total resulting stopping force</td> <td>Fs</td> <td>N</td> <td>[M*vh]</td> <td>2007</td> <td>2537</td> 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c2)	rad	α	[a*2pi/360]	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	B	°	42,60	42,13	41,85	38,20	37,86	35,43	contact angle	B	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	gravitational constant	g	m/sec ²	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	maximum speed	v	m/s	[-(2*(g*sin(a)-Fr*M)*s)]	0,6423	0,5798	0,7021	0,9862	1,2490	estimated stopping time	Δt	sec		0,8	0,8	0,8	0,8	0,8	total resulting stopping force	Fs	N	[M*vh]	2007	2537	6583	24656	46838	percentage of rated capacity		%		8	7	9	13	16	total radial force on stop device	F	N	[Fs/sinβ]	2966	3781	9866	39871	76311	total resulting vertical force	Fv	N	[Fs/tanβ]	2183	2804	7349	31333	60245	percentage of minimal axle load		%		22	20	30	48	61
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49)	DE	5.12		ge	There is no test for this or requirement for how much load the fixing device should withstand.	<p>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 carrying device is not fixed to the lifting element but lean on these.</p> <p>Here it is taken for granted that the load carrying device stops, without considering the forces that arise from this situation.</p> <p>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)</p> <p>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)</p> <p>But the issue can become really complex.</p>	
50)	DE	5.13.2		ge	<p>1.--- Our experience says us that some hydraulic 2 post lifts at the market do not apply electrical and</p> <p>/ or mechanical systems that detect a break and prevent the movement from the initial position.</p> <p>(Without electrical or mechanical safety is not possible to apply this point).</p>	<p>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).</p> <p>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?</p>	
51)	FR	5.14.2	Table E.1	te	Protection against leakage:	Some measures (no devices of protection against	

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		Annex E			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	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)»	
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.	The question is about the correct interpretation of next to last sentence of paragraph 5.15 <i>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.</i> <i>Safety related parts of control systems for vehicle lifts mentioned under c) shall comply with performance level d of EN ISO 13849-1:2006.</i> 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)	see comment 53

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					<p>5.15 Additional requirements for lifts with several drives or lifting elements</p> <p>If vehicle lifts are designed to carry the load on several drives or lifting elements, it shall be assured that:</p> <p>a) the separate lifting platforms respectively lifting elements are not overloaded when carrying the load;</p> <p>NOTE 1 When placing the load, load differences between separate lifting units or lifting elements may occur due to unsymmetries of the load.</p> <p>b) carried loads cannot roll, slide, tilt or rotate;</p> <p>c) unintentional desynchronisation is limited within the following constraints (see 5.4.3 and (informative)):</p> <ol style="list-style-type: none"> 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 system already occur within the limits mentioned under 1) and 2). Measures shall be taken to avoid overloading including the additional desynchronisation caused by the function of safety devices (e.g. overdimensioning or load-limiting device). The correct placing of the load shall be monitored during start up as well as during lifting and lowering (load sensing and/or levelling device). <p>NOTE 2 For vehicle lifts mentioned in 3) special attention (negotiation between user and manufacturer) shall be given to the maximum values described in 1) and 2).</p> <p>The safety concept of the system (e.g. electrical control system of lifting platforms) shall, as a general rule, be in accordance with performance level c of EN ISO 13849-1:2008.</p> <p>Safety related parts of control systems for vehicle lifts mentioned under c) shall comply with performance level d of EN ISO 13849-1:2008.</p> <p>The different assessment by the NB leads to a differentiated view of mechanical fasteners for synchronization control, as part of this general PL d is required in accordance with EN 13849-1.</p> <p>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 ..."</p>		
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	te	In the distances of safety, only the distances for	Reintroduce the distances of safety for the	

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			clause)		the passages of fingers and feet were kept.	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	<p>Control positions / Remote controls</p> <p>Current situation:</p> <p>EN 1493:2010 has the following in 5.4.1 and 5.4.2:</p> <p>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.</p> <p>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.</p> <p>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).</p> <p>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</p>	<p>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.</p> <p>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.</p> <p>Examples of such solutions are:</p> <ul style="list-style-type: none"> - 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 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. <i>Without</i> 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. 	see comment 21

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					<p>well as the space under the load carrying device and the load. This applies to the operation of both multiple and single lifting devices.</p> <p>e) If the vehicle lift <i>is intended to be used</i> 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.</p> <p>Comments:</p> <p>a) This general requirement seems to refer to fixed control devices that are either mounted on the lift or in the vicinity of the lift. Therefore the risk of being jeopardized is present. An important aspect here, seems that the operator <i>has to be</i> 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.</p> <p>b) A remote control offers several advantages.</p>	But	

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					<p>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.</p> <p>c) Limiting the area in which the remote control can be used, takes away the advantage of the better visibility with the remote control.</p> <p>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.</p> <p>e) It seems that it is the <i>type of vehicles</i> that are lifted (and therefore the lift type) which defines if the “hazardous area cannot be</p>		

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					<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>		
57)	DE	5.22.3		ge	<p>5.22.3 Speed lifting and lowering</p> <p>The reduction of the speed in this mode of</p>	<p>The <u>speed limit</u> provided by the standard are</p> <p>(A) Standard lift 0,15m/sec 150mm/sec</p>	

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					<p>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.</p> <p>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.</p>	<p>9000mm/min</p> <p>(B) Lift for trains 0,015m/sec 15mm/sec 900mm/min</p> <p>(C) Lift where is permitted to stay under the load in movement 5mm/sec 300mm/min</p> <p>Referred to a stroke of 1800 mm the lifting time are respectively 12sec, 120sec, 360 sec.</p> <p>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.</p> <p>Obviously the double speed involves technical complications and cost but it has to be related to the effective risk for the operator.</p> <p>In TC98 WG 3 the risk for the operator was considered as priority and so the low speed very conservative.</p> <p>But it can be discussed.</p> <p>Lifting and lowering speed</p> <p><i>The maximum speed for lifting and lowering shall not exceed 15 mm/s.</i></p>	
58)	NL	5.22.4		ed		"lowering of more <i>the</i> " must be "lowering of more <i>than</i> "	
59)	DE	6.1.1	Last sentence	ed	The standard should define a competent body.	Competent body here means notified body?	
59a	NB	6.1.1	Last		What kind of competency	Replaced competent body by	see comment 59

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			sentence			Notified Body in accordance with Machinery Directive	
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.	
60a	NB	7.3.1 c)			The information about the usage should be more detailed RfU 08.004	Add the following aspects: <ul style="list-style-type: none"> • Information about the use <ul style="list-style-type: none"> • description of controls (raising, lowering), • description of safety devices (safety catch, levelling system, emergency stop, rope or chain failure), • adjustment procedures (if any), • emergency stop procedures, restarting, • operating modes (independent / common control), safety features in different operating modes, • protection against unauthorized use (use of key switches), • rules for handling of special conditions (after tripping of protective devices, emergency lowering) • warning of dangerous parts (high voltage, high pressure), • error handling procedures (tripping of fuses, desynchronisation), • charging of batteries (ventilation), • safety instructions (e.g. no persons under the lift during movement), • authorization for operating. 	
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.	see comment 60
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)»	see comment 51

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Grey marked comments are of editorial nature