Art. 2. Definitions

Italy is in favour of the current definition of “Unladen mass”. It shall include also the ROPS structure, as it is today.

Justification. What is the end or the beginning of ROPS structure? What about the support or the connection to the chassis? What is the technical reason behind?

ANNEX III. Maximum design speed and speed governor

Amend text of point 1.5:

A 5 % tolerance on the maximum design speed is permitted. In order to take account of various unavoidable errors due, in particular, to the measuring technique and to the increase in running speed of the engine with a partial load, a measured speed exceeding of 3 km/h the maximum design speed, shall be acceptable for the type-approval test.

Justification To clarify and copy in the proper way present requirements of directive 2003/37/CE, footnote 17.

Replace text of point 3.3.3 by:

Any reprogrammable computer codes or operating parameter shall be resistant to tampering”. (according to German proposal)

Justification. ISO 15031 applies to passenger vehicles and light-duty vehicles (M1 and N1). The application of the standard to tractors cannot be implemented without a detailed analysis on its feasibility.

Annex IV. Steering for fast tractors

Italy is in favour of reference to ISO 10998. Point 1.1:

The requirements of ISO 10998 apply to the steering of vehicles belonging to categories Tb and Cb with maximum design speed above 40 km/h and up to 60 km/h.

Justification. ISO standard is in line with current requirements, but consider also electronic steering systems.

Annex V. Steering

Amendment needed for vehicles of category C with steel tracks. Insert a new point 1.2:
NEW P 1.2 Requirements of point 2 are not applicable in case of steel track-laying tractors equipped with differential steering. For vehicles where the steering system is combined with the braking system, the provisions of the Regulation XXX/XXXX (RVBR) with regard to requirements for braking apply.

For information, definition of “differential steering” is attached:

‘Differential steering’ means a method of steering on wheels or on tracks, where the orientation of the tractor is done by creating a different rotational speed between the left and the right hand wheels or track assemblies. The speed difference is either realized by a combination of mechanical components, such as brakes and a differential, or by a separate transmission path to the left and the right hand side, such as separated hydrostatic transmissions.

Justification. In order to consider the special purpose and characteristics of these vehicles. Test procedures of paragraph 2 are not intended for them. Also ISO 10998 specifies that certain requirements are not applicable to tractors equipped with steel tracks.

Annex VI. Speedometer

Editorial amendment in point 1

P 1 All tractors with maximum design speed exceeding 30 km/h shall be equipped with a speedometer according to the requirements of this Annex.

Justification. Editorial mistake.

Annex VII. Field of vision

Copy text from directive 2008/2/CE and, as an alternative, make reference to ISO 5721-1.

Justification. ECE R 71 is very old and needs to be updated before reference into Delegated Acts.

Annex VIII. Glazing.

Delete text and replace by the following (according to CEMA proposal):

1. Vehicles of category T shall meet the requirements of the UNECE Regulation 43 Rev. 2, Amendment 5, supplement 12, except Annex 21

2. Vehicles of category C shall meet the same requirements of the corresponding vehicles within T category.
3. Provisions regarding the installation of safety glazing on vehicles of category T and C with a maximum design speed exceeding 60 km/h shall be according annex 21 of UNECE R43.

4. Provisions regarding the installation of safety glazing on vehicles of category T and C with a maximum design speed not exceeding 60 km/h.

4.1 Safety glazing shall be installed in a way to ensure a high level of safety for the occupants and, in particular, to provide the driver with a high degree of visibility in all use conditions, not only forwards but also rearwards and laterally.

4.2 Safety glazing shall be fitted in such a way that, despite the stresses to which the vehicle is submitted under normal operating conditions, it remains in position and continues to afford visibility and safety to the occupants of the vehicle;

4.3 Safety glazing shall bear the appropriate component type-approval mark specified in paragraph 5.4. of UNECE Regulation 43, followed when required, by one of the additional symbols provided for in paragraph 5.5.

4.4 Safety glazing for windscreens

4.4.1. The regular light transmittance shall not be less than 70 per cent.

4.4.2. The windscreen must be correctly fitted with reference to the vehicle driver's 'R' point.

4.4.3. Vehicles of category Ta and Ca shall be fitted with one of the types of safety glazing material defined in annex 4, annex 5, annex 6, annex 8 or annex 10 of UNECE R43.

4.4.4. Vehicles of category Tb and Cb shall be fitted with one of the types of safety glazing material defined in 4.4.4 with the exception of annex 5 of UNECE R43.

4.5 Safety glazing other than windscreens

4.5.1. The safety glazing other than windscreens, must have a regular light transmittance of at least 70 per cent.

4.5.2. Plastic safety glazing shall bear an additional symbol A/L or B/L, as defined in paragraphs 5.5.5. and 5.5.7. of UNECE R43.
4.5.3. Other safety glazing material not needed for the driver’s field of vision to the sides or to the rear shall bear the additional symbol V specified in paragraph 5.5.2. of UNECE R43, if the light transmittance is below 70 per cent.

4.5.4. Plastic safety glazing shall bear one of the additional symbols defined in paragraphs 5.5.5., 5.5.6., and 5.5.7. of UNECE R43.

4.5.5. Exemptions

In the case of plastic safety glazing, the provisions related to abrasion resistance do not apply for sunroofs and glazing located in the roof of a vehicle. No abrasion test/symbol is required.

*Justification.* Installation of glazing on tractors needs to be clarified because it is not in the scope of ECE R 43. By this proposal uniformly toughened glass will not be allowed on fast (b) vehicles.

**Annex IX. Rear view mirrors**

Add reference to ECE R 46 as an alternative for type approval of rear view mirrors.

*Justification.* It is already used by some Manufacturers and it is an useful reference.

**Annex XII. Lighting installation**

Content of the Annex has to be in line with the on-going revision of ECE R 86. Italy is going to send comments to the ECE Task Force AVLI. Amendments are needed to the proposal submitted by Germany and CEMA. The same amendments are required for this Annex. Suggestion is to keep the technical discussion at ECE level and then copy the content into Annex XII. Next meeting of AVL Task Force will be held on the 5th of November and Commission will attend.

For information, find attached Italian comments for the revision of ECE R 86.

*Justification.* Keep consistency with new ECE R 86.

**Annex XIII. Interior fittings**

Delete text and replace by the following (according to CEMA proposal):

1. GENERAL
The purpose of these provisions is to reduce the risk or seriousness of bodily injury to a person pinched or sheared by the parts of the vehicle that can be reached by the occupants in a sitting position during normal operation. This is valid both when the vehicle is stationary and in motion.

2. DEFINITIONS

2.1. ‘Dangerous point’ means any point which, owing to the arrangements or design of the fixed or movable part of a tractor, involves a risk of injury. The dangerous parts are, in particular, pinching, and shearing points.

2.2. ‘Pinching point’ means any dangerous point where parts move in relation to each other or to fixed parts in such a way as may cause persons or certain parts of their bodies to be pinched.

2.3. ‘Shear point’ means any dangerous point where parts move along each other or along other parts in such a way as may cause persons or certain parts of their bodies to be pinched or shorn.

2.4. ‘Reach’ means the maximum distance which can be reached by persons or certain parts of their bodies upwards, downwards, inwards, above, around or across without the aid of any object.

2.5. ‘Control’ means any device whose direct actuation enables the state or operation of the tractor or of any equipment linked to it to be altered.

2.6. ‘Normal operation’ means the use of the tractor for the purpose intended by the manufacturer and by an operator familiar with the tractor characteristics and complying with the information for operation, service and safe practices, as specified by the manufacturer in the operator’s manual and by signs on the tractor.

3. GENERAL SPECIFICATIONS
3.1. Driving seat and environment

When he is in a sitting position, all pinching or shearing points must be out of range of the driver's hands or feet. This requirement is considered to have been met if the following conditions are fulfilled:

3.1.1. The driver's seat is at the mid-point in its longitudinal and vertical adjustment range. The driver's reach limit is divided into zones A and B. A central spherical point of these zones is 60 mm in front of and 580 mm above the seat index point 1 (see Figure 1). Zone A consists of a sphere having a diameter of 550 mm while zone B is located between that sphere and a sphere having a radius of 1 000 mm.

![Figure 1](image)

3.1.2. A safety distance of 120 mm in zone A and 25 mm in zone B is maintained near the pinching and shearing points, whilst a minimum angle of 30° is maintained in the case of shearing parts causing a change in angularity.

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1 Seat Index Point (SIP): determination according to XXXXXXXXX
3.1.3 In zone A, only the pinching and shearing points caused by parts set in motion by an outside energy source must be taken into account. The driver’s seat is at the mid-point in its longitudinal and vertical adjustment range.

3.1.4 If a dangerous point is due to the presence of structural parts adjacent to the seat, a safety distance of at least 25 mm is maintained between that structural part and the seat. There is no dangerous point between the seat backrest and the adjacent structural parts located behind that backrest if the adjacent structural parts are smooth and the seat backrest itself is rounded in the surrounding area and has no sharp points.

3.2 Passenger seat (if installed)

3.2.1. If parts may constitute a danger for the feet, provision must be made for protective devices within a hemispherical radius of 800 mm starting from the forward edge of the seat cushion and pointing downwards.

3.2.2. As described in point 3.1.1 (see Figure 2) the dangerous points in zones A and B must be protected within a sphere whose centre is 670 mm above the centre of the front edge of the passenger seat.

Figure 2

3.3 Narrow track tractors (as defined in 167/2013, Article 4, (3))
In the case of narrow-track tractors, the requirements of point 3.1 do not apply to the zone situated below a plane inclined at 45° to the rear and transverse to the direction of travel, and passing through a point located 230 mm behind the seat index point (see Figure 3). If there are any dangerous points in this zone, corresponding warnings must be affixed to the tractor.

Figure 3

3.4 Access to the driver’s seat: covered by Annex XIV to the Regulation on vehicle construction requirements xxx/2015

3.5 Control devices: covered by Annex XXIII to the Regulation on vehicle construction requirements xxx/2015

3.6 Steering and swing axle

Parts moving in relation to each other or to fixed parts must be protected if they lie within the zone defined in points 3.1.1 and 3.2.

When articulated steering is fitted, there must be indelible and clear markings within the articulation range on both sides of the tractor, indicating by means of an illustrative sign or in words that remaining within the unprotected range of articulation is not permitted.

The corresponding indications must be included in the operator’s manual.

3.7 Transmission shafts fixed on the tractor
Transmission shafts (for example, for four-wheel drive) which can only rotate while the tractor is in motion must be protected if they are located within the zone defined in points 3.1.1 and 3.2.

3.8 Clearance zone around the drive wheels

3.8.1 The provisions of section 3.8 apply only to tractors without an enclosed cab, where the occupants of driver seat or passenger seat can reach a tire with a hand.

3.8.2 The clearance zones of the wheel guards must meet the following requirements.

‘Clearance zone’ means the space which must remain clear around the tyres of the drive wheels in relation to the adjacent parts of the vehicle.

The clearance zone of the drive wheels, when fitted with largest-size tyres, must correspond to the dimensions set out in the following Figure 4 and Table 1.
3.8.3 A clearance zone smaller than that illustrated in Figure 4 and Table 1 is permissible in addition to the zones referred to in points 3.1.1 and 3.1.2 in the case of narrow-track tractors where wheel guards are also used to scrape off earth stuck to the wheels.

3.9 Interior fittings

3.9.1 All metallic and plastic interior fittings with a hardness exceeding 60 Shore A, such as controls, switches, instrument panels, displays and interior mirrors installed within the zone defined by 3.1.1 and 3.2, shall have edges with a minimum radius of curvature not less than 2.5 mm

3.9.2 This requirement shall not apply to parts which protrude less than 5 mm, such as small hardware, nor to components which are not rigidly installed

3.9.3 Head restraints, if fitted shall comply with the provisions of UNECE Regulation 25

3.11. Vehicle doors, with powered windows and/or powered roof hatches, if fitted shall comply with the provisions of UNECE Regulation 26

3.12 Seat belts: covered by Annex XIX to the Regulation on vehicle construction requirements xxx/2015

*Justification*. requirements taken on board from motor vehicles regulations are not suitable for agricultural tractors because they are completely different vehicles. Proposal is to take over the current requirements from 2009/144/EC and include provisions on head restraints Also provisions on interior fitting are included as adapted from UNECE Reg. 21.

**Annex XIV. Exterior fittings**

Wait for TRL study. In any case specificity of agricultural vehicles should be taken into account.
Annex XV. EMC

Add reference to ECE R10 and ISO 14982 as an ALTERNATIVE.

Justification. To provide suitable and alternative standards.

Annex XVII. Heating systems

Amend point 1.1

P 1.1 Heating and cooling systems, where fitted, shall be tested in accordance with clause 8 and 9 of ISO 14269-2:1997. Test reports shall be included into the technical information document.

Justification. To clarify relevant clauses of ISO 14269-2. RVCR has a similar approach for ventilation systems, where testing shall be made according to EN 15695-1.

Annex XVIII. Unauthorized use

Amend point 1. Delete par. 2 and 4 (reference to ECE R18)

P 1 Requirements for all T- and C-category vehicles until 31 December 2017

Justification. Tractors do not have the same steering column of motor vehicles. Thus their requirements are not appropriate for agricultural vehicles. It is also not clear what this implies for C-cat vehicles fitted with steering levers (instead of steering wheel).

Annex XXX. Tyres

Some tires not included in ECE Regulations may not be type approved but are needed for agricultural purposes. No clear idea on the possible solution. Any proposal should come from ETRTO and tyre Manufacturers.

Annex XXXIII. Tracks

Wait for TRL study.

However this Annex should specify also all different configurations for vehicles of category C. Depending on this configuration (see Table below), suitable requirements may change (e.g. crawlers with steel tracks).

<table>
<thead>
<tr>
<th></th>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The provisions of this Annex apply to the following vehicles of category C:</td>
</tr>
<tr>
<td>1.1</td>
<td>Vehicles with an undercarriage on steel tracks, whether or not equipped with rubber pads on the track shoes, and with a maximum speed between 6 and 15 km/h</td>
</tr>
</tbody>
</table>
1.1.1 Vehicles with only one track train at each side:
The steering function is performed by changing the speed between the LH and RH track trains.

1.1.2 Vehicles with two track trains at each side:
The steering function is performed by articulation of the front and rear part of the vehicle around a central vertical axis or by articulation of two opposite or all four track trains.

1.2 Vehicles with an undercarriage on rubber tracks, with a maximum speed between 6 and 60 km/h.

1.2.1 Vehicles with only one track train at each side:
The steering function is performed by changing the speed between the LH and RH track trains.

1.2.2 Vehicles with two track trains at each side:
The steering function is performed by articulation of the front and rear part of the vehicle around a central vertical axis or by articulation of two opposite or all four track trains.

1.3 Vehicles of which the undercarriage is a combination of a wheeled axle and a set of steel tracks, whether or not equipped with rubber pads on the track shoes and with a maximum speed between 6 and 15 km/h. The steering function is performed by changing the direction of the wheels on the wheeled axle and/or by articulation of the front and rear part of the vehicle around a central vertical axis. The wheeled axle can be installed at the front or at the rear of the vehicle.

1.4 Vehicles of which the undercarriage is a combination of a wheeled axle and a set of rubber tracks, whether or not equipped with rubber pads on the track shoes and with a maximum speed between 6 and 60 km/h. The steering function is performed by changing the direction of the wheels on the wheeled axle and/or by articulation of the front and rear part of the vehicle around a central vertical axis. The wheeled axle can be installed at the front or at the rear of the vehicle.

This Annex should also contain requirements for specific contact pressure (see Table below), including the calculation method.

<table>
<thead>
<tr>
<th></th>
<th>Specific ground contact pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.1</td>
<td>The specific ground contact pressure exerted by the tracks of a laden tractor on a hard horizontal and smooth surface shall not exceed 0.8 MPa.</td>
</tr>
<tr>
<td>3.2.2</td>
<td>The specific ground contact pressure shall be determined by dividing the maximum permissible load on a track train by the surface of the lugs or Road Pads that is in contact with the ground as defined in paragraph 3.1.2.3 to 3.1.2.5</td>
</tr>
<tr>
<td>3.2.3</td>
<td>The length of the track train that is in contact with the ground is the distance between the centers of the extreme track rollers under which the track shoes or track belt are contacting the ground</td>
</tr>
<tr>
<td>3.2.4</td>
<td>For vehicles belonging to 1.1.1 or 1.1.3 the surface of the track shoes or Road Pads in contact with the ground is defined by measuring the footprint of one track shoe or Road Pads perpendicular under the center of a not extreme track roller, by lowering a laden vehicle on a piece of cardboard. The total surface is obtained by multiplying this value by the number of track shoes or Road Pads that is in contact with the ground.</td>
</tr>
<tr>
<td>3.2.5</td>
<td>For vehicles belonging to 1.2 or 1.4, the supplier of the rubber belt shall provide the % of lug area² versus the total surface of the belt</td>
</tr>
</tbody>
</table>

Justification. Suitable requirements to be included for vehicles of category C.
Annex XXXIV. Mechanical couplings

Amendment need in point 2.2.1

P 2.2.1 “For the purposes of checking their strength the mechanical coupling components must undergo a dynamic test under the conditions set out in Appendix 2 and OR a static test under the conditions set out in Appendix 3”.

Justification. There is no real technical justification behind TRL requirement. This dual testing process does not exist for motor vehicles (category M, N, O). Why should it be introduced on tractors? The introduction of such requirement should be supported by a specific analysis on agricultural couplings. Please consider there is no evidence of any safety concern with the existing legislation, as identified by TRL report: “This study has found NO evidence that agricultural vehicle structural integrity is currently inadequate or requires greater verification”.

“In addition, mechanical couplings intended to be fitted on fast (b-category) vehicles must undergo the dynamic test only must be performed with the coupling attached to the entire vehicle chassis, suitably restrained within a test”

Justification. The testing of the coupling with the whole chassis does not exist for motor vehicles (category M, N, O). Why should it be introduced on tractors if it is not considered for trucks? The introduction of such requirement should be supported by a specific study on agricultural couplings. Please consider there is no evidence of any safety concern or problem with the existing legislation (approval of the component only), as identified by TRL report: “This study has found NO evidence that agricultural vehicle structural integrity is currently inadequate or requires greater verification”.