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Vehicle standards — Specification for vehicle roadworthiness — Part 2: Roadworthiness of vehicles prior to entry into service, and thereafter

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Foreword

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This African Standard was prepared by the ARSO Technical (Harmonization) Committee Number 08-4/59 on Automotive Technology and Engineering (ARSO/THC 08-4/ARSO/TC 59).

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Introduction

This specification applies minimum safety design requirements. It is not intended to cover all of the specific national safety requirements of countries for vehicles registered and operating within their borders but wherever possible countries are requested to standardise on the criteria contained in this specification.

Requirements are included only for items which are critical to safety and which can be assessed by a vehicle examiner with the facilities of a vehicle testing station complying with whatever appropriate requirements are laid down in legislation for vehicle examiners and vehicle testing stations.

This specification takes into account that in Africa both new and used vehicles may be imported from a variety of countries or regions and such vehicles may have been designed to comply with the domestic requirements of specific source countries or regions anywhere in the world.

This specification deals with methods and considerations to provide for the introduction of more advanced safety requirements which are detailed in Table 1 whilst offering options to minimize costly and burdensome technical and administrative controls and procedures. It caters for the situation where many countries or regions from which Africa imports vehicles have requirements which differ in certain detail, but which are intended and designed to afford a reasonable degree of safety to the vehicle occupants and to other road users. Examples of where differences between national or regional requirements do, or may exist, but which are considered as providing an equal or an acceptable degree of safety are given in Table 2 using UN ECE Regulations as the base.

This standard consists of the following parts under the general title “Specification for vehicle roadworthiness”:

Part 1: Roadworthiness of vehicles already in service

Part 2: Roadworthiness of vehicles prior to entry into service and thereafter

Part 3: Roadworthiness — Supporting information

Part 4: Roadworthiness — Requirements for vehicle examiners

Part 5: Roadworthiness — Requirements for testing equipment

Part 6: Roadworthiness — Requirements for combinations of vehicles

Vehicle standards — Specification for vehicle roadworthiness — Part 2: Roadworthiness of vehicles prior to entry into service, and thereafter

1 Scope

This African Standard specifies the design safety requirements for road vehicles prior to entry into service and thereafter when operating on a public road.

This specification does not cover special requirements or concessions for certification of fitness for cross border operation, other than referring to cases where national or regional legislation may take preference over the requirements of this standard.

NOTE It is essential that suppliers of vehicles must be made aware of these requirements before vehicles whether new or used are selected for importation to countries which are applying these requirements or before the vehicles are manufactured for supply to such countries.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. For UNECE Regulation references listed in 6.3, the level stated in Table 1 or Table 2 applies as the minimum requirement. Compliance with later levels are acceptable but may not be set as a minimum requirement.

ARS 1355-1, *Vehicle Standards — Specification for Vehicle Roadworthiness — Part 1: Roadworthiness of vehicles already in use*

ARS 1355-3, *Vehicle Standards — Specification for vehicle Roadworthiness — Part 3: Roadworthiness — Supporting information*

UN ECE R13, *Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking*

UN ECE R13H, *Uniform provisions concerning the approval of passenger cars with regard to braking*

UN ECE R16, *Uniform provisions concerning the approval of:*

- *I. safety-belts, restraint systems, child restraint systems and isofix child restraint systems for occupants of power driven vehicles*
- *II. vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems and isofix child restraint systems*

UN ECE R27, *Uniform provisions for the approval of advance-warning triangles*

UN ECE R28, *Uniform provisions concerning the approval of audible warning devices and of motor vehicles with regard to their audible signals*

UN ECE R30, *Uniform provisions concerning the approval of pneumatic tyres for motor vehicles and their trailers*

UN ECE R39, *Uniform provisions concerning the approval of vehicles with regard to the speedometer equipment including its installation*

UN ECE R43, *Uniform provisions concerning the approval of safety glazing materials and their installation on vehicles*

UN ECE R46, *Uniform provisions concerning the approval of vehicles with regard to rear-view mirrors and their installation*

UN ECE R48, *Uniform provisions concerning the approval of vehicles with regard to the installation of lighting and light-signalling devices*

UN ECE R49, *Uniform provisions concerning the approval of compression-ignition (C.I.) and natural gas (NG) engines as well as positive-ignition (P.I.) engines fuelled with liquefied petroleum gas (LPG) and vehicles equipped with C.I. and NG engines and P.I. engines fuelled with LPG, with regard to the emissions of pollutants by the engine*

UN ECE R54, *Uniform provisions concerning the approval of pneumatic tyres for commercial vehicles and their trailers*

UN ECE R58, *Uniform provisions concerning the approval of:*

I. Rear underrun protective devices (RUPDs)
II. Vehicles with regard to the installation of an RUPD of an approved type
III. Vehicles with regard to their rear underrun protection (RUP)

UN ECE R66, *Uniform technical prescriptions concerning the approval of large passenger vehicles with regard to the strength of their superstructure*

UN ECE R69, *Uniform provisions concerning the approval of rear marking plates for slow-moving vehicles (by construction) and their trailers*

UN ECE R70, *Uniform provisions concerning the approval of rear marking plates for heavy and long vehicles*

UN ECE R83, *Uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements*

UN ECE R94, *Uniform provisions concerning the approval of vehicles with regard to the protection of the occupants in the event of a frontal collision*

UN ECE R95, *Uniform provisions concerning the approval of vehicles with regard to the protection of the occupants in the event of a lateral collision*

UN ECE R104, *Uniform provisions concerning the approval of retro-reflective markings for vehicles of category M, N and O*

UN ECE R107, *Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction*

3 Terms, definitions and abbreviations

For the purpose of this standard the following terms, definitions and abbreviations apply.

3.1 Definitions

3.1.1
approval authority
the authority responsible for checking design compliance of vehicles entering into service for the first time. This may be a Roadworthiness Testing Centre qualified for this function, or some other body.

3.1.2
approval systems
systems operated by an approval authority intended to provide some degree of assurance that compliance with vehicle design safety standards has been achieved.

3.1.3
date of entry into service
the date on which the vehicle was licensed or registered for the first time in the African country in which it is being operated.

3.1.4
degrees of assurance of compliance
result from the adoption of the following approval systems:

a) maximum degree of assurance — if test reports from acceptable sources are made available and if test equipment is available locally to re-test in cases of doubt.

b) lesser degree of assurance — if the vehicles are received only from countries which are known to apply similar standards to their domestic and export production and if the vehicles are not older than 5 years.

c) minimal degree of assurance — if the vehicles and the owner's manuals are inspected visually for some indications that the vehicle is likely to incorporate some or all of the required design safety standard requirements.

3.1.5
vehicle design compliance
compliance to a design standard which has been published by a national or regional body

3.1.6
vehicle category
categories as provided below:

3.1.6.1
Category L
Motor vehicles with less than four wheels

(i) "Category L1": A two-wheeled vehicle with an engine cylinder capacity in the case of a thermic engine not exceeding 50 cm3 and whatever the means of propulsion a maximum design speed not exceeding 50 km/h.

(ii) "Category L2":A three-wheeled vehicle of any wheel arrangement with an engine cylinder capacity in the case of a thermic engine not exceeding 50 cm3 and whatever the means of propulsion a maximum design speed not exceeding 50 km/h.

(iii) "Category L3": A two-wheeled vehicle with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm3 or whatever the means of propulsion a maximum design speed exceeding 50 km/h.

(iv) "Category L4": A vehicle with three wheels asymmetrically arranged in relation to the longitudinal median plane with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm3 or whatever the means of propulsion a maximum design speed exceeding 50 km/h (motor cycles with sidecars).

(v) "Category L5": A vehicle with three wheels symmetrically arranged in relation to the longitudinal median plane with an engine cylinder capacity in the case of a thermic engine exceeding 50 cm3 or whatever the means of propulsion a maximum design speed exceeding 50 km/h.

(vi) "Category L6": A vehicle with four wheels whose unladen mass is not more than 350 kg, not including the mass of the batteries in case of electric vehicles, whose maximum design speed is not more than 45 km/h, and whose engine cylinder capacity does not exceed 50 cm3 for spark (positive) ignition engines, or whose maximum net power output does not exceed 4 kW in the case of other internal combustion engines, or whose maximum continuous rated power does not exceed 4 kW in the case of electric engines.

(vii) "Category L7": A vehicle with four wheels, other than that classified for the category L6, whose unladen mass is not more than 400 kg (550 kg for vehicles intended for carrying goods), not including the mass of batteries in the case of electric vehicles and whose maximum continuous rated power does not exceed 15 kW.

3.1.6.2
Category M
Power-driven vehicles having at least four wheels and used for the carriage of passengers

(i) "Category M1": Vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat.

(ii) "Category M2": Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.

(iii) "Category M3": Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

3.1.6.3
Category N
Power-driven vehicles having at least four wheels and used for the carriage of goods

(i) "Category N1": Vehicles used for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes.

(ii) "Category N2": Vehicles used for the carriage of goods and having a maximum mass exceeding 3.5 tonnes but not exceeding 12 tonnes.

(iii) "Category N3": Vehicles used for the carriage of goods and having a maximum mass exceeding 12 tonnes.

3.1.6.4
Category O
Trailers (including semi–trailers)

(i) "Category O1": Trailers with a maximum mass not exceeding 0.75 tonnes.

(ii) "Category O2": Trailers with a maximum mass exceeding 0.75 tonnes, but not exceeding 3.5 tonnes.

(iii) "Category O3": Trailers with a maximum mass exceeding 3.5 tonnes, but not exceeding 10 tonnes.

(iv) "Category O4": Trailers with a maximum mass exceeding 10 tonnes.

3.2 Terminology

Non-specific terms such as excessive, extensive, significant, impaired and such like expressions are used where finite limits are inappropriate to apply, and the Vehicle Examiner is the final arbiter in such cases.

3.3 Abbreviations

ANPR Automatic Number Plate Recognition

FIA Federation Internationale de l'Automobile being the governing body of motor sport and which promotes safe, sustainable and accessible mobility for all road users across the world.

GPS Global Positioning System

LHD left hand drive designed for operation in countries where traffic drives on the right.

RHD right hand drive designed for operation in countries where traffic drives on the left.

UN ECE United Nations Economic Commission for Europe.

VIN Vehicle Identification Number

4 Administrative requirements

4.1 Application form

The vehicle examiner must check that the Application Form for Vehicle Design Compliance is fully relevant to the vehicle to be examined. In particular, the vehicle examiner must inspect and record the VIN or Chassis Number and, if applicable, Registration Plate details by obtaining these from the vehicle itself and not from any documentation, then checking these details against the detail on the Application Form.

4.2 Evidence of vehicle having been presented

An automated system must be provided to take photographs of the vehicle at random during testing showing its front ¾ including its registration plate and at the same time showing the testing station in the background. Additional photographs showing the rear ¾ of the vehicle and its body together with a photograph of the VIN or chassis number must also be taken and filed.

Additional requirements to minimise fraud are intended to be introduced such that the photographs, plate number, date, time and GPS co-ordinates should be recorded by the ANPR cameras. This ensures that photographic proof is available that the vehicle was tested. The fingerprints of the applicant are to be verified and all documents, including signatures scanned and recorded on the system.

4.3 Vehicle design compliance certificate

Vehicles complying with the requirements of this standard must carry a vehicle design compliance certificate on the vehicle which certifies compliance with the requirements of this standard.

5 Procedural matters regarding the actual test

Circumstances where an examiner may refuse to examine a vehicle or to complete an examination

(a) If the information on the vehicle does not correspond with the information on the application;

(b) if the information on the vehicle appears to have been tampered with;

(c) if the vehicle is so dirty that the examiner would be unable to examine it efficiently;

(d) if the vehicle cannot be started or driven;

(e) if a defect is detected which renders the vehicle unsafe or otherwise presents a risk to the examiner;

(f) the person who presented the vehicle for test is uncooperative, or

(g) the person who presented the vehicle for test refuses to leave the vicinity of the test area so as to give the examiner the privacy he requires, except in the case of single personnel operating a lane where the examiner welcomes the assistance provided by the driver, or in the case where a vehicle adapted for operation by a disabled person is not able to be operated safely by the examiner and the examiner welcomes the presence of the disabled person to assist by operating the vehicle.

6 Assessment of compliance to vehicle design safety standards applicable on “date of entry into service” and thereafter

For both new and used vehicles entering into service for the first time from the date listed in Table 1 and thereafter as part of the normal roadworthiness checking for such vehicles, from the appropriate date.

6.1 Evidence of compliance – Reject if

(a) there are no test reports or certification from acceptable sources being presented for assessment to show that the vehicle and its equipment was manufactured to comply with each of the vehicle design safety standards listed in Table 1 or to the equivalent standards of the countries or regions listed in Table 2 and which are appropriate to the vehicle category, or

(b) any of the following visual assessment indicators in 6.2 are absent which are indicative of whether compliance with the appropriate design standards is likely to have been achieved, or

(c) compliance with a) or b) above cannot be ascertained.

NOTE Indications of compliance to one or more of the modern safety design standards may in some cases be taken as indicative of compliance to a range of safety design standards.

6.2 Visual assessment indications – Reject if

When inspected before selection for shipment or when manufactured or when submitted for inspection for certificate of fitness examination and it is found that there is no evidence of compliance for any of the following requirements to be satisfied, except that items 6.2 c) and 6.2 d) may be fitted before inspection for certificate of fitness:

(a) Braking – the ABS piping or sensors or wiring or control panel indicators are not fitted, and if ESC is required to be fitted, when an ESC indicator is not present, and if brakes are not fitted to all the wheels on the vehicle.

(b) Lighting – the colour, intensity, switching and positioning of all lighting and signalling and reflective equipment is not standard according to the experience of the examiner with other similar vehicle models.

(c) Contour tape is not “E-marked” and showing “R104”.

(d) Chevrons are not of the dimensions and material of the high intensity grade retro-reflective material specified in ARS 1355-1 or UN ECE R69 vehicles designed not to exceed 30km/h, or UN ECE R70 long and heavy goods vehicles.

(e) Any glass is not safety glass and is not “E-marked” and showing “R43” and in addition windscreens are not marked “laminated” or marked “//” or are not otherwise clearly marked as safety glass.

(f) Mirror housings or mirror glass are not E-marked or are not of the normally acceptable radius of curvature, and exterior mirrors are not in place at each side of the vehicle. Additionally in the case of goods vehicles over 7 500kg GVM if there are no additional “wide angle” mirrors which show the road to the immediate left and right of the driver generally as shown in ARS 1355-3.

(g) Tyres are not E-Marked or DoT marked or showing the markings of another approval authority and passenger tyres do not have a tread wear indicator.

(h) Emission control system on petrol engine vehicles has no catalytic converter fitted, or if warning systems indicate that maintenance of the emission system is required, or for testing stations which have emission testing equipment and limits laid down in national legislation, such limits are exceeded. For diesel engine vehicles examine the engine or documentation to assess compliance.

NOTE In some countries where the fuel quality is inadequate to support the latest technology engines and their emission control systems there may be rules in place to prohibit importation of such engined vehicles. This warning applies to both petrol and diesel engine vehicles.

(i) Safety belts do not bear a certification label or marking (such as E-marking) on a label or on the tongue and are not of the inertia type on front outboard seats of all vehicle categories, and on rear outboard seats of passenger cars, and there is not a driver alert to warn the driver if the driver's safety belt is not fastened.

(j) Rear underrun dimensions and position do not correspond to the details given in 6.20 of ARS 1355-1.

(k) Speedometer is not fitted or if it is not functioning or is not showing the correct units for the recipient country.

(l) Audible warning is unacceptably loud or weak.

(m) Warning triangle is not supplied or the supplied triangle is not "E-marked" and showing "R27".

(n) Frontal collision – in the case of category M1 vehicles the presence of airbags is not indicated on dashboard, A or B-pillars, sun visor, safety belts, owner's manual or warning lights. (Mandatory application under UN ECE R94 is limited to M1 not exceeding 2 500kg GVM, but other vehicles especially N1 are often designed to comply but some are not designed to comply.)

(o) Side impact – the presence of airbags or side curtain airbags to reduce injuries is not indicated on the seats or elsewhere in the vehicle or in the owner's manual or the airbag check-light does not illuminate when the ignition is switched on. (Mandatory application under UN ECE R95 is limited to M1 and N1 with seat squabs not more than 700mm above ground).

(p) Tilt angle for buses[1] – adequate documentary evidence cannot be supplied to support at least 28 degrees tilt without tipping over.

(q) Strength of superstructure of buses[1] – adequate documentary evidence cannot be supplied to support compliance.

(r) There is evidence that outstanding safety recall procedures have not been conducted.

6.3 Compliance

Vehicles to be introduced for entry into service and operation on public roads after the date of introduction of this Part 2 of the specification, must be inspected to comply with the requirements detailed in Table 1 relevant to the category of vehicle, or alternatively to comply with the national requirements of those source countries whose requirements are considered to be functionally equivalent and which are detailed in Table 2.

[1] Compliance with these requirements is not possible to assess visually and as such, members may wish to exempt compliance, unless means can be found to source documentary evidence of compliance.

Table 1 — Requirements for vehicles entering into service on or after 1 March 2021

Column 1 Type of Equipment	Column 2 UN ECE Regulation[2]	Column 3 Categories of vehicles affected	Column 4 Level of UN ECE Regulation available for study[3].
Braking	ECE R13H	Passenger vehicle up to 9 seats including driver, and goods vehicles up to 3500kg GVM	Revision 2, Supplement 11 to the original regulation – 30 January 2011
	ECE R13	Buses with 10 or more seats and goods vehicles over 3500kg GVM	Revision 6, Supplement 4 to the 10 Series of amendments – 10 November 2007
Lighting	ECE R48	All	Revision 3, Supplement 8 to the 02 Series of amendments – 12 August 2004
Contour tape (May be added after arrival)	ECE R104	Buses with 10 or more seats including the driver, and goods vehicles over 3500kg GVM or over 7m long.	Revision 1, Supplement 6 to the original regulation – 24 October 2009
Chevrons (May be added after arrival).	ARS 1355-1, Annex B	Over 3500kg GVM	UN ECE R69 Revision 1 and R70 Revision 1 are alternatives to the requirements in Column 2
Safety glass	ECE R43	All	Revision 2, Supplement 7 to the original regulation – 16 July 2003
Rear view	ECE R46	All	Revision 2, Supplement 4 to the 02 Series of amendments – 23 June 2005
Tyres - passenger	ECE R30	Passenger	Revision 3, Supplement 14 to the 02 Series of amendments – 18 January 2006
Tyres - commercial	ECE R54	Passenger & Goods	Revision 2, Supplement 15 to the original regulation – 30 October 2003
Emissions – Light vehicles	Euro 2	Applied in EU to new registrations 01 January 1997	UN ECE R83.05 or 70/220 EEC amended by 2003/76/EC ECE R83/03 and ECE R83/04
Emissions - HCV	Euro II – Ensure that fuel quality supports whatever emission level is specified.	Applied in EU during 1995	UN ECE R49/02 or 91/542/EEC
Inertia safety belts on all outboard seats	ECE R16	All M1, M2 & N1	Revision 7, Supplement 2 to the 06 Series of amendments – 26 July 2012 Rev 4 and Rev 5 now available
Rear underrun	ECE R58	Goods vehicles over 3500kg GVM	Revision 2, Supplement 02 Series of amendments – 11 July 2008
Speedometer	ECE R39	All	Revision 1, Supplement 5 to original regulation – 7 December 2002
Audible warning	ECE R28	All	Original regulation
Warning triangle	ECE R27	All	Revision 2, Supplement 1 to the 04 Series of amendments – 9 October 2014

[2] These UN ECE Regulation or Overprinted Standards of the levels specified in Column 4 are freely available on request to the Secretariat. Later levels are freely available from the UN ECE Website at https://www.unece.org/trans/main/welcwp29.html then click on UN Regulations (1958 Agreement) then Regulations (Addenda to the 1958 Agreement) then select the number of the regulation required from the groups shown.

[3] Compliance to any Revision level or to any Approval marking level of the UN ECE Regulation stated in Column 2 is acceptable or to the equivalent national regulation of the country of origin shown in Table 2 – *** except in the case of Emissions in Member States where the fuel quality does not support the latest technology engines. An overprint standard of the level in Column 4 is available free-of-charge from the Secretariat and in most cases from the UN ECE website. French and Portuguese translations of the UN ECE Regulations are available at https://ec.europa.eu › attachments › translations › renditions › native

Column 1	Column 2	Column 3	Column 4
Type of Equipment	**UN ECE Regulation[2]**	**Categories of vehicles affected**	**Level of UN ECE Regulation available for study[3].**
Frontal collision	ECE R94	Passenger vehicles up to 9 seats including driver	Revision 1, Supplement 3 to the 01 Series of amendments – 2 February 2007
Lateral collision	ECE R95	Passenger vehicles up to 9 seats including driver	Revision 1, Supplement 03 Series of amendments – 23 June 2011
Tilt-angle stability test	ECE R107 28 Degree Tilt Annex 3 Clause 7.4 Stability test	10 or more seats, M2 & M3 but using 68 kg/ person and ignore standees.	Revision 4, Supplement 3 to the 04 Series of amendments – 10 June 2014. Clause 7.4
Superstructure	ECE R66	More than 22 passengers	Revision 1, Supplement 1 to the original – 09 November 2005
Data Plate	ARS 1355-1, Clause 6.2	Goods vehicles < 3 500kg GVM and passenger cars	Showing the GVM, GCM & front and rear axle capacities.
Data Plate	ARS 1355-1, Clause 6.2	Goods vehicles over 3 500kg GVM and passenger vehicles with 10 or more seats and trailers.	Showing manufacturers technically permissible masses
Brakes on all wheels	ARS 1355-1, Clause 6.3.7	Category O2, O3, O4	All levels of ECE R13
Single type of semi-trailer suspension	ARS 1355-1, Clause 6.17.5	Category O2, O3, O4	No ECE Requirement

Table 2 — Alternative requirements to those of the UN ECE Listed in Table 1 according to the domestic legislation of the identified countries

Type of Equipment	UN ECE Regulation or Overprinted Standard[4]	Categories of vehicles affected	Standards of other nations which are understood to be directly equivalent to UN ECE or which are based on similar and adequate requirements and are functionally equivalent [5]
Braking	ECE R13H	M1, N1	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA, India, RSA
	ECE R13	M2/M3, N2/N3	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA, India, RSA
Lighting	ECE R48	All	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA, India, RSA
Contour tape	ECE R104	M2/M3, N2/N3 + Goods over 7m & all O	EU, Australia, China, Korea, Brazil, Gulf States
Safety glass	ECE R43	All	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA, India, RSA
Rear view	ECE R46	All	EU, Australia, Japan, USA
Tyres - passenger	ECE R30	Passenger	EU, Australia, China, Japan, USA
Tyres - commercial	ECE R54	Passenger & Goods	EU, Australia, China, USA
Emissions – Light vehicle	Euro 2 Ensure that fuel quality supports whatever emission level is specified.	Passenger & Goods	EU, Australia, China, Japan, USA
Emissions – HCV	Euro II Ensure that fuel quality supports whatever emission level is specified.	Passenger & Goods	EU, Australia, China, Japan, USA
Inertia safety belts on all outboard seats	ECE R16	All M1, M2 & N1	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA, India, RSA
Rear underrun	ECE R58	Goods vehicles over 3 500kg GVM	Unknown
Speedometer	ECE R39	All	EU, Australia, China, Japan, USA
Audible warning	ECE R28	All	EU, Australia, China, Japan, USA
Warning triangle	ECE R27	All	EU, Australia, China, Korea, Brazil
Frontal collision	ECE R94	M1	EU, Australia, China, Japan, Korea, Brazil, Gulf States, USA
Lateral collision	ECE R95	M1	EU, Australia, China, Japan, USA
Tilt angle	ECE R107 28 Degrees	More than 22 passengers	EU, Australia, RSA
Superstructure	ECE R66	More than 22 passengers	EU

[4] These UN ECE Regulation or Overprinted Standards of the levels specified in Column 4 of Table 1 are freely available on request to the Secretariat. Later levels are freely available from the UN ECE Website at https://www.unece.org/trans/main/welcwp29.html then click on UN Regulations (1958 Agreement), followed by Regulations (Addenda to the 1958 Agreement) then select the number of the regulation required from the groups shown.

[5] The term “functionally equivalent” is intended to convey the interpretation that those options in Table 2 which are not identical in technical content to a UN Regulation nevertheless achieve what is considered to be adequate safety performance by the regulatory authority that developed them. For example, FMVSS 121 is considered to be functionally equivalent to UN Regulation 13. Both have standards of braking performance and of safety back-up systems considered to be acceptable by regulatory authorities with many years of experience.

Bibliography

SADC HT 105-2:2019, *SADC Harmonized Text — Vehicle Standards — Specification for Vehicle Roadworthiness — Part 2: Roadworthiness of vehicles prior to entry into service, and thereafter*