43rd Asia Expert Meeting on UN Regulations related to External Projections of Passenger Cars (R26),Child Restraint System (R44) & Speed Limitation Devices (R89)

Date : **October 5th and 6th , 2015**

Place : **For October 5th**
Meeting Room, Level 4, Automotive Engineering Division,
Road Transport Department (JPJ), Putrajaya

For October 6th
JPJ Conference Room, (Al-Khawarizmi Meeting Room)
IT Division - JPJ, Cyberjaya

Day 1:

9:30 – 12:00	**Testing Procedures and Discussion on Checklist : UNR26, UNR44 and UNR89**
10:30 - 10:45	**Coffee Break (15 minutes)**

Additional Agenda : If necessary, other outstanding issues (next WG, next WS, two Japan trainings, P/P forum etc.) to be discussed after morning session.

Day 2:

8:30 - 9:30	**Registration**
9:30 - 9:40	**Opening Address :** from JPJ
9:40 – 9:45	**Message :** from JASIC
9:45 - 11:00	**UN R26 - General Information and Technical Requirements :** from Mr. Kikuchi **Q & A & Discussion**
11:00 – 11:15	**Photo Session and Break**
11:15 - 13:00	**UN R44 - General Information and Technical Requirements :** from Mr. Takagi **Q & A & Discussion**
13:00 – 14:00	**Lunch**
14:00 – 16:00	**UN R89 - General Information and Technical Requirements:** from Mr. Yonezawa **Q & A & Discussion**
16:00 - 16:10	**Closing**

UN Regulation No. 26
(EXTERNAL PROJECTIONS)
Technical Requirements

October 5, 2015
Sho Kikuchi

PASSIVE SAFETY SUBCOMMITTEE in JASIC
Japan Automobile Standards Internationalization Center

Contents

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1. Scope and Purpose

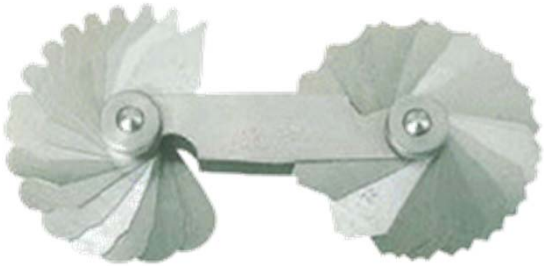
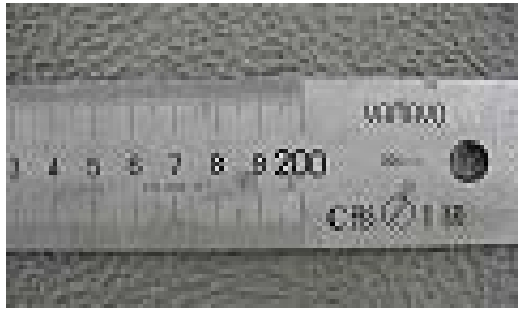
Scope	This Regulation applies to external projections of category M1 vehicles. It does not apply to exterior rear-view mirrors*1 or to the ball of towing devices.
Purpose	The purpose of this Regulation is to reduce the risk or seriousness of bodily injury to a person hit by the bodywork or brushing against it in the event of a collision. This is valid both when the vehicle is stationary and in motion.
Application for approval	The application for approval of a vehicle type with regard to its external projections shall be submitted by the vehicle manufacturer or by his duly accredited representative.
Approval	If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of paragraphs 5. and 6. below, approval of that vehicle type shall be granted.

*1 Notes: For rear-view mirror, refer to requirements in the UN R46

UN R46 INDIRECT VISION:
When the mirror is mounted on a plane surface, all parts, irrespective of the adjustment position of the device, including those parts remaining attached to the support after the test provided for in paragraph 6.1.3.2. below, which are in potential, static contact with a sphere either 165 mm in diameter in the case of an interior mirror or 100 mm in diameter in the case of an exterior mirror, shall have a radius of curvature 'c' of not less than 2.5 mm.

Contents

2. Test and Measurement Main Instrument

Cone with a half angle of 30deg.	Sphere of 100mm diameter	Sphere of 165mm diameter
		
Radius gauge	**Scale**	**Plumb bob**
		
Push-pull gauge	**Durometer**	**Colored chalk**
		

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		6.4	Windscreen wipers
		6.5	Bumpers
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		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
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		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
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3. Test Items

5	**General specifications**		
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		6.17	Aerials

5. General specifications

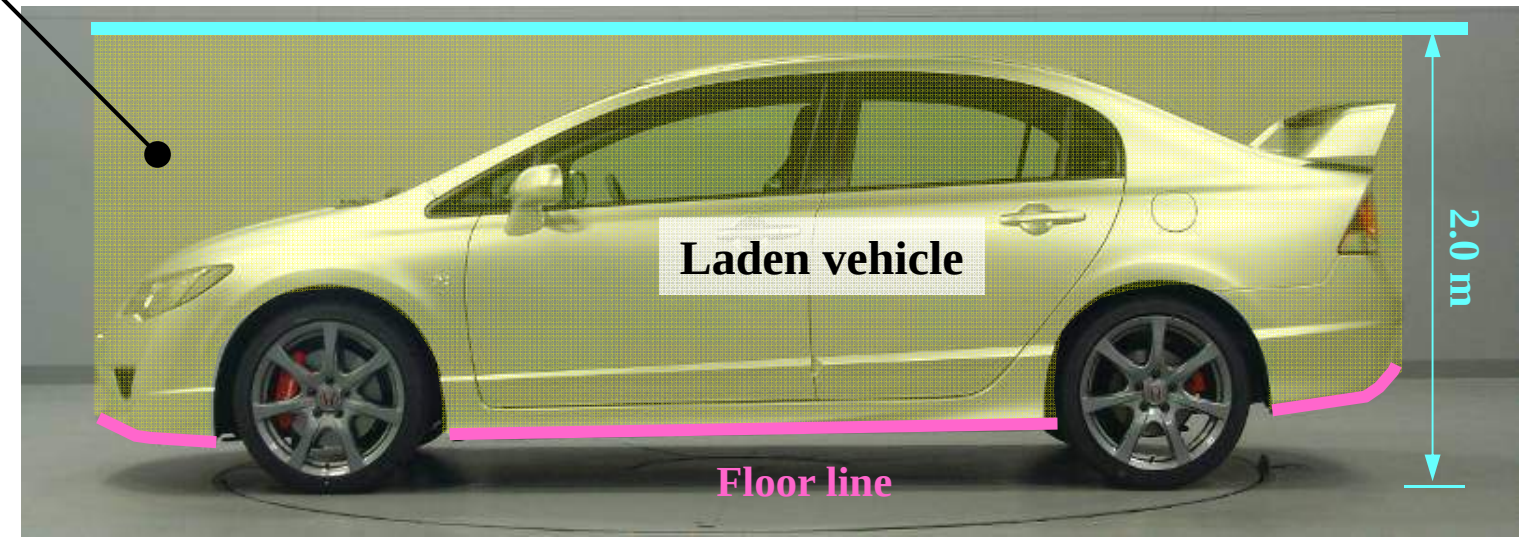
Outline

Conditions	The vehicle in the laden condition, with all doors, windows and access lids etc., in the closed position
Scope	The external surface of vehicles; • At a height of 2m or less • Above the floor line • Located can be contacted by a sphere 100mm in diameter in their static condition as well as when in operation
Requirements	• shall not exhibit, directed outwards - any pointed - sharp parts - any projections of such shape, dimensions, direction or hardness as to be likely to increase the risk or seriousness of bodily injury to a person hit by the external surface or brushing against it in the event of a collision - any part likely to catch on pedestrians, cyclists or motor cyclists • shall have a radius of curvature more than 2.5mm This requirement shall not apply to parts of the external surface; - which protrude less than 5mm *but the outward facing angles of such parts shall be blunted, save where such parts protrude less than 1.5mm - Protruding parts of the external surface, made of a material of hardness not exceeding 60 shore A

5. General specifications

Conditions and Scope

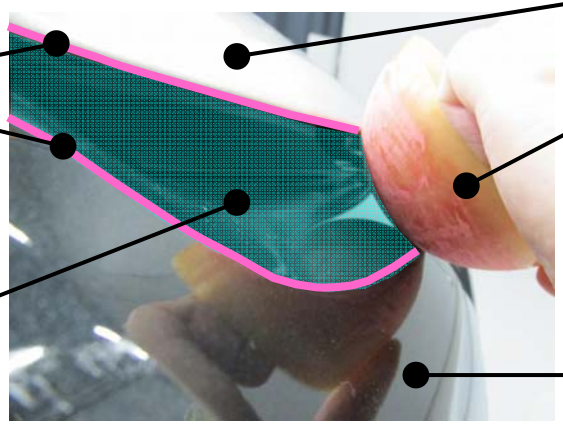
This area is the scope of application for the General specifications.



"Laden vehicle" means the vehicle laden to the maximum permitted technical mass.

Contacted lines are
the scope of application
for the General specifications.

No contacted area is
out of the scope of application
for the General specifications.



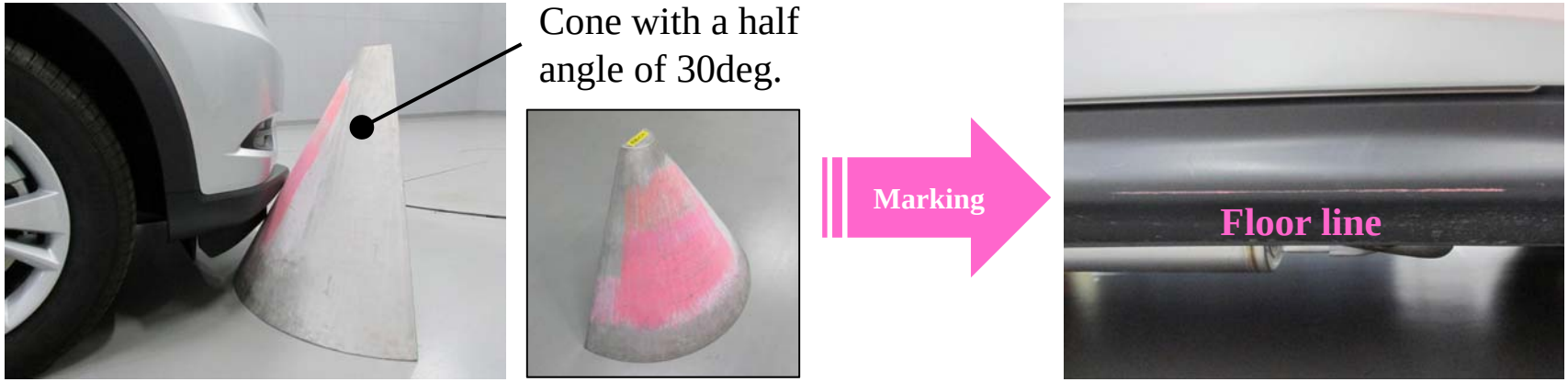
5. General specifications

Conditions and Scope

Floor line:

Successively position round a laden vehicle a cone with a vertical axis the height of which is not defined, and with a half angle of 30deg. in such a way that it contacts, constantly and as low as possible, the external surface of the vehicle.

The floor line is the geometric trace of these points of contact.

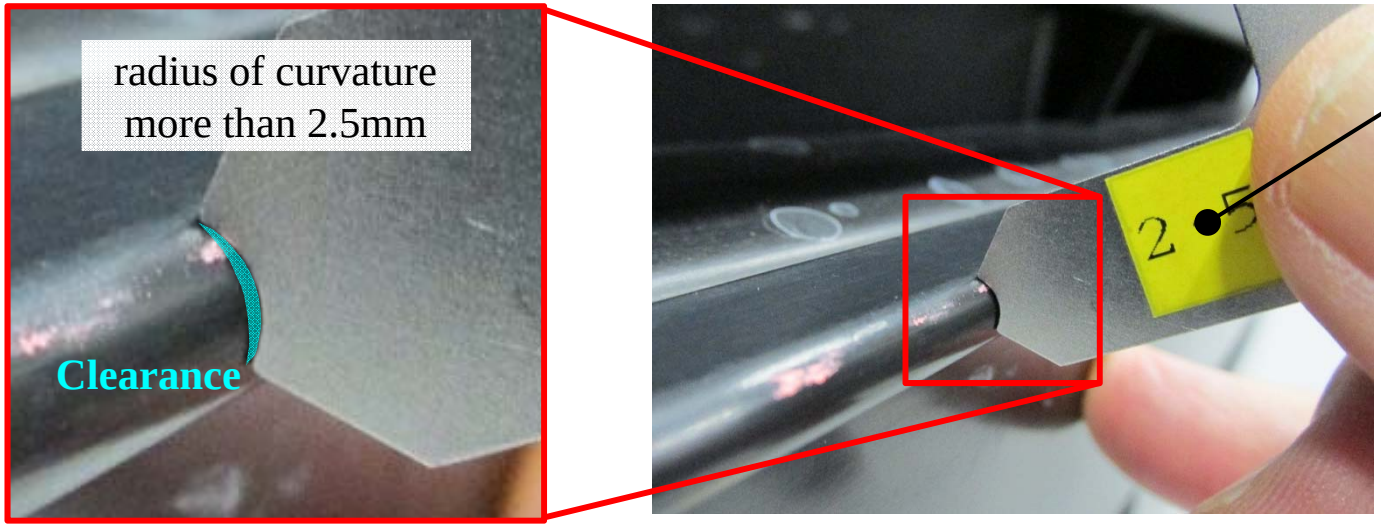


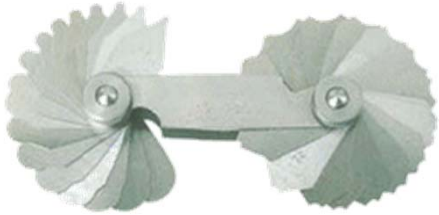
The jacking points, exhaust pipes or wheels shall not be taken into consideration.

5. General specifications

Scene of a test

This test is checking whether the external surface of vehicles have a radius of curvature more than 2.5mm.





Radius gauge

The durometer is used to measured the hardness for protruding parts of the external surface.

Durometer

The provisions of the General specifications shall apply in addition to the Particular, except where these Particular specifications expressly provide otherwise.

3. Test Items

5	General specifications		
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		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
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		6.17	Aerials

6.1 Ornaments

Outline

Conditions	To apply the 10 daN force a flat-ended ram of not more than 50 mm diameter shall be used.
Scope	These provisions shall not apply to ornaments on radiator grilles.
Requirements	• Added ornaments which project more than 10 mm from their support shall retract, become detached or bend over under a force of 10 daN exerted at their most salient point in any direction in a plane approximately parallel to the surface on which they are mounted. • After the ornaments are retracted, detached or bent over, the remaining projections shall not project more than 10 mm.

The push-pull gauge is used to apply a force of 10 daN to the Ornament

Push-pull gauge

3. Test Items

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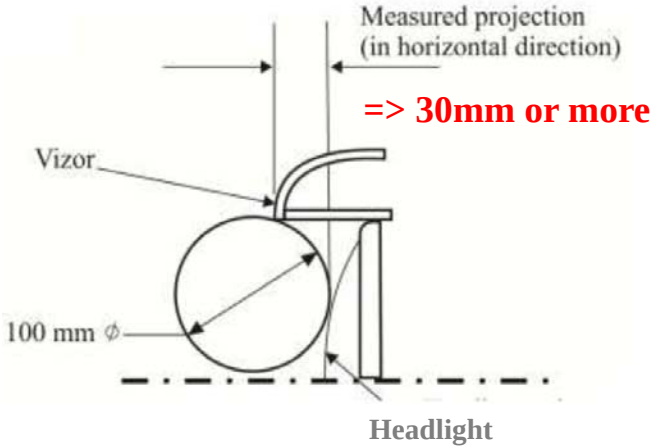
6.2 Headlights

Outline

Conditions	Case of Retracting headlights; shall meet the above requirement in both the operative and retracted positions.
Scope	do not apply to headlamps which are sunk into the bodywork or which are "overhung" by the bodywork.
Requirements	• Projecting visors and rims that as measured in relation to the external transparent surface of the headlight does not exceed 30 mm and their radius of curvature is at least 2.5 mm throughout. • After the ornaments are retracted, detached or bent over, the remaining projections shall not project more than 10 mm.



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6.3 Grilles and gaps

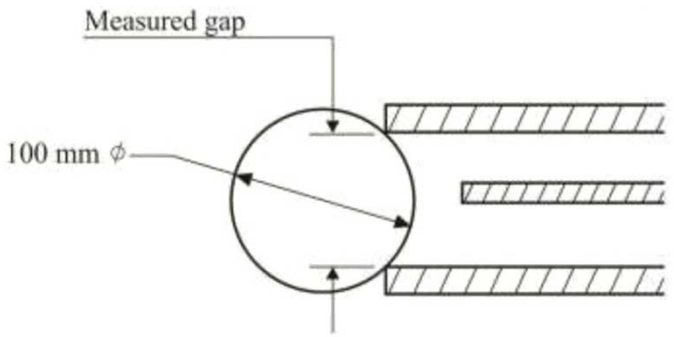
Outline

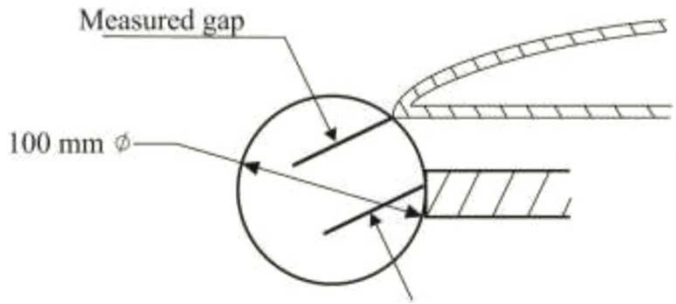
Scope	The requirements of the General specifications shall not apply to gaps between fixed or movable elements, provided that the distance between consecutive elements does not exceed 40 mm and provided that the grilles and gaps have a functional purpose.
Requirements	• Gaps exceed 40 mm - The radius of curvature shall be 2.5 mm or more. • Gaps between 40 mm and 25 mm - The radius of curvature shall be 1 mm or more. • Gaps between two consecutive elements is equal to or less than 25 mm - The radius of curvature of external faces of the elements shall not be less than 0.5 mm • The junction of the front with the side faces of each element forming a grille or gap shall be blunted.

6.3 Grilles and gaps

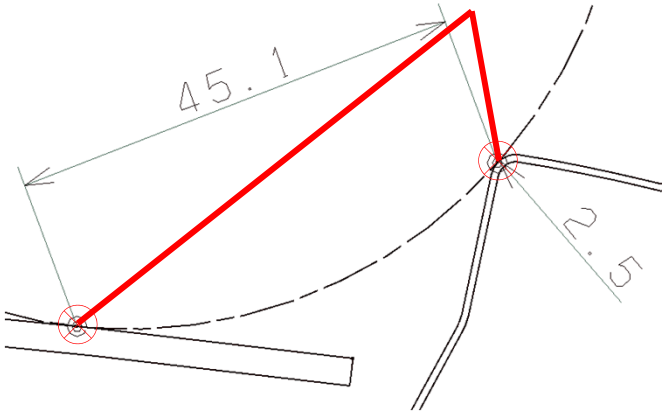
Scene of a test

Grilles:





The distance between two points in contact with a sphere 100 mm diameter is measured.



In case where Gaps exceed 40 mm, general specifications is applied.

For Fig. on the right, the surface shall have shall have a radius of curvature more than 2.5mm.

3. Test Items

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6.4 Windscreen wipers

Outline

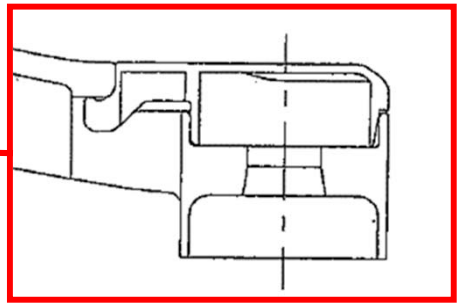
Scope	• The windscreen wiper, rear window wipers and headlamp wipers fittings. • General specifications shall not apply to the wiper blades or to any supporting members. However, these units shall be so made as to have no sharp angles or pointed or cutting parts.
Requirements	• shall be such that the wiper shaft is furnished: - with a protective casing which has a radius of curvature meeting the requirements of paragraph 5.4. above - an end surface area of not less than 150mm^2. • In the case of rounded covers; - with a protective casing which has a radius of curvature meeting the requirements of paragraph 5.4. above - these shall have a minimum projected area of 150mm^2 when measured not more than 6.5 mm from the point projecting furthest.

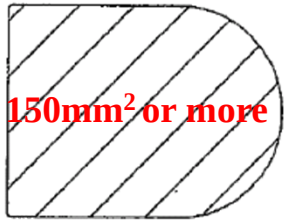
6.4 Windscreen wipers

Details

Protective casing:

an end surface area of not less than 150mm^2

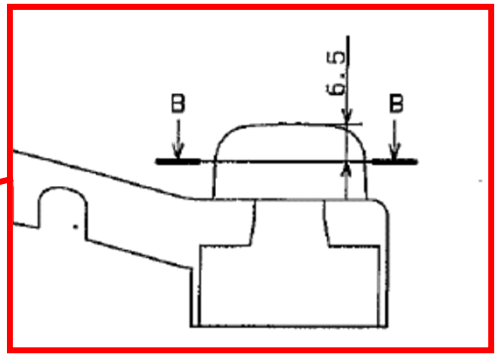


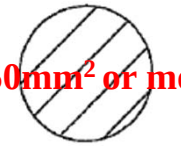


TOP VIEW

Rounded covers:

have a minimum projected area of 150mm^2 when measured not more than 6.5 mm from the point projecting furthest





Section BB TOP VIEW

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6.5 Bumpers

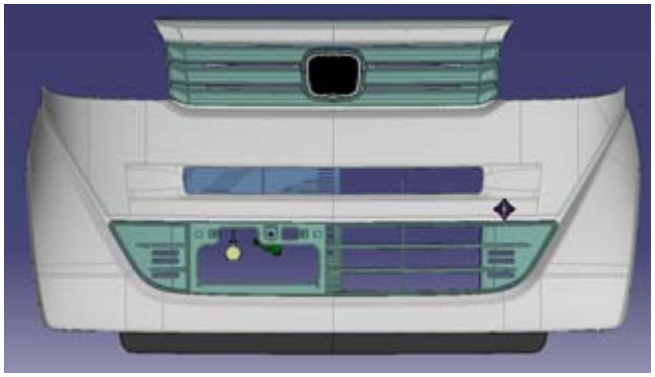
Outline

Scope	This provision applies to that part of the zone lying from the contour line to 20 mm inward which is situated between and in front (or rear in case of the rear bumper) of tangential points with the contour line of two vertical planes each forming with the longitudinal plane of symmetry of the vehicle an angle of 15 deg. shall not apply to parts on or of the bumper or to bumper insets which have a projection of less than 5 mm, with special reference to joint covers and jets for headlamp washers; but the outward facing angles of such parts shall be blunted, save where such parts protrude less than 1.5 mm.
Requirements	• The ends of the bumpers shall be turned in towards the external surface in order to minimize the risk of fouling. • at all its points lying from the contour line to 20 mm inward; - shall have a minimum radius of curvature of 5 mm • in all other cases; - shall have a minimum radius of curvature of 2.5 mm

6.5 Bumpers

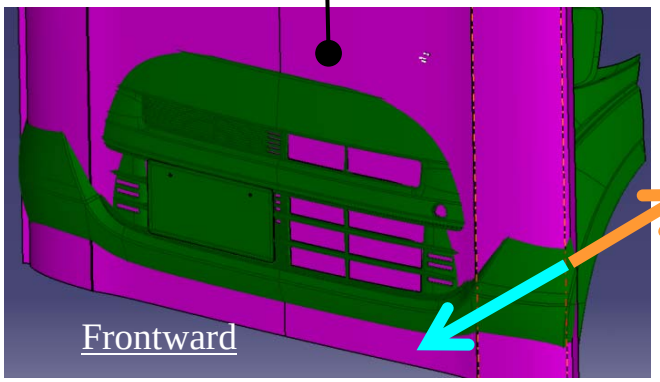
Details

Front Bumper:



Front View

the contour line to 20 mm inward.



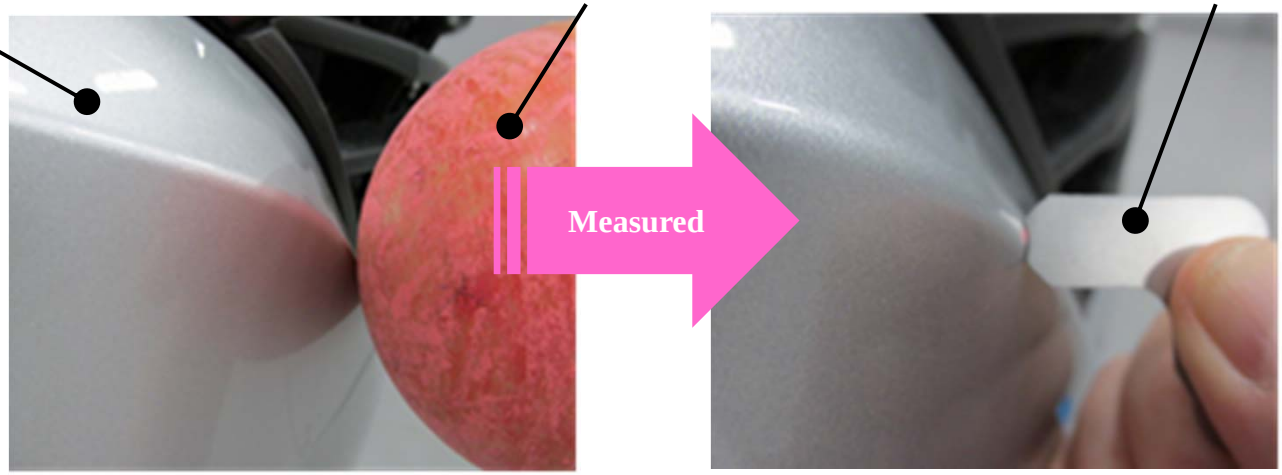
This area shall have a minimum radius of curvature of 2.5 mm

This area shall have a minimum radius of curvature of 5 mm

Front bumper surface

Sphere of 100mm diameter

Radius gauge (R5.0mm)



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		6.17	Aerials

Outline

Requirements	• In the case of door or luggage compartment handles; - <u>The projection shall not exceed 40mm</u> • In all other cases; - <u>The projection shall not exceed 30mm</u> • If lateral door handles rotate to operate; - In the case of handles which rotate parallel to the plane of the door; · The open end of handles must be directed towards the rear · The end of such handles shall be turned back towards the plane of the door and fitted into a protective surround or be recessed - In the case of handles which is not parallel to the plane of the door; · In the closed position, be enclosed in a protective surround or be recessed · The open end shall face either rearwards or downwards

In the case of handles which pivot outwards in any direction which is not parallel to the plane of the door:



be enclosed in a protective surround or be recessed. The open end shall face either rearwards or downwards.

3. Test Items

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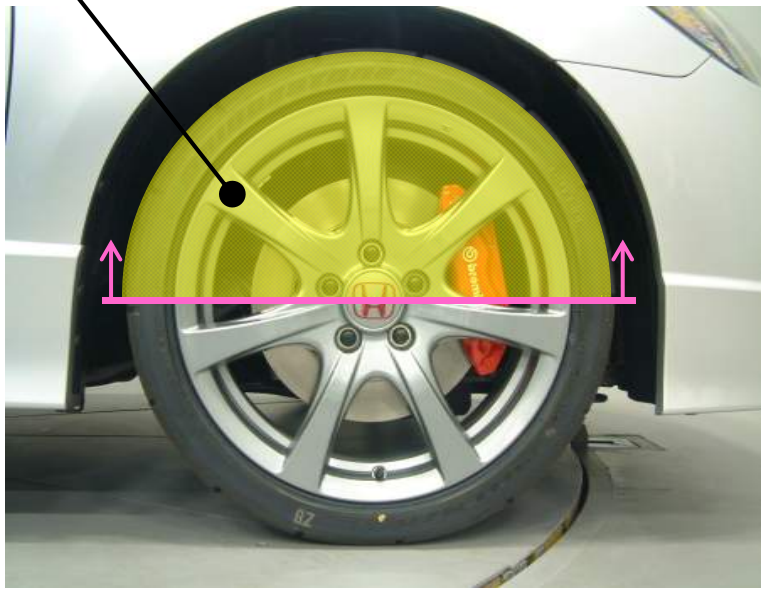
		6.17	Aerials

6.7 Wheels, wheel nuts, hub caps and wheel discs

Outline

Scope	When the vehicle is travelling in a straight line, no part of the wheels other than the tyres, situated above the horizontal plane passing through their axis of rotation
Requirements	• shall not exhibit any pointed or sharp projections that extend beyond the external plane of the wheel rim. • shall project beyond the vertical projection, in a horizontal plane of the external surface or structure

This area is the scope of application



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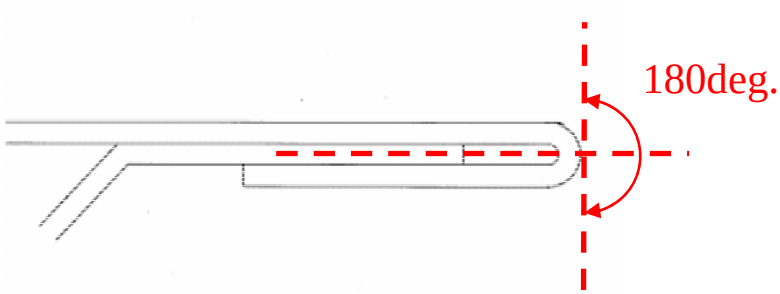
6.8 Sheet-metal edges

Outline

Scope	• Sheet-metal edges, such as gutter edges and the rails of sliding doors • The requirements of the General specifications shall not apply to the rear edge of bonnet and front edge of rear luggage boot.
Requirements	• shall not be permitted unless they are folded back, or - shall be folded back by approximately 180deg., or - shall be folded towards the bodywork in such a manner that it cannot be contacted by a sphere having a diameter of 100mm • shall not be fitted with a shield meeting this Regulation



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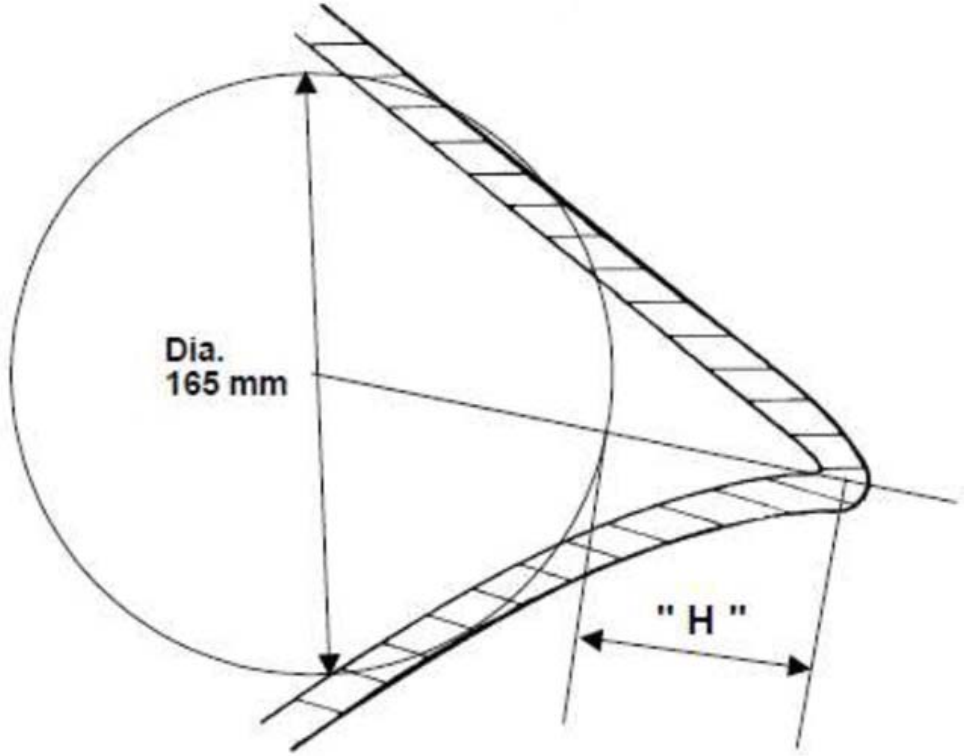
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.9 Body-panels

Outline

Requirements	Folds in body panels may have a radius of curvature of less than 2.5 mm provided that it is not less than one-tenth of the height "H" of the projection



3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	**Lateral air or rain deflectors**
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.10 Lateral air or rain deflectors

Outline

Requirements	shall have a radius of curvature of at least 1 mm on edges capable of being directed outwards

Lateral rain deflectors

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	**Jacking brackets and exhaust pipes**
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.11 Jacking brackets and exhaust pipes

Outline

Scope	The vertical projection of the floor line lying vertically above Jacking brackets and exhaust pipes (radius of curvature is less than 2.5 mm)
Requirements	shall not project more than 10 mm beyond this vertical projection

the floor line lying vertically

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	**Air intake and outlet flaps**
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.12 Air intake and outlet flaps

Outline

Condition	In all positions of use
Requirements	shall meet the requirements of the General specifications

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	**Roof**
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.13 Roof

Outline

Conditions	• Opening roofs; - only in the closed position • Convertible vehicles - examined with the hood in both the raised and lowered positions - With the hood lowered, no examination shall be made of the vehicle inside an imaginary surface formed by the hood when in the raised position
Requirements	shall meet the requirements of the General specifications

Opening roofs:

Convertible vehicles:

3. Test Items

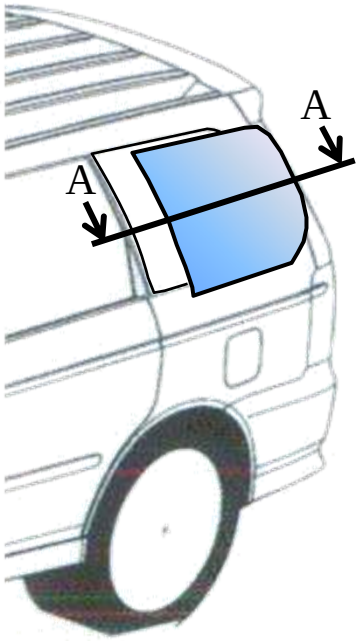
5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	**Windows**
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	Aerials

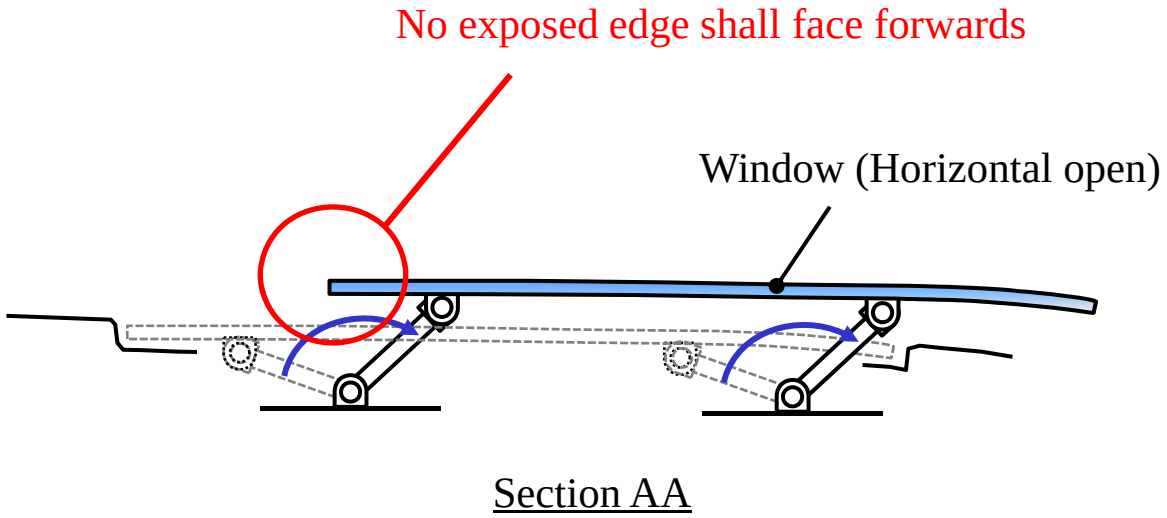
6.14 Windows

Outline

Conditions	in all positions of use
Requirements	• No exposed edge shall face forwards • No part of the window shall project beyond the extreme outer edge of the vehicle

Examples of non-conforming:





Section AA

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
		6.7	Wheels, wheel nuts, hub caps and wheel discs
		6.8	Sheet-metal edges
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	**Registration plate brackets**
		6.16	Luggage racks and ski racks
		6.17	Aerials

6.15 Registration plate brackets

Outline

Conditions	A registration plate is fitted in accordance with the vehicle manufacturer's recommendation.
Scope	Be contactable by a 100mm diameter sphere. * Registration plate is out of the scope of application
Requirements	shall meet the requirements of the General specifications.

Registration plate fitted areas are out of the scope of application this requirements

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
		6.5	Bumpers
		6.6	Handles, hinges and push-buttons of doors, luggage compartments and bonnets; fuel tank filler caps and covers
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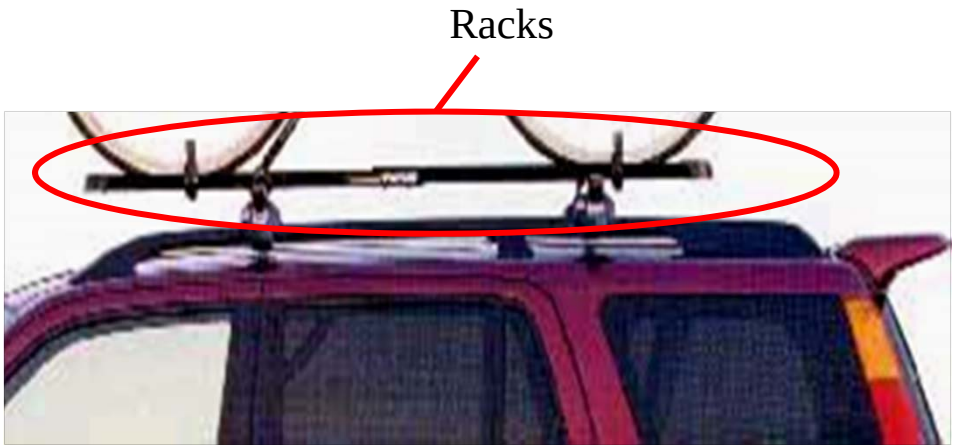
		6.9	Body-panels
		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	**Luggage racks and ski racks**
		6.17	Aerials

6.16 Luggage racks and ski racks

Outline

Requirements	• shall be so attached to the vehicle that positive locking exists in at least one direction and that horizontal, longitudinal and transverse forces can be transmitted which are at least equal to the vertical load-bearing capacity of the rack as specified by its manufacturer. • Racks; - The external surface in contact with a sphere 165 mm in diameter shall have a radius of curvature more than 2.5 mm. • Fastening elements; - shall not project more than 40 mm beyond the surface in contact with a sphere 165 mm in diameter.



After installation of the rack;
- Confirmation by contact with a sphere 165 mm in diameter.
- Static load test*

* The test loads shall not be applied at one point only.

3. Test Items

5	General specifications		
6	**Particular specifications**	6.1	Ornaments
		6.2	Headlights
		6.3	Grilles and gaps
		6.4	Windscreen wipers
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		6.10	Lateral air or rain deflectors
		6.11	Jacking brackets and exhaust pipes
		6.12	Air intake and outlet flaps
		6.13	Roof
		6.14	Windows
		6.15	Registration plate brackets
		6.16	Luggage racks and ski racks
		6.17	**Aerials**

6.17 Aerials

Outline

Scope	The aerial unattached end is less than 2 m from the road surface in any position of use specified by the manufacturer
Requirements	• shall be inside the zone bounded by the vertical planes which are 10 cm inside the extreme outer edge of the vehicle • shall be fitted to the vehicle that no part of the aerials protrude beyond the extreme outer edge of the vehicle • Shafts of aerials; - may have radius of curvature of less than 2.5 mm • Unattached ends of aerials; - shall be fitted with fixed capping which shall have a radius of curvature more than 2.5 mm • Bases of aerials (forward R point); - shall not project more than 40 mm • Bases of aerials (backward R point); - It shall not project more than 70 mm.

6.17 Aerials

Details

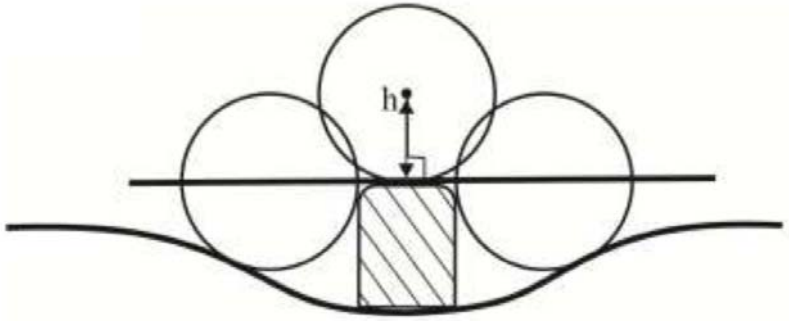
Capping

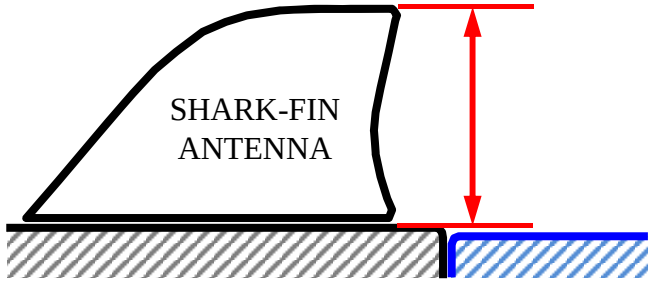
Bases of aerials (forward R point)

Bases of aerials (backward R point)
ex. Shark-fin antenna

Shafts

In the case of a component which is mounted on **a convex** surface





In case where shark-fin antenna is installed on **a flat** roof panel, it is measured from roof panel directly.

Terima kasih atas perhatian anda.

Thank you for your attention.

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ECE No. 44
Child Restraint Systems

Shunsuke Takagi
(NTSEL Automobile Type Approval Test Department)

独立行政法人
交通安全環境研究所
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Contents

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- Kinds and Category of CRS
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Child restraint is not a seat for children, but a device that secures children to their seats (additional device for children) to provide protection from impacts in accidents.

Safety device similar to seatbelts

Child restraint system ("restraint") means (2.1)

Child restraint system ("restraint") may comprise the combination of straps or flexible components with a securing buckle, adjusting devices, attachments and in some cases a supplementary device as a carry-cot, infant carrier, a supplementary chair and/or an impact shield, capable of being anchored to a power-driven vehicle. It is so designed as to diminish the risk of injury to the wearer, in the event of a collision or of abrupt deceleration of the vehicle, by limiting the mobility of the wearer's body.

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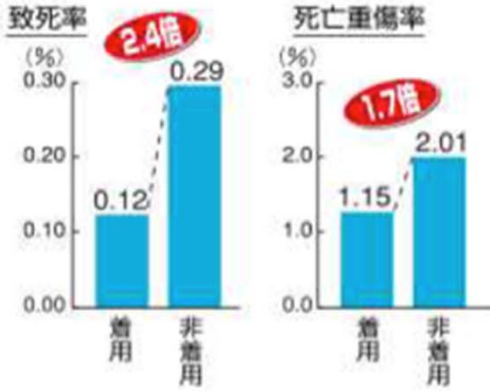
チャイルドシートをしないとどうなるの？

チャイルドシートの着用、非着用の事故データを見ると、着用時と非着用時とでは致死率、死亡重傷率に大きな差があることがわかります。

被害を最小限にするためにも、安全な製品を選び、正しく使用しましょう。

When child is not placed in CRS, the death ratio increases 2.4 times than when placed in CRS

■チャイルドシートの有無の致死率 死亡重傷率の比較



2007年中の6歳未満の幼児の自動車同乗中の交通事故発生状況

	被害者数				被害率	
	死者数	重傷者数	軽傷者数	計	致死率	死亡重傷率
チャイルドシート着用	9人	78人	7,505人	7,592人	0.12%	1.15%
チャイルドシート非着用	12人	70人	3,991人	4,073人	0.29%	2.01%
着用不明	0人	6人	195人	201人	0.00%	2.99%

（注）致死率＝死者数÷全死傷者数×100［%］
死亡重傷率＝（死者数＋重傷者数）÷全死傷者数×100［%］
警察庁資料より抜粋

MLIT website

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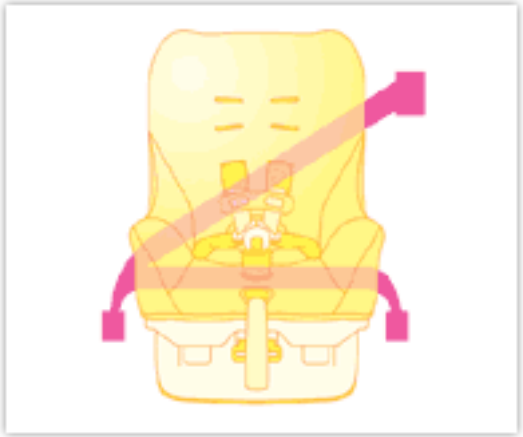
Belt -secured type (two-point or 3-point belt)	ISOFIX Anchorages ＋ Top Tether	ISOFIX Anchorages ＋ Support leg
		
Universal	ISOFIX Universal	Semi-Universal ISOFIX(6.1.1.)
Category		

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	Infant	Toddler	School age children
Weight	less than 10 kg	less than 9～18 kg	less than 15～36 kg
Height	up to 70 cm	up to 65～100 cm	up to 135 cm
Age	newborn to 1 year old	1 to 4 yrs old	4 to 10 yrs old
CRS			
Remark	"rearward-facing" and "bed type"	Some can be used for both infants and children	Adult seatbelt is used

MLIT website

Category: 4 categories based on installed seat/vehicle
Mass Group: 5 groups based on weight of child

Possible configurations for groups / categories (6.1.3)

Group category		Universal		Semi-universal		Restricted		Specific vehicle	
		CRS	ISOFIX CRS	CRS	ISOFIX CRS	CRS	ISOFIX CRS	CRS	ISOFIX CRS
0	Carry-cot	A	NA	A	A	A	NA	A	A
	Rearward facing	A	NA	A	A	A	NA	A	A
0+	Rearward facing	A	NA	A	A	A	NA	A	A
I	Rearward facing	A	NA	A	A	A	NA	A	A
	Forward facing (integral)	A	A	A	A	A	NA	A	A
	Forward facing (non-integral)	NA	NA	NA	NA	NA	NA	NA	NA
	Forward facing (non-integral - see paragraph 6.1.12.)	A	NA	A	NA	A	NA	A	A
II	Rearward facing	A	NA	A	NA	A	NA	A	A
	Forward facing (integral)	A	NA	A	NA	A	NA	A	A
	Forward facing (non integral)	A	NA	A	NA	A	NA	A	A
III	Rearward facing	A	NA	A	NA	A	NA	A	A
	Forward facing (integral)	A	NA	A	NA	A	NA	A	A
	Forward facing (non integral)	A	NA	A	NA	A	NA	A	A

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1) Mass Group(2.1.1)

Group	Mass
Group 0	less than 10 kg;
Group 0+	less than 13 kg;
Group I	from 9 kg to 18 kg;
Group II	from 15 kg to 25 kg;
Group III	from 22 kg to 36 kg.

2) ISOFIX CRS Size Category (2.1.1.6)

ISOFIX size		Explanation
A	ISO/F3	Full Height Forward Facing toddler CRS
B	ISO/F2	Reduced Height Forward Facing toddler CRS
B1	ISO/F2X	Reduced Height Forward Facing Toddler CRS
C	ISO/R3	Full Size Rearward Facing toddler CRS
D	ISO/R2	Reduced Size Rearward Facing toddler CRS
E	ISO/R1	Rearward Facing infant CRS
F	ISO/L1	Left Lateral Facing position CRS (carry-cot)
G	ISO/L2	Right Lateral Facing position CRS (carry-cot)

3) ISOFIX CRS Size combination (2.1.1.6)

Group	Mass
Group 0	E, F, G
Group 0+	C, D, E
Group I	A, B, B1, C, D

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Requirements

- Markings and Instructions
- Parts of CRS
- Entire CRS

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Items indicated on child restraint (marking)

① Manufacturer's name/Initials/Trade mark (4.1)

② Warning label for rearward-facing restraints (4.4～4.5)

③ ISOFIX Markings (4.8)

ISOFIX design, Size

Method


Marking

④ E marking / Approval number / Category (5.4)

Label

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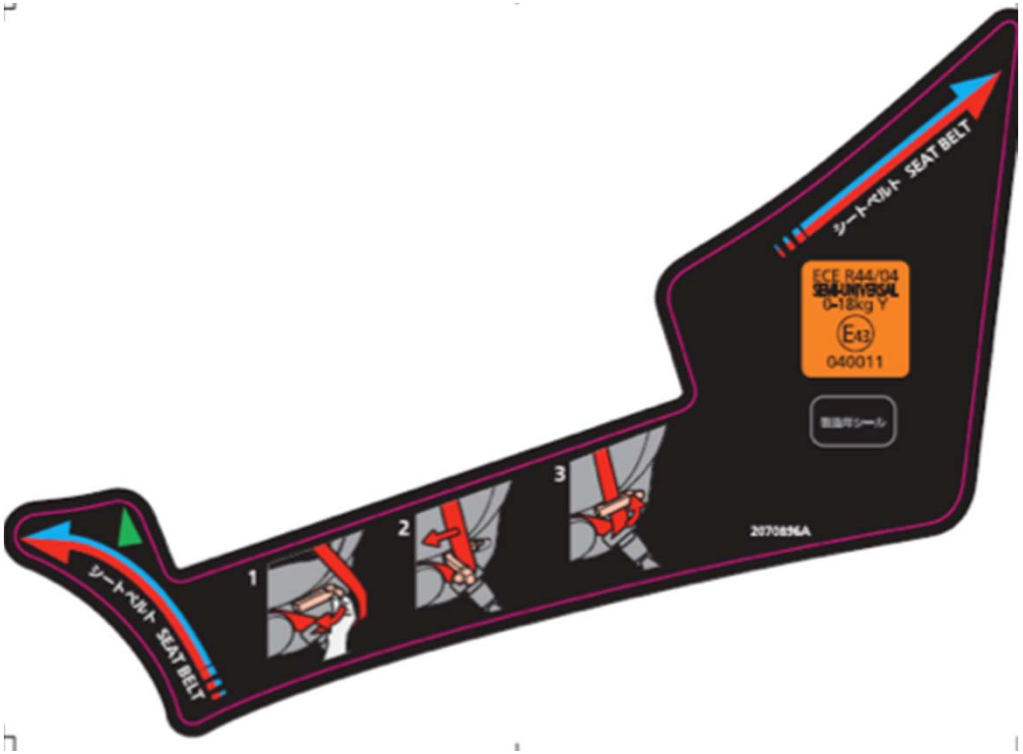
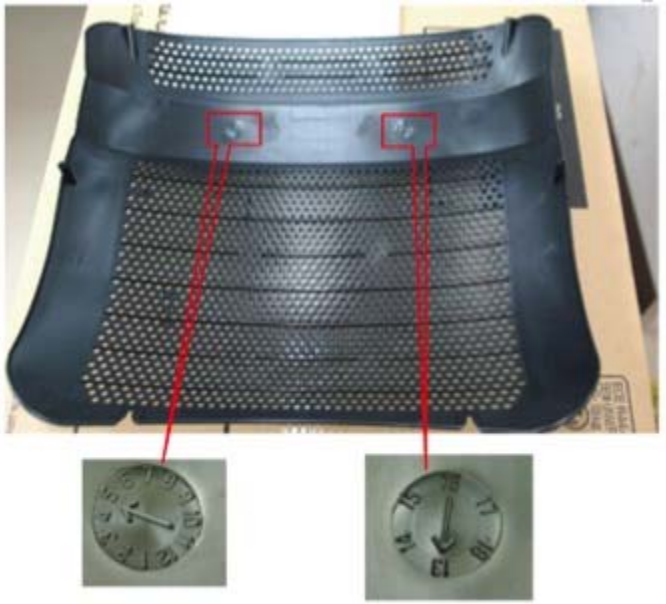
Items indicated on CRS (marking)

⑤ Production year on plastic parts (4.2)

⑥ Indication of belt route (4.3)





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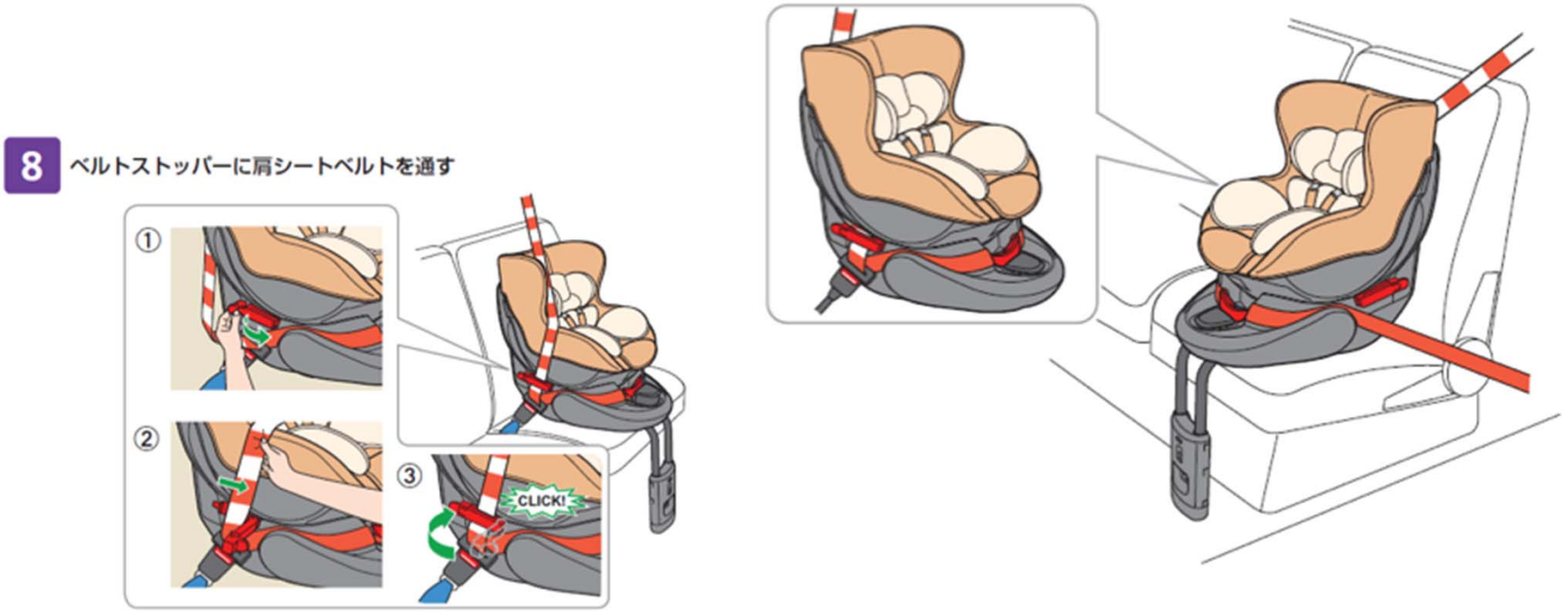
Instructions

- 15.2.6.

The method of installation illustrated by photographs and/or very clear drawings;



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Check restraint performance and damageability in normal use

Restraint performance

Lap strap load is transmitted through pelvis (Group I, II and III) (6.2.2)

Weak parts of body not subject to excessive stress (Group I, II and III) (6.2.2)

Distance between shoulder straps in vicinity of neck (at least width of neck) (6.2.3)

Compression load not imposed on crown of head (6.2.4)

Damageability

Sharp edges or protrusions liable to cause injury to occupant or damage to clothing (6.2.5.1～6.2.5.2)

Exhibition of sharp edges capable of abrading straps (6.2.5.4)

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Requirements

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- Entire CRS

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CRS Parts Name

Lock-off device

Seat cushion

Tongue

Buckle

Handle
(pre loader)

Harness Belt

Shoulder Strap
(Harness & Cover)

Crotch Strap
(Harness & Cover)

Adjusting device
Adjuster belt
Adjuster lever

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Provisions applicable to individual components of the restraint (7.2.)

Buckle (7.2.1, 8.2.1)

Adjusting device (7.2.2, 8.2.2, 8.2.3, 8.2.7, Annex 5, Annex 19)

Retractor (7.2.3, 8.2.4)

Strap (7.2.4, 8.2.5)

Lock-off device (7.2.5, 8.2.6)

ISOFIX attachment specification (7.2.6)

Dimension and area, operability, durability, releasing performance after impact test, breaking load are specified for components of above restraint device

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Specification of individual required parts

Buckle (7.2.1.)

- Preclude possibility of incorrect manipulation precluded (Not left in partially closed position)
  Buckle lock only when all parts are engaged (7.2.1.1)
- Easy to operate and grasp/ release button of proper size / red colored (7.2.1.2 ~ 7.2.1.3)
- Release of child from restraint by single operation is possible (7.2.1.4)

Adjusting device (7.2.2.)

- Range of adjustment sufficient to permit correct adjustment for all weight groups used (7.2.2.1)
- Quick adjuster type (7.2.2.2.)
- Adjusting device within easy reach (7.2.2.3.)

Strap (7.2.4.)

- Equipped with crotch strap (All forward facing Group I CRS) (6.2.1.5)
- Minimum width of straps which connect dummy (7.2.4.1.1)

Lock-off device (7.2.5.)

- Shall be permanently attached to child restraint (7.2.5.1.)
- Does not impair durability of adult belt (7.2.5.2.)
- Does not prevent rapid release of child (7.2.5.3.)

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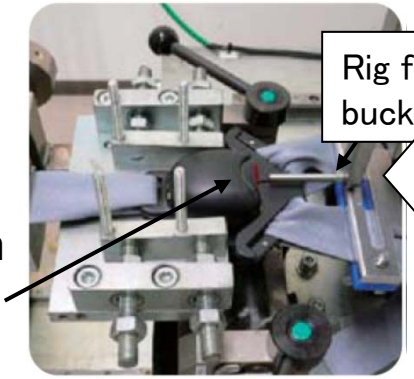
Buckle (7.2.1, 8.2.1)

Test	Buckle Opening Test		Strength test (7.2.1.9、8.2.1.3.2., Annex 20)
	Under load (7.2.1.8.1)	No load (7.2.1.8.2)	
Test contents	Secure buckle on tester, measure opening force when pushing release button at given speed		Confirm load bearing strength of buckle by stretch test.
Test parts	Parts completing dynamic test	Unused parts	Not specified (number of samples: 2)
Condition	Tension：200±2 N load	Tension: no load	Speed： 100±20 mm/min
Judge condition	Opening force: less than 80 N	Opening force: 40–80 N	Mass group 0, 0+: 4,000 N Mass group I or more: 10,000 N

Other tests and requirements

- Buckles used in dynamic tests shall undergo 5,000±5 opening and closing cycles (7.2.1.7.)
- Buckles shall be capable of withstanding temperature test operation requirements and repeated operation



Buckle load opening test

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Adjusting device (7.2.2, 8.2.2, 8.2.3, 8.2.7, Annex 5, Annex 19)

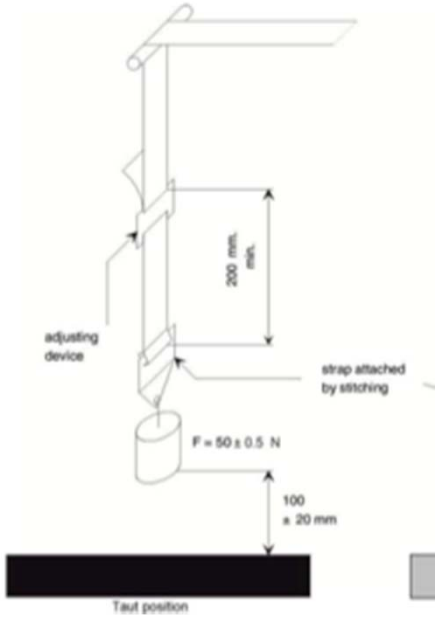
Test description

① Adjustment (8.2.2)

Draw strap through adjustment device at rate of 100±20 mm/min and check ease of adjustment

② Microslip test (8.2.3., Annex 5 Figure 3)

Arrange straps as shown in right figure, complete 1,000±5 cycles at amplitude of 300±20 mm (30±10 cycles/min)



(Ref.) micro slip test

Criteria

① Adjustment (7.2.2.4, 7.2.2.6)

Force required to operate device shall not exceed 50 N

② Microslip test (7.2.2.5)

- Less than 25 mm for one adjusting device
- Less than 40 mm for all adjusting devices

Other tests

・Adjusting devices used in dynamic tests shall undergo conditioning of 5,000±5 cycles.

Conditioning tester

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Retractor (7.2.3, 8.2.4)

Test description

Retracting force : belt assembly attached to manikin for measurement

Locking of ELR-type retractor : strap is extracted to check that locking occurs at given length, position, acceleration

Durability of retracting mechanism: 5,000 cycles of withdrawal and retraction

Corrosion test : same as corrosion-resistance of completed product

Dust-resistance test : retraction and withdrawal after each agitation of dust

Criteria

Retracting force

Part of lap belt: not less than 7 N

Part of chest restraint: not less than 2 N or more than 7 N

Locking of ELR-type retractor

Locking occurs when deceleration reaches 0.45 g, tilted more than 27 degrees from installation position

Durability of retracting, corrosion test, dust-resistance test

Retractor shall continue to operate correctly after test

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Strap （7.2.4, 8.2.5）

Test description

After conditioning straps, conduct tensile strength test at a speed of 100±20 mm/min.

Types of conditioning

① Room conditioning
② Special conditioning (light, cold, heat, exposure to water, abrasion)

Criteria

① Room conditioning
Difference between breaking loads of the 2 samples shall not exceed 10% of the greater of the two breaking loads measured.

② Special conditioning (light, cold, heat, exposure to water, abrasion)
Not less than 75% of average of breaking load of the 2 samples
Breaking load
- Group 0, 0+ & I: not less than 3.6 kN / Group II: not less than 5 kN
- Group III: not less than 7.2 kN

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Lock-off device (7.2.5, 8.2.6)

Test description

Class A device (8.2.6.1)

Place largest manikin in CRS, apply lock-off device, apply load to upper and lower webbing (pulling direction) and check amount of slip.

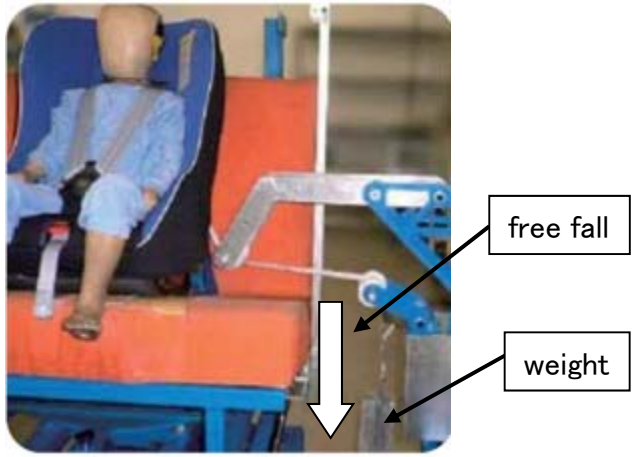
Class B device (8.2.6.2)

Pass webbing through lock-off and frame according to manufacturer's instructions, apply lock-off and attach mass (5.25±0.05 kg) to webbing. Allow mass to fall freely from given height, and check amount of slip after certain number of cycles.

Criteria

Class A & Class B devices (7.2.5.4, 7.2.5.5)

Amount of slip of webbing shall not exceed 25 mm.



Lock-off durability test

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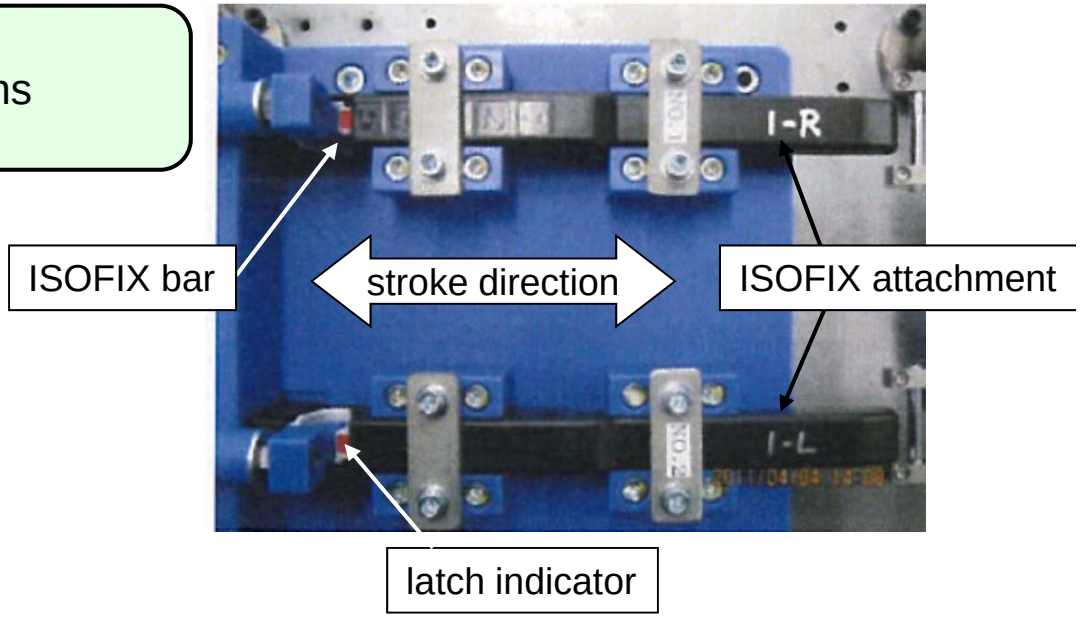
Specification of ISOFIX attachment (7.2.6)

Test description

ISOFIX attachment and latching indicator shall undergo 2,000±5 opening and closing cycles under normal conditions of use.

Criteria

Check resistance to repeated operations



ISOFIX attachment / latch indicator resistance test

Requirements

- Markings and Instructions
- Parts of CRS
- Entire CRS

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Items to be checked on CRS (Entire product)

Resistance to corrosion（7.1.1, 8.1.1, Annex 4）

Check for deterioration likely to impair the functioning and no corrosion

Energy absorption（7.1.2, Annex 17, 18）

Check for impact absorption and impact area of head, area of impact absorbing material

Overturning（7.1.3, 8.1.2）

Fix manikin in CRS and check retention performance when in upside down position.

Dynamic test（7.1.4, 8.1.3, Annex 15）

Check for head excursion of dummy, chest acceleration, abdominal penetration, failure or breakage of CRS after impact test.

Resistance to temperature（7.1.5, 7.2.1.7, 7.2.2.5, 7.2.5.2, 8.2.8）

Check for signs of deterioration likely to impair functioning of parts liable to be affected by temperature.

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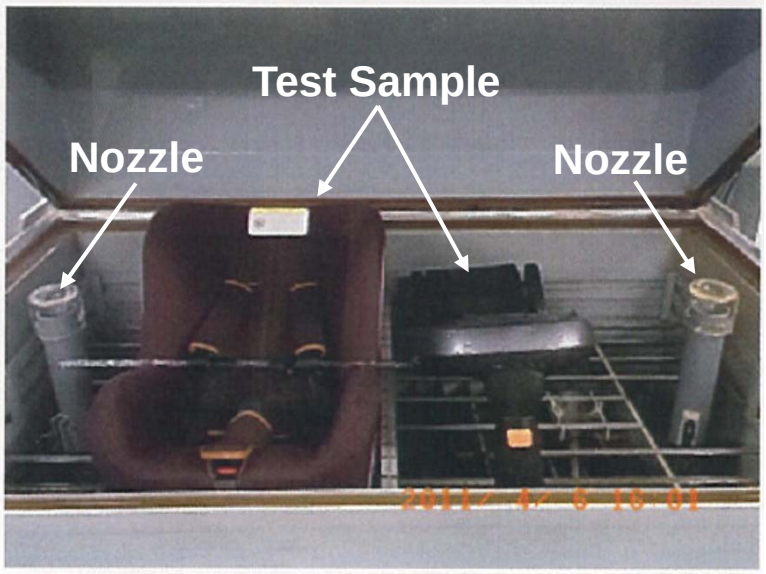
Resistance to corrosion (7.1.1, 8.1.1, Annex 4)

Test description

Place sample in salt solution reservoir,
spray salt solution from nozzle and
leave to stand for given time



Controlled items

- Test time (50 hours)
- Temperature in reservoir (35±5 ℃)
- Concentration of salt solution（6.5-7.2 pH）
- Pressure of compressed air
  (70 kN/m^2-170 kN/m^2)
- Position of test sample

(salt solution shall not drip directly on samples)

Criteria

No signs of deterioration likely to impair proper functioning shall
be visible by visual inspection.

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Energy absorption （7.1.2 Annex 17, 18）

Test description

Fall from a height of 100 $^{-0}$/+5 mm and measure acceleration of impact

Test area

CRS Backrest (bottom right photo)

Impact point

high rigidity, within area contactable by manikin head

Criteria

Peak acceleration: less than 60 g

Total mass
2.75±0.05 kg
(including accelerometer

Headform

Area to be impacted

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Overturning (7.1.3, 8.1.2, Annex 23)

Test description

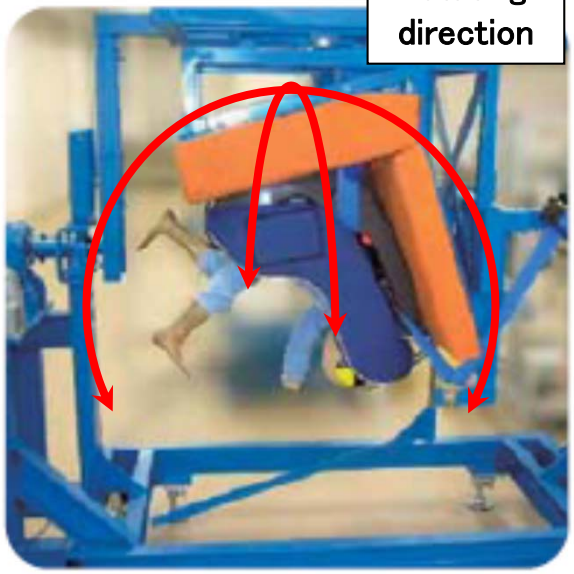
Fix CRS to test seat and rotate 540° at given speed. Apply mass equivalent to 4 times that of dummy. (400 mm/min)

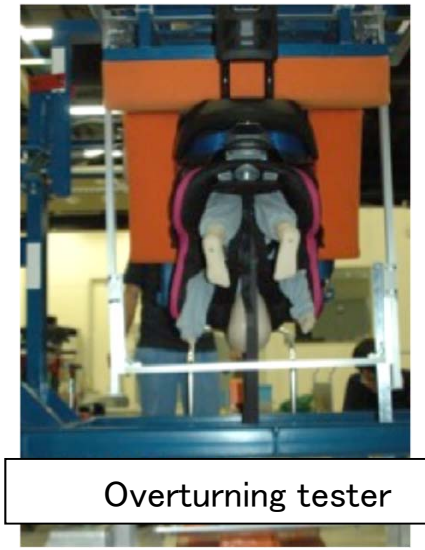
Manikin used

Both smallest and largest appropriate manikin of the group(s) intended for use (8.1.2.7)

Criteria

Manikin head shall not move more than 300 mm from original position in vertical direction. (7.1.3.)





Overturning tester

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Resistance to temperature (7.1.5, 7.2.1.7, 7.2.2.5, 7.2.5.2, 8.2.8)

Test description

Place test sample in temperature cycle tester.
Maintain in temperature of 100° (hot)→
0° (cold)→23° (normal) for a given time.

Temperature cycle tester

Tested parts

Buckle assembly, retractor, adjusting device,
lock-off device, etc.

Criteria

No sign of deterioration likely to impair proper functioning shall be visible by visual inspection.

Dynamic Tests

Test conditions (8.1.3.4.)

		FRONTAL IMPACT			REAR IMPACT		
Test	Restraint	Speed (km/h)	Test pulse	Stopping distance during test (mm)	Speed (km/h)	Test pulse	Stopping distance during test (mm)
Trolley with test seat	Forward facing front and rear seats universal, semi-universal or restricted	50 + 0 − 2	1	650 +/− 50	−	−	−
	Rearward facing front and rear seats universal, semi-universal or restricted	50 + 0 − 2	1	650 +/− 50	30 + 2 − 0	2	275 +/− 25
Vehicle body on trolley	Forward facing	50 + 0 − 2	1 or 3	650 +/− 50	−	−	−
	Rearward facing	50 + 0 − 2	1 or 3	650 +/− 50	30 + 2 − 0	2 or 4	275 +/− 25
Whole vehicle barrier test	Forward facing	50 + 0 − 2	3	not specified	−	−	−
	Rearward facing	50 + 0 − 2	3	not specified	30 + 2 − 0	4	not specified

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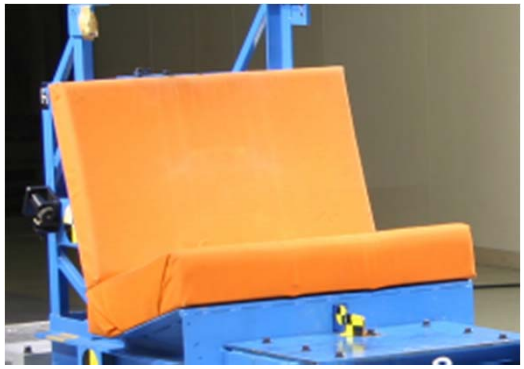
Dynamic Tests (Tests and seat)

P0 Dummy

P1.5 Dummy

P3/4, P3, P6, P10 Dummy



ECE Seat

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Dummy Setting

CRS and dummy are set according to paragraph 8.1.3.6 and Annex 21 of R44.

Check penetration of modelling clay, standard seatbelt is secured by specified tension, CRS strap is secured by specific load, etc.

Dimension of tools used to set dummy and calibration result of measuring instruments must also be checked.

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Dynamic Tests (7.1.4, 8.1.3)

Test description

CRS installed with manikin is set on test seat fixed on trolley, and projected so as to create impact similar to impact created by vehicle impact.(2 patterns (front impact and rear impact))

Criteria

- Restraint performance of manikin, breakage of attachment, etc.
- Resultant Chest Acceleration: 55 g (CFC180 Hz) (7.1.4.2.1)
- Vertical Component of the Acceleration : 30 g (CFC180 Hz)(7.1.4.2.2)
- Abdominal Penetration: no visible signs of penetration of the modeling clay.*1 (7.1.4.3.)
- Manikin displacement: within specified area (side view) (specified area differs between forward-facing and rear-facing types) (7.1.4.4.)

*1 Set up of the clay model

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Dynamic Tests (7.1.4, 8.1.3)

Front Impact

Rear Impact

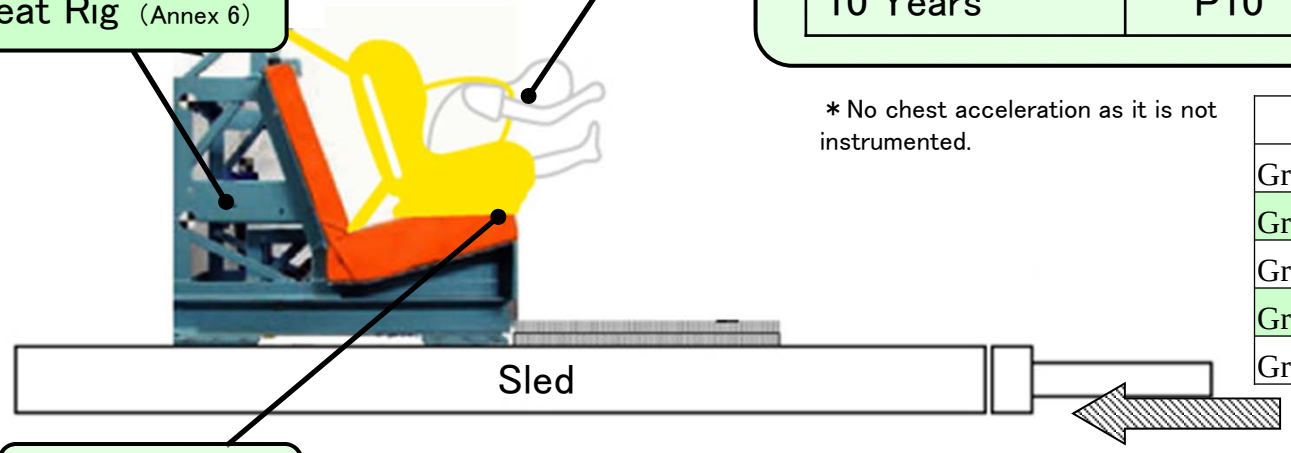
Manikin used (8.1.3.7., Annex 8)

Manikin	Dummy	Mass
Infants*	P0	–
9 months	P3/4	9kg
18 months	P1.5	11kg
3 Years	P3	15kg
6 Years	P6	22kg
10 Years	P10	32kg

* No chest acceleration as it is not instrumented.

Group	Dummy (8.1.3.7)
Group 0	P0, P3/4
Group 0+	P0, P1.5
Group I	P3/4, P3
Group II	P3, P6
Group III	P6. P10

EC Seat Rig (Annex 6)



EC seat (Annex 6)

Total velocity change (8.1.3.1.1.3.2)
frontal impact: $52^{+0}/_{-2}$ km/h
rear impact : $32^{+2}/_{-0}$ km/h

Trolley acceleration
within specified corridor

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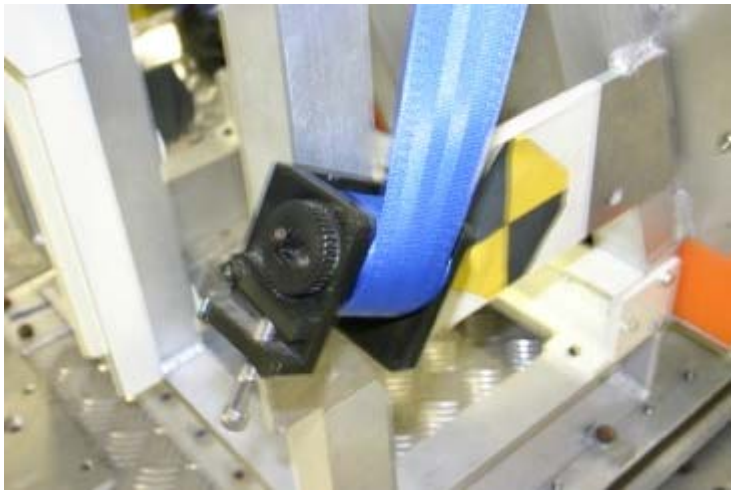

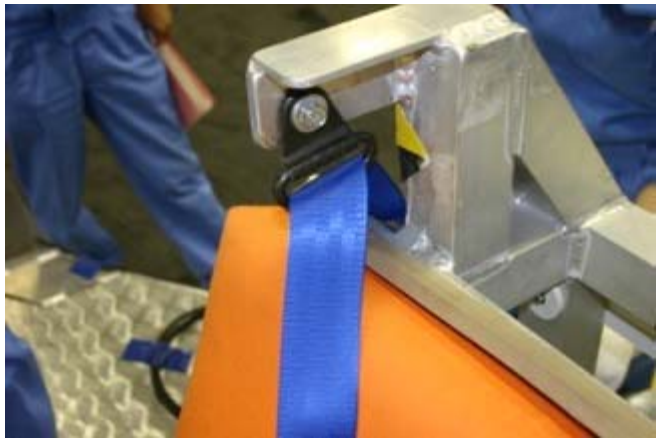

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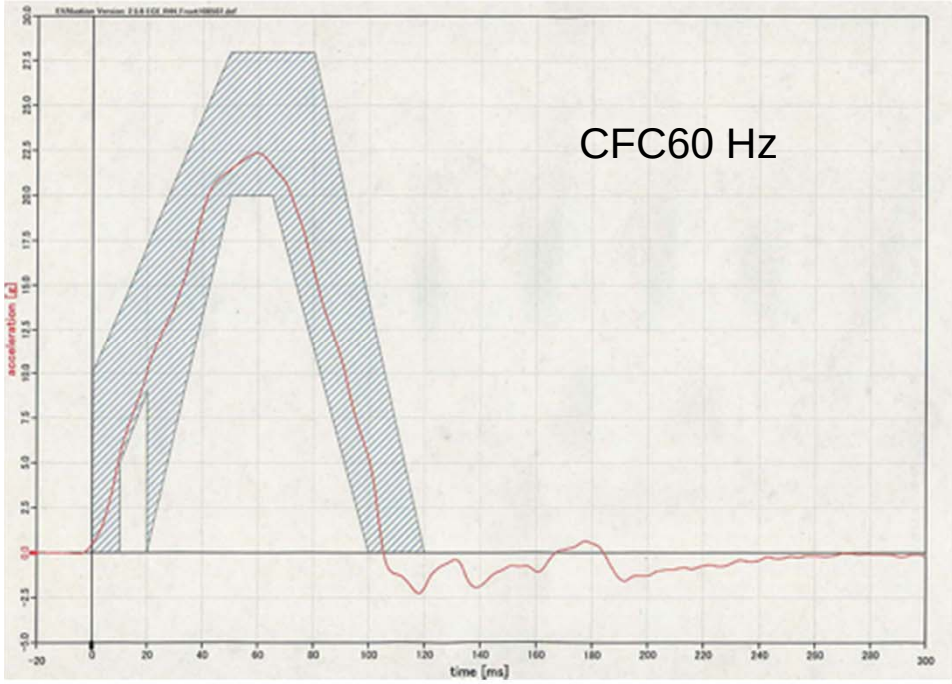
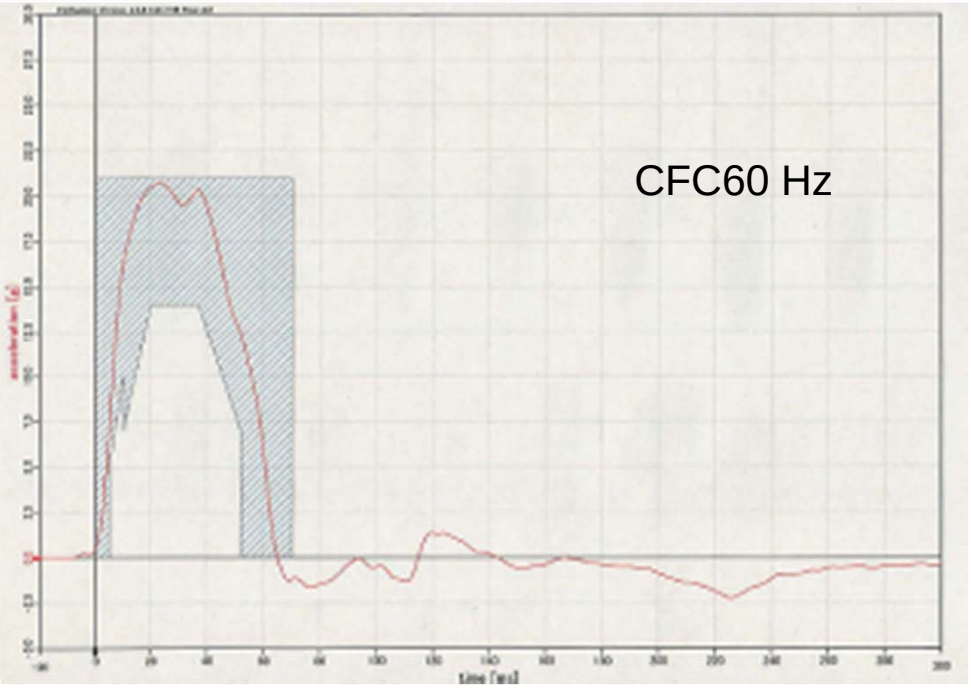
Acceleration curve and velocity





Front Impact

Velocity :50.0～52.0 km/h

Rear Impact

Velocity :32.0～34.0 km/h

*However, if the tests above were performed at a higher speed and/or the acceleration curve has exceeded the upper level of the hatched area and the child restraint meets the requirements, the test shall be considered satisfactory.

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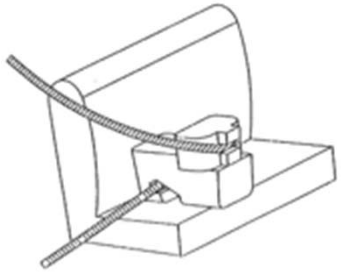
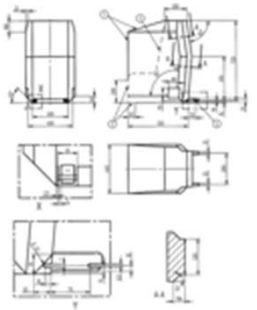
- Kinds and Category of CRS
- Requirements
- Vehicle fitting (UNECE R14 and R16)
- New CRS regulations (UNECE R129)

CRS fitting in Vehicle

CRS type		Belt	ISOFIX
UNECE Number14	Seatbelt anchorages	-	Bar and Tether Strength
			Bar and Tether Position
			Fitting
UNECE Number16	Seatbelt	Recommended CRS Fitting	Fitting
		Fitting	
		Belt Webbing	





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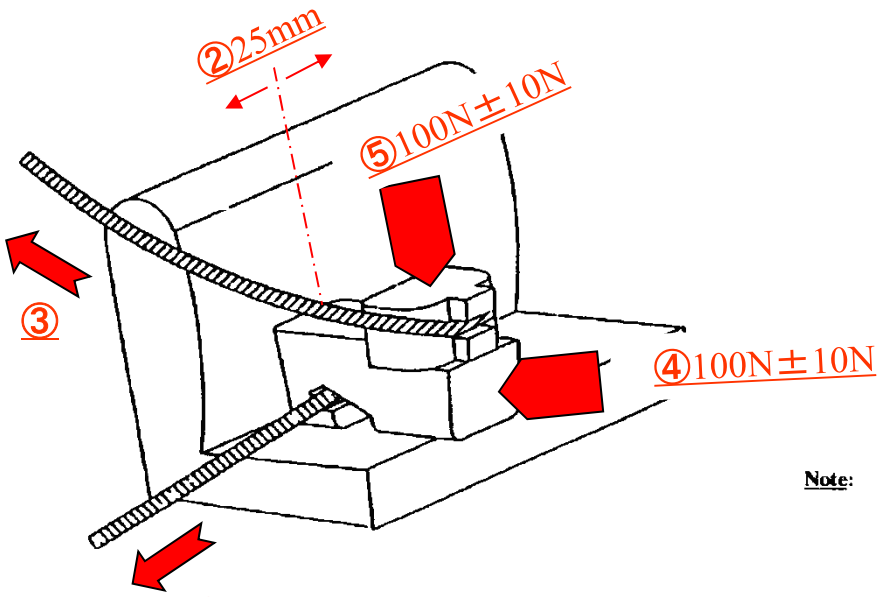
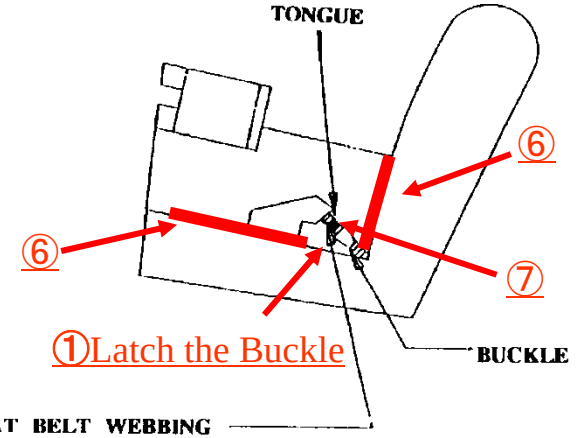
ISOFIX top tether anchorage



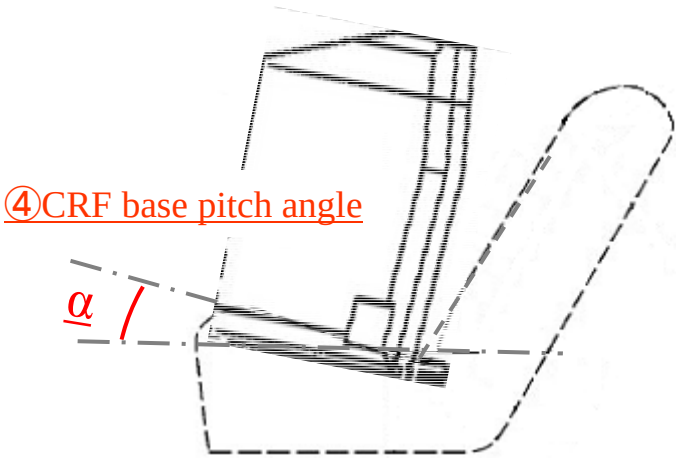
③Webbing slack is remove

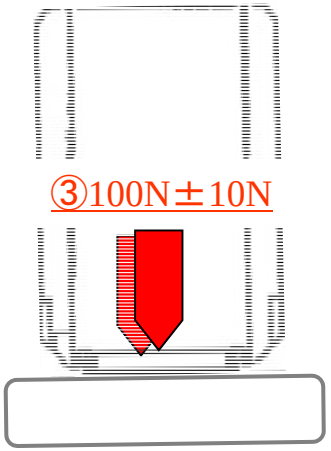


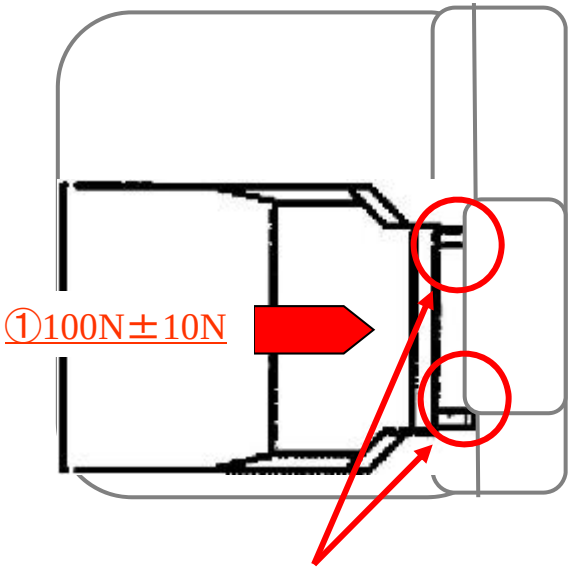
①Latch the Buckle

Note: THE SEAT BELT WEBBING MUST CONTACT THE CURVED EDGE ON BOTH SIDES OF THE FIXTURE

LAP BELT ONLY SHOWN


④CRF base pitch angle
α


③100N±10N


①100N±10N
②Attach the CRF to the ISOFIX anchorages system

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Q and P dummy

Q dummies (R129)

P dummies (R44)

UN Regulation 89

Speed Limitation Device (SLD) for Heavy-Duty Vehicles

Mitsuharu Yonezawa
Hino Motors Ltd. Technical Management Div

CONTENTS

A. Introduction

A. Introduction
A-1. Purpose of UN R NO. 89

The purpose of this regulation is to limit the maximum speed of heavy-duty vehicles to a specified value by a speed limitation device (SLD).

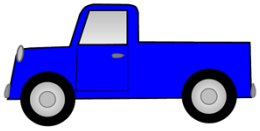
SLD is a device which limit the fuel feed to the engine under the control of engine ECU.

A. Introduction
A-2. Applicability

This regulation is applicable to

N2, N3, and M3.






M1	N1
M2	**N2**
M3	**N3**

A. Introduction
A-3. Construction

Regulation 89 consists of following 3 parts.

PART I: Approval of Vehicles fitted with SLD

PART II: Approval of SLD

PART III: Approval of Vehicle fitted with SLD which is already approved under PART II.

Usually,
vehicle SLD is controlled with its own engine ECU, and we vehicle manufacturers use PART I.
Therefore, today, I would like to explain this PART I.
The most requirements of PART II and PART III are all common to this PART I.

A-4. Definition

Vehicle Type

Vehicle type means vehicles which do not differ in such essential respect as:

This is the fundamental definition to determine the “vehicle type” and select a test vehicle from the group.

1) Make and type

2) Range of speed limit

3) Ratio of maximum engine power/unladen mass is less than or equal to that of tested vehicles

4) The highest ratio of engine speed/vehicle speed in top gear is less than or equal to the tested vehicle.

B. Technical Requirement

B-1. Design Requirement

1) Tamper-proof on SLD

Section 5.1.2 requires tamper-proof on SLD.
Previously, the fuel cut to limit the vehicle speed was controlled by mechanical injection system,
which needed the sealing on adjustable design parameters to protect against tampering.

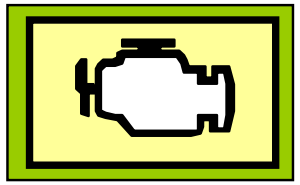
But today, most of the fuel injection is controlled by engine ECU.
If someone tries to modify the engine ECU,
it will affect other important vehicle performance.
So it is technically in feasible to attempt to tamper the speed limit settings.

B-1. Design Requirement

2) Checking function on SLD performance

Section 5.1.9 requires checking function on SLD while vehicle is stationary in order to confirm the activation of SLD visually.

If the SLD is controlled by engine ECU,
the warning lamp for general engine check lamp can be used in place of “SLD” warning lamp.



B-2. Test Requirement

1)Speed Limiter Test

Annex 5 describes the technical requirement on speed limiter test with 2 options.

(1.1) Measurement on Test Track

(1.2) Measurement of Chassis dynamometer

As chassis dynamometer for heavy-duty vehicles are not so easily available for use, we usually conduct the test on test track.

B-2. Test Requirement

1) Speed Limiter Test

Test Track Measurement consists of following two tests.

(a) Acceleration test method

(b) Steady speed test method

B-2. Test Requirement

1) Speed Limiter Test

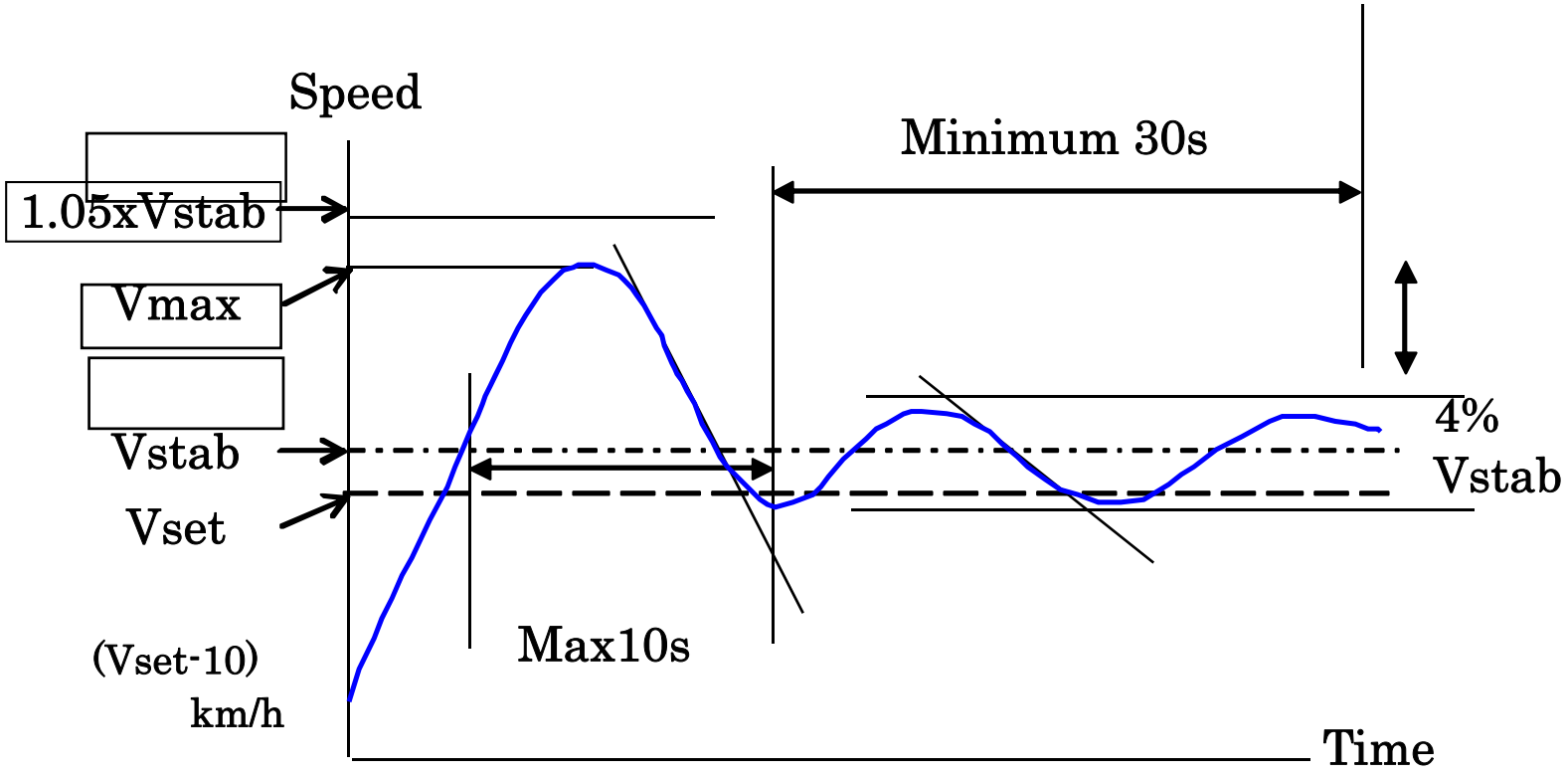
(a) Acceleration Test:

Conditions

Vehicle setting: Manufacturers recommendation
Vehicle mass: Unladen
Road surface: Grade of 2% or less
Climate condition: Average wind velocity < 6m/s
Gusts wind velocity <10 m/s

Acceleration Test Method (1/11)

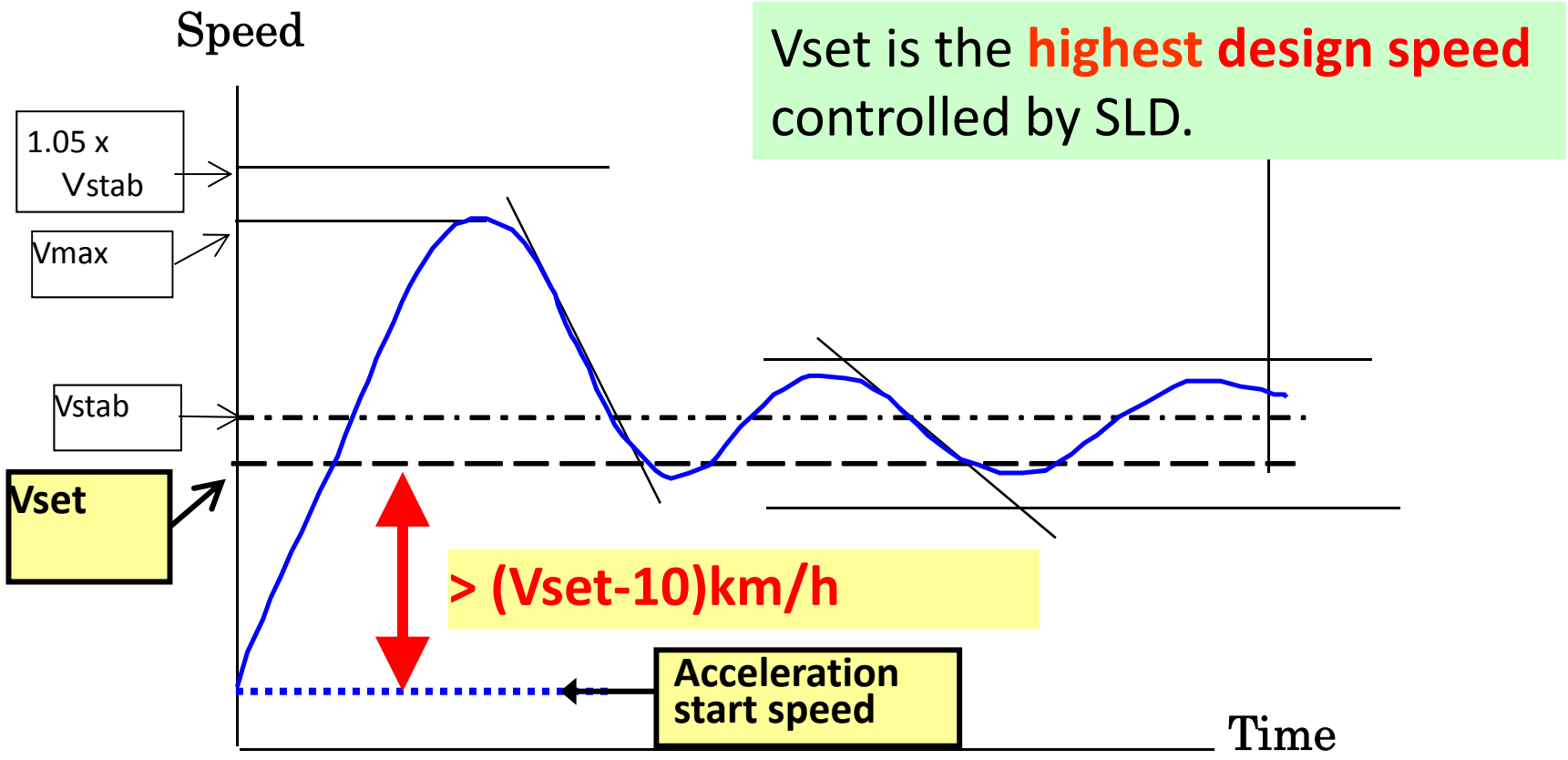
Annex5 1.1.4.2.4.



Acceleration Test Method (2/11)

1.1.4.1

The vehicle running at a speed which is 10 km/h below the set-speed(Vset) shall be accelerated as much as possible using on the accelerator control.

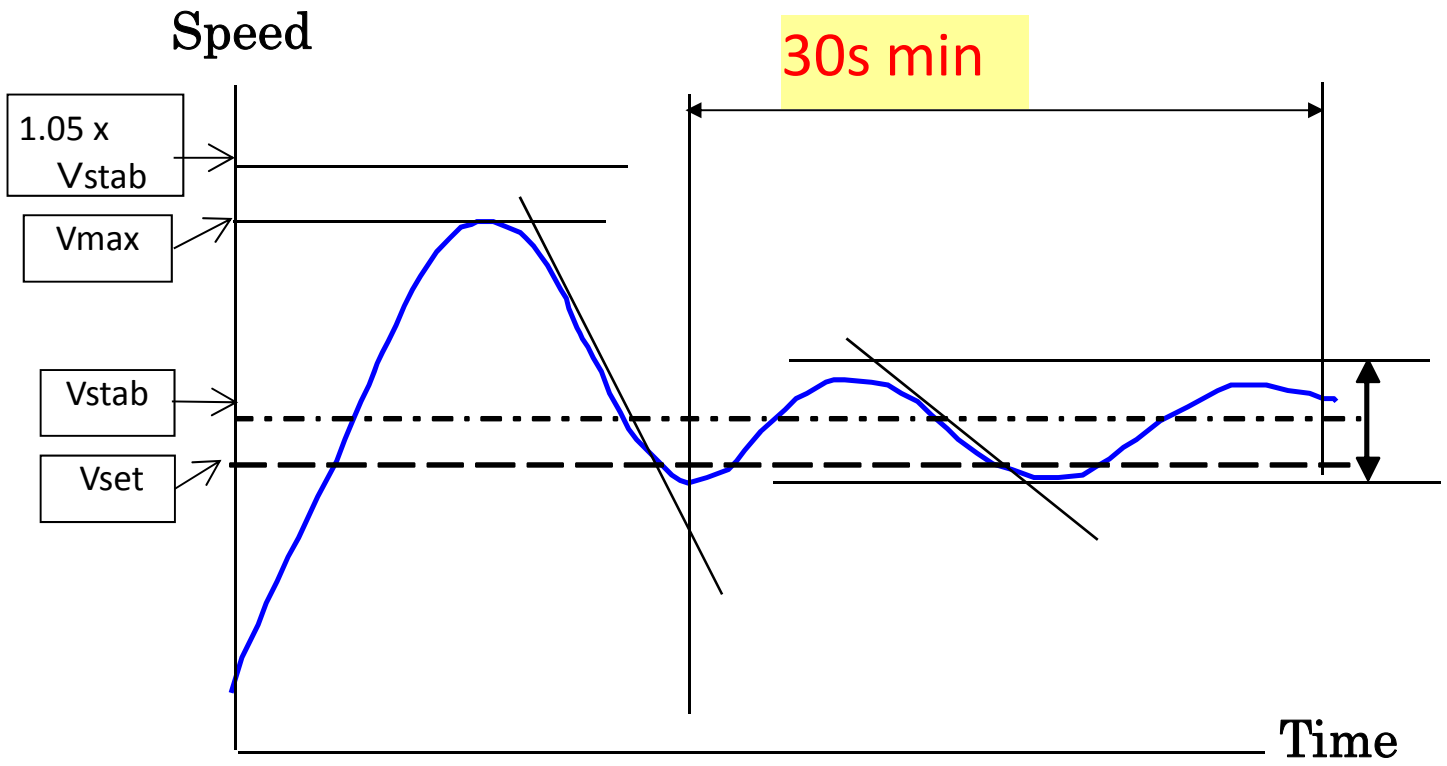


Vset is the **highest design speed** controlled by SLD.

Acceleration Test Method (3/11)

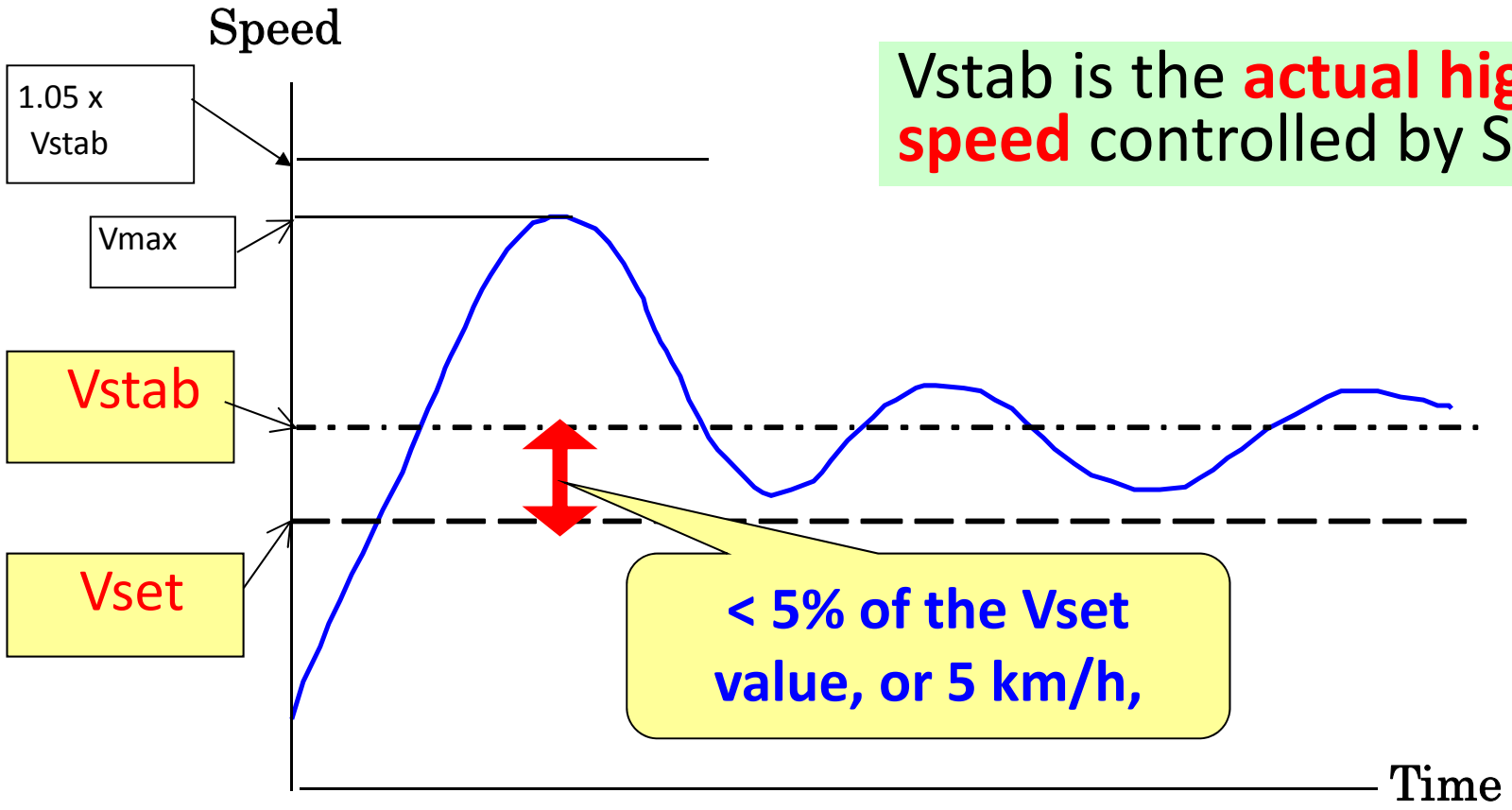
1.1.4.1

Depress the acceleration pedal at full throttle and it shall be maintained at least 30 seconds after the vehicle speed has been stabilized.



Acceleration Test Method (4/11)

1.1.4.2.1
The stabilized speed reached by the vehicle shall not exceed the set speed (Vstab <Vset).
However, a tolerance of 5% of the Vset value, or 5 km/h, whichever is the greater, is acceptable

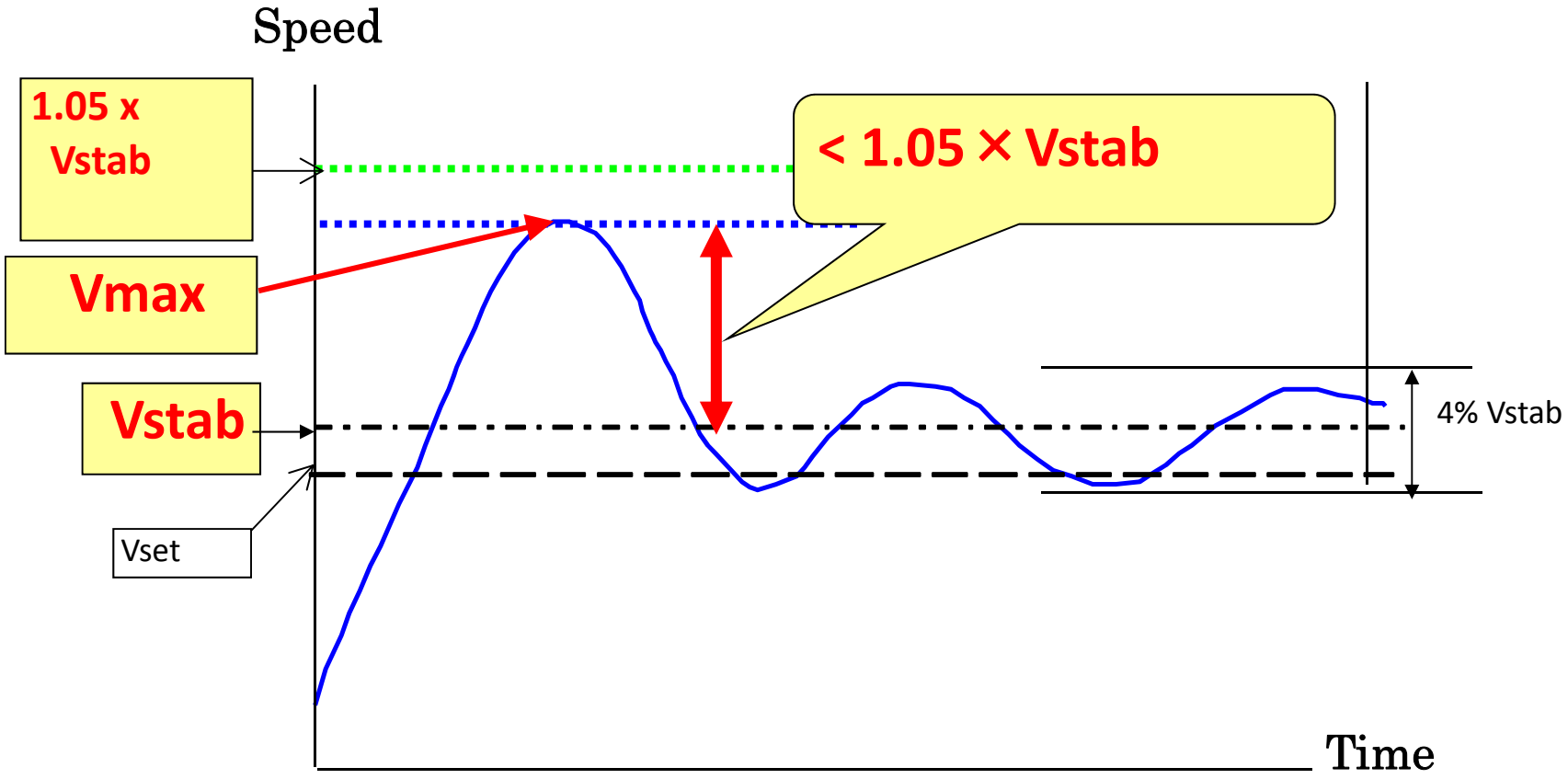


Vstab is the **actual highest speed** controlled by SLD.

Acceleration Test Method (5/11)

1.1.4.2.2.1

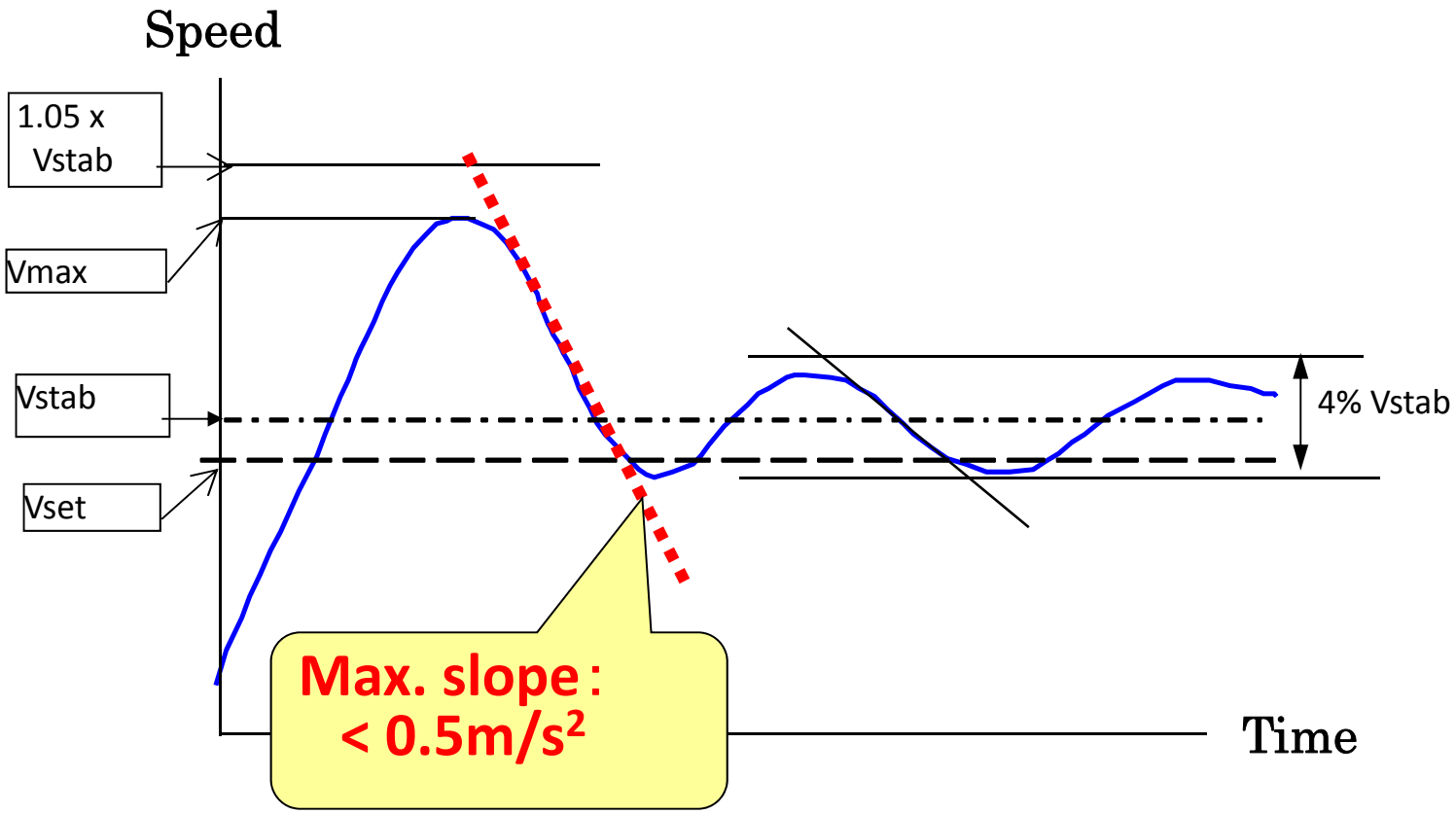
Vmax shall not exceed Vstab by more than 5%.



Acceleration Test Method (6/11)

1.1.4.2.2.2

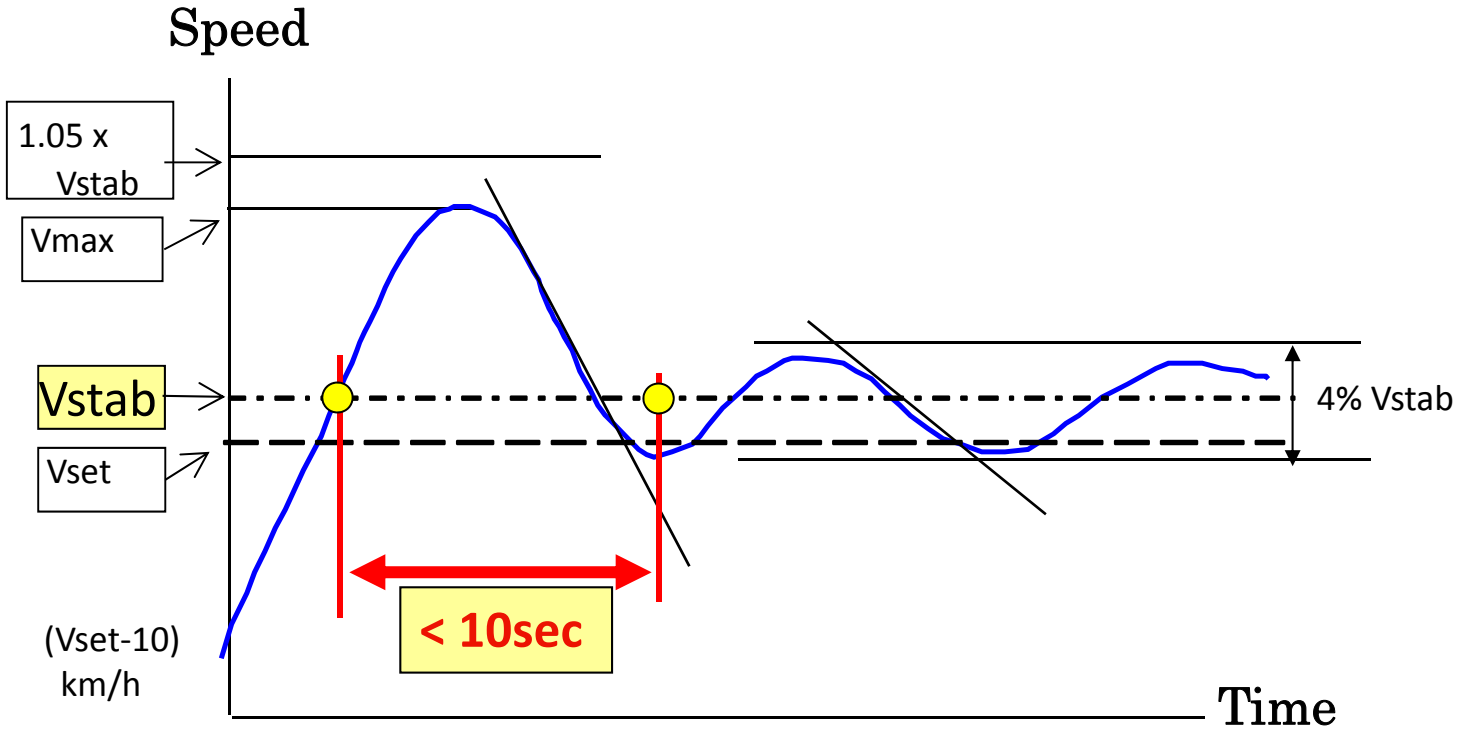
The rate of change of speed (from Vmax to Vset) shall not exceed 0.5 m/s²



Acceleration Test Method (7/11)

1.1.4.2.2.3

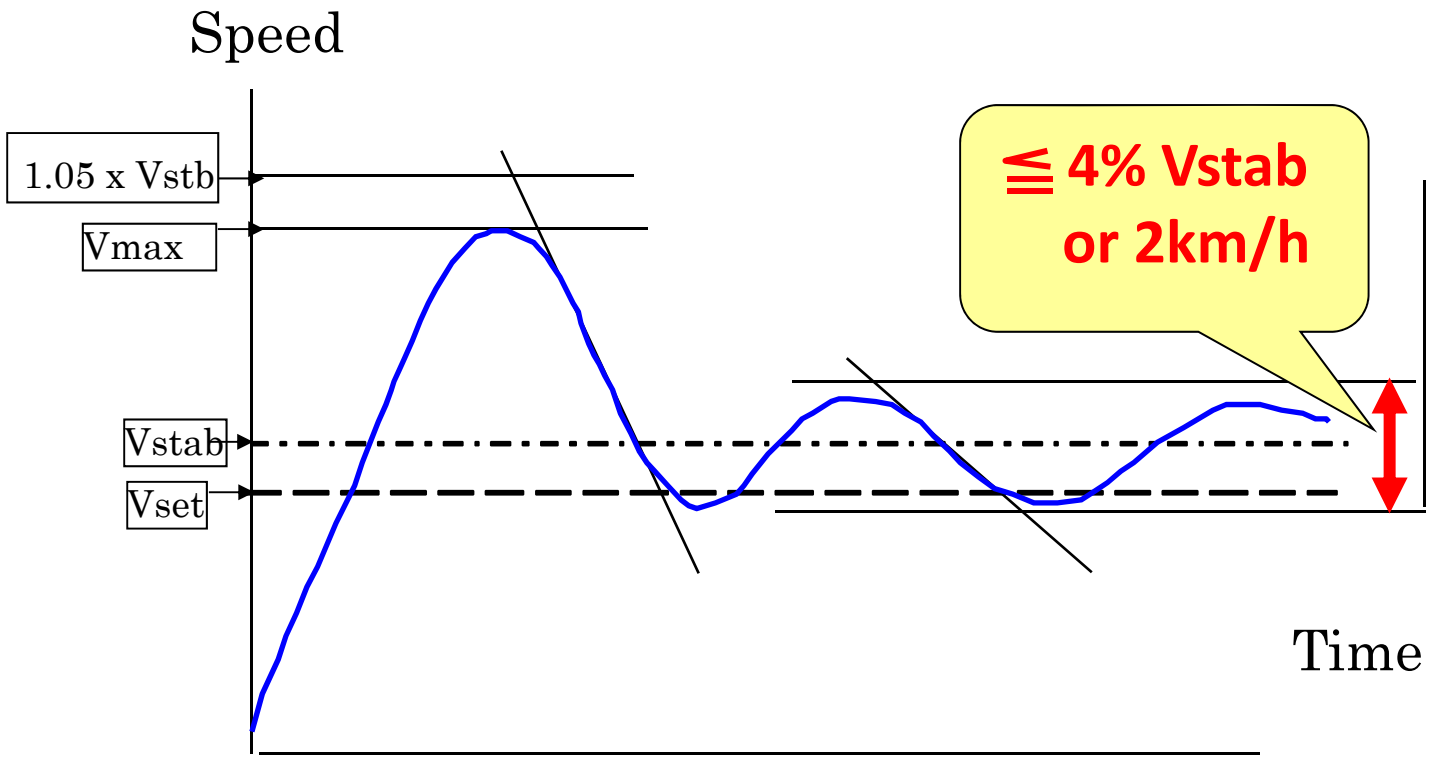
The stabilized speed conditions specified .
shall be attained within 10 s of first reaching Vstab;



Acceleration Test Method (8/11)

1.1.4.2.3.1

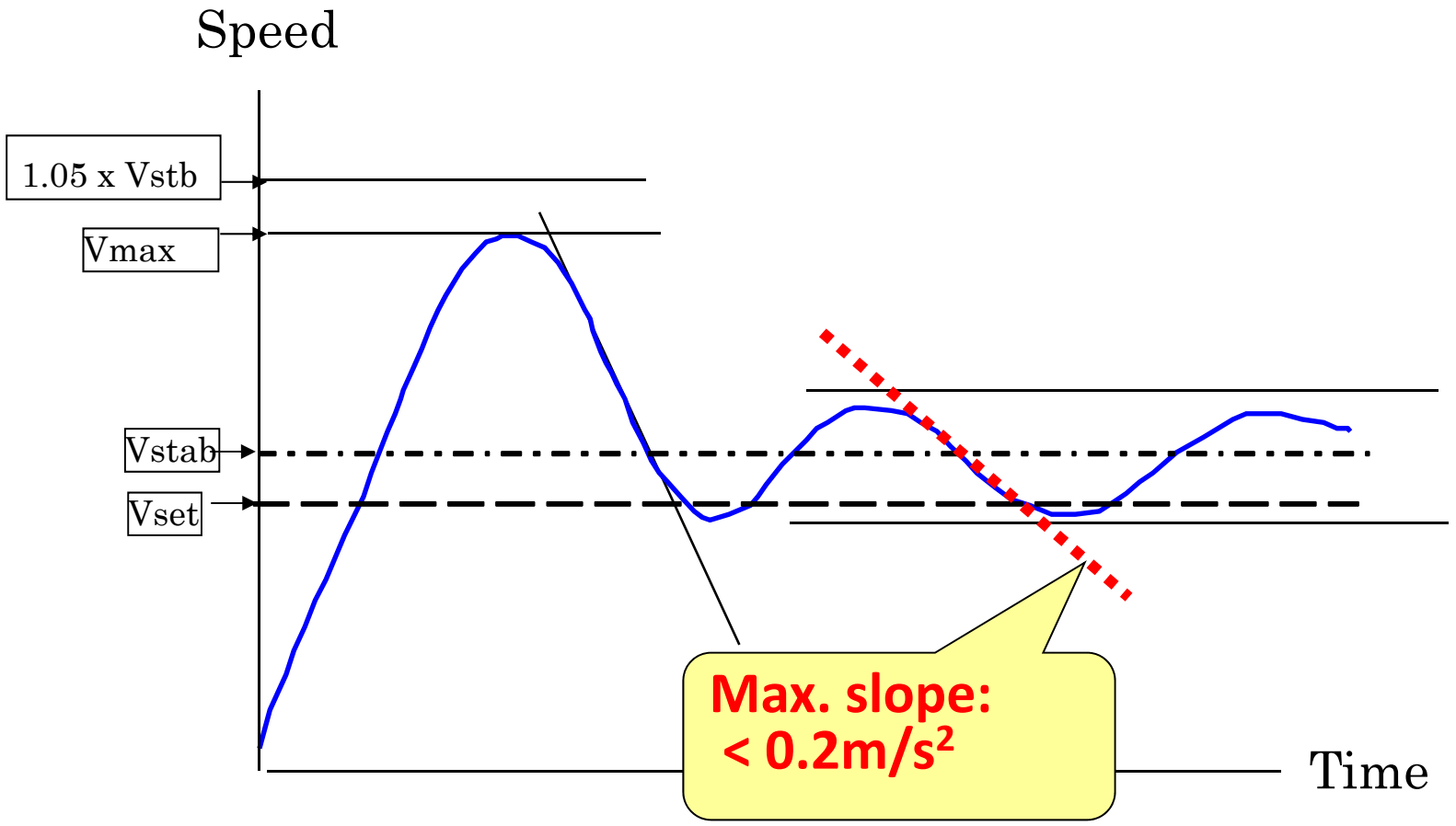
Stable speed shall not vary by more than 4% of Vstab or 2 km/h whichever is greater; is acceptable



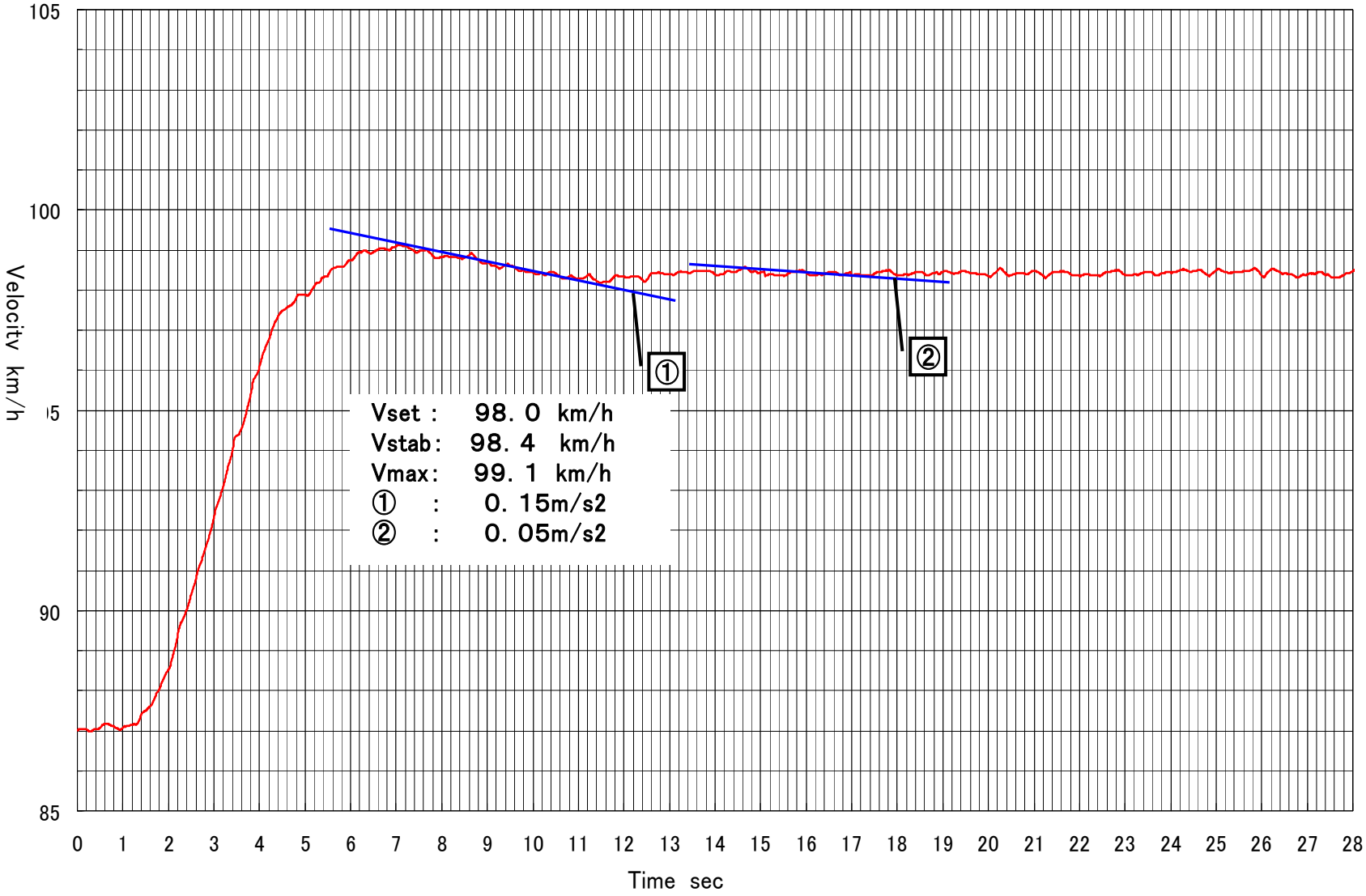
Acceleration Test Method (9/11)

1.1.4.2.3.2

The rate of change of speed shall not exceed 0.2 m/s2



Test Result (Sample)

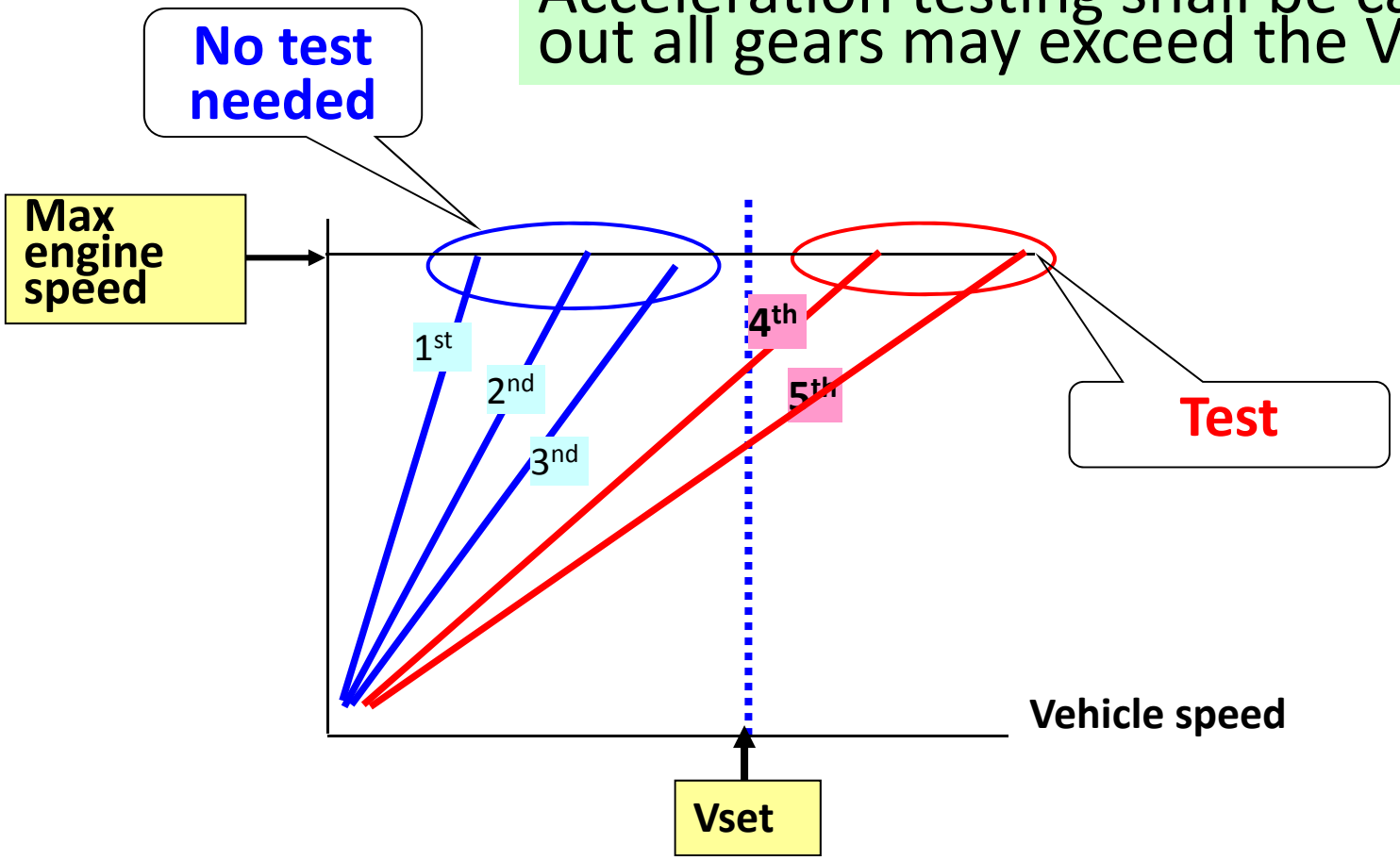


Acceleration Test Method (11/11)

I.1.4.2 4.

Tests in acceleration shall be carried out and the acceptance criteria verified for each gear ratio allowing in theory the set speed to be exceeded.

Acceleration testing shall be carryed out all gears may exceed the Vset



B-2. Test Requirement

1) Speed Limiter Test

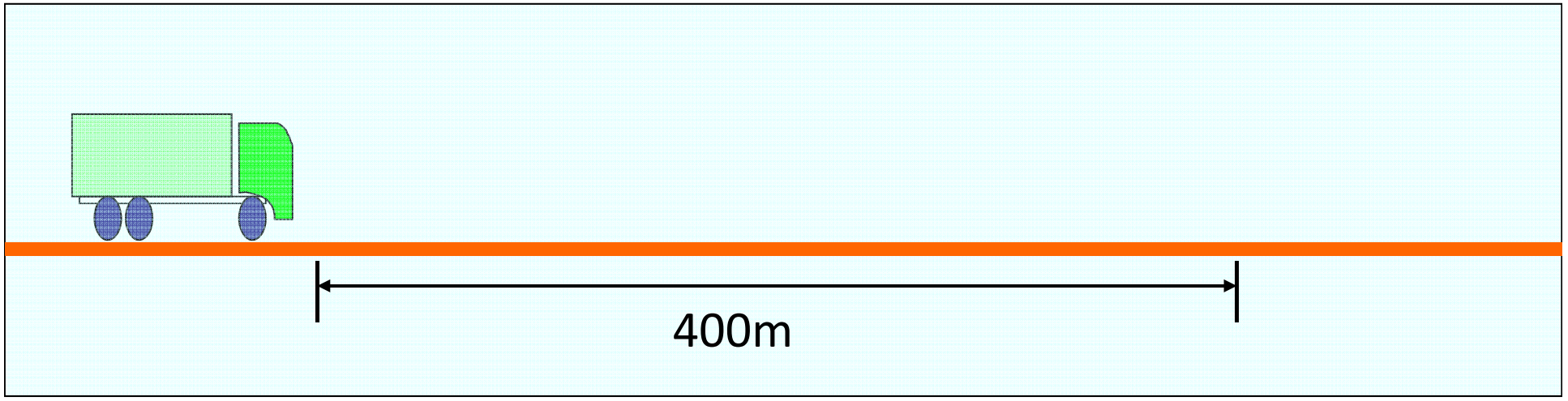
(b) Steady-speed Test

Vehicle setting: Manufacturers recommendation
Vehicle mass: Unladen
Road surface: Grade of 2% or less
Climate condition: Average wind velocity <6m/s
Gusts wind velocity <10 m/s

Conditions are all the same as those of acceleration test.

Steady Speed Test Method:

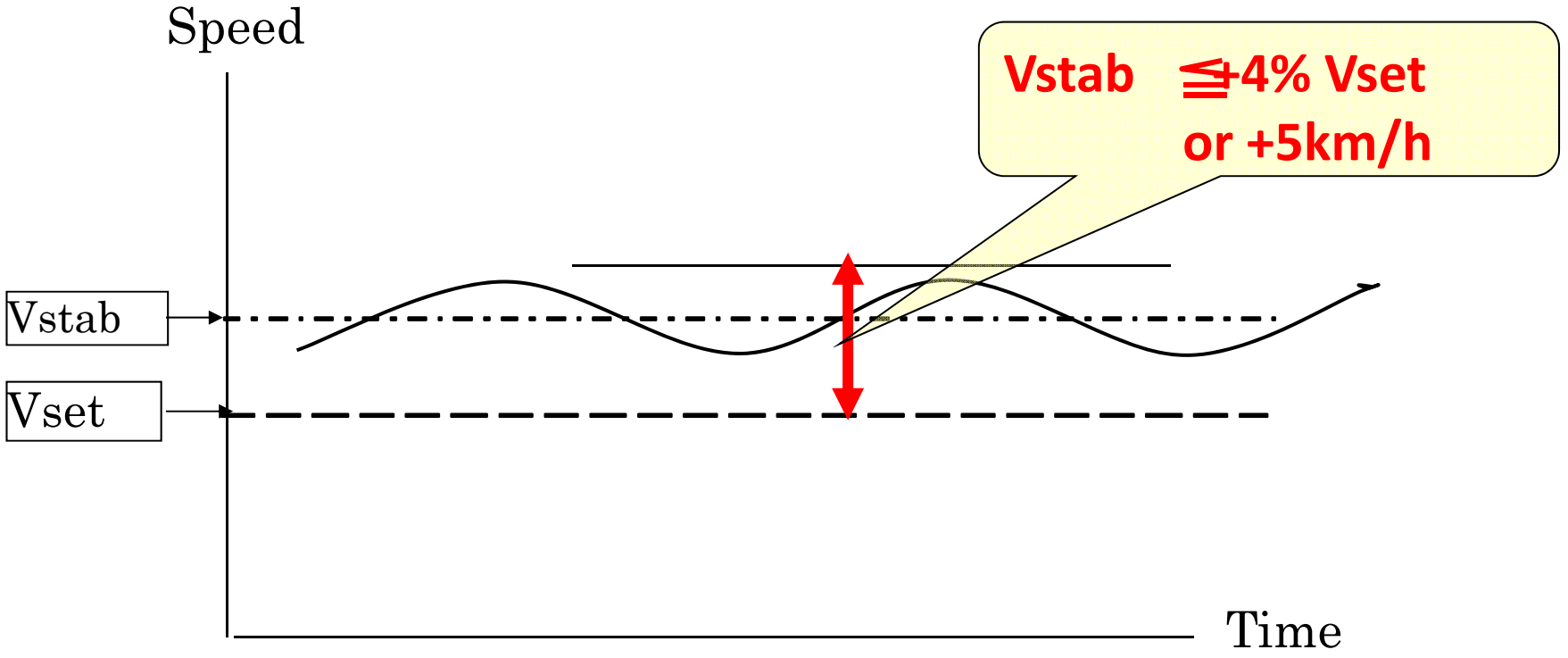
- Run the test vehicle at least 400 m with maintaining the Vstab controlled by SLD.
- Then the same test will be carried out in the opposite direction on the same test track.
- Repeat this test 5 times.



Steady Speed Test Method:

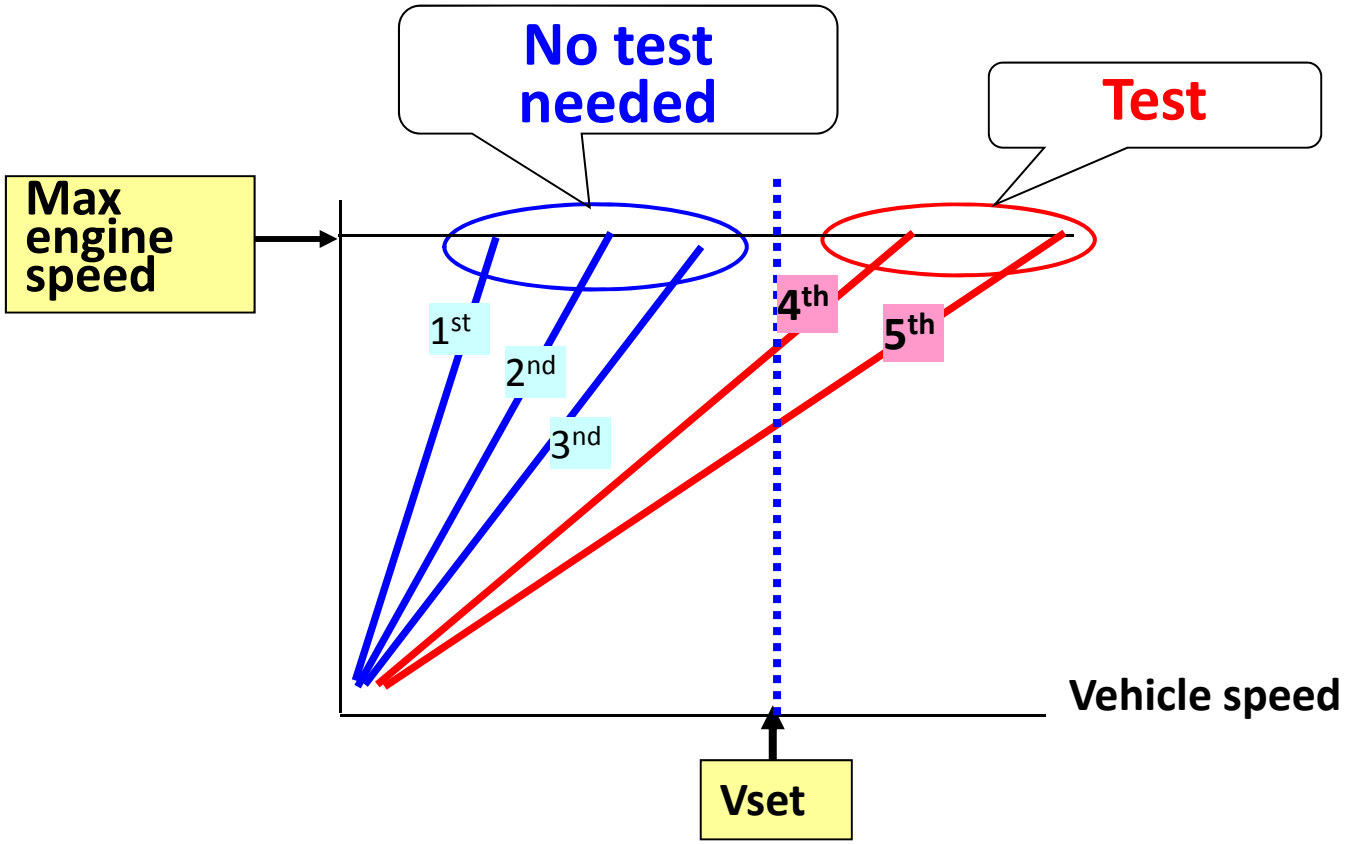
On each test run Vstab shall not exceed Vset.

However, a tolerance of 5% of the Vset value, or 5 km/h, whichever is the greater, is acceptable.



Steady Speed Test Method:

Tests in Steady Speed shall be carried out and the acceptance criteria verified for each gear ratio allowing in theory the set speed to be exceeded.



B-2. Test Requirement

2) Durability Test

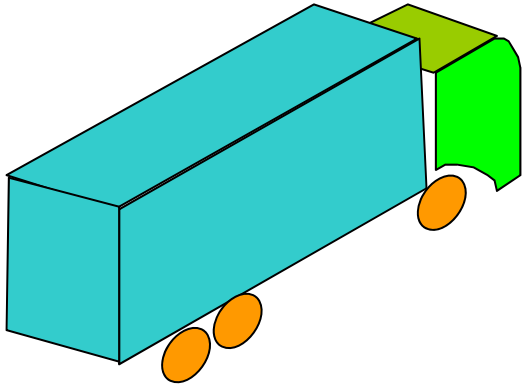
Only applicable to SLD using mechanical fuel injection system.

Therefore, SLD controlled by engine ECU, this requirement is not applicable.

UN Regulation 89
Speedlimiter for Heavy-Duty Vehicles

Thank you for listening to my explanation.

Thank you



Report on
the 43rd JASIC Asia Expert Meeting
(R26, R44, R89)

Replaced due to editorial correction: March 31, 2016
October 23, 2015

Date: Monday, October 5, 2015, 9:00-12:00
Tuesday, October 6, 2015, 9:30-13:00
Place: JPJ Meeting Room, Putrajaya, Malaysia (October 5)
JPJ Meeting Room, Cyberjaya, Malaysia (October 6)
Participants:
Malaysian side: About 52 people attended the meeting, including:
Those from JPJ:
MR. MOHD SHARUULNIZAM BIN SARIP (Deputy Director)
MR. AZZAHARIN BIN ALLIAS
MR. AZIZUL BIN ABDUL AZIZ
MR. MUHAMAD ARIF FAHMI BIN ABDUL WAHAB
MR. MOHD AFFIZUL ARIFF BIN SALIM
MR. SYED NUR ADAF ZHAFRY BIN ISMAL
Japanese side:
Mr. Kikuchi (Honda/JASIC), Mr. Takagi (Automobile Type Approval Test Dept., NTSEL),
Mr. Yonezawa (Hino/JASIC), Mr. Yamagata (JASIC), Mr. Korenori (JASIC Jakarta)

Day 1: Detailed examination of the check list drafted by JPJ
Day 2: Presentations by experts and Q&A

Overview

Monday, October 5

- The participants discussed the checklist for UN-R26 that was ready as of October 5.
- As to the checklists for the remaining UN-R44 and UN-R89, it was agreed that after the completion by JPJ, they would be sent to JASIC, distributed to experts and examined later.
- The experts gave 14 comments on the checklist for UN-R26 (See Attached Table 1), which, after a discussion, the participants agreed to all reflect on the checklist.

Tuesday, October 6

- First, Mr. Sharuulnizam Bin Sarip, Deputy Director, JPJ, gave a speech. Since joining the 1958 Agreement in 2006, Malaysia has adopted 78 UN Regulations, including the three Regulations on the agenda of the Expert Meeting today. He hoped this meeting would stimulate an active discussion and contribute to enhancing the understanding of the issues by parties concerned.
- On behalf of JASIC, Mr. Yamagata expressed gratitude to JPJ and the participants for their cooperation in making the meeting a success. He hoped that, as the top runner in harmonization efforts in ASEAN, Malaysia would keep making the best use of Expert Meetings and set an example in developing AMS.
- Thereafter presentations were given in the order of UN-R26 (External Projections), UN-R44 (Child Restraint Systems), and UN-R89 (Speed Limitation Devices). Each presentation was followed by an active Q&A session and enhanced the understanding of the participants. (See Attached Table 2 for Q&A)

(Table 1) Comments on the checklist for UN-R26

No.	Subject	Paragraph No.	Experts' comments	JPJ's conclusion	Remark
1	Model	–	How about adding the model year?	We will add that as a reference.	The model year will be given in such a way that it doesn't look like a different new model every model year despite there being any change in the specifications.
2	General Specification	Para.5	Is a space for checking general requirements necessary, such as 2.5R or more?	The space will be included.	–
3	Grilles and gaps	Para.6.3	We see parts to be checked are fixed, but isn't that parts to be checked change from a model to another? Some manufacturers make a list of parts to be checked for each requirement by model.	We will get an example of such a checklist from Mr. Kikuchi and refine our lists based on that.	An example list was provided to JPJ after the meeting.
4	Hadle, Hinges etc.	Para.6.6.2.1 Para.6.6.2.2	How about adding requirements such as "When handles rotate parallel to the plane of the door, the open end of handles must be directed towards the rear."?	That will be added.	–
5	Wheel	Para.7.3	How about adding requirements such as "The wheel shall not exceed the outermost end of the body, or, otherwise shall satisfy the requirement of R30"?	That will be added.	–
6	Body Panels	Para.6.9.1	Since the measurement is done by toutching the panel with a 165 mm sphere, with the body panel bent inward, actually verifying the compliance is difficult. We suggest that you verify that with the layout data.	If actual measurement is difficult, we will verify with the layout data, but we would like to stick to the principle as far as individual parts allows that.	–
7	Jacking brackets and exhaust pipes	Para.6.11.1	There is an exemption provision that if the part satisfies the "R2.5 or more" requirement, the value may exceed 10 mm. How about adding that?	A foot note will be added to that effect.	JPJ asked if there's no limit to the projection as far as the part satisfies the "R2.5 or more" requirement. The experts answered that that would depend on the result of consultation with the authority.
8	Roof	Para.6.13	What is indicated in the list is test conditions only, with no reference to requirement (R2.5 or more).	The requirement will be added.	Considering that only the paragraph 6.13 including testing conditions is much specific, the experts suggest following the crowd.
9	Windows	Para.6.14	The idea of requirement for the "sharp edge" is that, as far as there's no harm when the engineer touches the edge, that will be OK. There's no requirement with specific figures.	Understood.	JPJ asked if an edge isn't sharp as far as that's R2.5 or more. The experts answered that's right, but warned against indicating so with specific figures.
10	Registration plate brackets	Para.6.15	What is indicated in the list is test conditions only, with no reference to requirement (R2.5 or more).	The requirement will be added.	The same as the roof above.
11	Luggage racks and ski racks	Para.6.16	There's no reference to the requirement for the rack load test.	That will be added.	The test conditions are not very clear and depend on the discretion of the manufacturer. It's possible you can do that with desktop calculation in consultation with the testing laboratory, but the principle is verification with actual vehicles. However, the regulation doesn't take care of accessory parts with which automakers are not fully involved.
12	Aerials	Para.6.17.1	How about adding the requirement that "The requirement for R2.5 shall not apply if the aerial exceeds 2 m", and that "The aerial shall be installed at 10 cm or more inward from the outermost end of the vehicle" ?	Those will be added.	There's few cases that exceed 2 m among passenger cars.
13		Para.6.17.2	Isn't it necessary to add the requirement that the 40 mm requirements applies to aerials installed in front of the driver, the 70 mm requirement shall apply when the aerial is installed backward of the driver? How about adding also the requirement that this shall not apply to aerials exceeding 2 m?	Those will be added.	For example, the 70 mm requirement applies to a shark aerial installed in the rear.
14		Para.6.17	How about adding the exemption provision that, when the aerial bends under a load of 50 daN or more, the requirement shall apply to the part coming under that bending point? How about adding the exemption provision that, in case of a flexible aerial, the requirement shall apply to the part coming under that base?	Those will be added.	–

(Table 2) Q&A at the Expert Meetings on UN-R26, 44, and 89

No.	UN-R	Question	Answer
1	UN-R26	About accessory parts: There are many different patterns, including i) genuine parts prescribed by automakers; ii) parts independently defined by affiliated dealers; and iii) parts available on the market. What's the idea underlying the regulations in ensuring regulatory compliance?	As to specifications subject to the whole-vehicle type approval, all parts must comply with relevant regulations, whether they are genuine or optional or whether they are defined by automakers or dealers, and automakers are taking care of this at their own responsibility. On the other hand, as to other accessory parts sold on the markets out of automakers' sight, it lies upon parts manufacturers to ensure regulatory compliance, but whether they actually do so might be a gray area.
2		How should we handle COP with the three patterns above?	With COP in Europe and Japan, basically vehicles are checked in their default status. Therefore, if accessory parts are included in the whole-vehicle type approval test, then parts in i) and ii) above are subject to COP requirement. As to parts available on the markets without type approval such as those cited in iii) above, usually they are not subject to the COP requirement. That is to say, as we stated above, it lies upon those parts manufacturers to independently have their products comply with relevant regulations.
3	UN-R44	What kind of requirements apply to parts comprising CRS? Is marking required for them? And when they are applied, will the manufacturer's own label do, as far as it testifies that the product is in compliance?	The requirements for each part are prescribed mainly in paragraph 6, but they are also indicated throughout the regulation wherever deemed appropriate. So please check them all carefully throughout the regulation. As to their outline, that's as we presented in this meeting. CRS requires marking for compliant assemblies, but not for individual parts, except for certain products (such as plastic products). As to manufacturers' own labels, it is up to the engineer to determine whether they are compliant or not. If they find no problem with proprietary labels, then there won't be any problem with such labels.
4		Which parts are subject to corrosion tests?	Metallic parts. The tests see how corrosion has progressed.
5		There are three categories for CRS. Is there any universal CRS that would cover all ranges? If any, could you tell me the manufacturer's name?	That depends on the CRS, but some cover two or three categories. Takata's CRS, for example, covers three categories.
6		Does every category have its own restriction as to the size of the occupant, such as the height between the hip to the shoulders?	There provisions such as "6.2.4 The design shall be such that compression loads shall not be imposed on the crown of the child's head in the event of a collision," so we check the height after installing the dummy. Further, when it doubles as groups as in 6.2.7, there are separate requirements.
7		About the frontal and rear collision in the dynamic tests: I see that tolerance for the colliding speed is given downward (+0-2) for the frontal collision but upward (+2-0) for the rear collision. Why this difference?	That's only difference in legal expression. Technically there's no difference.

8	UN-R44	What's the difference between the P dummy and the Q dummy?	They are totally different dummies with different biological fidelity, measurable body parts, etc. The Q dummy cannot be used for R44.
9		CRS includes a variety of sizes and geometries. Is there any case where you have to change the design of the seat belt?	For the purpose of UN-R16, once you verify that the seat belt is properly worn with a gabarit, usually there won't be any change in its handling or design. However, when the automaker wants to recommend large CRS to small-sized vehicles, then they might have to change the design of the seat belt to accommodate that on the vehicle side.
10	UN-R89	R89 concerns such categories as N2, N3, and M3. Are the requirements presented today all apply commonly to all of these categories? Or are there different requirements depending on the category?	The presentation today, including the video clips, typically concerns N3, but yes, they cover all of the three categories.
11		In Japan, are the speed limits defined for each category? And are they defined by the Japanese government?	In case of N3, for example, the speed limit is defined at 90 km/h by the Japanese government. For the purpose of the Road Traffic Act, the speed limit is set at 80 km/h.