

# Child Seat Usability Test Procedure

Enacted: April 1st, 2001

Revised: March 20th, 2018

April 1st, 2009

## 1. Dates Effective

This test procedure went into effect starting April 1st, 2001. The revisions made on March 20th, 2018 went into effect on April 1st, 2018.

## 2. Scope of Application

This test procedure applies to the "Child Seat Usability Test Procedure" conducted by the National Agency for Automotive Safety and Victims' Aid (hereinafter referred to as "NASVA") in the child seat assessment program information supply project, as well as the adapted western standards for child seats for infants and young children (general/all-purpose use only.)

## 3. Definitions of Terms

The terms used in this test procedure are defined as follows:

- (1) Child Seat: A seat for infants or young children.
- (2) Infant Bed: A device which keeps an infant in a supine state on a flat surface by restraints.
- (3) Child Seat Classifications: Refer to the table below. Categories are sorted by weight.

Table 1: Child Seat Classifications

Class	Child's weight range (kg)
Infant	Less than 10 or less than 13
Young Child	More than 9 less than 18

- (4) Front-Facing: Facing the same direction in which the vehicle is moving when traveling forwards.
- (5) Rear-Facing: Facing the opposite direction in which the vehicle is moving when traveling forwards.
- (6) Side-Facing: Facing perpendicular to the direction in which the vehicle is moving when traveling forwards.

## 4. Test Procedure

Depending on the type of child seat used in the test, follow the test provisions on either Attachment 1 (ISO-FIX fixed type) or Attachment 2 (seatbelt fixed type).

## 5. Test Results

If the test results satisfy or don't meet the requirements, enter either "pass" or "fail" on the applicable rows on the sheets, according to type (Attachment 1 or 2). However, for mountings 2-1 through 2-3, and row 4 on Attachment 1, and Main Table 2, Body Mechanism 1, and mountings 3-1, 3-2, and 5 in Row 3 in Attachment 2, if these functions are not present, enter "function absent" in the test results rows.

ISO-FIX Fixed

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Installation Manual	1	Instruction manual's clarity, accuracy	<ul style="list-style-type: none"> <li>A simple description of the installation and parts is attached.</li> <li>The post-installation confirmation procedure is specific and quantifiable.</li> </ul>	<ul style="list-style-type: none"> <li>The description is incorrect or there is none. It doesn't match the product and is difficult to understand.</li> <li>The post-installation confirmation procedure is vague or absent.</li> </ul>	
	2	Illustrations' visual clarity, accuracy	<ul style="list-style-type: none"> <li>Simple diagrams of the installation and parts is attached.</li> <li>The post-installation confirmation procedure is specific and quantifiable.</li> </ul>	<ul style="list-style-type: none"> <li>The diagrams are incorrect or there are none. Diagrams don't match the product and are difficult to understand.</li> <li>The post-installation confirmation procedure is vague or absent.</li> </ul>	
	3	How to use different child physiques	<ul style="list-style-type: none"> <li>If there are multiple different child physiques with different uses, installation and devices are explained for each different type.</li> <li>There is one sole use.</li> <li>Adjustments to the shoulder positions, etc., are</li> </ul>	<ul style="list-style-type: none"> <li>The explanation of differences is vague or the explanation does not address differences in physique.</li> </ul>	
	4	Display of notes and warnings, and whom to contact with questions	<ul style="list-style-type: none"> <li>The notes and warning displays are easy to understand.</li> <li>Displays with the maker's common name, telephone number, and "Contact the manufacturer" are clearly marked.</li> </ul>	<ul style="list-style-type: none"> <li>The notes and warning displays are not easy to understand.</li> <li>There are no markings indicating how to "Contact the manufacturer."</li> </ul>	
	5	Video Explanations	<ul style="list-style-type: none"> <li>There are easy-to-understand tutorial DVDs or homepage addresses with videos regarding installation and devices.</li> </ul>		

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Body Display Content	1	Clarity of attachment procedure	<ul style="list-style-type: none"> <li>There is an attachment procedure display and its contents are easy to understand. (ex. The colors on the display and actual item are the same.)</li> </ul>	<ul style="list-style-type: none"> <li>There is no display or its contents are difficult to understand.</li> </ul>	
	2	Clarity of the use procedure for seat anti-rotation mechanisms (top tethers or support	<ul style="list-style-type: none"> <li>There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>There is no display or its contents are difficult to understand.</li> </ul>	
	3	Description Clarity	<ul style="list-style-type: none"> <li>The display descriptions are appropriate and difficult to misinterpret.</li> </ul>	<ul style="list-style-type: none"> <li>Inappropriate: difficult to understand, font is too small, misleading expressions, not in the correct language, etc.</li> </ul>	
	4	Clarity of operation description for other movable parts	<ul style="list-style-type: none"> <li>There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>There is no display or its contents are difficult to understand.</li> </ul>	
	5	Clarity of installation procedure	<ul style="list-style-type: none"> <li>There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>There is no display or its contents are difficult to understand.</li> </ul>	

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Body Mechanisms	1	Operability of the Recliner	<ul style="list-style-type: none"> <li>Locks with certainty.</li> <li>If certain devices must be in operation for proper use (such as, facing backward) the lever's position is clear.</li> <li>The form of use is uniform.</li> </ul>	<ul style="list-style-type: none"> <li>Locks without certainty.</li> <li>Difficult to find the lever.</li> </ul>	
	2	ISO-FIX Latch system or anti-seat rotation devices (top tether or support leg) operability	<ul style="list-style-type: none"> <li>Locks with certainty.</li> <li>If certain devices must be in operation for proper use, the operation method is clear.</li> </ul>	<ul style="list-style-type: none"> <li>A possibility of improper operation or installation.</li> <li>The release mechanism is within the child's reach and can be released by the child.</li> </ul>	
	3	Operability of other moving parts	<ul style="list-style-type: none"> <li>Locks with certainty.</li> <li>If certain devices must be in operation for proper use, the lever's position is clear.</li> </ul>	<ul style="list-style-type: none"> <li>Locks without certainty or the integrity of the attachment is compromised when checked.</li> <li>Difficult to find the lever.</li> </ul>	
	4	Attachment Certainty	<ul style="list-style-type: none"> <li>When the seat cover is removed, it is easy to attach the harness, etc., with certainty without misunderstanding.</li> </ul>	<ul style="list-style-type: none"> <li>Cannot be attached with certainty or is easy to attach incorrectly.</li> </ul>	
	5	Stored user's manual and accessories for installation	<ul style="list-style-type: none"> <li>The storage area is in an easy position to locate and fill when the seat is fully-attached.</li> </ul>	<ul style="list-style-type: none"> <li>There is no storage or storage area is difficult to access when the seat is fully-attached.</li> </ul>	

ISO-FIX Fixed

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
A t t a c h m e n t a b i l i t y	S e a t a b i l i t y	1 Vehicle seat side fixtures (anchors) and arms	<ul style="list-style-type: none"> <li>Confirmed locked stage is displayed and can be confirmed audibly or tactilely.</li> </ul>	<ul style="list-style-type: none"> <li>←Difficult to confirm if locked or not.</li> <li>←Display is in a difficult location to see.</li> </ul>	
		2-1 Base and main body (front-facing)	<ul style="list-style-type: none"> <li>Connection with the base and main body are displayed and easy to confirm by ear or by touch.</li> </ul>	<ul style="list-style-type: none"> <li>←Difficult to confirm if locked or not.</li> <li>←Display is in a difficult location to see.</li> </ul>	
		2-2 Base and main body (rear-facing)	<ul style="list-style-type: none"> <li>Connection with the base and main body are displayed and easy to confirm by ear or by touch.</li> </ul>	<ul style="list-style-type: none"> <li>←Difficult to confirm if locked or not.</li> <li>←Display is in a difficult location to see.</li> </ul>	
		2-3 Base and main body (side-facing)	<ul style="list-style-type: none"> <li>Connection with the base and main body are displayed and easy to confirm by ear or by touch.</li> </ul>	<ul style="list-style-type: none"> <li>←Difficult to confirm if locked or not.</li> <li>←Display is in a difficult location to see.</li> </ul>	
	r o t a t i o n	3-1 Support leg	<ul style="list-style-type: none"> <li>Easy to set with certainty, display indicates when locked and can be confirmed by ear or touch.</li> </ul>	<ul style="list-style-type: none"> <li>←Height adjustment is too wide and difficult to set.</li> </ul>	
3-2 Tether strap		<ul style="list-style-type: none"> <li>Equipped with tension adjustment devices and tension loosening devices.</li> <li>Display indicates when tension is adequate</li> </ul>	<ul style="list-style-type: none"> <li>←Difficult to adjust tension.</li> <li>←Difficult to release tension.</li> <li>←Difficult to see the display that shows when tension is adequate from adjusting.</li> </ul>		
L o c k d i s p l a y	4 Lock display of the vehicle's seat with the base.	<ul style="list-style-type: none"> <li>Display indicates when locked and can be confirmed in all lighting conditions.</li> </ul>			
	5 Anti-rotation device lock display	<ul style="list-style-type: none"> <li>Display indicates when locked and can be confirmed in all lighting conditions.</li> </ul>			

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
I n s t a l l a b i l i t y	H a r n e s s	1 Height adjustments	<ul style="list-style-type: none"> <li>Able to adjust with certainty, the positions of the cover hole and slot are adequate.</li> <li>Adjusting the harness cover and shoulder pad positions is easy.</li> </ul>	<ul style="list-style-type: none"> <li>←Unable or difficult to adjust, or the cover hole and slot positions are so skewed that the device might be misused.</li> <li>←The harness cover and shoulder pads are difficult to attach or easy to lose.</li> <li>←The attachment function is too complicated (ex. passing the belt through metal fittings to secure.)</li> <li>←Difficult to operate even with an adjuster.</li> </ul>	
		2 Length adjustments (harness slack, etc.)	<ul style="list-style-type: none"> <li>Able to adjust with certainty, enough length for adequate restraint.</li> <li>Adjusting the harness cover and shoulder pad positions is easy.</li> </ul>	<ul style="list-style-type: none"> <li>←Unable or difficult to adjust.</li> <li>←The harness cover and shoulder pads are difficult to attach or easy to lose.</li> <li>←The attachment function is too complicated.</li> </ul>	
		3 Confirming length adjustments	<ul style="list-style-type: none"> <li>When the harness is adjusted properly, this can be confirmed by visual, audible, or tactile notifications.</li> </ul>		
	B u e t c l e	4 Usability (including functions added for sitting.)	<ul style="list-style-type: none"> <li>Able to lock with certainty and impossible to insert from the wrong direction.</li> <li>Is not a one-sided lock system.</li> <li>Locked state is displayed with certainty and can be confirmed visibly, audibly, or tactilely.</li> </ul>	<ul style="list-style-type: none"> <li>←There is uncertainty about the locked state (ex. If there is a rattling noise during locking, it is difficult to tell when the lock mechanism has not functioned properly.)</li> <li>←Possible to insert from the wrong direction.</li> </ul>	
		5 Lock display	<ul style="list-style-type: none"> <li>Locked state can be confirmed with certainty, and can be seen in all lighting conditions.</li> </ul>		

Seatbelt, Fixed Type

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Installation Manual	1	Instruction manual's clarity, accuracy	<ul style="list-style-type: none"> <li>← The description of the installation and parts is attached.</li> <li>← The post-installation confirmation procedure is specific and quantifiable.</li> </ul>		
	2	Illustrations' visual clarity, accuracy	<ul style="list-style-type: none"> <li>← Simple diagrams of the installation and parts is attached.</li> <li>← The post-installation confirmation procedure is specific and quantifiable.</li> </ul>		
	3	How to use different child physiques	<ul style="list-style-type: none"> <li>← If there are multiple different child physiques with different uses, installation and devices are explained for each different type.</li> <li>← There is one sole use.</li> <li>← Adjustments to the shoulder positions, etc., are</li> </ul>	<ul style="list-style-type: none"> <li>← The explanation of differences is vague or the explanation does not address differences in physique.</li> </ul>	
	4	Display of notes and warnings, and whom to contact with questions	<ul style="list-style-type: none"> <li>← The notes and warning displays are easy to understand.</li> <li>← Displays with the maker's common name, telephone number, and "Contact the manufacturer" are clearly marked.</li> </ul>	<ul style="list-style-type: none"> <li>← The notes and warning displays are not easy to understand.</li> <li>← There are no markings indicating how to "Contact the manufacturer."</li> </ul>	
	5	Video Explanations	<ul style="list-style-type: none"> <li>← There are easy-to-understand tutorial DVDs or homepage addresses with videos regarding installation and devices.</li> </ul>		

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Body Display Content	1	Clarity of attachment procedure	<ul style="list-style-type: none"> <li>← There is an attachment procedure display and its contents are easy to understand. (ex. The colors on the display and actual item are the same.)</li> </ul>	<ul style="list-style-type: none"> <li>← There is no display or its contents are difficult to understand.</li> </ul>	
	2	Clarity of the use procedure for seat anti-rotation mechanisms (top tethers or support legs)	<ul style="list-style-type: none"> <li>← There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>← There is no display or its contents are difficult to understand.</li> </ul>	
	3	Description Clarity	<ul style="list-style-type: none"> <li>← The display descriptions are appropriate and difficult to misinterpret.</li> </ul>	<ul style="list-style-type: none"> <li>← Inappropriate: difficult to understand, font is too small, misleading expressions, not in the correct language, etc.</li> </ul>	
	4	Clarity of operation description for other movable parts	<ul style="list-style-type: none"> <li>← There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>← There is no display or its contents are difficult to understand.</li> </ul>	
	5	Clarity of installation procedure	<ul style="list-style-type: none"> <li>← There is an installation procedure display and its contents are easy to understand.</li> </ul>	<ul style="list-style-type: none"> <li>← There is no display or its contents are difficult to understand.</li> </ul>	

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results	
Body Mechanisms	1	Operability of the Recliner	<ul style="list-style-type: none"> <li>← Locks with certainty.</li> <li>← Easy to operate when facing backwards, etc.</li> </ul>	<ul style="list-style-type: none"> <li>← Locks without certainty.</li> <li>← Difficult to find the lever.</li> </ul>	
	2	Operability of other moving parts	<ul style="list-style-type: none"> <li>← Locks with certainty.</li> <li>← If certain devices must be in operation for proper use, the lever's position is clear.</li> </ul>	<ul style="list-style-type: none"> <li>← Locks without certainty or the integrity of the attachment is compromised when checked.</li> <li>← Difficult to find the lever.</li> </ul>	
	3	Operability of anti-rotation devices (top tether, support legs)	<ul style="list-style-type: none"> <li>← Locks with certainty.</li> <li>← If certain devices must be in operation for proper use, the operation method is clear.</li> </ul>	<ul style="list-style-type: none"> <li>← A possibility of improper operation or installation.</li> <li>← The release mechanism is within the child's reach and can be released by the child.</li> </ul>	
	4	Attachment Certainty	<ul style="list-style-type: none"> <li>← When the seat cover is removed, it is easy to attach the harness, etc., with certainty without misunderstanding.</li> </ul>	<ul style="list-style-type: none"> <li>← Cannot be attached with certainty or is easy to attach incorrectly.</li> </ul>	
	5	Stored user's manual and accessories for installation	<ul style="list-style-type: none"> <li>← The storage area is in an easy position to locate and fill when the seat is fully-attached.</li> </ul>	<ul style="list-style-type: none"> <li>← There is no storage or storage area is difficult to access when the seat is fully-attached.</li> </ul>	

Seatbelt, Fixed Type

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results
A t t a c h a b i l i t y	1 Belt Attachability	<ul style="list-style-type: none"> <li>Difficult to misinterpret, easy to pass, irregular bending and twisting does not occur on the car side belt.</li> <li>Easy to tighten singlehandedly without putting weight on the body, can confirm locked state.</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to misinterpret, irregular bending and twisting occurs on the car side belt.</li> <li>Difficult to tighten singlehandedly.</li> <li>Difficult to confirm locked state.</li> </ul>	
	2-1 Discerning post-attachment F (front-facing)	<ul style="list-style-type: none"> <li>After attaching, when pulling the CRS upper-side by 10kgf, there is a 3cm deficiency.</li> </ul>		
	2-2 Discerning post-attachment R (rear-facing)	<ul style="list-style-type: none"> <li>After attaching, when pulling the CRS upper-side by 10kgf, there is a 3cm deficiency.</li> </ul>		
	2-3 Discerning post-attachment (side-facing)	<ul style="list-style-type: none"> <li>After attaching, when pulling the CRS upper-side forward by 10kgf, there is a 3cm deficiency.</li> </ul>		
	3-1 Support leg	<ul style="list-style-type: none"> <li>Easy to set with certainty, display indicates when locked and can be confirmed by ear or touch.</li> </ul>	<ul style="list-style-type: none"> <li>Height adjustment is too wide and difficult to set.</li> </ul>	
	3-2 Tether strap	<ul style="list-style-type: none"> <li>Equipped with tension adjustment devices and tension loosening devices.</li> <li>Display indicates when tension is adequate.</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to adjust tension.</li> <li>Difficult to release tension.</li> <li>Difficult to see the display that shows when tension is adequate from adjusting.</li> </ul>	
	4 Lock display of the vehicle's seat with the base.	<ul style="list-style-type: none"> <li>Display indicates when the belt is secured and in a locked state, and can be confirmed in all lighting conditions.</li> </ul>		
5 Anti-rotation device lock display	<ul style="list-style-type: none"> <li>Display indicates when locked and can be confirmed in all lighting conditions.</li> </ul>			

Test	Test Items	Requirements	Examples of not meeting the requirements	Test Results
I n s t a l l a b i l i t y	1 Height adjustments	<ul style="list-style-type: none"> <li>Able to adjust with certainty, the positions of the cover hole and slot are adequate.</li> <li>Adjusting the harness cover and shoulder pad positions is easy.</li> </ul>	<ul style="list-style-type: none"> <li>Unable or difficult to adjust, or the cover hole and slot positions are so skewed that the device might be misused.</li> <li>The harness cover and shoulder pads are difficult to attach or easy to lose.</li> <li>The attachment function is too complicated (ex. passing the belt through metal fittings to secure.)</li> <li>Difficult to operate even with an adjuster.</li> </ul>	
	2 Length adjustments (harness slack, etc.)	<ul style="list-style-type: none"> <li>Able to adjust with certainty, enough length for adequate restraint.</li> <li>Adjusting the harness cover and shoulder pad positions is easy.</li> </ul>	<ul style="list-style-type: none"> <li>Unable or difficult to adjust.</li> <li>The harness cover and shoulder pads are difficult to attach or easy to lose.</li> <li>The attachment function is too complicated.</li> </ul>	
	3 Confirming length adjustments	<ul style="list-style-type: none"> <li>When the harness is adjusted properly, this can be confirmed by visual, audible, or tactile notifications.</li> </ul>		
	4 Usability (including functions added for sitting.)	<ul style="list-style-type: none"> <li>Able to lock with certainty and impossible to insert from the wrong direction.</li> <li>Is not a one-sided lock system.</li> <li>Locked state is displayed with certainty and can be confirmed visibly, audibly, or tactilely.</li> </ul>	<ul style="list-style-type: none"> <li>There is uncertainty about the locked state (ex. If there is a rattling noise during locking, it is difficult to tell when the lock mechanism has not functioned properly.)</li> <li>Possible to insert from the wrong direction.</li> </ul>	
	5 Lock display	<ul style="list-style-type: none"> <li>Locked state can be confirmed with certainty, and can be seen in all lighting conditions.</li> </ul>		