

REPORT ON SEAT BELT ANCHORAGE TEST OF AEPL'S CREW SEAT												
Report No.	SDL/3100021589(24-25)/AEPL/305(24-25) Part II	Date: 30/12/2024										
Name of the Party	Autogistic Engineering Private Limited (AEPL) No. 267/1, Podhigai, Big Melamaiyur Villam Post, Thirukalukundram Road, Chengalpattu, Kanchipuram - 603002											
REFERENCE												
Correspondence Reference:	E-mail dated – 14/08/2024											
Specifications Reference:	FMVSS 210											
TEST COMPONENTS												
Crew seat	3100021589/07											
Test Date	03/12/2024											
RESOURCES USED												
Actuator: FTL/INS/465, 466 and 1057 Load cell: FTL/INS/419, 473 and 1043 GT Controller: FTL/CO/24												
TEST REQUIREMENTS												
<ul style="list-style-type: none"> All the seat belt anchorages of the seats shall be capable of withstanding the specified loads as per clause 12.B.(1) and 12.B. (2) of FMVSS 210 standard. As per clause 12.B.(5) of FMVSS 210, the specified load shall be maintained for a minimum period of 10 seconds. 												
<table border="1"> <caption>Graph Data Points</caption> <thead> <tr> <th>Time (sec)</th> <th>Load (%)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>15</td><td>100</td></tr> <tr><td>25</td><td>100</td></tr> <tr><td>40</td><td>0</td></tr> </tbody> </table>			Time (sec)	Load (%)	0	0	15	100	25	100	40	0
Time (sec)	Load (%)											
0	0											
15	100											
25	100											
40	0											
TEST PROCEDURE												
<ul style="list-style-type: none"> The seat belt anchorage test was carried out on crew seat. The tractive forces were applied to the seat belt anchorages through the traction devices. Fig. 01 shows the test setup photographs of the seat. Specified loads were applied on seat with the help of servo hydraulic actuators. An additional force was applied at CG location of the seat, the load is equal to 20 times weight of seat. 												

- Table below shows the 100% loading condition to be applied.

Lap Load (kN)	Torso Load (kN)	Seat weight (kg)	CG load (kN)
13.35	13.35	20.5	4.03




- Load vs. time was acquired for the entire Lap, Torso & CG loading. All the belt anchorages and the seat structure inspected after the test for any deformation or breakage.

TEST RESULT AND OBSERVATIONS

- Table below shows the maximum loads sustained by each anchorage.

Loads achieved	Lap Load (kN)	Torso Load (kN)	CG Load (kN)
100%	13.7	13.7	4.1
Loading Angle (°)	12.7	12.8	0

- Seat achieved and sustained loads for period of 11 seconds.
- Deformation of seatback has been observed in the direction of load. Fig. 02 shows after test photographs.
- Fig. 03 shows the Load vs. Time plot for the Torso, Lap and CG blocks acquired during the test.

Prepared by	Reviewed by	Approved by
 S.L. GADHAVE Engineer	 V.V. DESAI Manager	 V. V. SHINDE Sr. Deputy Director

Disclaimer: - "This test report pertains only to the components / parts / assemblies / vehicles etc. actually tested at ARAI in the presented condition based on the documents / information produced / submitted by the customer. The issuance of this test report alone does not indicate any measure of approval, certification, supervision, control of quality surveillance by ARAI of the product. No extract, abridgement or abstraction from this test report shall be published or used to advertise the product without the written consent of the Director, ARAI, who reserves the absolute right to agree or reject all or any of the details of any items of publicity for which consent may be sought. ARAI is in no way responsible for any misuse of copying of any design / type / system in connection with entire vehicle / components / parts and assemblies. Breach of any statutory provision of Indian laws or laws of other countries, will be the sole responsibility of the customer and ARAI shall not be liable for any claims or damages, made by the party, whatsoever, the customer shall alone be liable for the same, and undertakes to indemnify ARAI in this regard. Further, the ARAI has the right to initiate cancellation / withdrawal of the report issued, in case of any fraud, misrepresentation, when it surfaces and comes in the knowledge of ARAI. The appropriate local courts at Pune shall have the jurisdiction in respect of any dispute, claim or liability arising out of this report.

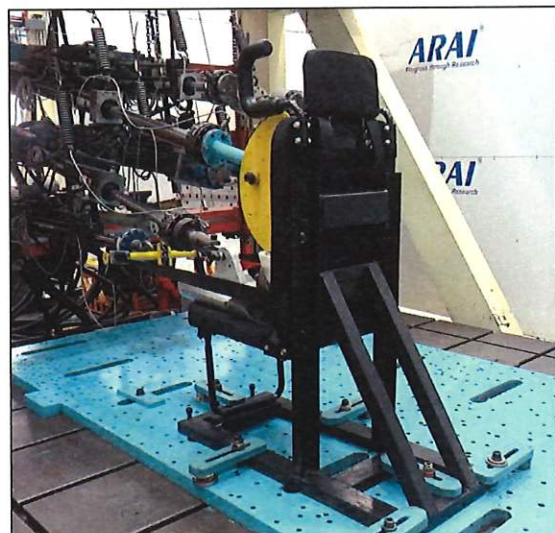
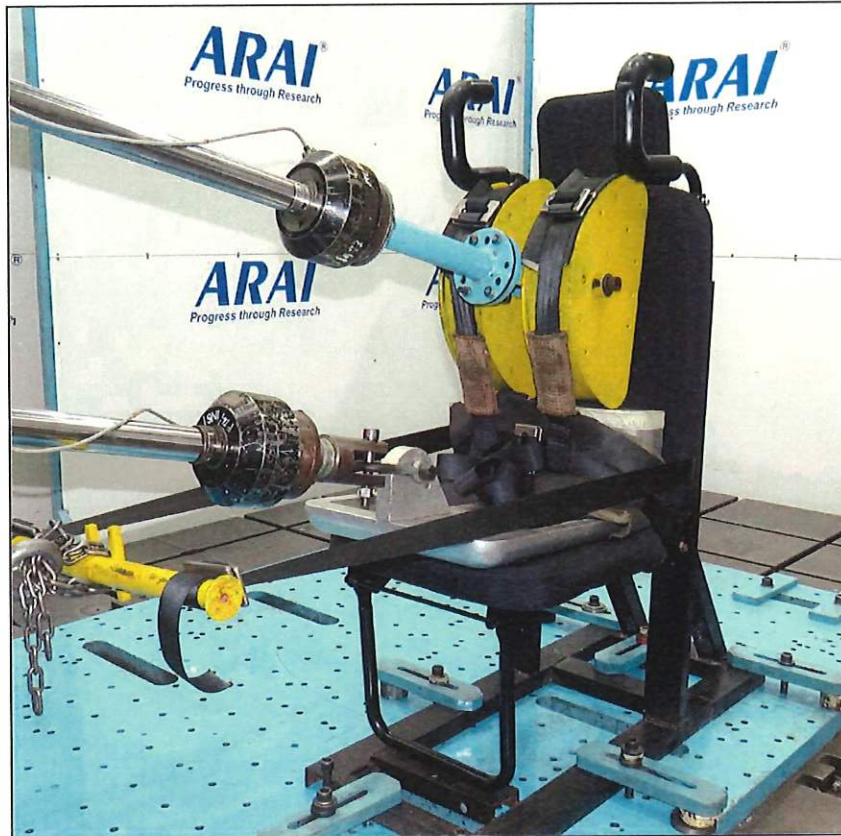


Fig. 01 – Test setup photographs of Crew seat.
(Component ID: 3100021589/07)



Fig. 02 – Post test photographs of Crew seat.
(Component ID: 3100021589/07)

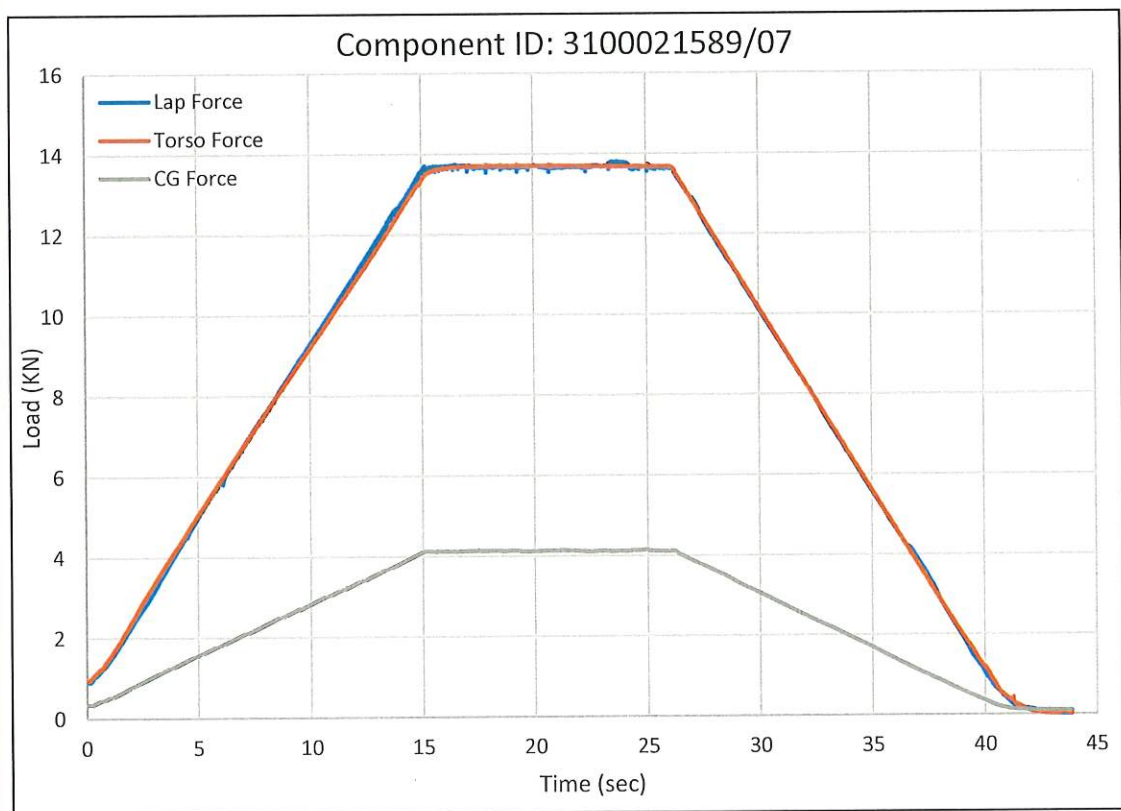


Fig. 03 – Load vs. time graph acquired during SBA test of Crew seat