



1. New state-of-the-art Crash Test Facility at ARAI-Chakan

2. ARAI Gears Up for Eligibility Assessment of Electric and Hybrid Electric Vehicles as per FAME India Scheme

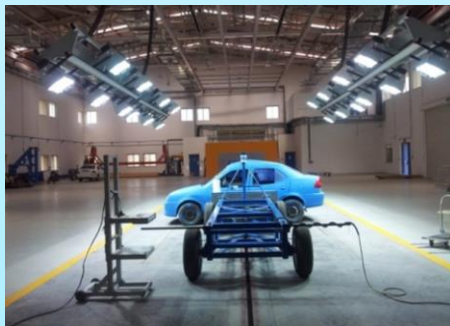
□ New state-of-the-art Crash Test Facility at ARAI-Chakan

New Crash Test Facility at Passive Safety Lab at ARAI Chakan Plant is successfully installed and commissioned and now ready for use for vehicular crash testing to comply with applicable norms. Salient features of the facility are -

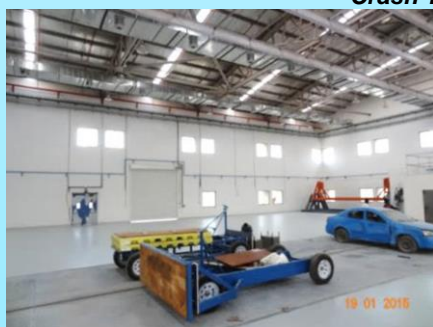
Crash Testing

- Electric AC Drive Crash Test System with maximum capacity of 3500 kg payload and propelling speed of 80km/h.
- Two Photo pits measuring 6m x 3m x 3m for capturing underbody view – one for full frontal / offset frontal crash tests and other for Side Impact / Rear Impact Crash Tests.
- High Speed cameras capable of capturing up to 2000 frames per second (as required for crash applications).
- Lighting Systems (on-board and off-board) capable of providing light intensity up to 1,50,000 lux

PHOTOGRAPHS OF FACILITY SET UP AT ARAI, CHAKAN PLANT



Crash Test Facility



Moving Barriers / Deformable Barriers



Pole Side Impact



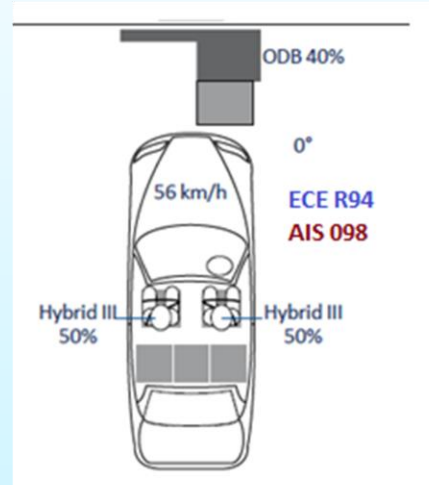
Static Rollover Facility

Facility Planned – Facility is planned for the following test configurations.

1. Full Frontal Test



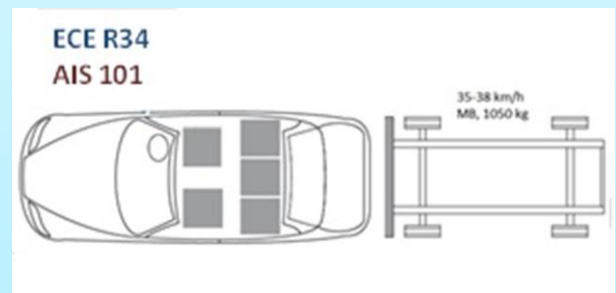
2. Offset Frontal Test



3. Side Impact Test



4. Rear Impact Test



5. Crash tests for Airbag ECU Calibration

6. Crash tests for component evaluation of frontal structure

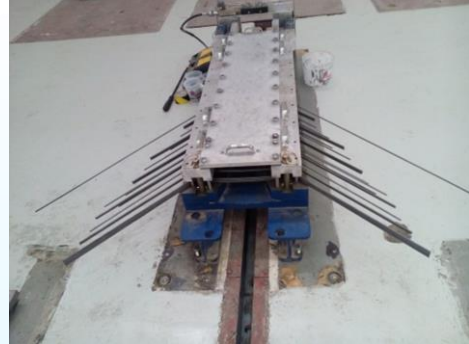
Highlights of Crash Testing Lab

- Skilled, experienced and trained manpower
- 1500 man-days of crash testing experience
- Experience of conducting crash tests since year 2003, with more than 65 crash tests conducted at Passive Safety Lab, ARAI, Kothrud.
- Experience of Developmental / Benchmarking Crash Tests
- Evaluation of Road Restraint Systems and Security Devices like tire-ripper and bollards possible with existing advanced Electronic Control Vehicle (ECV) facility
- Motion analysis and signal analysis competency for impact tests
- Experience of providing High Speed Photography and High Speed Multi Channel DAQ Services .

Sled Testing

Advanced Programmable Deceleration Sled with maximum trolley pay load of 1000 kg, maximum speed of 80 km/h and maximum deceleration of 60g.

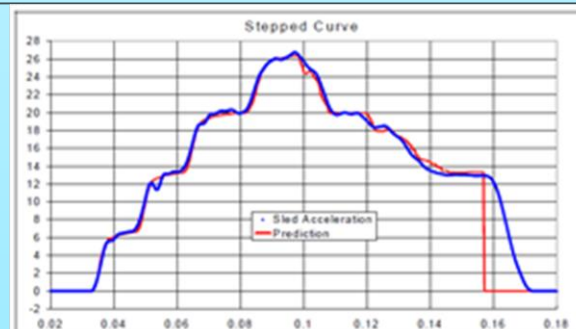
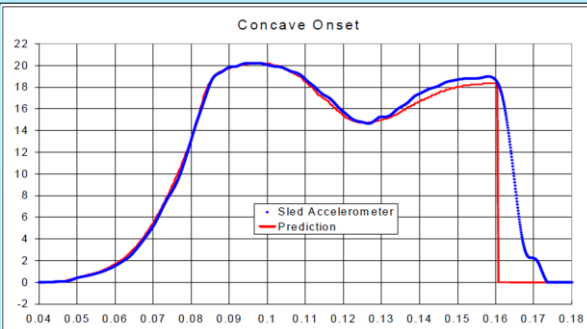
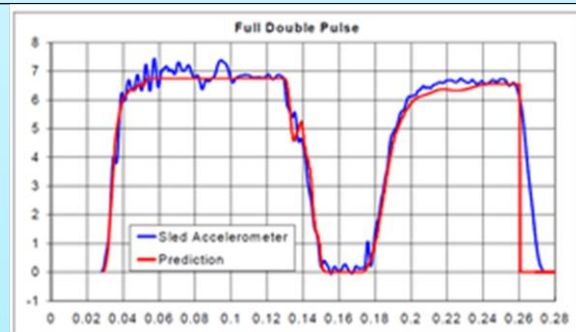
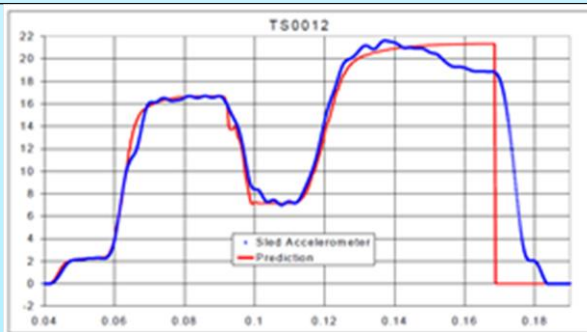
Actual Laboratory Photos



Advanced Programmable Deceleration Sled

Facility planned for following test configurations

1. Seat Testing IS 15546 / AIS 023 / ECE R17 / ECE R80	2. Luggage Retention test IS 15546 / ECE R17
3. Door Locks and Door Retention Components GTR 1 / ECE R11	4. Child Restraint System Dynamic Test AIS 072 / ECE R44
5. Safety Belt Testing as per IS 15140 / ECE R16	6. Determination of Dynamically determined head impact zone IS 15223:2014 / ECE R21
7. Various crash test pulses (Few illustrative pulses)	



Highlights of Sled Testing Lab

- Trained and experienced manpower
- Extensive experience of conducting various types of sled tests since year 2003 with more than 10000 sled tests conducted at Bungee Sled facility, PSL, ARAI, Kothrud.
- Experience in conducting various internal validation tests of Major OEMs for their vendors.
- New sled facility at ARAI Chakan is in addition to the already existing test set up and capacity with more capabilities.

With crash test regulations (AIS 098 / AIS 099 / AIS 096) on anvil and ARAI Crash Test Set Up being the first facility to be ready under NATRiP initiative, Automotive Industry will extensively use the facility for necessary compliance to regulations.

□ ARAI Gears Up for Eligibility Assessment of Electric and Hybrid Electric Vehicles as per FAME Scheme

Government of India has launched FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) – India Scheme from 1st April 2015, as a part of National Mission for Electric Mobility. As a part of this scheme, to create an initial demand for market uptake, Government has decided to offer demand incentive to the buyers of electric and hybrid electric vehicles at the time of purchase of such vehicles. In this scheme, following types of vehicles are covered -

- 2-Wheelers (Category L1 and L2 as per CMVR)
- 2-Wheelers (With max power not exceeding 250W)
- 3-Wheelers (Category L5 as per CMVR)
- Passenger Cars (Category M1 as per CMVR)
- Light Commercial Vehicles (Category N1 as per CMVR)
- Buses (Category M3 as per CMVR)
- Hybrid Retrofitment (Category M1, M2 and N1 as per CMVR)





For each type of these vehicles to qualify for the demand incentive, vehicles are required to qualify certain technical criteria, details of which have been elaborated in the scheme guidelines. ARAI, leading authorised test agency under CMV Rule 126, has been authorized by Government of India, to test and issue eligibility assessment certificate to the qualifying electric and hybrid electric vehicle models. Accordingly, ARAI has geared-up for eligibility assessment and issue of compliance certificate as per FAME India Scheme, to the manufacturers of electric and hybrid electric vehicles.

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