

Centre of Excellence Passive Safety

Passive Safety is playing important role in new vehicle development and new regulation implementation to build safer vehicles. In last decade crash test on full vehicle have become compulsory all over the world and also for components. There are two major challenges are facing by OEM's and component manufactures in this area i.e.

- Huge investment needed to perform test in-house.
- Additional development cost due to destructive nature of these kind of tests.

The requirement for complete Passive Safety test can be broadly categorised in two form.

- **Regulation Requirement:** There are three segments of manufacturer can be grouped in this category having specific requirement for regulation related test. These manufacturers and there test requirement are as follows:
 - A. Passenger Car Manufacturers:** The passenger car type approval required Offset crash, Lateral crash , Rear impact, Pedestrian protection and Occupant protection test.
 - B. Component Manufacturers:** To test and homologate sub-system of vehicle Sled test, Load test, Structural and Environmental fatigue test are mandatory.
 - C. OEM's Other Than Car Manufacturers:** The other vehicles required Sled test, Load test, Impact test and Tilt test.
- **R&D Requirement:** The R&D requirement is based on mandatory crash test , to derive all possible information which will be used for developmental purpose. The information gathering involve acquiring data on the car and dummy, measuring acceleration and displacement, filming the events, and all other extra data acquisition capability. The other features such as Rollover test and Airbag test are additional benefits.

In view of the above difficulties and requirement, NATRiP is in process to establish State of Art facility under Centre of Excellence for Passive Safety at GARC-Chennai. Beside

GARC, NATRiP is also in process to establish two other passive safety facilities at iCAT and ARAI.

The Centre of Excellence for Passive Safety at GARC-Chennai has following facilities:

- Capable for performing frontal car to car crash, Sled test, Full vehicle crash test and also angular car-to-car crash.
- Measuring loads on the impact block with a load cell wall.
- The lab is able to perform EuroNCAP and USANCAP tests and having special equipments to measure and film crash test and some climatic control of the impact zone are required.
- Additional data acquisition and filming capability.