

Accelerated corrosion test

Corrosion is a natural process that causes gradual destruction of metals by chemical and /or electrochemical reaction with their environment. Corrosion causes important problems which affect not only the appearance but also the reliability and durability of vehicles worldwide.



Corrosion can be triggered by particular ambient conditions like high humidity and saline environments or by road de-icing agents used in cold areas of the world.

IDIADA has run internal development projects in order to study how corrosion affects vehicles from various parts of the world, making it possible to determine different corrosion ratings and targets depending on the type of vehicle and market. These ratings are used in accelerated corrosion testing in the proving ground.

IDIADA has a broad experience in performing accelerated corrosion tests for worldwide OEMs and markets based on international standards like SAE J1950. These tests are run in our HQ's proving ground facilities on **passenger cars, commercial vehicles, trucks and buses**. The accelerated corrosion tests simulate the corrosion ageing of vehicle surfaces coatings over several years in a specific market in a few months –commonly 10 years are simulated in highly corrosive environments.

Three main events are combined in order to accelerate corrosion on vehicle surfaces:

- **Mileage accumulation** on rough surfaces and dusty roads.
- **Saline water shower and bath**. Salt composition and concentration can be changed upon demand.



- **Climatic chamber** soaking under predefined cycles consisting of temperature and humidity variations ranging from -35°C to 55°C and up to 99% of relative humidity.

Detailed checklists for any type of vehicle are used to thoroughly analyse vehicles for any sign of corrosion that may appear during the test. Complete photographic reports and rating evaluation are available after each simulated year.

A final tear-down inspection to component-level is performed at the end of the test in order to evaluate and judge the performance of the complete vehicle surface coatings and protections.