

## Exterior noise development

IDIADA's NVH teams, both in Spain and China, have **extensive knowledge of exterior noise testing** with more than 25 years' experience. The teams are active all-year-round and familiar with a large number of standardized testing procedures. The client's own procedures can also be applied, upon request.

- Pass-by according to **UN R51** (R51.03, ASEP method)
- Pass-by according to **TRIAS 30** (Japan) or US/China/Korea etc. regulations (incl. **GOST**)
- Coast-down for tyres according to **UN R117**
- AVAS (Acoustic Vehicle Alerting System) according to **UN R138/FMVSS 141**
- Horn noise according to **UN R28/KMVSS ART 53/GB 15742**



### Exterior noise testing tracks in Spain and China:

Applus IDIADA's proving grounds in Spain and China are overall equipped with **7 exterior noise test tracks aimed at exterior noise testing and validation.**

- Five of those [exterior noise test tracks are located at the Proving Ground in Spain](#). All of them comply with **ISO standard 10844:2014**. The facilities in Spain provide an exclusive **2 surface exterior noise tracks** and 3 more surface areas are found at other tracks that can be booked exclusively.
- Two more exclusive [exterior noise tracks are located at the China Proving Ground](#) facilities. The surfaces fulfil **ISO standards** (ISO1: ISO 10844:2014 and ISO2: ISO 10844:1994).

The main characteristics of the test tracks are:



- Background noise 50 dB(A)
- Test area dimensions: 22 x 20 m
- Length of acceleration lane: 300 m

The test tracks are also used for development projects. Exterior noise source performance is analysed using source masking techniques for exhaust and intake improvement, sound package performance and optimization, and tyre noise optimization. Moreover, our specialist teams can assist in exterior noise sources countermeasures, design, strategy definition, and system target setting.