Guard rail testing

Applus+ identifies the properties of guard rails and tests for compliance with the Spanish Building Code.

Applus+ Laboratories offers a wide range of testing and solutions to identify properties of guard rails and test for compliance with the Spanish Building Code. Applus+ has laboratories that specialise in product testing, but we can also carry out tests on site.

Guard rail compliance with the Spanish Building Code
Guard rails are used in construction at the edge of a drop, to provide protection from falling. The nature and properties of guard rails must be appropriate for the intended location. They must guarantee personal safety under both normal and exceptional conditions of use.

In Spain, the Building Code (CTE SUA 1 3.2) lays down required dimensions and resistance for guard rails. The resistance and rigidity requirements vary depending on the intended use of the guard rail. The Building Code (CTE DB SE-AE) defines three categories of use. For each category, there is a minimum level of resistance to horizontal loads.

- 3.0 kN/m: Areas used for public gatherings (concert halls, stadiums, etc.)
- 1.6 kN/m: Areas where people can move around freely, for example, hallways in public or administrative buildings or hotels, exhibition rooms (e.g. museums), gyms, car parks and accessible roofs with private access only
- 0.8 kN/m: All other uses

Spain’s UNE standards for guard rails
The UNE standards cover product characteristics such as impact resistance, dimensions and design features. These standards can help you make an informed choice between different guard rail systems.

- UNE 85-237 Railings – Definitions, terms and general safety standards
- UNE 85-238 Railings – Testing methods
- UNE 85-239 Railings – Specifications for separate sections, properties of the fixings, conditions for supply and on-site installation
- UNE 85-240 Railings – Classification

**Guard Rail tests carried out by Applus+:**

- Dimensions
- Horizontal static test to the interior
- Horizontal static test to the exterior
- Vertical static test
- Dynamic impact test (soft body)
- Dynamic impact test (hard body)
- Safety test

In addition to testing the properties of guard rails, Applus+ Laboratories recommends that manufacturers, developers and site managers pay careful attention to the type and number of fixings and the base used for attachment on site. Check that both are compatible with the guard rail system.