

# ROAD RESTRAINT SYSTEMS: STATE OF THE ART 2021

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## ABSTRACT

Forgiving roadsides are designed to reduce the severity of run-off-the-road crashes. Road signs and markings keep vehicles on the road while shoulders and the absence of unnecessary objects in the road reserve provide grace to errant vehicles. Road restraint systems protect road users from fixed objects while providing a safe environment for secondary road users such as pedestrians and cyclist.

The RTMC initiated a research project on Road Restraints Systems (RRS) with the aim to provide a uniform approach to the assessment, evaluation, prioritisation and design of road restraint systems across all road networks. The research is based on existing road design literature.

Comparison of road geometric design manuals revealed that many countries developed their manuals from AASHTO: A Policy on Geometric Design of Highways and Streets, including the "The SANRAL Geometric Design Guide, 2003" and "South African Road Safety Manual, 1999, Volume 6, Road Side Hazard Management". The concepts of risk assessment and computer-based needs analysis are new to the most recent manuals.

There are only two standard RRS testing methods, AASHTO Manual for Assessing Safety Hardware 2009 and European EN1317, (adopted by South Africa). Academic research continues to refine test variables and finite numerical element calibrated on the physical tests to the above standards.

Proper Road Restraint Systems will significantly influence road safety and reduce the demands on the national budget through Road Accident Fund [RAF].