Following the international trends, extensive research on seismic resistant structures has been carried out in Europe, with the introduction of several innovative anti-seismic systems based on energy dissipation. The dissipative parts of the systems, where damage potentially concentrates, are mostly small, easily dismountable and replaceable leading to less repairing effort after strong earthquakes. However, these systems have not claimed a fair share of the steel construction market, as provisions for their design have not been included in the Eurocodes and only a few designers are confident enough to employ them. The INNOSEIS project, funded by the Research Fund for Coal and Steel (RFCS) with the participation of 11 partners, aims to deal with this shortcoming. In the frame of the INNOSEIS project information documents, design guidelines, establishment of a methodological procedure to define consistent behaviour factors, design of case studies, organization of seminars and workshops, as well as the development of online, printed and electronic material were prepared and carried out.

This Volume combines the information documents of the 12 innovative anti-seismic systems and includes their description, experimental investigations, design rules, structural analyses and applications examples. The systems under discussion are dissipative connections, dissipative links, dissipative beam splices, replaceable bolted links and shear panels, modified braces, self-centring devices as well as hysteretic devices, triangle or moon-shaped.