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SURVEY OF DWELLING BUILDINGS FOR SEISMIC LOSS ASSESSMENT AT URBAN SCALE: THE CASE STUDY OF 18 VILLAGES IN VAL D’AGRI, ITALY

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Abstract

This paper offers a case study of the seismic vulnerability assessment of existing buildings in 18 villages located in the Val d’Agri area (Basilicata region, Southern Italy). A building-by-building inventory was carried out within the urban areas of the villages by trained technicians in two periods collecting typological data for a total of about 17,500 buildings. In the first period (2001-2003), a purposely drawn up inspection form (VSP-2001) based on the usability form adopted in Italy after seismic events was used to collect detailed data for masonry buildings in 9 villages, while less detailed data were collected for reinforced concrete (RC) ones. In the second period (2005-2006), detailed typological data were collected on both masonry and RC buildings in 9 other villages using an upgraded survey form (VSP-2005). The collected data were analyzed to assign the vulnerability class of the surveyed buildings on the basis of their building type and age. Comparisons with data provided by the national census of population and buildings, carried out in 2001 over the entire Italian territory, were also performed and significant differences were found in terms of estimated vulnerability classes. Results indicate the need for accurate technical surveys to verify and calibrate building vulnerability assessments carried out at large scale using data extracted from housing census or drawn from other rapid and less expensive information sources.

Key words: existing buildings, seismic risk, survey form, urban scale, vulnerability assessment

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