Simplified Assessment of R3 Nominal Assurance Degree to Seismic Action of the Existing Masonry Dwellings

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Abstract text:
This paper refers to the assessment of the performance level of a building for a given seismic hazard level. Building performance level describes the expected seismic performance given by the computation of R3 Nominal Assurance Degree to Seismic Action of the Existing Masonry Dwellings and Monumental Buildings according to the Romanian Norm P100:1992 [1], modified on 1996 with the chapters 11 and 12, until the Part 3 of P100-1:2006 [2], will be performed for the Assessment and Strengthening Structural Design of the Seismic Vulnerable, Existing Buildings, in the frame of SR EN 1998-1:2004 EC8 [3].The framing of damages into the potential risk degrees has a social and economic impact. Assessment and retrofitting of the existing buildings have represented a huge engineering challenge as a distinct problem versus a new building design. The performance level of a vulnerable existing building shows us the expected seismic performance level due to the classified damages, the pattern of cracks, the interruption of function, the economic losses and the needed interventions, all in function of the importance class of building on next life span of use.On recommends the computation of R (R3) Nominal Assurance Degree to Seismic Action of the Vulnerable Dwellings for the assessing and strengthening design, in comparison to both norms because of the bearing conventional seismic load computed by [1], will result less than the value which will be computed by the Part 3 of P100-1:2006, i.e. the norm P100:1992 is more severe. In the case of the breakable fracture probability of the existing structural masonry members, one recommends a bigger value of ? – reduction factor unless the given values by [1] for a new structure with a high ductility, especially for the deflections calibration on the same limit state.
Key Words:
Nominal Assurance; Seismic Action; Masonry Dwellings.

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