

**Abstract**

*The seismic response and stress-strain state parameters of buildings with various numbers of storeys are compared. Means for taking into account the building height factor when determining the seismic loads and higher modes of vibrations for the seismic impact calculations according to the response spectrum theory are analyzed. The importance of this factor for the seismic stability of multi-storey buildings at possible seismic impacts is shown.*

**Keywords:** seismic impact, multi-storey buildings, higher-mode effect, stress-strain state

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