Geophysics has a great role on determining physical and dynamic characteristics of the ground. The main reasons that collapse the buildings do not cause from only ground conditions but also cause from building's structural features. Dominant period value, obtained by microtremor measurements, is one of the most important parameters which give very valuable information about the strength of the structure and ground-building interaction. Dominant period and Ta-Tb parameters calculated from the periods are very important for structural design and the building’s resonance risk. The building’s period should not be between Ta and Tb values in order to prevent the building from resonance. It is possible to investigate this seismic risk by using microtremor measurements. In this study, 11 buildings, where one of them is skyscraper, were investigated in city of İzmir. Data were collected on several floors of the buildings and grounds. The dominant period values of the buildings were between 0.24 and 1.47 seconds and two of the buildings were evaluated as risky for resonance. Besides the measurements were made in every 3 floors of a building that has 44 stories. It was determined that the building is not risky.