

COMPLEX METHOD OF SEISMIC MICROZONING

by
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Seismic microzoning is carried out to isolate areas of various expected seismic risk within cities. This fact is due to the dependence of damage effect of large earthquakes on mechanical properties of soils, on the level of ground waters, on the velocities of propagations of elastic waves, on spectral characteristics of soils resulting from ground layeriness and on peculiarities of earthquake foci as well.

To compile the map of seismic microzoning the complex investigations are made:

- vibrations from small near earthquakes are measured simultaneously on various soils;
- velocities of propagation of longitudinal and shear waves and the structure of soils are determined with the methods of seismic prospecting;
- change of spectral composition with intensity is defined;
- distribution of macroseismic effect during earthquakes (intensity 3-4, scale MM or MSK-64) are used;
- vibrations from exposures on different soils are measured at distances of 10-15 km;
- seismic and geological data on large earthquakes of past years are interpreted.

Joint complex theoretical analysis of all above-mentioned data usually results in good correlation.

The map of seismic microzoning is compiled in two variants: the regions of various intensities or those of different accelerations (expected during 100 years) are isolated.

The main directions of seismic microzoning investigations for the purposes of procedure improvement in the nearest future can be the following:

- accumulation of instrumental data about vibrations on different grounds during earthquakes of various intensities;
- determination of inelastic ground deformations as during earthquakes and during previous period;
- perfection of methods of calculations for multiply-reflected waves in layered media.

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