

OVER THE ASSESSMENT OF THE EFFICACY OF RESTORATION JOBS
ON BRICK BUILDINGS DAMAGED BY EARTHQUAKE

by
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The consequences of earthquakes showed, that most damages were caused to walls masoned out of burned bricks, which can be subdivided into three groups:

1. Damages that arise due to the lack of strength or complete absence of connections between the carrying elements of the building. Such damages are dangerous, because the geometrical changes due to the outfall of the outer walls and corners.

2. Damages, where the connections were strong enough to withstand the destroying forces, but where a part of the carrying structures could not withstand the seismic influences.

3. Damages of secondary elements (partions etc.), only in bad repair.

Such measures are stipulated by the necessity of strengthening separate wall elements and they are summarized into a single system by means:

- usage of wet processes (air-placed concrete over wiremeshes placed on both sides of the wall);
- arranging vertical connections and horizontal ties with consequent tensioning;
- combinations of such measures.

For the first time we used that instrumental method at the restoration jobs, while eliminating the consequences of the Tashkent earthquake in 1966.

Experimental researches allowed to note the change of periods of free oscillations of a three-, four-, and five-storey brick house in general from 10 to 26%, while arranging metallic connections with consequent tensioning, but under conditions of an extra wall strengthening by means of air-placed concrete applied over meshes placed on both sides even greater values.

The following records, registered on 30 units, were made by the collaborators of the Institut for Mechanics and Aseismology of the Academy of Sciences of the Uzbek SSR, certified the mentioned results and allowed somehow to correct them.

Hereat the periods of their free oscillations for two-storey houses decreased in the range of 10 to 40%.

It should be mentioned, that on account of the building strengthening by means of applying air-placed concrete the primary stiffness of the building was restored to 100% in all case while the strengthening done by means of metallic ties and columns - only to 83% of all cases.

If we consider, that under the safficiency of restoration we mean the allocation of former reliability to the building, then the mentioned restoration methods should be accounted for as quite satisfactory.

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