

# Natural disaster in Kazakhstan

## Problem and solution

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- So self made homes from local materials: clay, brick, adobe, without amplification of the first floor. Such houses in Almaty around 20%. They will have heavy damage with seven points, meaning they are considered dangerous buildings, adobe houses will fall.
- Brick houses with wooden ceiling, built before 1955 - when seven points will have moderate to severe damage, with eight points partial collapse.
- Brick houses with strengthened concrete floor, 3-5 floors, built before 1957, we have 23% of homes - will have moderate to severe damage in seven points. At magnitude 9 they fall.
- Timber frame house various types of welded joints and brick walls, we have very few of them, only 7%. They are earthquake-proof, they will be at magnitude 7 only minor injuries, while eight - bit heavier.

- The strongest- is large-panel house. They have a total of 30%, they can withstand 8 points and moderate damage in nine points.
- In 2000, there were more than 7000 apartment buildings are not earthquake resistant, and almost 1,500 require survey.
- You can say , all that has been built up to the 80s - is bad, because were built not taking seismic resistance into account .
- If we talk about individual homes, they are generally not surveyed. Here you have 50% of the population, and we do not know what will happen to their homes.

- Forbid foothills house building (there is very dangerous ground, which disintegrate and liquefy during an earthquake)
- Landslides, mudflows
- 3\$ mln or 5000\$
- Strengthen the building
- Spread information about earthquakes