# Chennai NGO Wants to Build Earthquake-Resistant Houses Made of Plastic Bottles in Nepal

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A Chennai-based NGO has earthquake-resistant houses, being constructed with plastic bottles.

**Chennai:** You can huff and you can puff but you can't blow these houses down, claims a Chennai organization that has developed 'earthquake-proof' houses made of used plastic bottles. An NGO in Chennai wants to build these houses for homeless poor who lost their homes in the in recent earthquake that struck Nepal.

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"Our focus is the construction of permanent, earthquake-proof homes before the Himalayan winter sets in," says Patrick San Francesco, chairman and founder of Samarpan, which has developed these houses.

This low-cost house is made of plastic bottles filled with sand, making them as strong as bricks. The structure is bound together with fishing net cords, instead of steel rods. And one house costs just Rs. 600 per square foot. Around 10,000 bottles are required for a 250 square foot house.

Samarpan gets the bottles free from the top and mid-level hotels that would otherwise just discard them.

The idea to replace steel rods with nylon fishnet came to Mr San Francesco, when he observed fishing nets drawing huge quantities of fish and sea water and still remaining intact. "Stronger than steel," is how he describes them. The structure has one limitation, though. It has only been tested for a single floor, 400 square foot house.

Mr San Francesco says the Council of Scientific and Industrial Research (CSIR), administered a 'shake table test', which subjects the structure to a simulated earthquake-like shake and studies its behaviour, and certified the plastic house as safe even in an earthquake of a magnitude of eight on the Richter scale. Council officials refused to comment.

A CSIR report on Samarpan's plastic house, says: "Generally, the overall and global behaviour of the structure under simulated seismic testing is found to be satisfactory. The structure withstood a maximum acceleration of .9G beyond which there is an unstable response of the structure."