

12TH INTERNATIONAL BRICK/BLOCK Masonry CONFERENCE



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STRENGTH OF CONCRETE MASONRY GARDEN WALLS REINFORCED WITH STEEL PILE

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ABSTRACT

In Japan, many houses are surrounded with concrete masonry garden walls and fences. The number of them is supposed over ten million (convert into high: 1.6m long: 10m), because concrete block units are produced in great quantities as from hundred million through one thousand and five hundred million.*

These walls (fences), however, frequently lose their structure whenever an earthquake or typhoon occurs; the walls falling have led to a social problem.

It must be known that, when concrete masonry walls falls down in residential quarter, it not only inflicts big damages to residents but it also causes obstacles for emergency rescue or refuge.

For these reasons fences that never fall are required.

In this paper, I propose two methods. One is using steel pile as foundation pile, and another is using steel pile as buttress-pole. The purpose of foundation pile is preventing falling down from foundation, and as buttress-pole is preventing from upper part of ground.

Now, this study explains experimentally the strength capacity and behavior of the both new construction methods.

Then we can obtain results that prove having continuous footing with steel pile makes the capacity of strength on falling increase remarkably; also the fences never fall down from the foundation, it may cause the fences to lean quite a bit, however.

