Lehrstuhl für Baustatik und Baudynamik

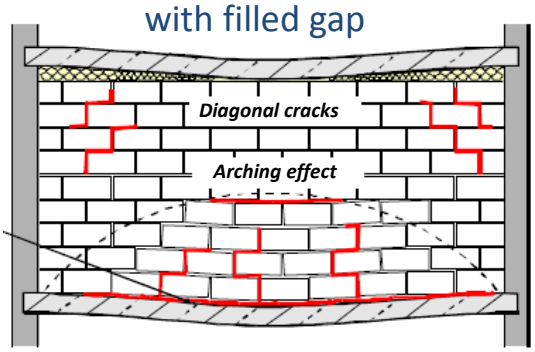
RWTH AACHEN UNIVERSITY

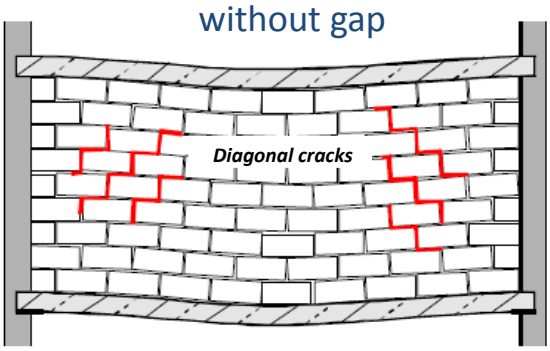
Master Thesis

Effects of slab deflection on arching effect of partition walls

Background

In the scope of a current research project effects of slab deflection on arching effect of partition walls are investigated. Arching effect is very important effect for out-of-plane behavior of partition walls, but as a consequence of slab deflections, partitions walls are subjected to tensile stresses at lower parts of the wall and they are cracked. Hence, they cannot anymore provide arching effect as a way of behaviour and their out-of-plane resistance is significantly decreased. Also, slab deflection is limited to L/500 after installation of partition walls during the building construction. This is due to limitation of cracks as a consequence of slab deflection and this increases time for construction of buildings. New system, which will replace mortar, made of recycled rubber material is introduced between masonry wall and slab.





Aim

The main tasks of this Thesis is to investigate behaviour of masonry partition walls under slab deflection with traditional mortar connection and with new connection made of recycled rubber material. Afterwards, behaviour of partitions under combination of slab deflection and out-of-plane load should be investigated. Investigation of behaviour should be done analytical and numerical.

Contact

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