

In-Plane Shear Tests of Prefabricated Masonry Panel System with Two-Component Polyurethane Adhesive

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Abstract : In recent years, the importance of masonry glued by polyurethane adhesive has increased. In 2021, the Institute of Structural Engineering of the University of Kassel was commissioned to carry out quasi-static in-plane shear tests on prefabricated brick masonry panel systems with 2K PUR adhesive in order to investigate the load-bearing behavior during earthquakes. In addition to the usual measurement of deformations using displacement transducers, all tests were documented using an optical measuring system ("GOM"), which was used to determine the surface strains and deformations of the test walls. To compare the results with conventional mortar walls, additional reference tests were carried out on test specimens with thin-bed mortar joints. This article summarizes the results of the test program and provides a comparison between the load-bearing behavior of masonry bonded with polyurethane adhesive and thin bed mortar in order to enable realistic non-linear modeling.

Keywords : masonry, shear tests, in-plane, polyurethane adhesive

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