

Load Tests on Post-Tensioned Masonry Walls

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Abstract:

This paper presents the results of load tests on six post-tensioned masonry walls. The walls were subjected to a constant axial load and a progressively increasing end rotation. Both calcium-silicate blocks and hollow clay bricks were used. The 3.28 ft(1m) wide by 7.09 in. (180 mm) thick walls were post-tensioned perpendicularly to the bed joints by means of two unbonded 0.6 in. (16 mm) diameter monostrands, each prestressed to 22.48 kips (100 kN). The axial load was either equal to 26.98 or 80.93 kips (120 or 360 kN) and the wall height corresponded to one or two storeys (2.6 or 5.0 m). The experimental results are compared with theoretical predictions considering both geo-metric and material nonlinearities.

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