

Computer Program for Analysis of Masonry Shear Walls

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Abstract:

Under the assumptions that masonry shear walls between stories act as fixed-end beams and that horizontal diaphragms are infinitely rigid, a computer program for PC-based systems was written to determine: individual wall rigidity, floor centers of gravity and rigidity, lateral and vertical loads distribution, and torsional effects for all stories in a building. The program computes stress fields in walls and checks the adequacy of the shear walls at each story according to the requirements for uncracked masonry in the new ACI-530 masonry building code. With its graphics pre-and post-processor, the program is intended to be a user-friendly tool. In its present format, the program is essentially a structural analysis module. While presenting the model adopted for this computer program, the paper offers a rather detailed discussion on procedures used for the stiffness computation of solid and pierced shear walls, including the method adopted in this work.

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