Seismic Retrofit of URM Walls with Fiber Composites

M. Ehsani[1], Ph.D., P.E. and H. Saadatmanesh[2], Ph.D., P.E.

Abstract:

A new economical approach for seismic retrofitting of unreinforced masonry structures is presented where a fiber composite fabric is epoxy bonded to the exterior surface(s) of the wall. The thin composite fabrics cause little increase in the weight and thickness of the wall. Test results are presented that demonstrate flexural and shear strength as well as the ductility of masonry can be significantly enhanced. Following the January 17, 1994 Northridge earthquake, this technique was applied to a one-story unreinforced masonry building in southern California. In this paper, some of the laboratory and field test results are presented and the strengthening of the building is discussed. Price data are presented which support the cost-effectiveness of this technique.

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[1] Professor, Department of Civil Engineering and Engineering Mechanics, The University of Arizona, Tucson, AZ 85721

[2] Associate Professor, Department of Civil Engineering and Engineering Mechanics, The University of Arizona, Tucson, AZ 85721