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Repair of Shear Column using Fiberglass/Epoxy Jacket and Epoxy Injection

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A shear column which was previously tested to failure as a 0.4 scale as-built bridge column model of typical pre-1971 squat bridge piers was repaired with a full height Tyfo SEH-51 System jacket and retested under fully reversed increasing cyclic lateral load/displacement input similar to that used for as-built and steel jacket retrofitted test columns under a separate UCSD/Caltrans research program. Test results indicated that the initial stiffness of the repaired column was very similar to that of the as-built column and that the load-displacement response of the two columns was almost identical up to the displacement ductility levels of two. The as-built column sustained cyclic lateral displacement up to a displacement ductility of ten without any sign of capacity degradation. The outstanding performance of the repaired column clearly demonstrated the suitability and technical effectiveness of the performed repair measures in post-earthquake squat column repair cases.