

## Effect of Riprap Stability on Roughness Bridge Pier in River Bend

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**Abstract :** In this research, by placing the two cylindrical piers without roughness and with roughness with riprap around its, they proceeded to a series of tests. Experiments were done by three relative diameters of riprap with density 2.1 and one rate of discharge 27 lit/s under pure water condition. In each experiment, flow depth measured in terms of failure threshold then stability number calculated by using data obtained. The results of the research showed that the riprap stability in pier with roughness is more pier without roughness because of the pier with roughness is sharp-pointed and reduced horseshoe vortex.

**Keywords :** riprap stability, roughness, river bend, froude number

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