

SIMULASI BEBAN LALU LINTAS JEMBATAN DENGAN MENGGUNAKAN DATA WIM PADA JEMBATAN BENTANG PENDEK

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Bridge in Indonesia is designed using bridge loading standard SNI 1725:2016. Vehicle load in this regulation are idealization of actual vehicle load. Weigh in motion (Him) technology allow the measurement of vehicle load when vehicles moving, which is the actual load of traffic received by road and bridge. This study aims to compare the response of the bridge to the actual load of traffic from the WIM data with the standard load of SNI 1725:2016. This study using a composite steel girder bridge with a span of 20 m, 30 m, 40 m, and 50 m with WIM data of the Kaligawe Bridge in Semarang. Based on the characteristic of the vehicle axle load, class 40 namely the type of two-axle truck, has the largest axle load value 18 tons with an overload percentage 80%. Whereas based on the characteristic of the total vehicle load, class 120 namely the type of six-axle trailer truck, has the largest total vehicle load value 72.46 tons with a percentage of overload of 57.52%. The result of the 3D analysis of the bridge structure can be concluded that the WIM traffic data at Kaligawe Bridge Semarang obtained bending moment and shear force lower than the standard load of SNI 1725:2016. The ratio value of the maximum bending moment and shear force of WIM data traffic load to standard load of SNI 1725:2016 on a 20 m, 30 m, 40 m and 50 m span bridge ranges from 0.8 - 0.96.

Keywords: bridge, design vehicle load, weight in motion