CAPACITY ANALYSIS OF EXISTING STEEL FRAME BRIDGES USING LOADINGSNI 1725-2016
(CASE STUDY OF THE MORONG STRAIT BRIDGE, RUPAT DISTRICT)

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ABSTRAK

This research analyzes the capacity of the existing steel truss bridge, Selat Morong Bridge in Rupat Sub-district, Bengkalis Regency, using the SNI 1725-2016 loading standard. A three-span bridge model (60 meters long, 6.35 meters high) was created using Midas Civil software based on field data. The analysis includes material definition (SM 490 BJ55), loading (dead, live, wind, brake, additional), and load combinations according to SNI 1725-2016. Results show that several structural elements cannot withstand the load combinations, especially under the maximum load of a 9-ton truck, with deflections exceeding allowable limits. In conclusion, the existing Selat Morong Bridge does not meet the structural adequacy requirements based on SNI 1725-2016 and requires rehabilitation, strengthening, or replacement to ensure safety. The research recommends regular evaluation and planning that considers future traffic growth.

Keywords : *Capacity Analysis, Steel Truss Bridge, SNI 1725-2016, Selat Morong Bridge, Midas Civil, Loading, Deflection, Structural Adequacy, Rehabilitation*