

Paper #RM-14**ANALYSIS OF THE MAXIMUM LIVE LOAD ON THE MAIN TRIBUNE FRAME
OF THE HARAPAN BANGSA STADIUM IN BANDA ACEH BY USING PROGRAM
SAP2000 VERSION 8.3.3****Teuku Edisah Putra and Fuadi Noor Balia**Mechanical Engineering Department - Engineering Faculty
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E-mail: edi_unsyiah@yahoo.co.id**Abstract**

The main tribune of the Harapan Bangsa stadium in Banda Aceh is a three-dimensional structure. The dead load from the roof, gutter and ventilation causes the frames to experience direct stress, not only tensile stress σ_t but also compression stress σ_c . The objective of this paper is to analyze the maximum live load which can be supported by the structure. By using the program SAP2000 version 8.3.3 one can calculate the deformed shape, the joint reaction force, the shear force diagram, the moment diagram, and the capacity ratio on the frames caused by the dead load. By analyzing the results, the maximum capacity ratio is equal to 0.787, with an axial force of 8,201.3942 N. Therefore, the structure can accept the maximum live load equal to 2,219.69 N. It happens on the tensile frame which causes it to become smaller.

Keywords: Frame, Dead Load, SAP2000 Version 8.3.3, Live Load