

FINAL YEAR PROJECT REPORT
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FINITE ELEMENT ANALYSIS OF PROFILED STEEL
SHEET DRY BOARD (PSSDB) SYSTEM AS A WALLING
UNIT WITH DOOR OPENING

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I hereby declare that this thesis has not been submitted, either in the same or different forms, to this or any other University for a degree.

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Abstract

The thesis presents the analysis of double skin composite walling panel known as Profile Steel Sheet Dry board (PSSDB) System. The model represented is the full model of PSSDB panel. This work presents the performance of PSSDB to resist the uniaxial compressive load. The analysis is based on the linear analysis. The lateral deflection of the PSSDB panel with door opening is determined using the finite element analysis method and LUSAS is the best software program are using to analyse the lateral deflection of the panel.

The *finite element analysis* is a computer-based numerical technique for calculating the strength and behaviour of the structure. It can be used to calculated deflection, stress, vibration, buckling behaviour and many other phenomena. It can be used to analyse either small or large-scale deflection. It can analyse elastic deformation, or “permanently bent out of shape” plastic deformation. The computer is required for this analysis because the astronomical number or calculation needed to analyse a complex structure.

For this case the axial load is transferred to the wall through the profile steel sheet and dry board. The Lateral deflection of the panel increased under the increment of uniaxial compressive load. Analytical solutions for lateral deflection of the panel in uniaxial compressive load are obtained. The type of analysis is linear analysis. The result obtained in this thesis was compared between the experimental test for non-overlap specimen done by Mohd. Akashsh (2002). The lateral deflection pattern was analysed due to the loading applied.

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