

Republic of Iraq
Ministry of higher education
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Building and Construction Department



Design of warehouse using STAAD-PRO and check with hand calculations

*Annual project submitted to the department of
building and construction engineering of University of
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Abstract:

A steel warehouses structure used for agriculture purposes as a shelter for aircraft has been analyzed and designed throughout this project using STAAD PRO v8i-2014 program. The design has been carried out based on American Institute of steel Construction (AISC) specification. The steel frame consists of warehouse steel building with 6m height and plane dimensions of (12*33 m).

The load cases considered for analyzing the structure were dead loads, roof live loads in addition to wind load. Load combination based on ACI- Code 318-11 for loading both service and ultimate have been considered. The applied loads were dead loads (self weight and cladding) of the members in which the program will calculate them due to defaults density kept in the program, and live loads as well as wind loads in two directions calculated according to American Society of civil Engineering (ASCE 07). From the analysis using Staad Pro the member stresses and deflections, reaction and quantities of material use will be gained. As well as the program has ability to check code to get the optimum and economical size for the elements.

To verify the program hand calculations were done for tension, compression and truss element then compared with STAAD output. Beside design Steel base plate and concrete separate footing were completed.