

DESIGN A SINGLE STOREY FACTORY

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ABSTRACT

The purpose of any framed building is to transfer the loads of the structure plus any imposed loads through the members of the frame to a suitable foundation. This form of construction can be clad externally with light weight nonload bearing walls to provide the necessary protection from the Framed building are particularly suitable for medium and high rise structures and for industrialized low rise buildings such as single storey factory buildings.

The objective of this project as to design a steel roof truss, steel column, purlins, column base, sheeting rails and other members. Before start the design, we need to know the loading acting on the building. There are three types of loading considered here, dead load, imposed load and wind load. The dead loads due sheeting, weight steel purlins, truss, column and other members. This loads may range from 0.3 to 1.0 Kn per meter square. The dead load should be estimated for any particular case. However, the imposed loads on roofs where the wind suction can cause reversal of loads in the members and it is acted normal to the roof surface. The wind loads are estimated from CP 3: Chapter V: Part 2 and depends on the building dimensions and roof slope among other factor.

Steel roof truss is a plane frame consisting of a series of rigid triangles composed of compression and tension members. The compression members are called rafter or strut and the tension members are termed ties. Normally, steel roof trusses are positioned between 3 to 7.5 meter centers and support by universal column. The forces acting in the members can be solved by method of joints or method of sections.