ABSTRACT

Nowadays, innovation in steel construction is advancing due to the development of new modelling and more efficient methods of construction. One of the innovation in steel construction is Pre-engineered Building (PEB). PEB is a steel construction that uses wide flange profile, the same as conventional steel building (CSB), but the dimension of the wide flange varies according to the force applied along the span. Material efficiency of PEB will change the construction method, cost, and duration of the project. The unit price per kilogram of PEB is higher than CSB, because PEB passes through two fabrication phases and using more advanced technology.

In this study, analysis of various span length were done to see its trend and to obtain the relation of weight and cost of PEB and CSB. It is demonstrated that PEB construction will always be lighter than CSB in every length of span. Then a study was performed for a PEB project case, where based on some assumptions and SNI codes, it was analysed using CSB method. The result was compared to the general results in the previous span length study. It showed the similar optimum length where the PEB surpasses CSB in terms of cost efficiency. It was later shown that SNI-7393-2008 needs further studies and cannot be applied yet in scheduling and unit price analysis for PEB.

Key word: Pre-engineered Building, various span analysis, SNI-7393-2008