

Optimal Design of Profiled Steel Sheet for Composite Slab

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Abstract : Nowadays, in our world of technological development, there is an enhanced intention imposed on the building construction industry to improve the time, economy, and structural efficiency of structures. Modern profiled steel sheets are mostly designed as formwork and tensile reinforcement. This research is concerned with the optimal design of profiled steel sheets for composite slabs. Apart from satisfying the safety requirement, the design should be economical. For a given condition, there might be a large number of alternatives that satisfy the requirement set by the codes. But the designer must be in a position to choose the design, which is optimal against certain measures of optimality. Therefore, the designers have to do some optimization to arrive at such a design. In this research, the optimal cross-sectional dimensions of profiled steel sheets will be determined by considering different spans, loadings, and materials.

Keywords : profiled sheeting, optimal cross-sectional dimensions, cold-formed profiled sheets, composite slab

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