

Sulfur infiltrated concrete box sections with poly styrene core as panel units

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Civil Engineering

June 1983

Abstract

Experimental research has been conducted on sandwich box panels consist of poly unrethane core and sulfur infiltrated fibre concrete faces. These panels utilize the high strength and durability of sulfur infiltrated fibre concrete with the light weight and good insulating properties of expanded plastics to provide a durable, strong but light panel for use in the building industry. It is very difficult to predict the ultimate strength and deflection of such panels due to the presence of shear lag. Therefore, the normal stress variation across the width was investigated for different span/width ratios. In addition, the fire resistance and the water absorption of the panels was measured.

The results of this study indicate that composite box panels have good mechanical properties but unfortunately they are very expensive to produce and, unless a more economical solution to the drying process can be developed, are unlikely to be adopted by the industry.