

On Mechanical Performance of Folded Ferrocement Element at Different Aging Periods at Hot Climates

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Abstract

Roofing elements is one of the most widely used applications of folded ferrocement for both industrial and domestic buildings. Owing to this wide application, more advanced mechanical properties are required for these elements. Among these mechanical properties, mechanical capacity against fracture and harsh climate are two essential properties must be acquired. Thus, the present investigation was conducted to fabricate a high strength and environmental resist folded ferrocement elements. Cubes of the specimens were prepared by folding technique at 50×50×50 mm size with specific enforcement. These samples were exposed to hot environment at different time intervals then examined for compressive strength. Also, the modulus of rupture for the standard prisms of 40×40×160 mm prepared and examined at different temperatures-time strategies. It was found that the preparation method of folding gave a high quality folded ferrocement in terms of flexural and climate resistance. It was also found that the fabricated sheets were cost effective compared to the conventional ferrocement sheet at the same testing environments and the choice of folded sheets contributes to reduced load intensity and reduced deflection.