Construction Sector Group Publication
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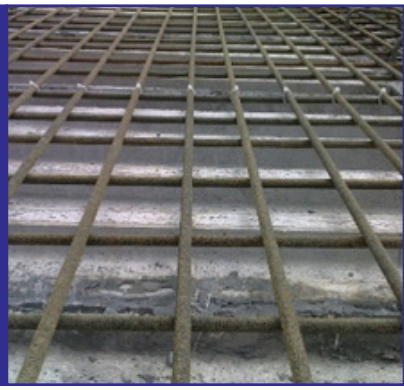
Composites UK Trade Association

Reinforcement of Thompson's Bridge Deck Slabs





Details

Location	County Fermanagh, Northern Ireland.
Description	Thompson's Bridge was a replacement bridge to carry the A509 in County Fermanagh. It consists of a fully integral single-span skew bridge. The mid-span section was constructed with basalt-fibre-reinforced polymer (BFRP) bars of 12mm diameter and the remaining slab had 12mm steel reinforcement.
Date of project	2010.
Where FRP composites are used and why	Galen ROCKBAR rebars were used for the reinforcement of Thompson's bridge deck slabs to replace corrodible steel reinforcement with highly durable basalt-fibre reinforced polymer (BFRP) reinforcing.
Specific design details	The bridge is a one span bridge with an abutment supported on piles. The upper part consists of the prestressed beams, deck slabs reinforced with ROCKBAR composite rebars.
Type of composite used	BFRP rebars.
Performance in service	According to results of the performed investigations the following conclusions have been made: 1. Composite armature "Rockbar" has increased operating performances. Due to the arching effect its strength is higher in comparison with the comparible steel reinforced slabs tested before. 2. Strength of the investigated slabs has surpassed values of the Bending Theory of the given standard. 3. Slabs reinforced with composite armature "Rockbar" correspond to all requirements indicated in various normative documents such as Canadian Standard, ACI Guidance (reinforcement value 0.6% acc. to 5 Part). 4. The ultimate failure is expressed with concrete cracks in the central portion of a slab span. Such failure is a better than FRP failure. 5. FRP based reinfrocement is a durable analugue for bridge decks as it distinctes with the arching effect increasing operating parameters & strength. Thus it reduces FRP material's disadvantages.
Further information	http://galencomposite.com/home/implemented-projects/the-bridge-in-the-northern-ireland/

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