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Anchors for CFRP Plates: State-of-the-Art Review and Future Potential

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Abstract

In order to utilize the high tensile strength of the carbon fibre-reinforced-polymer (CFRP) plate, prestressing of the plate is recommended. End-anchors are required for the prestressing of the CFRP plate. Although a number of anchors have been developed, the literature lacks a review of the existing CFRP plate anchors. This article presents a state-of-the-art review of the available anchors for CFRP plates. The strength, performance, design parameters and failure modes of the anchors have been discussed. Barriers to the commercial use of the existing anchors include unconventional manufacturing, complicated installation steps, large size and high cost. An overall assessment of the existing CFRP plate anchors, considering industry requirements, has led to suggestions on research and development priorities.

Keywords: A. Laminates; B. Mechanical properties; C. Numerical analysis; D. Mechanical testing.

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