International Standard

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First edition

Fibre-reinforced polymer (FRP) reinforcement of concrete — Test methods —

Part 4:
FRP grids

PROOF/ÉPREUVE

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Foreword

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This document was prepared by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 6, *Non-traditional reinforcing materials for concrete structures*.

This first edition cancels and replaces the second edition (ISO 10406-1:2015) which has been technically revised.

The main changes are as follows:

— inclusion of thermoplastic resin for FRP grids;

— fibre volume fraction testing and single-lap shear bond test methods have been added;

— tensile performance, alkali resistance, and pull-off bond test methods are modified;

— test method for performance of anchorages and couplers, test method for transverse shear strength, and test method for flexural tensile properties have been deleted.

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Introduction

Fibre Reinforced Polymer (FRP) grids, renowned for their high strength, lightweight nature, excellent bond behaviour, and superior durability, serve a pivotal role in rehabilitating existing RC structures and reinforcing new constructions. Incorporating FRP grids effectively within structures, it becomes imperative to comprehensively understand involves a comprehensive understanding of their physical properties, mechanical characteristics, long-term performance, durability, and bond capabilities. This understanding is crucial to ensures that structures reinforced or constructed with FRP grids meet the stringent design requirements.

However, the prevalent testing methods for FRP bars or sheets, as outlined in existing specifications, are insufficient in adequately accounting for the spatial bidirectional characteristics inherent in FRP grids. Therefore, the need arises to develop an internationally recognized standard that specifically delineates testing methodologies tailored for FRP grids. This document aims to establish a framework for testing procedures that consider the distinctive spatial bidirectional properties of these grids. Additionally, the document provides essential material properties data required for structural design, offering engineers and designers a reliable basis for incorporating FRP grids into their projects. By formulating a document for testing FRP grids, we endeavor to fill the existing gap in methodologies and facilitate a more accurate assessment of their performance. This document not only enhances the reliability of structural designs utilizing FRP grids but also promotes their wider and more efficient use in construction projects worldwide.