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

Part 4: FRP grids

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documentsdocument should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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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*.

In comparison to ISO 10406-1:2015, this document introduces the following revisions:

a) InclusionThis 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;

— b) Fibrefibre volume fraction testing and single-lap shear bond test methods arehave been added;

— c) Tensiletensile performance, alkali resistance, and pull-off bond test methods are modified;

— d) Testtest method for performance of anchorages and couplers, test method for transverse shear strength, and test method for flexural tensile properties arehave been deleted.

A list of all parts in the ISO 10406 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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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. ~~Thisdocument~~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.

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