

# ISO 10406-4:2025-09 (E)

## Fibre-reinforced polymer (FRP) reinforcement of concrete - Test methods - Part 4: FRP grids

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
1	Scope .....	1
2	Normative references .....	1
3	Terms, definition, and symbols .....	2
3.1	Terms and definition .....	2
3.2	Symbols .....	4
4	General provision concerning test pieces .....	6
5	Test method for physical properties .....	6
5.1	Cross-sectional area .....	6
5.1.1	Test piece .....	6
5.1.2	Test procedure .....	7
5.1.3	Calculation .....	7
5.1.4	Test report .....	7
5.2	Fibre volume fraction .....	8
5.2.1	Test pieces .....	8
5.2.2	Test procedure .....	8
5.2.3	Calculation .....	9
5.3	Coefficient of thermal expansion .....	10
5.3.1	Test pieces .....	10
5.3.2	Testing device .....	10
5.3.3	Test method .....	10
5.3.4	Calculations .....	11
5.3.5	Test report .....	11
6	Test method for short-term mechanical properties .....	12
6.1	Tensile property .....	12
6.1.1	Test pieces .....	12
6.1.2	Test equipment .....	12
6.1.3	Test procedure .....	13
6.1.4	Test temperature .....	13
6.1.5	Calculations .....	13
6.1.6	Test report .....	15
7	Test method for durability .....	17
7.1	Alkali resistance .....	17
7.1.1	Test pieces .....	17
7.1.2	Immersion in alkaline solution .....	17
7.1.3	External appearance and mass change .....	18
7.1.4	Tensile test .....	18
7.1.5	Calculations .....	18
7.1.6	Test report .....	19
8	Test method for long-term mechanical properties .....	20
8.1	Long-term relaxation .....	20

8.1.1	Test pieces .....	20
8.1.2	Testing frame and devices .....	20
8.1.3	Test temperature .....	21
8.1.4	Test method .....	21
8.1.5	Calculations .....	21
8.1.6	Test report .....	22
8.2	Tensile fatigue strength .....	22
8.2.1	Test pieces .....	22
8.2.2	Testing machine and devices .....	23
8.2.3	Test temperature .....	23
8.2.4	Test method .....	23
8.2.5	Calculations .....	24
8.2.6	Test report .....	24
8.3	Creep rupture strength .....	25
8.3.1	Test pieces .....	25
8.3.2	Testing frame and devices .....	25
8.3.3	Test temperature .....	25
8.3.4	Tensile capacity .....	25
8.3.5	Test method .....	25
8.3.6	Calculations .....	26
8.3.7	Test report .....	27
9	Test methods for bond properties .....	28
9.1	Bond property by pull-out testing .....	28
9.1.1	Test pieces .....	28
9.1.2	Testing machine and devices .....	29
9.1.3	Test method .....	29
9.1.4	Calculations .....	30
9.1.5	Test report .....	30
9.2	Bond property by single-lap shear test .....	32
9.2.1	Test pieces .....	32
9.2.2	Testing machine and devices .....	33
9.2.3	Test method .....	33
9.2.4	Calculations .....	34
9.2.5	Test report .....	35
10	Informative references .....	36