

ISO 10406-4:2025-09 (E)

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

Contents		Page
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