

ISO/TR 16475:2020-03 (E)

General practices for the repair of water-leakage cracks in concrete structures

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	2
3	Terms and definitions	2
4	Conditions of water-leakage cracks	2
4.1	Types of water-leakage cracks	2
4.2	Environmental degradation factors that cause water-leakage cracks	3
4.2.1	General	3
4.2.2	Chemical conditions	4
4.2.3	Physical (mechanical) conditions	4
5	Expected performance for repair materials	5
5.1	General	5
5.2	Expected performance for chemical conditions	5
5.2.1	Thermal stability	5
5.2.2	Chemical resistance	5
5.3	Expected performance for physical (mechanical) conditions	5
5.3.1	Water (wash out) resistance	5
5.3.2	Adhesion on wet substrate surface	5
5.3.3	Watertightness	6
5.3.4	Response to the substrate movement	6
6	Grout materials for repair	6
6.1	General	6
6.2	Acrylic grouts (water-based acrylic gel grout)	7
6.3	Cementitious grouts (water-based mixture of cement grout)	7
6.4	Epoxy resin grout	8
6.5	Polyurethane grouts	8
6.6	Synthetic rubber polymer gel grout	8
6.7	Other materials	8
7	Appropriate repair material selection procedure	9
7.1	Selection process of repair materials (injection grouts)	9
7.2	Test for performance requirements	9
7.2.1	General	9
7.2.2	Test for thermal stability	10
7.2.3	Test for chemical resistance	10
7.2.4	Test for water flow (wash out) resistance	10
7.2.5	Test for adhesion on wet substrate surface	10
7.2.6	Test for watertightness	11
7.2.7	Test for response to the substrate movement	11
8	Execution of different types of repair methods	11
8.1	General	11
8.2	Grouting injection methods	11
8.3	Injection method for reforming a waterproofing layer	12

9	Performance assessments of repaired structures	13
9.1	Inspection of repairs	13
9.2	Evaluation of repairs	13
10	Data collection (reference material)	14
	Bibliography	15