

DIN EN 17418:2021-06 (E)

Two-component epoxy and polyurethane adhesives for on-site repair of cracked timber structures - Testing, requirements and repair strength verification

Contents		Page
European foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Symbols	8
5	General requirements	8
6	Classification	8
7	Bond strength of adhesive-wood interface	9
7.1	General	9
7.2	Requirements	9
7.2.1	Bond strength in longitudinal tensile shear tests	9
7.2.2	Resistance to delamination	9
7.2.3	Effect of wood shrinkage on the shear strength	9
7.2.4	Effect of compression shear stress and climatic changes	10
7.3	Test methods	10
7.3.1	Determination of bond strength in longitudinal tensile shear test	10
7.3.2	Determination of resistance to delamination	10
7.3.3	Determination of the effect of wood shrinkage on the shear strength	10
7.3.4	Determination of the effect of compression shear stress and climatic changes	10
8	Tests on cohesive strength of monolithic adhesive specimens	11
8.1	General	11
8.2	Tensile tests	11
8.2.1	Specimen	11
8.2.2	Procedure	12
8.2.3	Expression of results	13
8.2.4	Requirements	13
8.3	Compression tests	13
8.3.1	Specimen	13
8.3.2	Procedure	13
8.3.3	Expression of results	14
8.3.4	Requirements	14
8.4	Block shear tests	14
8.4.1	Specimen	14
8.4.2	Procedure	14
8.4.3	Expression of results	14
8.4.4	Requirements	15
9	Large scale component tests including drill core tests	16
9.1	Straight beams with predefined glue lines	16
9.1.1	Specimen	16
9.1.2	Conditioning of the specimens	17
9.1.3	Test procedure	18
9.1.4	Expression of results	18

9.1.5	Evaluation and requirements	18
9.2	Large scale specimens with repaired glue lines	19
9.2.1	General	19
9.2.2	Straight beams with repaired glue lines	19
9.2.3	Curved beams with repaired glue lines	19
9.3	Block shear tests with water treated drill cores	22
9.3.1	General	22
9.3.2	Sampling	22
9.3.3	Specimens	22
9.3.4	Conditioning of specimens	22
9.3.5	Test procedure	23
9.3.6	Requirements	23
9.4	Long term loading and residual strength tests	23
9.4.1	General	23
9.4.2	Specimens	23
9.4.3	Test procedure	24
9.4.4	Requirements	24
10	Repair of cracks in dowel type fasteners connections	25
10.1	General	25
10.2	Specimen	26
10.3	Procedure	27
10.4	Expression of the test results	28
10.5	Requirements	28
11	Working properties of the adhesive	29
11.1	General	29
11.2	Determination of working life under reference conditions	29
11.3	Determination of curing time under reference conditions	29
11.4	Determination of time to fully cured state	29
11.4.1	General	29
11.4.2	Tensile tests	29
11.4.3	Block shear tests	29
11.4.4	Declared time to fully cured state	30
12	Test report	31
12.1	General	31
12.2	Adhesive	31
12.3	Preparation of specimens and testing procedure	31
12.4	Test results	31
	Annex A (informative) On-site repair control test	32
	Bibliography	33