

DIN EN 13791:2008-05 (E)

Assessment of in-situ compressive strength in structures and precast concrete components

Contents		Page
Foreword		4
Introduction		5
1	Scope	7
2	Normative references	7
3	Terms and definitions	8
4	Symbols and abbreviations	9
5	Principles	10
6	Characteristic in-situ compressive strength in relation to compressive strength class	10
7	Assessment of characteristic in-situ compressive strength by testing of cores	11
7.1	Specimens	11
7.2	Number of test specimens	11
7.3.2	Approach A	12
7.3.3	Approach B	12
8	Assessment of characteristic in-situ compressive strength by indirect methods	13
8.1	General	13
8.1.1	Methods	13
8.1.2	Alternative 1 - Direct correlation with cores	13
8.1.3	Alternative 2 - Calibration with cores for a limited strength range using an established relationship	14
8.2	Indirect tests correlated with in-situ compressive strength, (Alternative 1)	14
8.2.1	Application	14
8.2.2	Testing procedure	14
8.2.3	Establishing the relationship between test result and in-situ compressive strength	14
8.2.4	Assessment of in-situ compressive strength	14
8.3	Use of a relationship determined from a limited number of cores and a basic curve, (Alternative 2)	15
8.3.1	General	15
8.3.2	Testing	15
8.3.3	Procedure	15
8.3.4	Validity of relationships	19
8.3.5	Estimation of in-situ compressive strength	19
8.4	Combination of in-situ strength test results by various test methods	19
9	Assessment where conformity of concrete based on standard tests is in doubt:	20
10	Assessment report	21
Annex A (informative)	Factors influencing core strength	22
A.1	General	22
A.2	Concrete characteristics	22
A.2.1	Moisture content	22

A.2.2	Voidage	22
A.2.3	Direction relative to the casting	22
A.2.4	Imperfections	22
A.3	Testing variables	22
A.3.1	Diameter of core	22
A.3.2	Length/diameter ratio	23
7.3.1	General	12
7.3	Assessment	12
A.3.3	Flatness of end surfaces	23
A.3.4	Capping of end surfaces	23
A.3.5	Effect of drilling	23
A.3.6	Reinforcement	23
Annex B (informative) Factors influencing results by indirect test methods		24
B.1	Rebound hammer tests	24
B.2	Ultrasonic pulse velocity measurements	24
B.3	Pull-out tests	24
Annex C (informative) Concepts concerning the relationship between in-situ strength and strength from standard test specimens		25
assessing in-situ strength		26
D.1	Planning	26
D.2	Sampling	26
D.3	Testing programme	26
D.4	Assessment	27
Bibliography		28