

DIN EN 1363-1:2012-10 (E)

Fire resistance tests - Part 1: General Requirements

Contents		Page
Foreword		5
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms, definitions, symbols and designations	8
3.1	Terms and definitions	8
3.2	Symbols and designations	10
4	Test equipment	10
4.1	General	10
4.2	Furnace	11
4.3	Loading equipment	11
4.4	Test frames	11
4.5	Instrumentation	12
4.5.1	Temperature	12
4.5.2	Pressure	13
4.5.3	Load	13
4.5.4	Deflection	13
4.5.5	Integrity	13
4.6	Precision of measuring equipment	14
5	Test conditions	14
5.1	Furnace temperature	14
5.1.1	Heating curve	14
5.1.2	Tolerances	14
5.2	Furnace pressure	15
5.2.1	General	15
5.2.2	Establishing the neutral pressure plane	16
5.3	Furnace atmosphere	16
5.4	Loading	16
5.5	Restraint/boundary conditions	16
5.6	Ambient temperature conditions	17
5.7	Deviation from required test conditions	17
6	Test specimen(s)	17
6.1	Size	17
6.2	Number	17
6.2.1	Separating elements	17
6.2.2	Non-separating elements	17
6.3	Design	17
6.4	Construction	18
6.5	Verification	18
7	Installation of test specimen	18
7.1	General	18
7.2	Supporting constructions	18
7.2.1	General	18
7.2.2	Standard supporting constructions	19

7.2.3	Non-standard supporting constructions	21
8	Conditioning	21
8.1	Test specimen	21
8.2	Supporting constructions	21
9	Application of instrumentation	21
9.1	Thermocouples	21
9.1.1	Furnace thermocouples (plate thermometers)	21
9.1.2	Unexposed surface thermocouples	22
9.1.3	Internal thermocouples	23
9.2	Pressure	23
9.2.1	General	23
9.2.2	Furnaces for vertical elements	23
9.2.3	Furnaces for horizontal elements	23
9.3	Deflection	23
10	Test procedure	24
10.1	Restraint application	24
10.2	Load application	24
10.3	Commencement of test	24
10.4	Measurements and observations	24
10.4.1	General	24
10.4.2	Temperatures	24
10.4.3	Furnace pressure	25
10.4.4	Deflection	25
10.4.5	Integrity	25
10.4.6	Load and restraints	26
10.4.7	General behaviour	26
10.5	Termination of test	26
11	Performance criteria	27
11.1	Loadbearing capacity	27
11.2	Integrity	27
11.3	Insulation	28
11.4	Consequential effects of failing certain performance criteria	28
11.4.1	Insulation and integrity versus loadbearing capacity	28
11.4.2	Insulation versus integrity	28
12	Test report	28
12.1	Test report	28
12.2	Expression of test results in the test report	30
Annex A (informative) Field of application of test results		39
A.1	General	39
A.2	Field of direct application	39
A.3	Extended application	39
Annex B (informative) The role of supporting constructions		40
B.1	General	40
B.2	Standard supporting constructions	40
B.3	Non-standard supporting constructions	40
Annex C (informative) General information on thermocouples		42
C.1	Furnace thermocouples (plate thermometers)	42
C.1.1	Maintenance	42
C.1.2	Positioning	42
C.2	Internal thermocouples	42
C.2.1	General	42

C.2.2	Specification	42
C.2.3	Fixing methods and positioning	42
C.3	Unexposed face thermocouples	43
C.3.1	General	43
C.3.2	Positioning	43
C.3.3	Fixing to specific materials	44
Annex D (informative) Guidance on the basis for selection of the test load		46
D.1	General	46
D.2	Options for selecting the test load	46
Annex E (informative) Boundary and support conditions		47
Annex F (informative) Guidance on conditioning		48
F.1	General	48
F.2	Guidance on procedures for conditioning	48
F.3	Guidance on measurement techniques	49
F.3.1	Direct reading moisture meter	49
F.3.2	Oven drying techniques	49
Annex G (informative) Guidance on deflection measurements of vertical separating elements using a fixed datum		50
G.1	General	50
G.2	Apparatus	50
G.3	Procedure	50
G.4	Reporting	51
Bibliography		52