

# DIN EN 494:2013-01 (E)

## Fibre-cement profiled sheets and fittings - Product specification and test methods

---

<b>Contents</b>		<b>Page</b>
Foreword .....		4
<b>1</b>	<b>Scope .....</b>	<b>5</b>
<b>2</b>	<b>Normative references .....</b>	<b>5</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>6</b>
<b>4</b>	<b>Symbols and abbreviations .....</b>	<b>7</b>
<b>5</b>	<b>Product requirements .....</b>	<b>8</b>
5.1	General .....	8
5.1.1	Composition .....	8
5.1.2	Appearance and finish .....	8
5.2	Dimensions and tolerances .....	9
5.2.1	General .....	9
5.2.2	Categorisation by height of profile .....	9
5.2.3	Thickness .....	9
5.2.4	Tolerances on nominal dimensions .....	10
5.3	Physical requirements and characteristics for fibre-cement profiled sheets .....	11
5.3.1	General .....	11
5.3.2	Apparent density .....	11
5.3.3	Mechanical characteristics .....	11
5.3.4	Water impermeability .....	13
5.4	Durability requirements .....	13
5.4.1	General .....	13
5.4.2	Freeze-thaw .....	13
5.4.3	Heat-rain .....	13
5.4.4	Warm water .....	14
5.4.5	Soak-dry .....	14
5.5	Summary of characteristics and classification .....	14
5.5.1	Summary of characteristics .....	14
5.5.2	Classification .....	14
5.6	Fire and safety .....	15
5.6.1	External fire performance .....	15
5.6.2	Reaction to fire .....	15
5.6.3	Release of dangerous substances .....	15
5.7	Product information .....	15
<b>6</b>	<b>Evaluation of conformity .....</b>	<b>16</b>
6.1	General .....	16
6.2	Initial Type testing .....	16
6.3	Factory Production Control (FPC) .....	17
6.3.1	General .....	17
6.3.2	Acceptance tests .....	17
6.3.3	Equipment .....	18
6.3.4	Raw materials and components .....	19
6.3.5	Product testing and evaluation .....	19
6.3.6	Non-conforming products .....	19
6.4	Inspection of a consignment of finished products .....	19
<b>7</b>	<b>Test methods .....</b>	<b>19</b>

7.1	General .....	19
7.2	Dimensional tests .....	19
7.2.1	Dimensional tests for sheets .....	19
7.2.2	Dimensional tests for fittings .....	22
7.3	Tests for physical performance and characteristics .....	22
7.3.1	Apparent density .....	22
7.3.2	Mechanical characteristics .....	23
7.3.3	Water impermeability .....	27
7.3.4	Warm water .....	27
7.3.5	Soak-dry .....	28
7.4	Tests for climatic performance .....	30
7.4.1	Freeze-thaw .....	30
7.4.2	Heat-rain .....	31
7.4.3	Freeze-thaw test for fittings .....	32
7.5	Test for fire performance .....	33
7.5.1	Test for external fire performance .....	33
7.5.2	Test for reaction to fire .....	33
8	Marking, labelling and packaging .....	38
	Annex A (normative) Figures .....	40
	Annex B (normative) Consignment inspection sampling .....	52
	Annex C (normative) Statistical method for determining the corresponding wet values or revised dry specifications for the breaking load and/or bending moment when carrying out the dry method of test for quality control purposes .....	53
C.1	Procedure .....	53
C.2	Determination of the correlation between the results of testing wet and dry specimens ...	53
C.3	Determination of the regression line .....	54
C.4	Determination of a value for wet testing from an obtained value for dry testing .....	54
C.5	Determination of the minimum value specified for dry testing $x_{std}$ corresponding to the minimum value specified for wet testing in this document $y_{std}$ .....	55
	Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive .....	57
ZA.1	Scope and relevant characteristics .....	57
ZA.2	Procedure for the attestation of conformity of fibre cement profiled sheets and fittings .....	59
ZA.2.1	Systems of attestation of conformity .....	59
ZA.2.2	EC Declaration of conformity .....	62
ZA.3	CE marking .....	64
	Bibliography .....	66