Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment

ETA-17/0856 of 11 October 2017

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	AQUAPANEL Cement Board Indoor
Product family to which the construction product belongs	Cement Bonded Board
Manufacturer	Knauf Aquapanel GmbH & Co. KG Zur Helle 11 58638 Iserlohn DEUTSCHLAND
Manufacturing plant	901 902 903 904
This European Technical Assessment contains	11 pages including 5 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 210024-00-0504

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Specific Part

1 Technical description of the product

The cement bonded board "AQUAPANEL Cement Board Indoor" is a specific board made of a cement mixture, mineral lightweight aggregates and water. The board is reinforced on both sides with alkali-resistant glass fibre fabric.

The boards are manufactured with a thickness of 12,5 mm.

The boards are usually available in nominal lengths up to 3000 mm and nominal width up to 1250 mm.

The cement bonded board "AQUAPANEL Cement Board Indoor" can be classified in category C according to EN 12467.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The cement bonded board "AQUAPANEL Cement Board Indoor" may be used for non-structural indoor partitions e.g. as wall covering, as ceiling covering and for the manufacturing of floor construction.

The boards shall be used with one of the following fixing elements:

- "AQUAPANEL Maxi Screw SN - needlepoint" according to Annex A1
- "AQUAPANEL Maxi Screw SB - drillpoint" according to Annex A2

The performances given in Section 3 are only valid if the cement bonded board "AQUAPANEL Cement Board Indoor" is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the cement bonded board "AQUAPANEL Cement Board Indoor" of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

The essential characteristics regarding mechanical resistance and stability are included under the Basic Works Requirement safety in use.

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1 according to EN 13501-1[1]

[1] EN 13501-1 Fire classification of construction products and building elements; Part 1: Classification using data from reaction to fire tests

3.3 Hygiene, health and environment (BWR 3)

Essential characteristic	Performance
Vapour Permeability	μ = No Performance Assesses
Content, emission and/or release	
Substance(s) classified as EU-cat. Carc. 1A/1B [a)]	The product does not contain these dangerous substances. [b)]
Substance(s) classified as EU-cat. Muta. 1A/1B [a)]	
Substance(s) classified as EU-cat. Acute Tox. 1, 2 and/or 3; substance(s) classified as EU-cat. Repr. 1A/1B; substance(s) classified as EU-cat. STOT SE 1 and/or STOT RE 1 [a)]	
SVOC and VOC	No performance assessed.
Release scenarios regarding BWR 3: IA1, IA2 (according to EOTA TR 034)	

a) In accordance with Regulation (EC) No 1272/2008.

b) Assessment based on the detailed manufacturer's statements.

3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Thickness	e = 12,5 mm ± 1,25 mm
Dimension (length and width)	Annex C
Straightness of edges	0,1 % = Level I acc. to EN 12467
Squareness of edges	2 mm/m = Level I acc. to EN 12467
Density	ρ_{mean} = 1100 ± 100 kg/m³
Moisture content	H = 8,0 % by mass
Water impermeability	Passed
Dimensional stability - length	$\delta l_{65,85}$ = 0,3 mm/m $\delta l_{65,30}$ = -0,3 mm/m
Dimensional stability - thickness	$\delta l_{65,85}$ = 0,09 % $\delta l_{65,30}$ = -0,06 %
Bending strength Bending modulus of elasticity	$f_{m,0,k}$ = 6,0 N/mm² $f_{m,90,k}$ = 6,3 N/mm² (smooth side under tension) $f_{m,90,k}$ = 5,9 N/mm² (smooth side under compression) $E_{m,0,mean}$ = No Performance Assessed $E_{m,90,mean}$ = No Performance Assessed
Pull through resistance - "AQUAPANEL Maxi Screw SN" (Annex A1) - "AQUAPANEL Maxi Screw SB" (Annex A2)	 $f_{head,k}$ = 280 N $f_{head,k}$ = 390 N
Impact resistance	IR_{mean} = 9,8 mm/m
Water adsorption	w_a = 29,3 % by mass
Warm water resistance for category C	$R_{L,WW}$ = 0,75
Soak-dry resistance for category C	$R_{L,SD}$ = 0,98
Durability of metal parts	Annex B1

3.5 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity	$\lambda_{10,tr}$ = No Performance Assessed
Air permeability	"The "AQUAPANEL Cement Board Indoor" is not permeable to air."

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

According to Decision 98/437/EC[2] of the European Commission as corrected[3] and amended by the Commission Decision 2001/596/EC[4] of 08.01.2001 the assessment and verification of constancy of performance system (AVCP system) (see Annex V to Regulation (EU) 305/2011 as amended by the Commission Delegated Regulation (EU) No 568/2014) given in table 1 applies.

Table 1: AVCP systems

Product	Intended use(s)	Level(s) or Classe(s) of performance	AVCP system
Cement Bonded Board	As internal or external finishes in wall or ceilings subject to reaction to fire regulations	A1*, A2*, B* and C* A1**, A2**, B**, C**, D and E (A1 to E)***, F	1 3 4
	As internal or external finishes in walls or ceilings, as relevant, subject to regulations on dangerous substances	--	3
	As internal or external finishes in walls or ceilings for other uses mentioned in the mandate	--	4

* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).

** Products/materials not covered by footnote (*).

*** Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of Class A1 according to Commission Decision 96/603/EC).

2 Official Journal of the European Communities L 194 of 10 July 1998
3 Official Journal of the European Communities L 278 of 15 October 1998
4 Official Journal of the European Communities L 209 of 02 August 2001

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 11 October 2017 by Deutsches Institut für Bautechnik

BD Dip.-Ing. Andreas Kummerow
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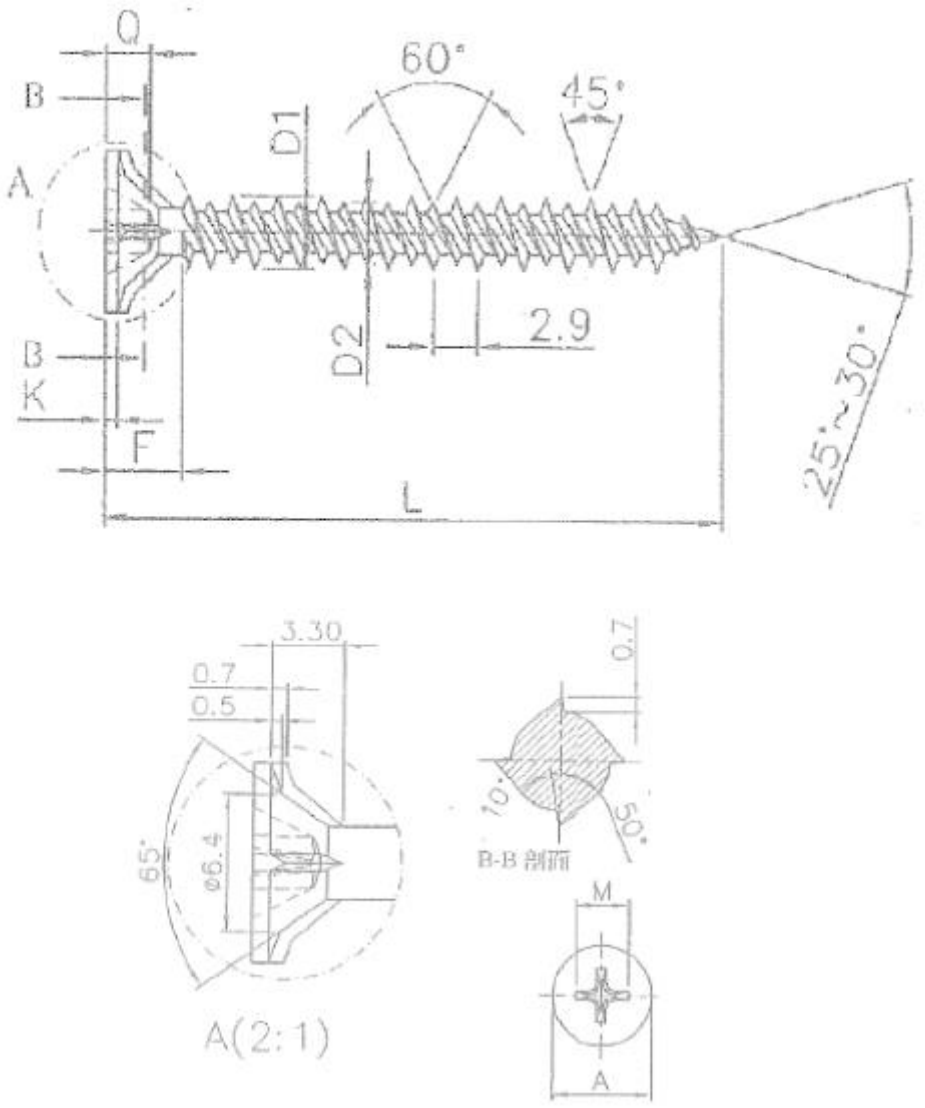
beglaubigt:
Schröder

Deutsches Institut für Bautechnik DIBt



AQUAPANEL Maxi Screw SN 25 / 39 / 55 (with needlepoint)

	SN 25	SN 39	SN 55
screw length [mm]	25	39	55

Material: C 22 (similar to Ck22 / Cm22)
Material No.: SAE 1022 (similar to 1.1151 / 1.1149 acc. to EN 10083-2)

Dimensions in mm; without scale

AQUAPANEL Cement Board Indoor	**Annex A1**
Fastener for the cement bonded board "AQUAPANEL Cement Board Indoor": "AQUAPANEL Maxi Screw SN 25 / 39 / 55 (with needlepoint)"	

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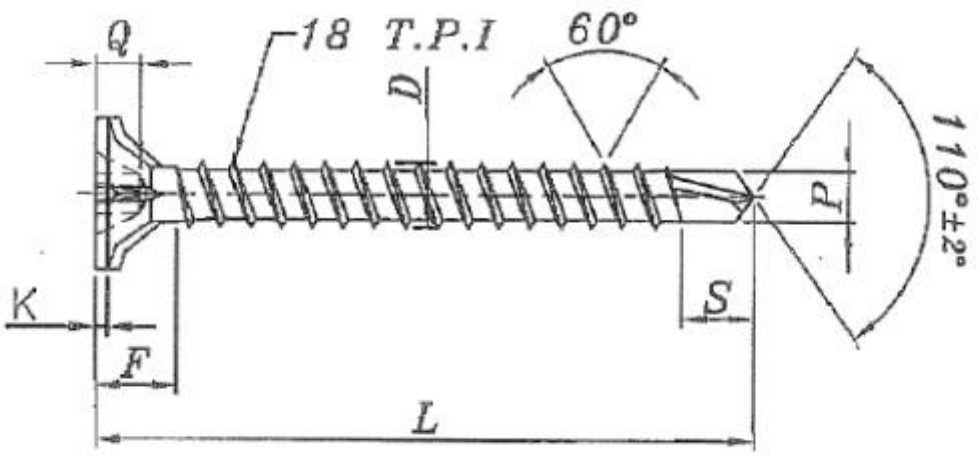

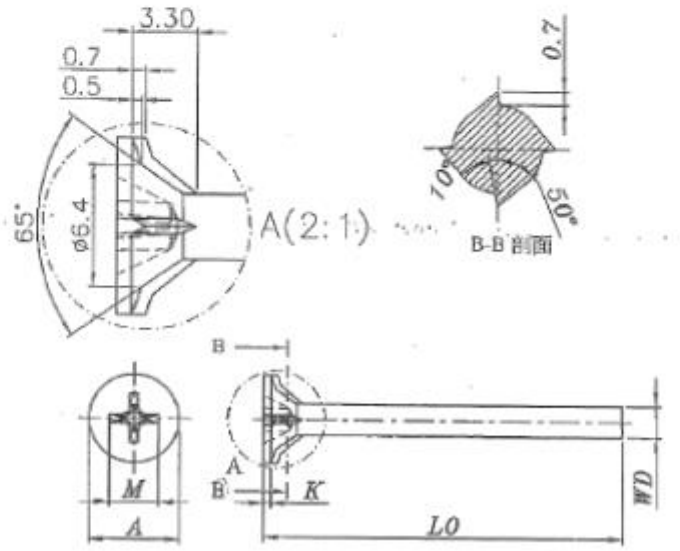

AQUAPANEL Maxi Screw SB 25 / 39 (with drillpoint)

	SB 25	SB 39
screw length [mm]	25	39

Material: C 22 (similar to Ck22 / Cm22)
Material No.: SAE 1022 (similar to 1.1151 / 1.1149 acc. to EN 10083-2)

Dimensions in mm; without scale

AQUAPANEL Cement Board Indoor	**Annex A2**
Fastener for the cement bonded board "AQUAPANEL Cement Board Indoor": "AQUAPANEL Maxi Screw SB 25 / 39 (with drillpoint)"	

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Specification of the intended use

Cement Bonded Board subject to <u>non-structural applications</u>

- non-load bearing internal partitions
- lining of building components in indoor areas
- for manufacturing of floor construction

Use conditions

<u>Cement bonded board</u>

Category **C** acc. to EN 12467:	Boards which are intended for internal applications, where they may be subjected to heat and moisture, but not to frost.

<u>Fasteners</u>

- Structures subject to dry internal conditions
  (zinc coated steel or stainless steel)
- Structures subject to exposure in permanently damp internal conditions, if no particular aggressive conditions exist.
  (zinc coated steel* or stainless steel)

  * Both fasteners according to Annex A can be used for internal applications with permanent damp conditions if the screw head is permanently sealed after the installation against moisture.

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, **chloride atmosphere of indoor swimming poo**ls or atmosphere with extreme chemical pollution (e.g. in desulphurization plant)

AQUAPANEL Cement Board Indoor	**Annex B1**
Specification of the intended use: Use conditions	

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Installation

During transport and storage the cement bonded board "AQUAPANEL Cement Board Indoor" and the components manufactured by using these boards shall be protected against damaging and inadequate moisture, e.g. from precipitation or high building moisture (e.g. covering the boards or the components on all sides with foil to avoid standing water).

Damaged cement bonded boards "AQUAPANEL Cement Board Indoor" or components manufactured by using these boards may neither be used nor installed.

If cement bonded board "AQUAPANEL Cement Board Indoor" is processed on site (on-site fabrication), the moisture of the timber substructure may not detrimentally increase until installing the boards (protection from precipitation or high building moisture).

As connecting devices of the cement bonded board "AQUAPANEL Cement Board Indoor" to the substructure screws according Annex A shall be used.

The maximum permitted distance of the fasteners is 220 mm.

Expansion joints are placed minimum all 15 m.

For the installation of the cement bonded board "AQUAPANEL Cement Board Indoor" the information of the manufacturer (instructions for installation) shall be considered.

AQUAPANEL Cement Board Indoor	**Annex B2**
Specification of the intended use: Installation	

Table C1: Nominal length of the cement bonded board "AQUAPANEL Cement Board Indoor"

nominal length	length (target value)	tolerance
mm	mm	mm
≤ 3000	nominal length – 3	900 ≤ l ≤ 1000: Δ l = ± 3
		1000 ≤ l ≤ 1000: Δ l = ± 3 % x l
		L ≥ 1600: Δ l = ± 5

Table C2: Nominal width of the cement bonded board "AQUAPANEL Cement Board Indoor"

nominal width	length (target value)	tolerance
mm	mm	mm
900	897	Δ l = ± 3
1200	1197	Δ l = ± 3,6
1250	1247	Δ l = ± 3,7