

Approval body for construction products
and types of construction

Bautechnisches Prüfamts

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-13/0608
of 19 June 2018

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 6 mm"
"AQUAPANEL Cement Board 8 mm"
"AQUAPANEL Cement Board 8 mm (hydrophobic)"

Product family
to which the construction product belongs

Cement Bonded Board

Manufacturer

Knauf Aquapanel GmbH & Co. KG
Kipperstraße 19
44147 Dortmund
DEUTSCHLAND

Manufacturing plant

901
902
903
904

This European Technical Assessment
contains

11 pages including 4 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

This version replaces

ETA-13/0608 issued on 21 June 2013

European Technical Assessment

ETA-13/0608

English translation prepared by DIBt

Page 2 of 11 | 19 June 2018

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific part

1 Technical description of the product

The cement bonded board is a specific board made of a mixture of cement according to EN 197-1¹, additions, admixtures, mineral lightweight aggregates and water. The board is reinforced on both sides with alkali-resistant glass fibre fabric.

The cement bonded board is marketed as

- "AQUAPANEL Cement Board 6 mm"
- "AQUAPANEL Cement Board 8 mm"
- "AQUAPANEL Cement Board 8 mm (hydrophobic)"

depending on the thickness of the board.

The surfaces of the boards are not coated. The surface of the "AQUAPANEL[®] Cement Board 8 mm (hydrophobic)" is treated with a hydrophobic agent to prevent absorption of humidity during the installation (construction phase).

The boards are manufactured with a thickness of 6 mm and 8 mm.

The boards are manufactured with a nominal length from 900 mm to 2500 mm and nominal width of 900 mm or 1200 mm (see Annex C).

The boards are used with one of the following fixing elements:

- "AQUAPANEL Maxi Screw SN - needlepoint" according to Annex A, page 1
- "AQUAPANEL Maxi Screw SB - drillpoint" according to Annex A, page 2

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

The Cementbonded boards are intended to be used for non-structural partitions, as lining, and for the manufacture of floor construction elements.

"AQUAPANEL Cement Board 6 mm" is intended to be used for non-structural internal partitions, as lining of interior components, for suspended ceilings and floor construction elements in indoor applications.

"AQUAPANEL Cement Board 8 mm" is intended to be used for non-structural internal partitions, as lining of interior components, for suspended ceilings in indoor applications.

"AQUAPANEL[®] Cement Board 8 mm (hydrophobic)" is intended to be used for non-structural external planking of walls and suspended ceilings in exterior applications.

The performances given in Section 3 are only valid if the cement bonded boards "AQUAPANEL Cement Board" are used in compliance with the specifications and conditions given in Annex B1 and B2.

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 boards "AQUAPANEL Cement Board" 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.

¹ EN 197-1 Cement - Part 1: Composition, specifications and conformity criteria for common cements

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 ²

3.3 Hygiene, health and environment (BWR 3)

Essential characteristic	Performance
Vapour Permeability	d = 6 mm : $\mu = 48,4$ d = 8 mm (hydrophobic): $\mu = 40,1$
Content, emission and/or release of dangerous substances	
Substances classified as EU-cat. Carc. 1A/1B ^{a)}	The product does not contain these dangerous substances actively used. ^{b)}
Substances classified as EU-cat. Muta. 1A/1B ^{a)}	
Substances classified as EU-cat. Acute Tox. 1, 2 and/or 3; substances classified as EU-cat. Repr. 1A/1B; substances classified as EU-cat. STOT SE 1 and/or STOT RE 1 ^{a)}	
SVOC and VOC	No performance assessed.
Release scenarios regarding BWR 3 according to EOTA TR 034: IA1, IA2	

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

^{b)} Assessment based on a detailed manufacturer's statement on dangerous substances.

3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Thickness	e = 6,0 mm ± 0,6 mm e = 8,0 mm ± 0,8 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	d = 6 mm: $\rho_{\text{mean}} = 1250 \text{ kg/m}^3$ d = 8 mm: $\rho_{\text{mean}} = 1230 \text{ kg/m}^3$
Moisture content	d = 6 mm: H ≤ 13 % by mass d = 8 mm (hydrophobic): H ≤ 13 % by mass
Water impermeability	Passed

² EN 13501-1

Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests

Essential characteristic	Performance
Dimensional stability - length	d = 6 mm / 8 mm / 8 mm (hydrophobic): $\delta l_{65,85} = 0,38 \text{ mm/m}$ $\delta l_{65,30} = -0,32 \text{ mm/m}$
Dimensional stability - thickness	d = 6 mm / 8 mm / 8 mm (hydrophobic): $\delta l_{65,85} = 0,3 \%$ $\delta l_{65,30} = -0,3 \%$
Bending strength Bending modulus of elasticity	d = 6 mm $f_{m,0,k} = 6,3 \text{ MPa}$ $f_{m,90,k} = 13,4 \text{ MPa}$ $E_{m,0,mean} = 930 \text{ MPa}$ $E_{m,90,mean} = 1690 \text{ MPa}$ d = 8 mm (hydrophobic) $f_{m,0,k} = 6,9 \text{ MPa}$ $f_{m,90,k} = 10,9 \text{ MPa}$ $E_{m,0,mean} = 800 \text{ MPa}$ $E_{m,90,mean} = 1750 \text{ MPa}$
Pull through resistance "AQUAPANEL Maxi Screw SN" (Annex A, page 1) "AQUAPANEL Maxi Screw SB" (Annex A, page 2)	d = 6 mm / d = 8 mm $f_{head,k} = 2,3 \text{ N/mm}^2$ / $f_{head,k} = 2,8 \text{ N/mm}^2$ $f_{head,k} = 2,3 \text{ N/mm}^2$ / $f_{head,k} = 2,8 \text{ N/mm}^2$
Impact resistance	$IR_{mean} = 12,5 \text{ mm/mm}$
Water adsorption	$w_a = \text{No performance assessed.}$
Freeze-thaw resistance for category B and D	d = 8 mm (hydrophobic): $R_{L,FTC} = 0,94$ d = 6 mm: $R_{L,FTC} = \text{No Performance Assessed}$
Heat-rain resistance for category B	d = 8 mm (hydrophobic): Passed
Warm water resistance for category B and D	d = 8 mm (hydrophobic): $R_{L,WW} = 0,82$ d = 6 mm: $R_{L,WW} = 0,75$
Soak-dry resistance for category B and D	d = 8 mm (hydrophobic): $R_{L,SD} = 1,0$ d = 6 mm: $R_{L,SD} = 1,0$
Durability of metal parts	Annex B1

3.5 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity	d = 6 mm: $\lambda_{10, tr} = 0,34 \text{ W/(m} \cdot \text{K)}$ d = 8 mm: $\lambda_{10, tr} = 0,36 \text{ W/(m} \cdot \text{K)}$ d = 8 mm (hydrophobiert): $\lambda_{10, tr} = 0,36 \text{ W/(m} \cdot \text{K)}$
Air permeability	The "AQUAPANEL Cement Board 6 mm" respectively The "AQUAPANEL Cement Board 8 mm" respectively The "AQUAPANEL Cement Board 8 mm (hydrophobic)" is not permeable to air.

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

In accordance with EAD No. 21-0024-05.04, the applicable European legal act is: 1998/437/EC (EU).

The system to be applied is: 4

In addition, with regard to reaction to fire for products covered by this EAD the applicable European legal act is: 1989/106/EC (EU)

The system to be applied is: 3

In addition, with regard to dangerous substances for products covered by this EAD the applicable European legal act is: 98/437/EC (EU)

The system to be applied is: 3

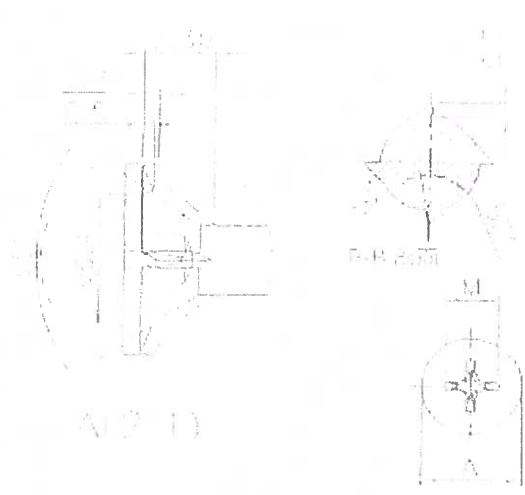
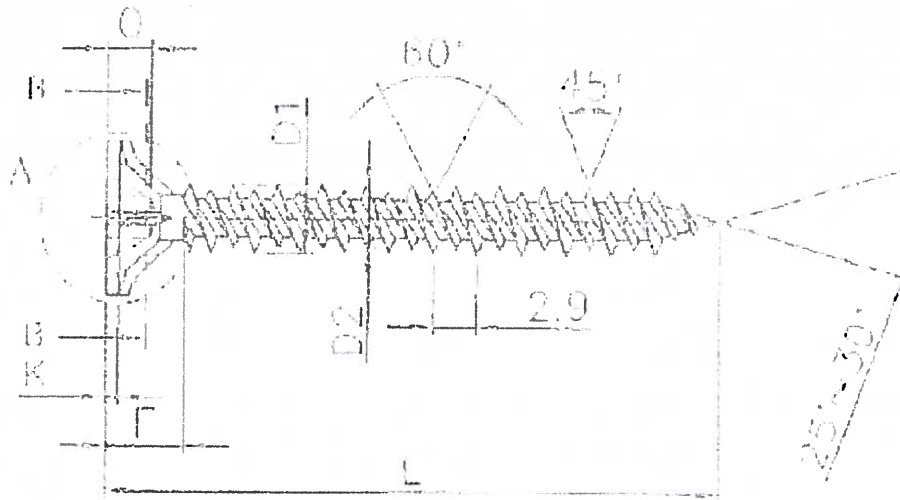
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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 19 June 2018 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Schröder



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

	SN 25	SN 39
Screw length [mm]	25	39

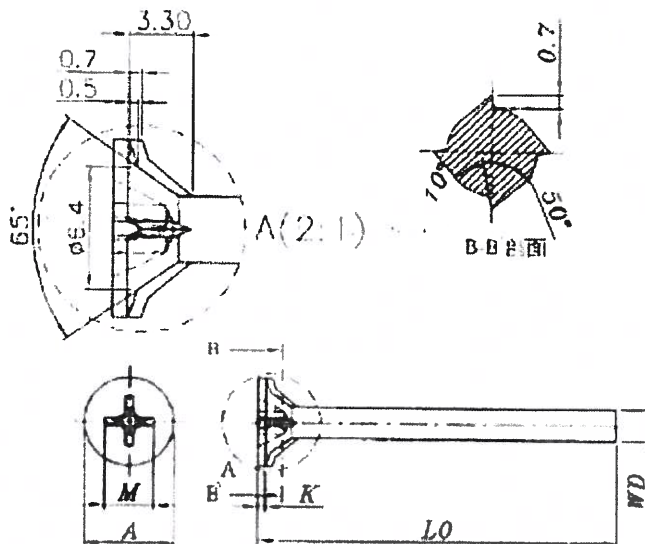
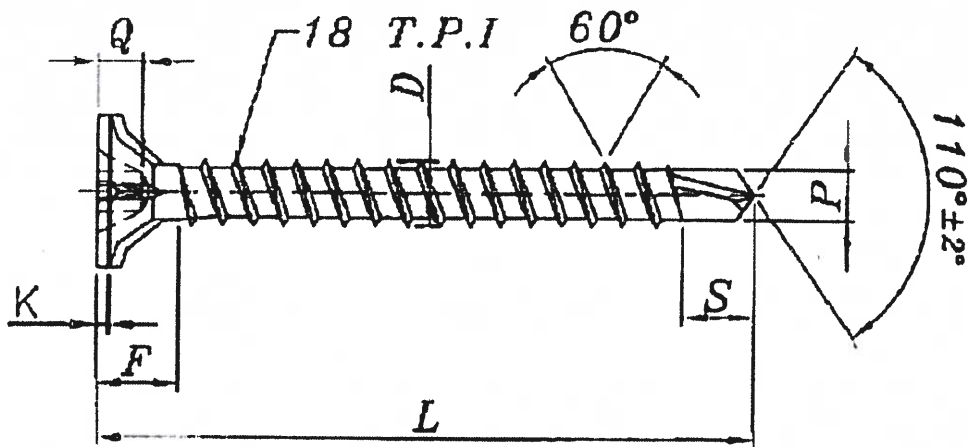
Material: C 22 (similar to Ck22 / Cm22)
Material No.: SAE 1022 (similar to 1.1151 / 1.1149 acc. to EN 10083-2)

Dimensions in mm; without scale

"AQUAPANEL Cement Board 6 mm", "AQUAPANEL Cement Board 8 mm", "AQUAPANEL Cement Board 8 mm (hydrophobic)"

Fastener for the cement bonded boards "AQUAPANEL Cement Board":
AQUAPANEL Maxi Screw SN (with needlepoint)

Annex A
Page 1 of 2



AQUAPANEL Maxi Screw SB 25 / SB 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 6 mm", "AQUAPANEL Cement Board 8 mm", "AQUAPANEL Cement Board 8 mm (hydrophobic)"

Fastener for the cement bonded boards "AQUAPANEL Cement Board":
AQUAPANEL Maxi Screw SB (with drillpoint)

Annex A
Page 2 of 2

Specification of the intended use

Cement Bonded Boards subject to non-structural applications

d = 6 mm and d = 8 mm

- lining of interior components
- support board for interior areas
- suspended ceilings for interior areas
- floor construction element for interior areas

d = 8 mm (hydrophobic)

- lining of walls for outdoor application without direct weathering
- suspended ceilings for outdoor application without direct weathering

Use conditions

Cement bonded board

Category B
acc. to EN 12467:

Boards which are intended for applications where they may be subjected to heat, moisture and occasional frost, e.g. where they are either protected from or not subjected to severe weathering conditions.

Category D
acc. to EN 12467:

Boards for rigid underlayer applications.

Fasteners

- Fasteners intended for use in structure subject to dry, internal conditions: (Galvanised steel or stainless steel)
- Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal condition, if no particular aggressive conditions exist (stainless steel)

Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plant or road tunnels where de-icing materials are used)

The fasteners according to Annex A can be used for external applications if the screw head is permanent sealed after the installation against moisture.

"AQUAPANEL Cement Board 6 mm", "AQUAPANEL Cement Board 8 mm", "AQUAPANEL Cement Board 8 mm (hydrophobic)"

Specification of the intended use: Use conditions

Annex B1

Installation

During transport and storage the cement bonded boards "AQUAPANEL Cement Board 6 mm", "AQUAPANEL Cement Board 8 mm" and "AQUAPANEL Cement Board 8 mm (hydrophobic)" 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 or components manufactured by using these boards may neither be used nor installed.

If cement bonded boards are 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 to the substructure appropriate screws with adequate corrosion protection shall be used, see Annex A.

For use of the cement bonded board in direct exposure a suitable protection against weathering shall be added e.g. render system consisting of an undercoat plaster and finishing plaster coat that is not part of this assessment.

The cement bonded boards shall not be fixed under tension.

The maximum permitted distance between the fasteners is 220 mm for transverse installation and 250 mm for longitudinal installation.

The distance between the fasteners shall be at least 50 mm.

Expansion joints are placed minimum all 15 m.

For the installation of the cement bonded boards the information of the manufacturer (instructions for installation) shall be considered.

National regulations may be observed if the cement bonded boards are used for non load-bearing components in interior areas as partition walls or for the production of floor elements or as suspended ceilings.

"AQUAPANEL Cement Board 6 mm", "AQUAPANEL Cement Board 8 mm", "AQUAPANEL Cement Board 8 mm (hydrophobic)"

Specification of the intended use: Installation

Annex B2

Table C: Length and width of the cement bonded boards "AQUAPANEL Cement Board" including the permissible deviations

Width	Length
898 mm ± 3 mm	1197 mm ± 3,6 mm
	1247 mm ± 3,8 mm
	2397 mm ± 5,0 mm
	2497 mm ± 5,0 mm
1198 mm ± 3,6 mm	897 mm ± 3,0 mm
	2397 mm ± 5,0 mm
	2497 mm ± 5,0 mm

"AQUAPANEL Cement Board 6 mm", "AQUAPANEL Cement Board 8 mm", "AQUAPANEL Cement Board 8 mm (hydrophobic)"

Length and width of the cement bonded boards "AQUAPANEL Cement Board"

Annex C