

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-18/1155
of 1 December 2020

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

"AQUAROC"

Product family
to which the construction product belongs

Cement-bonded board

Manufacturer

PLACOPLATRE
34 Avenue Franklin Roosevelt
92282 SURESNES
FRANKREICH

Manufacturing plant

PLACOPLATRE
105 Route d'Argenteuil
FR-95240 Cormeilles-en-Parisis
FRANCE

This European Technical Assessment
contains

21 pages including 14 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 "AQUAROC" is a specific board made of a cement mixture, lightweight aggregates, fillers and water. The board is reinforced on both sides with alkali-resistant glass fibre mesh.

The constituents for the manufacturing of the cement-bonded board "AQUAROC" and the manufacturing process are deposited.

The cement bonded boards are type NT (Non-asbestos Technology).

The front side of the board "AQUAROC" is produced without a coating. A hydrophobic agent is used to prevent absorption of humidity during the installation respectively construction phase.

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

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

The cement bonded board "AQUAROC" can be classified in class 1 and category B according to EN 12467.

For a permanent outdoor use of the cement bonded board "AQUAROC", the front side must be provided with an appropriate weather protection system that is not part of the assessment.

The cement bonded board "AQUAROC" has a bending strength perpendicular to the plane (test side at rear side) according to EN 12467, 5.4.4, of 3,4 MPa (mean value) and a minimum density of 990 kg/m³.

The cement bonded board "AQUAROC" is a non-combustible material of class A1 according to EN 13501-1¹.

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

The cement bonded board "AQUAROC" is intended to be used for following non-structural applications:

- Non-load bearing internal partitions
- Lining of building components in indoor and outdoor areas

The cement bonded board "AQUAROC" is intended to be used with one of the following fixing elements:

- Placo Aquaroc HB 3,8 x L mm, K7,0 according to Annex A1,
- Rigips-Gold and Rigips-Titan Schnellbauschraube TN 3,8 x L, K7,8 according to Annex A2,
- Rigips-Gold Schnellbauschraube TB 3,5 x 35 mm, K8,2 according to Annex A3,
- Etanco Perfix 4,4 TF 4,8 x L mm, K9,5 according to Annex A4,
- Placo Iberica THTPF 3,8 x L mm, K7,5 according to Annex A5,
- EJOT Edelstahl Saphir JT4-ST3 4,8 x 35 mm, K12 according to Annex A6,
- Hilti Schraube mit Bohrspitze S-PD 01S 4,0 x 4,0 mm, K8,2 according to Annex A7,
- Hilti Schraube mit Holzspitze S-PS 01S 4,0 x 40 mm, K8,2 according to Annex A8,
- Spax Schraube T-Star Plus 5,0 x 40 mm, K9,7 according to Annex A9,

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

- Würth Assy Plus A2 4,0 x 40 mm, K8,0 according to Annex A10,
- Big head blind rivet 5,0 x 20 mm, K14 according to Annex A11,
- Haubold staple KG 750 CRF 1,53 x 50 mm according to Annex A12.

The performances given in Section 3 are only valid if the cement bonded board "AQUAROC" 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 "AQUAROC" 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

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Vapour permeability	$\mu = 105$
Content, emission and/or release	
Substances classified as Carc. 1A/1B ^{a)}	The product does not contain these dangerous substances. ^{b)}
Substances classified as Muta. 1A/1B ^{a)}	
Substances classified as Acute Tox. 1, 2, 3; Repr. 1A/1B; STOT SE 1 and STOT RE 1 ^{a)}	
SVOC and VOC	No performance assessed.
Release scenario regarding BWR 3: IA 1, IA 2	
^{a)} In accordance with Regulation (EC) No 1272/2008.	
^{b)} Assessment based on the detailed manufacturer statement on dangerous substances.	

3.4 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Thickness	$e = 12,5 \text{ mm} \pm 1,25 \text{ mm}$
Dimension (length and width)	Table C1 and Table C2 (Annex C)
Straightness of edges	0,1 % = Level I according to EN 12467
Squareness of edges	2 mm/m = Level I according to EN 12467
Density	$\rho_{\text{mean}} = 990 \text{ kg/m}^3$

Essential characteristic	Performance
Moisture content	H = 1,2 % by mass
Water impermeability	WI = Passed
Dimensional stability - length	$\delta l_{65,85} = 0,21$ mm/m $\delta l_{65,30} = -0,26$ mm/m
Bending strength and bending modulus of elasticity	Table C3 (Annex C)
Pull through resistance	Table C4 (Annex C)
Impact resistance	IR _{mean} = No performance assessed.
Water adsorption	w _a = 8,7 % by mass
Freeze-thaw resistance for category A	R _{L,FT} = 0,98
Heat-rain resistance for category B	Passed. No cracks.
Warm-water resistance for category A	R _{L,WW} = 0,81
Soak-dry resistance for category A	R _{L,D} = 0,88

3.5 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity	$\lambda_{10, tr} = 0,282$ W/(m·K)
Air permeability	The cement bonded board "AQUAROC" is not permeable to air.

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

According to EAD No. 210024-00-0504, the applicable European legal act is: 98/437/EC (EU) and amended by 2001/596/EC

The system to be applied is: 3

In addition, with regard to e.g. reaction to fire for products covered by this EAD the applicable European legal act is: 98/437/EC (EU) and amended by 2001/596/EC

The systems to be applied are: 1,3 and 4

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

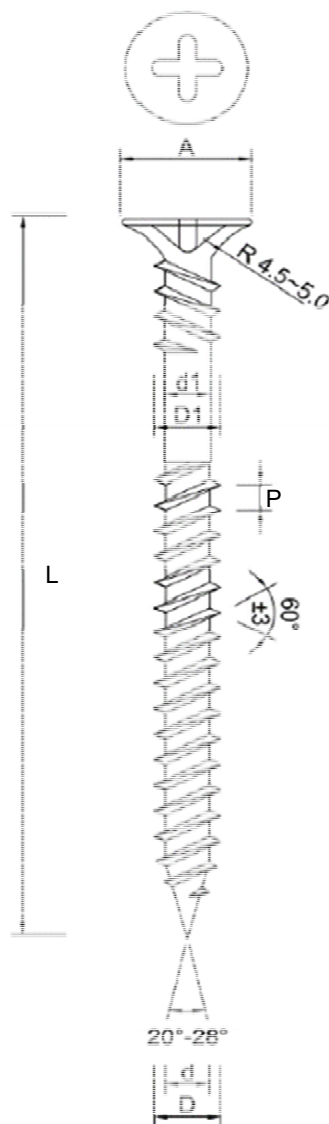
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 1 December 2020 by Deutsches Institut für Bautechnik

Dr.-Ing. Wilhelm Hintzen
Head of Section

beglaubigt:
Schröder

Placo Aquaroc® HB 3,8 x L mm, K7,0



Drawing without scale

Material:

Material: Steel (C1022 with corrosion protection (salt spray resistance 1000 hours according to ASTM B117-07))
Material number: 1.0402 according to EN 10250-2

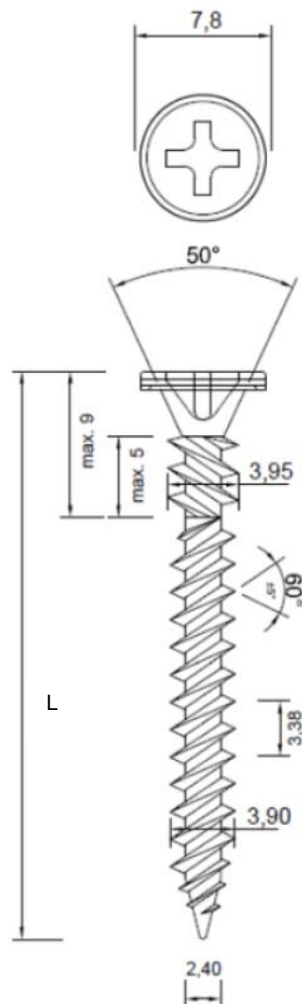
Nominal dimension of the screw	
A (Head diameter) =	7,00 mm
D (Thread size) =	3,85 mm
D (Core diameter) =	2,55 mm
D1 (Thread size) =	3,85 mm
d1 (Core diameter) =	2,65 mm
P (Lead length) =	1,6 mm
L (Screw length) =	25 mm 41 mm

"AQUAROC"

Placo Aquaroc® HB 3,8 x L mm, K7,0

Annex A1

Rigips-Gold and Rigips-Titan Schnellbauschraube TN 3,8 x L mm, K7,8



L (Length)
25 mm
35 mm
45 mm

Dimension in mm; Drawing without scale

Material:

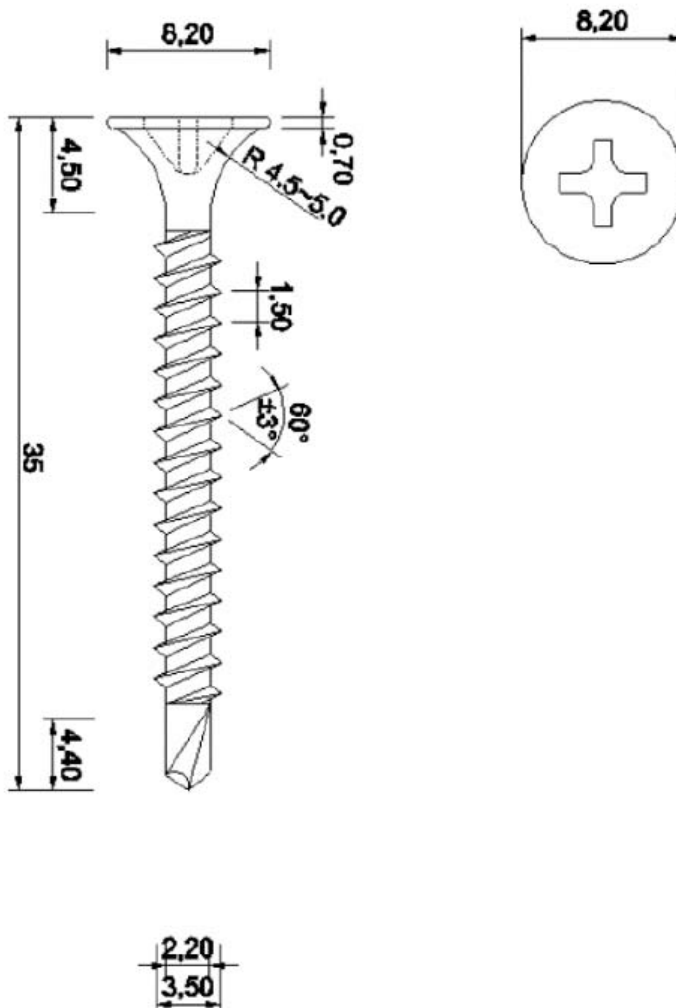
Material: Steel (C1022 with corrosion protection C3 and C5M according to EN ISO 12944)
Material number: 1.0402 according to EN 10250-2

"AQUAROC"

Rigips-Gold and Rigips-Titan Schnellbauschraube TN 3,8 x L K7,8

Annex A2

Rigips-Gold Schnellbauschraube TB 3,5 x 35 mm, K8,2



Dimensions in mm; Drawing without scale

Material:

Material: Steel (C1022 with corrosion protection C3 according to EN ISO12994)

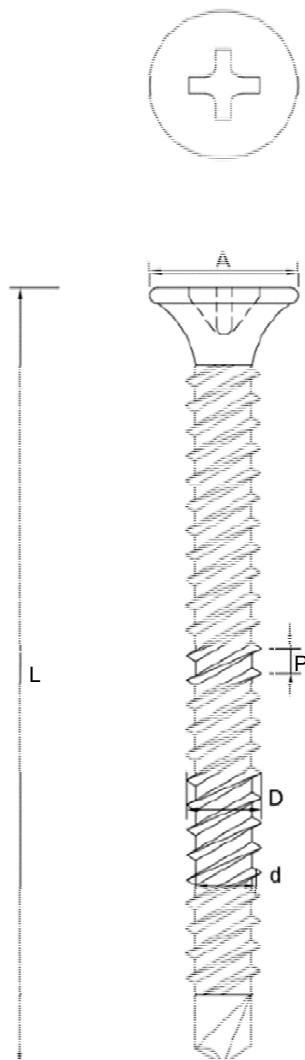
Material number: 1.0402 according to EN 10250-2

"AQUAROC"

Rigips-Gold Schnellbauschraube TB 3,5 x 35 mm, K8,2

Annex A3

Etanco Perfix 4,4 TF 4,8 x L mm, K9,5



Drawing without scale

Material:

Material: Stainless steel (V2A)
Material number: 1.4301 according to EN 10088-3

Nominal dimension of the screw

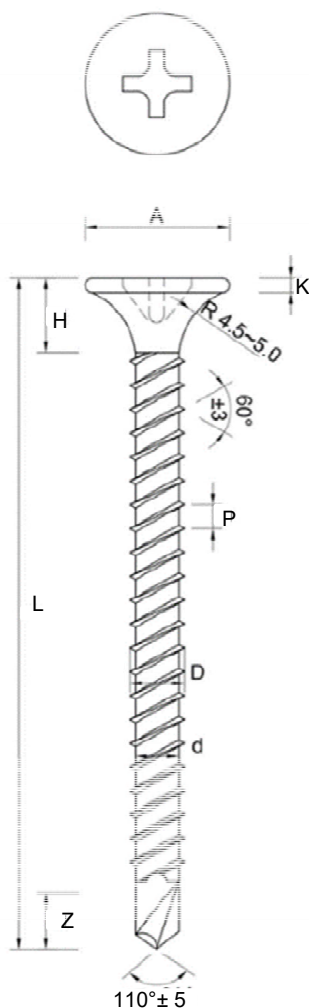
A (Head diameter) =	9,50 mm
D (Thread size) =	4,80 mm
d (Core diameter) =	3,50 mm
P (Lead length) =	1,6 mm
L (Screw length) =	25 mm
	32 mm
	50 mm

"AQUAROC"

Etanco Perfix 4,4 TF 4,8 x L mm, K9,5

Annex A4

Placo Iberica THTPF 3,8 x L mm, K7,5



Drawing without scale

Material:

Material: Steel (C1022)
Material number: 1.0402 according to EN 10250-2)

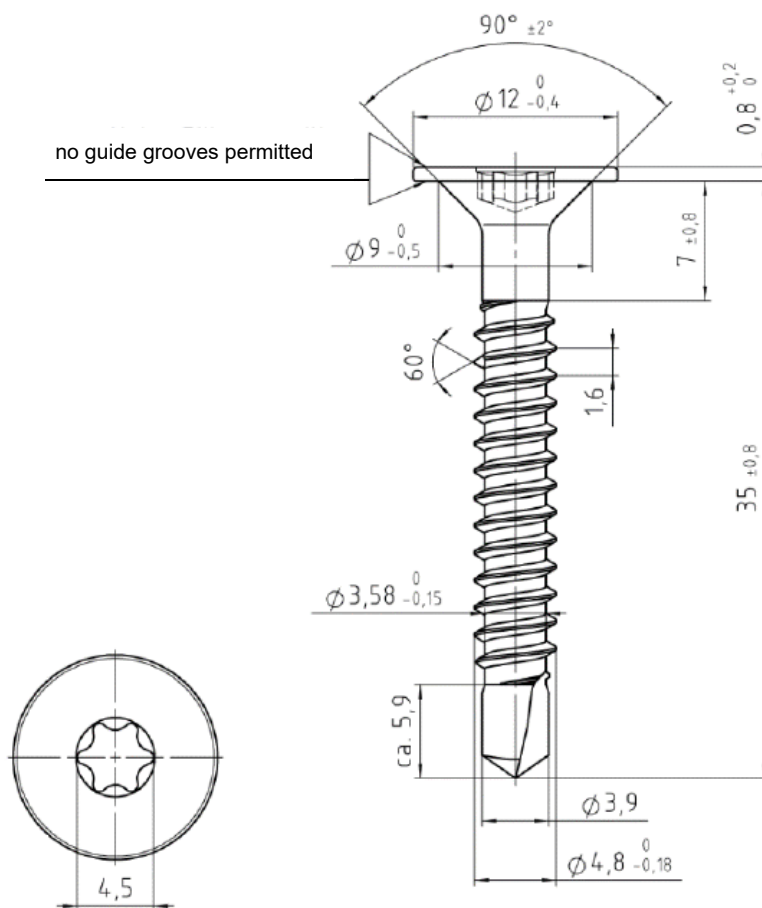
Nominal dimension of the screw	
A (Head diameter) =	7,5 mm
D (Thread size) =	3,80 mm
d (Core diameter) =	2,70-2,89 mm
P (Lead length) =	1,6+/- 10 %
L (Screw length) =	25 mm 35 mm 45 mm

"AQUAROC"

Placo Iberica THTPF 3,8 x L mm, K7,5

Annex A5

EJOT Edelstahl Saphir JT4-STS-3 4,8 x 35 mm, K12



Thread according to EN ISO 1478

Dimensions in mm; Drawing without scale

Material:

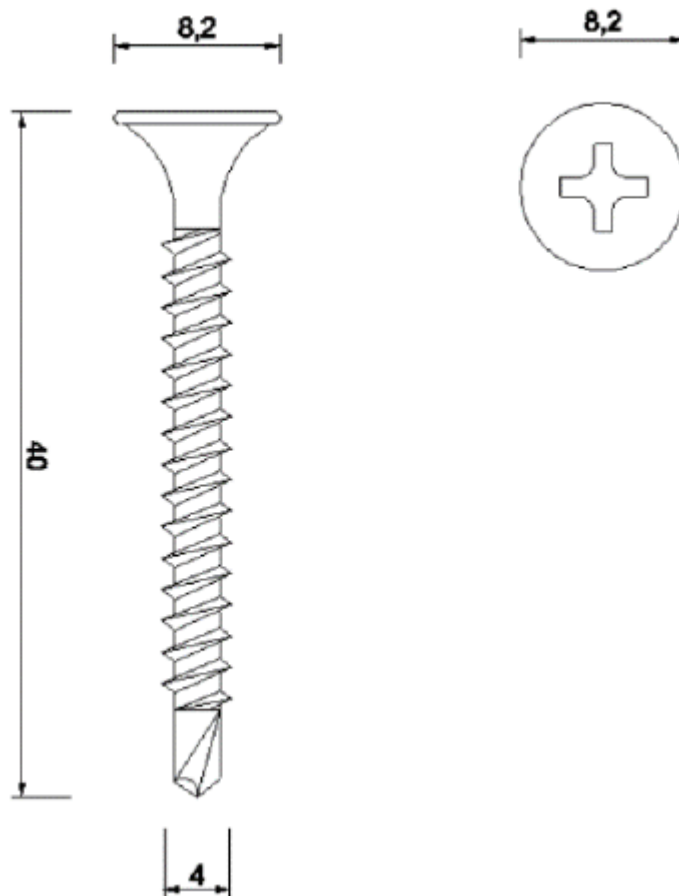
Material: Stainless steel (V2A)
Material number: 1.4301 according to DIN EN 10088-3

"AQUAROC"

EJOT Edelstahl Saphir JT4-STS-3 4,8 x 35 mm, K12

Annex A6

Hilti Schraube mit Bohrspitze S-PD 01S 4,0 x 40 mm, K8,2



Dimensions in mm; Drawing without scale

Material:

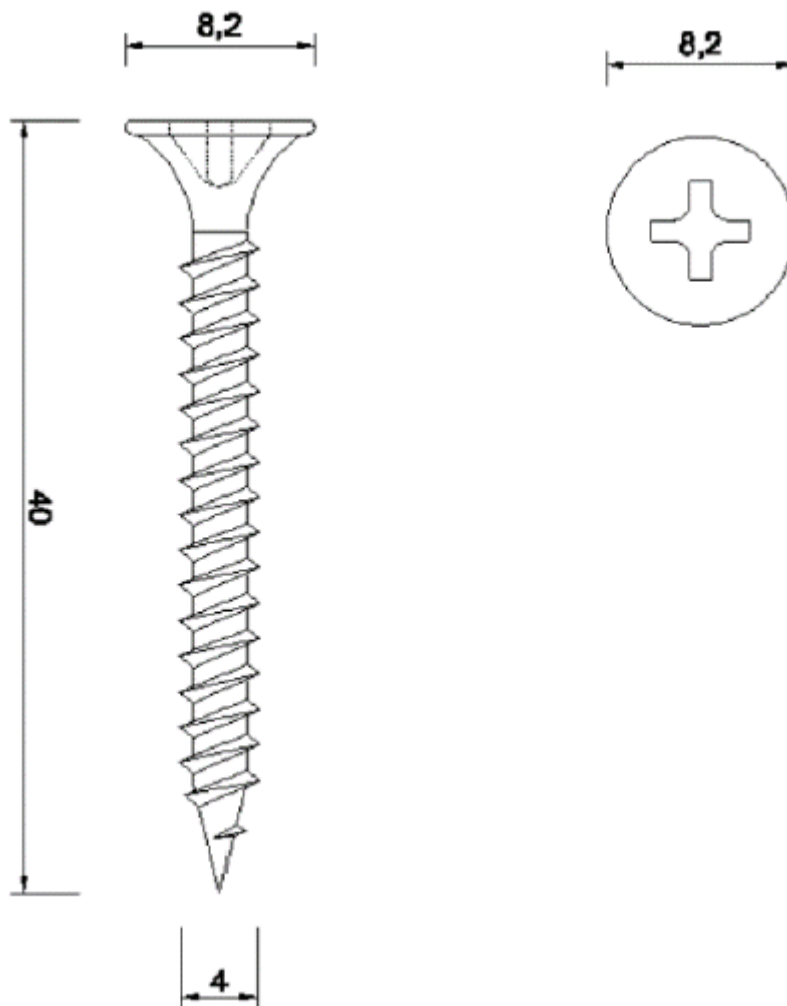
Material: Stainless steel (V2A)
Material number: 1.4567 according to EN 10088-3

"AQUAROC"

Hilti Schraube mit Bohrspitze S-PD 01S 4,0 x 40 mm, K8,2

Annex A7

Hilti Schraube mit Holzspitze S-PS 01S 4,0 x 40 mm, K8,2



Dimensions in mm; Drawing without scale

Material:

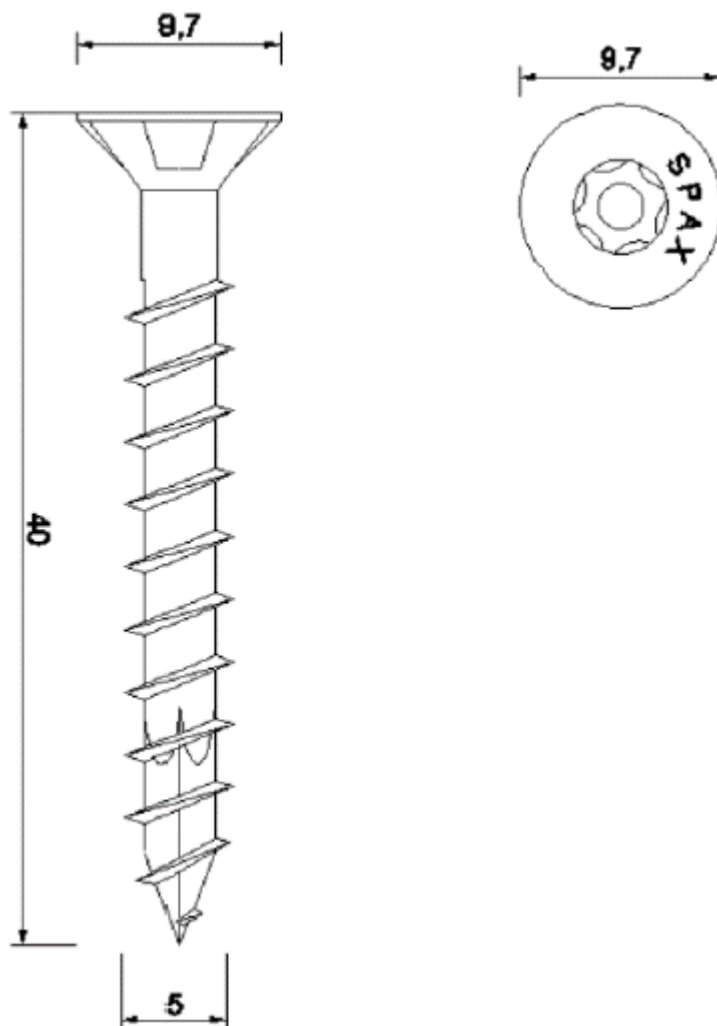
Material: Stainless steel (V2A)
Material number: 1.4567 acc. to EN 10088-3

"AQUAROC"

Hilti Schraube mit Holzspitze S-PS 01S 4,0 x 40 mm, K8,2

Annex A8

Spax Schraube T-Star Plus 5,0 x 40 mm, K9,7 according to ETA-12/0114



Dimensions in mm; Drawing without scale

Material:

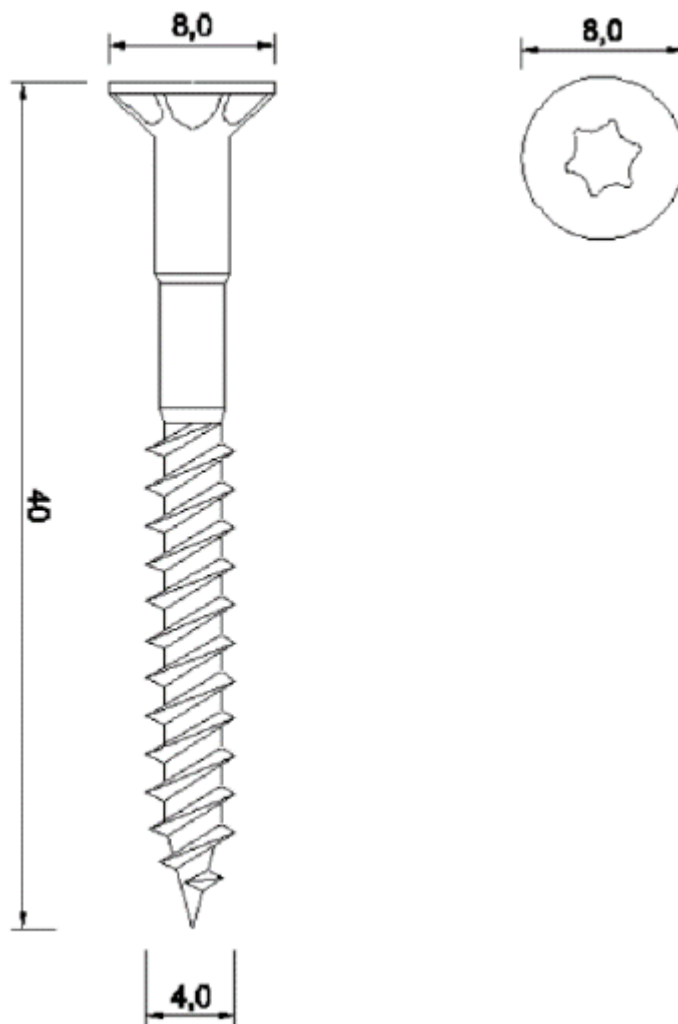
Material: Stainless steel (V2A)
Material number: 1.4301 according to EN 10088-3

"AQUAROC"

Spax Schraube T-Star Plus 5,0 x 40 mm, K9,7 according to ETA-12/0114

Annex A9

Würth Assy Plus A2 4,0 x 40 mm, K8,0 according to ETA-11/0190



Dimensions in mm; Drawing without scale

Material:

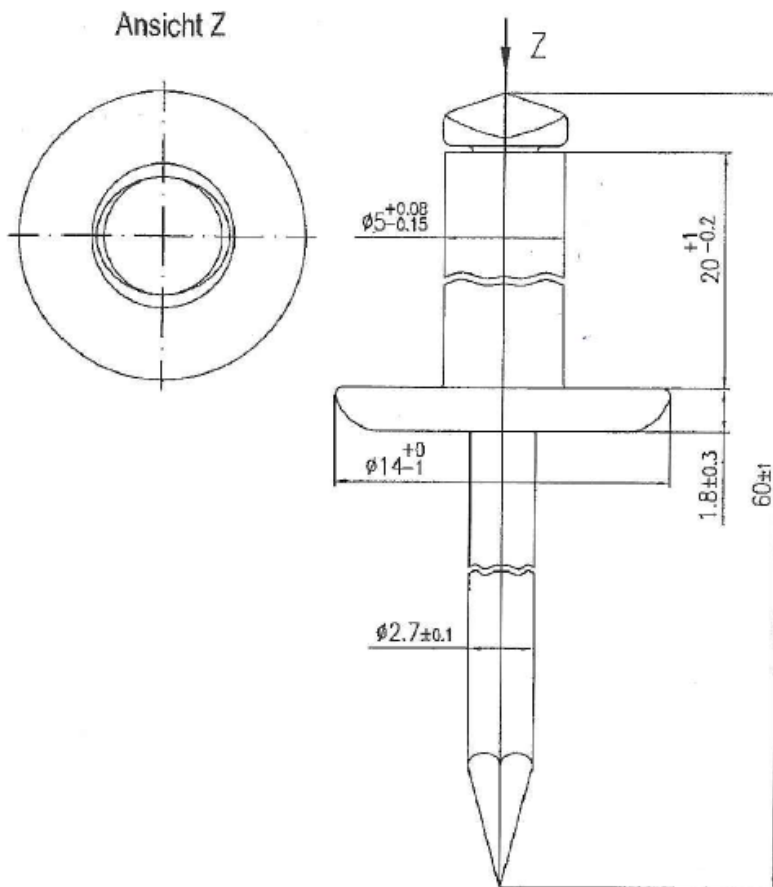
Material: Stainless steel (V2A)
Material number: 1.4567 according to EN 10088-3

"AQUAROC"

Würth Assy Plus A2 4,0 x 40 mm, K8,0 according to ETA 11/0190

Annex A10

Big head blind rivet 5,0 x 20 mm, K14 according to ETA-13/0255



Dimensions in mm; Drawing without scale

Materials:

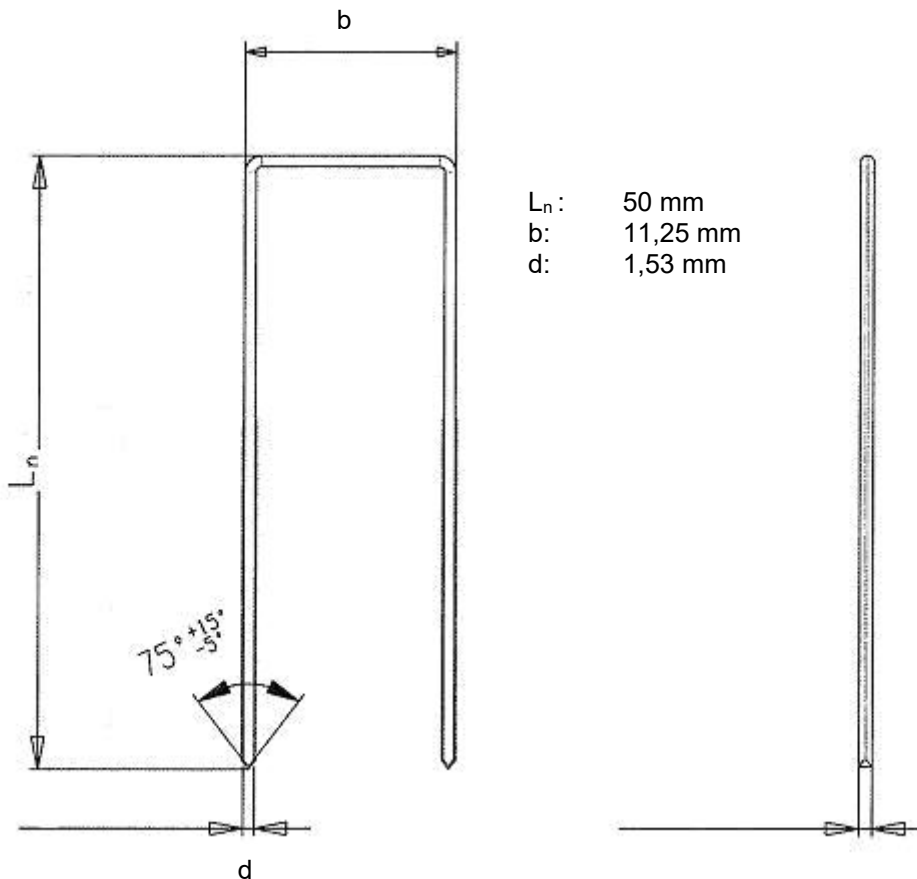
Rivet: AIMg3 (EN AW-5754)
 Material number: 3.3535 according to EN 573-3
 Rivet mandrel: Stainless steel (V2A)
 Material number: 1.4541 according to EN 10088-3

"AQUAROC"

Big head blind rivet 5,0 x 20 mm, K14 according to ETA-13/0255

Annex A11

Haubold staple KG 750 CRF 1,53 x 50 mm



L_n : 50 mm
 b : 11,25 mm
 d : 1,53 mm

Drawing without scale

Material:

Material: Stainless round steel wire $\varnothing = 1,53$ mm (V2A or V4A)
 Material number: 1.4301 / 1.4401 or 1.4529 according to EN 10088-3

Electronic copy of the ETA by DIBt: ETA-18/1155

"AQUAROC"

Haubold staple KG 750 CRF 1,53 x 50 mm

Annex A12

Specification of the intended use

Cement-bonded board subject to non-structural applications

- Non-load bearing internal partitions
- Lining of building components in indoor and outdoor areas

Use conditions

Cement-bonded board

Category B according 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. For a permanent outdoor use of the cement-bonded board "AQUAROC", the front side must be provided with an appropriate weather protection system.
Category C according to EN 12467:	Boards which are intended for internal applications, where they may be subjected to heat and moisture, but not to frost.

Fasteners

- Structures subject to dry internal conditions
(All Fasteners according to Annex A1 to A12)
- Structures subject to external atmospheric exposure (including industrial and marine environments), or exposure in permanently damp internal conditions, if no particular aggressive conditions exist.
(zinc coated steel* or stainless steel)
* Fasteners according to Annex A1 to A5 can be used for external atmospheric exposure or 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 pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plant)

"AQUAROC"

Specification of the intended use:
Use conditions

Annex B
Page 1 of 2

Installation

During transport and storage, the cement-bonded board "AQUAROC" 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 "AQUAROC" or components manufactured by using these boards may neither be used nor installed.

If cement-bonded boards "AQUAROC" 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).

The cement-bonded boards can be fixed on timber substructures with the fasteners according to Annex A1, Annex A2, Annex A3, Annex A8, Annex A9, Annex A10 and Annex A12 and on aluminium substructures according to Annex A4, Annex A5, Annex A6, Annex A7 and Annex A11.

For the use of the cement-bonded boards as ceiling lining on a special substructure (pressure-stiff hangers with a minimum load capacity of 0,25 kN made from thin-walled metal profiles according to EN 13964) the fasteners according to Annex A2 and Annex A3 could be used.

If the big head blind rivet according to Annex A11 is used, the cement-bonded board shall be pre-drilled with a hole diameter of $d = 5,1 \text{ mm}$.

The cement-bonded boards shall not be fixed under tension.

The maximum permissible distance between the fastening elements is 150 mm, if the boards are used as ceiling lining and 220 mm, if the boards are used as wall lining.

When using the cement-bonded boards as ceiling lining, the field boundary joint distance is maximum 15 m.

The maximum permissible area that can be executed without joints in the area of suspended ceilings is 15 m x 15 m.

When using the cement-bonded boards as wall lining, the field boundary joint distance is maximum 25 m.

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

For the installation of the cement-bonded board "AQUAROC" the information of the manufacturer (instructions for installation) shall be considered.

Cement-bonded board "AQUAROC"

Specification of the intended use:
Installation

Annex B
Page 2 of 2

Table C1: Nominal length of the cement-bonded board "AQUAROC"

Nominal length	Length (target value)	Tolerance
mm	mm	mm
≤ 3000	nominal length – 2 / + 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 "AQUAPROC"

Nominal width	Width (target value)	Tolerance (Level I)
mm	mm	mm
≤ 1250	nominal width – 1 / + 3	900 ≤ w ≤ 1000: Δ w = ± 3
		1000 ≤ w ≤ 1000: Δ w = ± 3 % x w
		w ≥ 1600: Δ w = ± 5

Table C3: Bending strength ($f_{m,0,k}/f_{m,90,k}$) and bending modulus of elasticity ($E_{m,0,mean}/E_{m,90,mean}$) of the cement-bonded board "AQUAROC"

Load direction	Position of the face side	Bending strength characteristic value [N/mm ²]	Bending modulus of elasticity Mean value [N/mm ²]
Testing direction: perpendicular to the plane			
load support parallel to production direction (PA)	up (FU)	$f_{m,90,PA-FU,k} = 11,3$	$E_{m,90,PA-FU} = 4400$
	down (FD)	$f_{m,90,PA-FD,k} = 8,58$	$E_{m,90,PA-FD} = 3870$
load support perpendicular to production direction (PE)	up (FU)	$f_{m,90,PE-FU,k} = 3,15$	$E_{m,90,PE-FU} = 4860$
	down (FD)	$f_{m,90,PE-FD,k} = 2,51$	$E_{m,90,PE-FD} = 3050$
Testing direction: plane to the plane			
Load input: at the edge parallel to production direction (PA)	-	$f_{m,0,PA,k} = 5,25$	$E_{m,0,PA} = 3830$
Load input: at the edge perpendicular to production direction (PE)	-	$f_{m,0,PE,k} = 2,76$	$E_{m,0,PE} = 1490$

The bending behaviour of the cement-bonded board "AQUAROC" is ductile.

"AQUAROC"

Product characteristics of the cement-bonded board "AQUAROC"

Annex C
Page 1 of 2

Table C4: Pull through resistances ($f_{head,\alpha,k}$) of the cement-bonded board "AQUAROC"

Fastener / Substructure	Characteristic values ¹⁾	
	$F_{max,k}$	$f_{head,k}$
-	[N]	[N/mm ²]
Placo Aquaroc® HB (Annex A1) / Timber	553	12,97
Rigips-Gold and Rigips-Titan Schnellbauschraube TN (Annex A2) / Timber and special substructure (only for ceiling lining)	616	10,12 (calculated with $d_h = 7,80$ mm)
Rigips-Gold Schnellbauschraube TB (Annex A3) / Timber and special substructures (only for ceiling lining)	755	11,23 (calculated with $d_h = 8,20$ mm)
Etanco Perfix 4,4 TF (Annex A4) / Aluminium	535	6,28
Placo Iberica THTPF (Annex A5) / Steel (no cracks) ¹⁾	478	9,12
EJOT Edelstahl Saphir JT4-ST5-3 (Annex A6) / Aluminium	772	5,36 (calculated with $d_h = 12,0$ mm)
Hilti Schraube mit Bohrspitze S-PD 01S (Annex A7) / Aluminium	610	9,07 (calculated with $d_h = 8,2$ mm)
Hilti Schraube mit Holzspitze S-PS 01S (Annex A8) / Timber		
Spax Schraube T-Star Plus (Annex A9) / Timber	767	8,15 (calculated with $d_h = 9,7$ mm)
Würth Assy plus A2 (Annex A10) / Timber	676	10,56 (calculated with $d_h = 8,0$ mm)
Big head blind rivet (Annex A11) / Aluminium	939	4,79 (calculated with $d_h = 14,0$ mm)
Haubold staple KG 750 CRF (Annex A12) / Timber	430	25,00 (calculated with $d_h = 1,53$ mm / $a = 11,25$ mm)

"AQUAROC"

Product characteristics of the cement-bonded board "AQUAROC"

Annex C
Page 2 of 2