

SCHOMBURG GmbH & Co. KG · Aquafinstraße 2 - 8 · D-32760 Detmold

A company of the SCHOMBURG-Group

Your contact person

Regionalmanager

Date
09. March 2020

*English version of German General Building
Code Certificates*

our abbreviations
NT

Dear Sir / Madam,

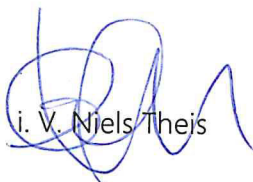
We would like to inform you that the following test report is not signed and not sealed.

This is due to the fact that the test report concerns the German "general building code" and is not legally binding outside of Germany.

For a legally binding version, please use the German version of this test report.

Yours sincerely

SCHOMBURG GmbH & Co. KG



i. V. Niels Theis

Head of Product Management

SCHOMBURG GmbH & Co. KG
Aquafinstraße 2 - 8
D-32760 Detmold
Telefon +49-5231-953-00
Telefax +49-5231-953-123
www.schomburg.de

Werkniederlassung Halle
Deutsche Grube 11
D-06116 Halle/Saale
Telefon +49-345-57180-0
Telefax +49-345-57180-77

Sparkasse Paderborn-Detmold
500 59 62 (BLZ 476 50130)
IBAN: DE14 4765 0130 0005 0059 62
BIC: WELADE33XXX

Commerzbank Detmold
448 44 99 00 (BLZ 476 400 51)
IBAN: DE65 4764 0051 0448 4499 00
BIC: COBADEFFXXX

Volksbank Paderborn-Höxter-Detmold
8201 62 16 00 (BLZ 472 601 21)
IBAN: DE34 4726 0121 8201 6216 00
BIC: DGPBDE33XXX

USD Nr.: DE 124 616 406

SCHOMBURG GmbH & Co. KG
Entwicklungs- u. Produktionsgesellschaft
Pers. haft. Gesellsch.:
SCHOMBURG Verwaltungs GmbH
Handelsregister Lemgo B 4538

Geschäftsführer:
Albert Schomburg
Ralph Schomburg
Alexander Weber



General Building Code Test Certificate

- Translation -

Test Certificate No.: P-1202/355/19 MPA BS

Item: AQUAFIN-CJ3 swelling tape
for internal joint sealing in concrete members with a high water penetration resistance against pressing and non-pressing water and against ground moisture in compliance with Administrative Provisions – Technical Building Rules, sequential no. C 3.30

Client: Schomburg GmbH & Co.KG
Aquafinstr. 2 - 8
32760 Detmold

Date of First issue 14/08/2019

Issued on: 26/05/2020

Valid until: 25/05/2025

This General Building Code Test Certificate (abP) consists of 7 pages and 4 annexes.

This document is not checked by the test laboratory. The legally binding text is the German original version. This translation may not be used in the German building inspection procedure.

A General provisions

- (1) This General Building Code Test Certificate (abP) attests that the construction product can be used within the meaning of federal state building code regulations.
- (2) The General Building Code Test Certificate (abP) does not replace any of the building permits, approvals and certificates required by law for the performance of building projects.
- (3) The General Building Code Test Certificate (abP) is granted without prejudice to the rights of third parties, in particular private property rights.
- (4) Producers and distributors of the construction product shall, without prejudice to any additional regulations set out under the special provisions below, furnish the user of the construction product with copies of the General Building Code Test Certificate (abP), and they shall in addition point out that the General Building Code Test Certificate (abP) must be available at the place of use of the construction product. Copies of the General Building Code Test Certificate (abP) shall be made available to the authorities concerned upon request.
- (5) The General Building Code Test Certificate (abP) may not be copied unless as a complete text. Excerpts of the Certificate may only be published with the prior permission of the Braunschweig Civil Engineering Materials Testing Institute (MPA Braunschweig). The wording of, or drawings used in, advertising brochures must not be in conflict with the contents of the General Building Code Test Certificate. Translations of the General Building Code Test Certificate shall bear the note "translation of the German original not checked by MPA Braunschweig".
- (6) The General Building Code Test Certificate (abP) is subject to revocation. The provisions may be subsequently amended or revised, in particular if and when required as a result of new technical findings.

B Special provisions

1 Test item and field of application

1.1 Test item

This General Building Code Test Certificate (abP) applies to the fabrication and use of the „AQUAFIN-CJ3“ swelling tape in connection with the „AQUAFIN-CA“ adhesive, or the „Montageschiene/Befestigungsgitter“ of Schomburg GmbH & Co.KG for internal sealing of construction joints in structural elements made from concrete with a high water penetration resistance in accordance with Administrative Provisions – Technical Building Rules, sequential no. C 3.30.

The „AQUAFIN-CJ3“ swelling tape is produced in rectangles of 18 mm x 24 mm (width x height).

1.2 Field of application

The swelling tape may be used for the internal sealing of construction joints in structural elements made from concrete with a high water penetration resistance, with a maximum opening width of 0.25 mm, against:

- Ground moisture and non-pressing water
- Pressing water up a maximum water pressure of 1.2 bar (12 m WC) (dimensions 24 mm x 18 mm),

The swelling tape is suited for use in zones of frequently changing water levels. The sealing complies with utilisation-class A requirements for application classes 1 and 2 as set forth in the regulations for watertight structures (WU-Richtlinie)¹.

The swelling tape must be applied as specified in section 4 (Execution). The sealing effect of the tape is based on its ability to swell.

2 Provisions concerning the construction product

2.1 Composition, properties and characteristics

The „AQUAFIN-CJ3“ is a swellable Bentonite- and butyl-rubber-based tape. It comes in rolled lengths of 5 metres. For application of the swelling tape to the hardened concrete, either the „AQUAFIN-CA“ adhesive (supplied in 290-ml cartridges) is used, or the Montageschiene/Befestigungsgitter (metal rail in 1-metre sections).

The construction products have the characteristic values that are shown in table 1 and annexes 1 to 4, which they must comply with.

¹ German committee for RC directive „Wasserundurchlässige Bauwerke aus Beton“ (watertight structures made from concrete), November 2003

The fitness for use of the swelling tape as a sealing means for construction joints in structural elements made from concrete with a high water penetration resistance has been demonstrated in accordance with the test principles for certification with General Building Code Test Certificates (abP) for "joint waterproofing elements in structural elements made from concrete with a high water penetration resistance when in contact with the ground" (PG-FBB, October 2012). Results are documented in Test Reports No. 5065/1111, No. 5123/7614 and No. 5059/394/13 and No. 1200/063/15a issued by MPA Braunschweig.

Construction joints that are sealed with the swelling tape

- provide adequate stability
- are adequately impervious to water
- provide adequate age resistance

for the fields of application mentioned in section 1.2 above.

The construction product fulfils the requirements of fire behaviour class *E* in accordance with DIN EN 13501-1.

2.2 Production, packaging, transport, storage, marking

2.2.1 Production

The construction products are produced industrially.

2.2.2 Packaging, transport, storage

The swelling tape is packed in boxes containing rolls of 5 metres each. The product has to be handled and stored, so the swelling tape, the adhesive and the mounting rail will not be adversely affected in their designed properties. The materials have to be protected against the action of frost and atmospheric influence.

The information provided on the packaging regarding other official requirements must be complied with.

The manufacturer's specifications regarding storage periods shall be complied with. System components that have to be used together must be clearly marked and marketed together.

2.2.3 Marking

2.2.3.1 Conformity mark (Ü mark)

The manufacturer shall mark the construction products with the conformity mark (Ü mark) in compliance with the conformity marking regulations of the federal states. The conformity mark with the required details:

- Name of manufacturer
- Number of the General Building Code Test Certificate (abP)

shall be shown on the packaging or, if this should not be possible, in the package leaflet. This marking may be provided only if the conditions set forth in section 3 below are complied with.

2.2.3.2 Additional details

The following details must be shown on the packaging of the construction product or in package leaflet:

- Product name
- Lot number
- Intended use
- Reference to application requirements

3 Declaration of conformity

3.1 General information

Confirmation that the construction product conforms with the requirements set forth in the present General Building Code Test Certificate (abP) shall be provided for each production plant in the form of a manufacturer's declaration of conformity. This declaration shall be issued on the basis of an initial type test and factory production control (FPC) in accordance with sections 3.2 and 3.3 below. The manufacturer shall declare conformity by marking the construction product with the conformity mark (Ü mark) in accordance with 2.2.3.1.

3.2 Initial type test of the construction product performed by an approved inspection body

An initial type test is not required for the product, if the samples used for testing for purposes of a general type approval were taken from the normal production run in the production plant.

If the conditions under which the product is manufactured should change, the initial type test must be repeated.

3.3 Factory production control (FPC)

DIN 18200 requires that factory production control (FPC) be established for, and be performed in the production plant.

Factory production control must be performed in compliance with the specifications shown in table 1, which reflect the special features of the product and the conditions for producing this product. The requirements made are based on the results of the initial type test.

The results of factory production control must be recorded and evaluated by the manufacturer. The records must at least include the following details:

- Name of the product
- Type of test or inspection
- Date when produced and date of test
- Test results and comparison with requirements
- Signature of person in charge of factory production control

The records must be kept for a minimum of five years and must be presented upon request.

Should testing supply inadequate results, the manufacturer must take immediate action to remedy any deficiencies noted. Non-conforming construction products must be handled so that confusion with conforming and faultless construction products is positively prevented. Once the deficiency has been corrected, the required test must be repeated to the extent that is necessary to prove adequate correction.

Table 1: Type and frequency of tests to be performed as part of factory production control

| Properties | Test conditions | Requirements | Intervals |
|--|--|-----------------------------------|------------------|
| AQUAFIN-CJ3 | | | |
| Inspection of source material | Manufacturer's declaration or suitable tests | No signs of change | Per shipment lot |
| Height Width | - - | nominal measure $\pm 10 \%$ | Per lot |
| Density | DIN EN ISO 1183-1 immersion method | 1.86 g/cm ³ $\pm 3 \%$ | Per lot |
| Swelling capacity (weight gain) | 24 h stored in distilled water | 18 x 24 = 191 M.-% $\pm 10 \%$ | Per lot |
| AQUAFIN-CA mounting adhesive PM | | | |
| Inspection of source material | Manufacturer's declaration or suitable tests | No signs of change | Per shipment lot |
| Density | DIN EN ISO 1183-1 immersion method | 1.52 g/cm ³ $\pm 3 \%$ | Per lot |
| Infrared spectrum | See annex 3 | No signs of change | Per lot |
| Montageschiene/Befestigungsgitter | | | |
| Width | - | 26.9 mm $\pm 5 \%$ | Per lot |
| Hole centre distance | - | 20.2 mm $\pm 5 \%$ | Per lot |
| Weight | - | 197.5 g/m $\pm 3 \%$ | Per lot |

4 Execution

Product details are shown in annex 5 and must be complied with.

In the joint region, the concrete surface must be dry, plane and clean, and it must be free from loose material, cement slurry and release agents. The swellable tape must always be glued to the concrete surface with the AQUAFIN-CA or the Montageschiene/Befestigungsgitter. The swelling tape has to be checked for perfect fit and premature swelling immediately before placing the concrete.

5 Legal basis

This General Building Code Test Certificate (abP) is issued on the basis of article 19 of the building code of Lower Saxony (NbauO) in conjunction with Administrative Provisions – Technical Building Rules, sequential no. C 3.30.

6 Legal remedy

This General Building Code Test Certificate (abP) is subject to objection. Objections must be lodged in writing or stated orally on the record of the management of Materialprüfanstalt für das Bauwesen, Beethovenstraße 52, 38106 Braunschweig within a period of one month after it has been issued. The date on which the Testing Laboratory receives the notice of objection shall decide on whether the objection was made timely.

i. A.

Dr.-Ing. K. Herrmann
Head of Testing Laboratory

M. Pankalla
Engineer/official in charge

Properties of AQUAFIN-CJ 3

- Appearance: black, coated, dimensionally stable, homogeneous
- Density (DIN 53479): 1.86 g/cm³
- Weight loss: 37.9 wt %
(TGA, 25° C to 900° C)
- Swelling capacity after
(gain in weight)
 - Ca(OH)₂ storage (pH 12.5):
 - 1 d = 10 wt %
 - 2 d = 137 wt %
 - 11 d = 172 wt %
 - Stored in H₂SO₄ (pH 4):
 - 1 d = 92 wt %
 - 2 d = 174 wt %
 - 7 d = 224 wt %
 - Stored in water (demin.):
 - 1 d = 225 wt %
 - 2 d = 327 wt %
 - 10 d = 428 wt %
- Swelling pressure: 0.5 N/mm²
- IR spectrum and TGA: see annexes 2 and 4
- Flammability: DIN EN 13501-1

Properties of AUQAFIN-CA adhesive

- Appearance: grey, tacky, soft, homogeneous
- Density (DIN ISO 1183-1): 1.52 g/cm³
- IR spectrum: see annex 3

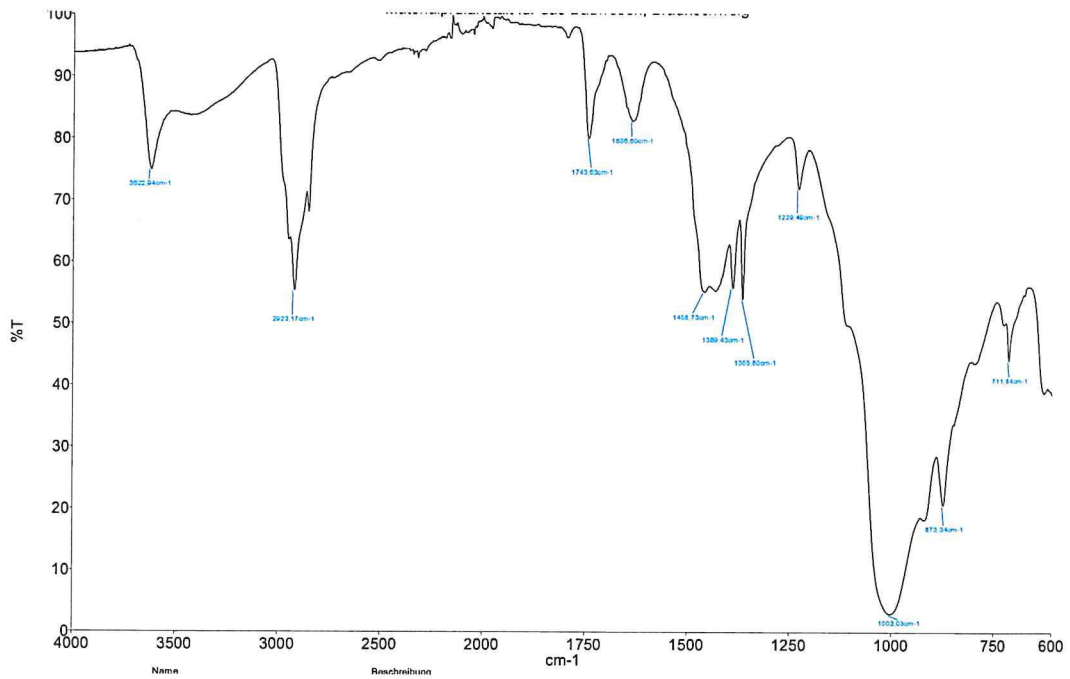
Properties of Montageschiene/Befestigungsgitter (steel rail)

- Dimensions: 1,000 mm thick, 26.9 mm wide
- Hole diameter: 4.8 mm
- Hole centre distance: 20 mm
- Weight: 197.5 g/m

IR-spectrum

AQUAFIN-CJ 3 swelling tape

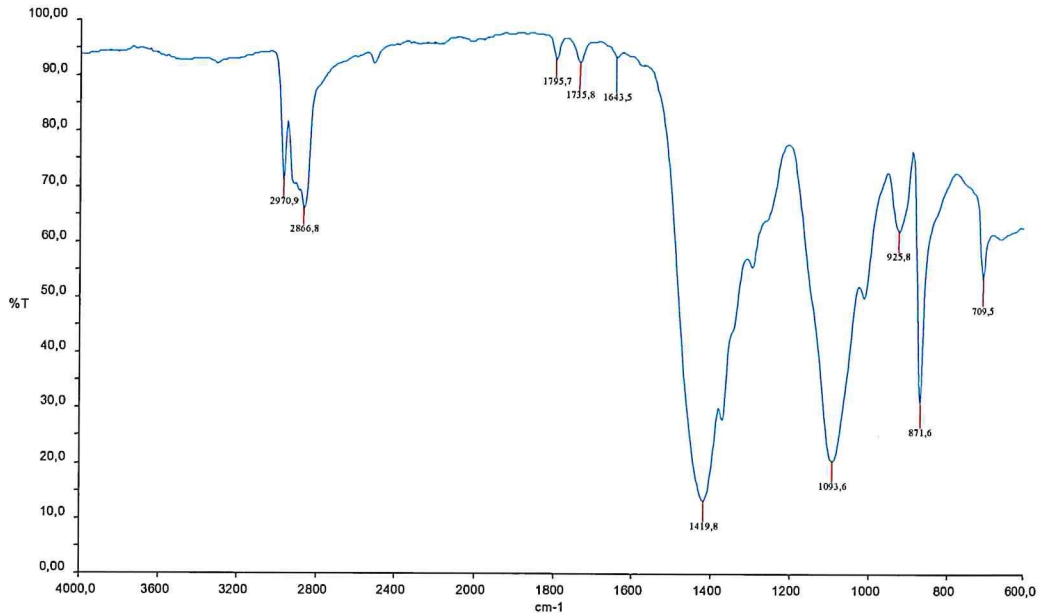
The IR analyses were made with a Perkin-Elmer FTIR unit of the type Spectrum 2000 Explorer, wave number range 4,000 cm⁻¹ to 600 cm⁻¹. The layer thickness was selected, so the DIN 51451 requirements respecting extinction ratios are complied with.



IR-spectrum

AQUAFIN-CA adhesive

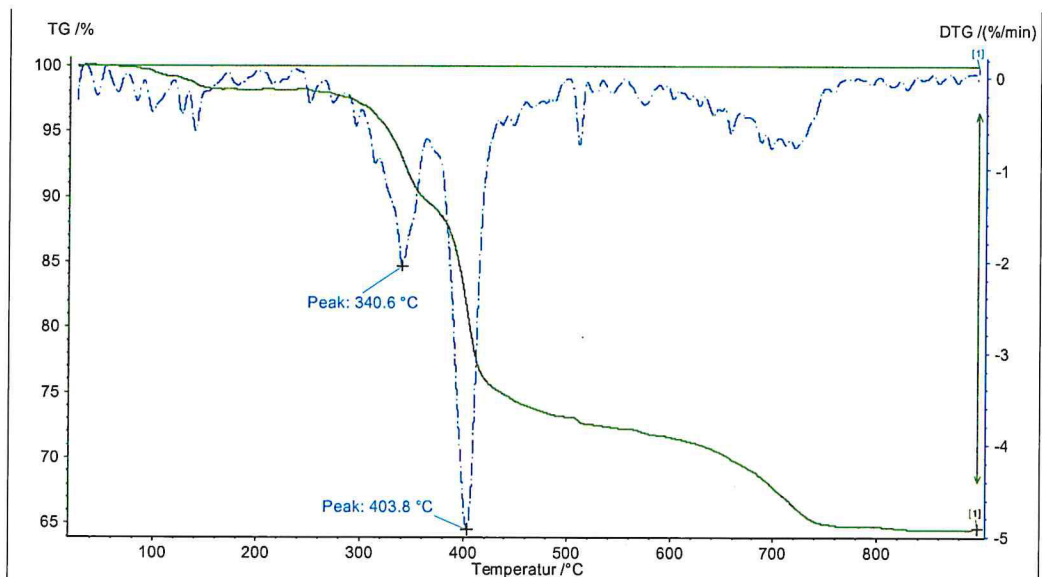
The infrared spectrum was recorded (pyrolysis) within a wave number range of 4,000 cm⁻¹ to 600 cm⁻¹. The layer thickness was selected, so the DIN 51451 requirements respecting extinction ratios are complied with.



Thermogravimetric analysis

AQUAFIN-CJ 3 swelling tape

The thermogravimetric analysis was made on the basis of ISO 7111. The heating rate was 20 K/minute. Measurements were made with a TA 3000 thermoanalyzing station in a nitrogen atmosphere. The weight loss was determined at temperatures between 25° C and 900° C.



Instructions for installation

- The AQUAFIN-CJ 3 swelling tape has to be stored in a dry place and left in its original packaging until it is used.
- The base material must be dry, plane and it must have been freed from loose material, cement slurry and release agents.
- To prevent underflow, the swelling tape has to be glued to the base material with the AQUAFIN-CA adhesive applied to its full face, or fixed with the Montageschiene/Befestigungsgitter and the required steel nails / nail plugs (max. spacing: 35 cm). The processing instructions (technical data sheets) for the adhesives must be complied with.
- The swelling tape is placed in the middle of the joint, leaving a space of about 8 cm both at the inner and the outer reinforcement. In members of a relatively large thickness, the swelling tape can be installed within $1/3 d$ to $1/2 d$ of the member thickness d (with respect to the exposed side).
- In joint areas, ends are abutted and firmly pressed together.
- The swelling tape has to be checked for perfect fit and premature swelling before placing the concrete.

Due regard must be given to the regulations in DIN EN 1992, DIN 1045, the regulations for watertight structures (WU-Richtlinie), and DBV codes of practice (DBV-Merkblätter) in designing and providing joints.