

General Building Authority Test Certificate

Test certificate number: P-5147/5783 MPA-BS

Object: RubberElast sealing tape
for use as a sealing tape for joints between precast concrete elements with a high water penetration resistance in accordance with the General Administrative Regulation, Technical Building Provisions, seq. no. C 3.30

Applicant: B.T. innovation GmbH
Sudenburger Wuhne 60
D-39116 Magdeburg

Date of first issue: 27/01/2004

Date of issue: 06/05/2019

Valid until: 05/05/2024

This General Building Authority Test Certificate comprises 6 pages and 4 appendices

*certified as true translation
of the original*
PTS GmbH
1A, rue de la Laiterie
L-9910 Troisvierges
[Signature]

A General provisions

- (1) With this General Building Authority Test Certificate the usability of the construction product is verified within the meaning of the State Building Regulations.
- (2) The General Building Authority Test Certificate does not replace the legally prescribed approvals, permits and certificates required for the execution of construction projects.
- (3) The General Building Authority Test Certificate is issued without prejudice to third-party rights and in particular private property rights.
- (4) Notwithstanding further regulations in the "Special provisions", the manufacturer and distributor of the construction product must provide the user of the construction product with copies of the General Building Authority Test Certificate and stipulate that the General Building Authority Test Certificate must be available at the place of use of the product. The authorities involved must be provided on request with copies of the General Building Authority Test Certificate.
- (5) The General Building Authority Test Certificate may only be duplicated in its entirety. The publication of extracts requires the consent of the Materialprüfanstalt für das Bauwesen, Braunschweig (MPA-Braunschweig) [Materials Testing Institute for the Construction Industry, Braunschweig]. Texts and drawings in advertising materials may not contradict the General Building Authority Test Certificate. Translations of the General Building Authority Test Certificate must contain the note "Translation of the German original edition – not checked by the MPA Braunschweig".
- (6) The General Building Authority Test Certificate is revocably issued. The provisions can subsequently be supplemented and amended, in particular if necessitated by new technical findings.

certified as true translation
of the original
PTS GmbH
1A, rue de la Laiterie
L-9910 Troisvierges
www.pts.lu

B Special provisions

1 Object and area of use

1.1 Object

The General Building Authority Test Certificate applies to the manufacture and use of the RubberElast sealing tape from B.T. innovation GmbH.

The RubberElast sealing tape is a sealing tape manufactured on the basis of a butyl rubber. The sealing tape is manufactured with the cross-sectional dimensions 17 mm x 17 mm, 22 mm x 22 mm, 25 mm x 19 mm, 32 mm x 25 mm, 37 mm x 28 mm, 38 mm x 32 mm, 46 mm x 40 mm and 48 mm x 42 mm (in each case width x height).

1.2 Area of use

The normally inflammable sealing tape is governed by the General Administrative Regulation, Technical Building Provisions, seq. no. C 3.30 and serves to seal joints between precast concrete elements with a high water penetration resistance. The sealing tape may be used for the following areas:

- pressing water up to a maximum water pressure of 0.5 bar (5 m water column)
- Ground moisture and non-pressing water.

The sealing tape is generally to be installed in accordance with the details in 4 (Execution).


The seal is based on the adhesion to concrete and necessitates the compression of the RubberElast sealing tape situated between the hardened concrete surfaces to a height of $\leq 20\%$ of the initial height ($\geq 80\%$ compression).

2 Provisions for the construction product

2.1 Parameters and properties

The construction product has the properties listed in appendices 1 and 2. The usability of the sealing tape was verified through component tests carried out at the MPA Braunschweig after compression of the sealing tape (80 % compression) and subsequent widening of the joint by 0.25 mm as well as additional horizontal shifting of the joint by 3 mm (cross section, 17 mm x 17 mm) or 7 mm (cross sections 37 mm x 28 mm and 38 mm x 32 mm) (see examination reports no. 5147/5783 of 26/01/2004 and 1200/142/15 of 25/07/2016). The verification of the usability was supplemented by component tests in which the sealing tape (cross section 38 mm x 32 mm) was compressed to 50 %, then laterally shifted by 25.6 mm, subsequently compressed to 20 % of the initial height (80 % compression) and finally widened by 0.25 mm and fixed (examination report no.1200/954/17 of 28/02/2018). The test programme was orientated to the specifications of the working group "Issuing of General Building Authority Test Certificates for products in accordance with the General Administrative Regulation, Technical Building Provisions, seq. no. C 3.30" at the German Institute of Building Technology (DIBt) in Berlin.

*certified as true translation
of the original
PTS GmbH
1A, rue de la Laiterie
L-9910 Troisvierges
www.pts.lu*



2.2 Packaging, transport, storage and marking

- (1) The sealing tape, which is provided on one side with protective backing paper, is packed in cartons. The construction product must be transported and stored in such a way that it is neither deformed nor damaged, is protected against frost and is not exposed to constant sunlight.
- (2) The details given on the packaging regarding requirements from other legal areas must be observed.
- (3) The manufacturer's specifications for the duration of storage must be observed. System components that belong together must be clearly marked and distributed together.

2.3 Conformity mark

- (1) The manufacturer must mark the construction products with the conformity mark (Ü-mark) in accordance with the conformity mark regulations of the States. The conformity mark with the details prescribed there:
 - name of the manufacturer
 - number of the General Building Authority Test Certificate

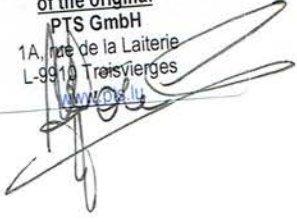
must be applied to the packaging or, if that is not possible, to the information leaflet. The mark may only be applied if the requirements according to section 3 are fulfilled.

- (2) The following information must be shown on the packaging of the construction product or the information leaflet.
 - Product name
 - Batch number
 - Intended use
 - Information about the associated processing specification

3 Verification of conformity

(1) General

In accordance with the General Administrative Regulation, Technical Building Provisions, seq. no. C 3.30, the conformity of the construction product to the requirements of this General Building Authority Test Certificate is verified through a declaration of conformity by the manufacturer on the basis of a factory production control (FPC) and testing of the product by a recognised testing body prior to confirmation of the conformity (initial testing).

certified as true translation
of the original
PTS GmbH
1A, rue de la Laiterie
L-9913 Troisvierges


(2) Initial testing of the construction product by a recognised testing body

Within the scope of the initial testing, the tests of the parameters are to be carried out in accordance with table 1. The test values may thereby deviate from the reference values at the most by the tolerances specified there.

The initial testing of the product can be omitted if the samples for the tests within the scope of the proof of usability were taken from the running production of the manufacturing plant.

A new initial test must be carried out if the production requirements change.

(3) Factory production control (FPC)

A factory production control (FPC) in accordance with DIN 18200 is to be set up and implemented in the manufacturing plant.

The factory production control must take place in accordance with the provisions listed in table 1, adapted to the product and its manufacturing conditions. The requirements are based on the results of the basic testing.

The results of the FPC are recorded and evaluated by the manufacturer. The recordings must contain at least the following information:

- Designation of the product
- Method of monitoring
- Date of manufacture and of testing
- Result of the monitoring and comparison with the requirements
- Signature of the person responsible for the FPC

The recordings must be archived for at least five years and are to be presented on demand.

If the monitoring results are unsatisfactory, the manufacturer must immediately take the necessary actions to rectify the defect. Construction products that do not meet the requirements must be handled in such a way that they cannot be mistaken for conformant, defect-free construction products. After rectification of the defect, the test concerned is repeated if necessary to verify the elimination of the defect.

Table 1: Method and frequency of the tests to be carried out within the scope of the FPC

Properties	Test conditions	Requirements	Frequency
Geometry	-	Height $\pm 10\%$ of the nominal size Width $\pm 10\%$ of the nominal size	per batch
Density	DIN 53479	1.299 g/cm ³ $\pm 2\%$	per batch
Thermogravimetric analysis	see appendix 2	no indication of changes Loss of mass: 57.3 % by mass $\pm 3\%$:	per batch
Infrared spectrum	EN 1767 and DIN 51451	No indication of changes in the composition (appendix 2)	per batch
Compressive strength	see examination report 5147/5783	1.39 N/mm ² $\pm 5\%$	1x per year
Adhesive tensile strength on concrete (23/50)	see examination report no. 5147/5783	≥ 60 kPa	1x per year

certified as true translation
of the original
PTS GmbH
1A, rue de la Laiterie
L-9910 Treisvierges
www.pts.lu

4 Execution

The manufacturer's installation instructions apply to the execution and installation work (Appendices 3 and 4).

Particular care must be taken to ensure that the structural elements to be sealed are even and that the sealing tape is compressed to a height of $\leq 20\%$ of the initial height ($\geq 80\%$ compression).

5 Legal basis

This General Building Authority Test Certificate is issued on the basis of § 19 of the Building Regulations of Lower Saxony (NBauO) in conjunction with the General Administrative Regulation, Technical Building Provisions, seq. no. C 3.30.

6 Information on legal remedies

An objection to this General Building Authority Test Certificate can be raised within one month of its issue. The objection is to be submitted in writing or declared for the record to the management of the MPA, Beethovenstraße 52, 38106 Braunschweig. Decisive for the timeliness of the objection is the time of receipt of the letter of objection by the testing body.

p.p.



Dr.-Ing. K. Herrmann
Head of testing body



p.p.



M. Pankalla
Case handler

certified as true translation
of the original

PTS GmbH
1A rue de la Laiterie
L 9910 Troisvierges



Properties of the RubberElast sealing tape

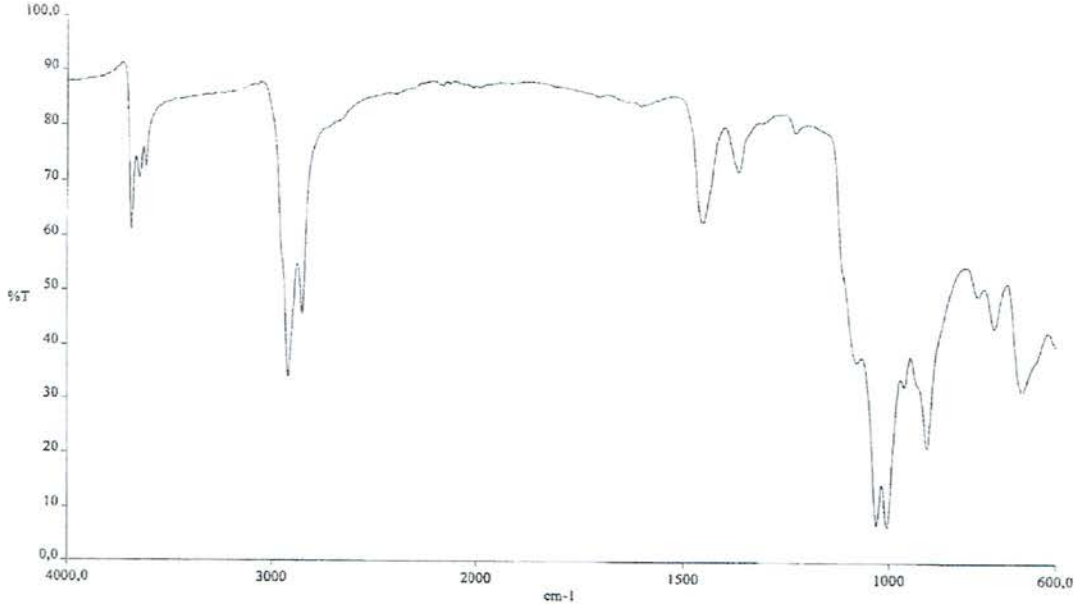
- External properties: Black, ductile, homogeneous
- Density (DIN 53479): 1.299 g/cm³
- Loss of mass: 57.4 % by mass
 (TGA, 25 °C to 1000 °C)
- Behaviour after
 - Storage in dist. water for 28 d: Mass increase 0.45 % by mass; free of tears and bubbles
 - Storage in Ca(OH)₂ for 28 d: Mass increase 0.39 % by mass; free of tears and bubbles
 - Storage in sulphuric acid (20 %) for 28 d: Mass increase 0.64 % by mass; free of tears and bubbles
- Behaviour in adhesive strength test on concrete

	Adhesive tensile strength	Elongation at adhesive tensile strength
- Delivery condition (23/50):	74 kPa	9.6 %
- Storage in water for 14 d:	56 kPa	13.3 %
- Storage at 8 °C:	120 kPa	16.4 %
- Compressive strength at 80 % compression: 1.39 N/mm²

certified as true translation
of the original
 PTS GmbH
 1A, rue de la Laiterie
 L 9910 Troisvierges

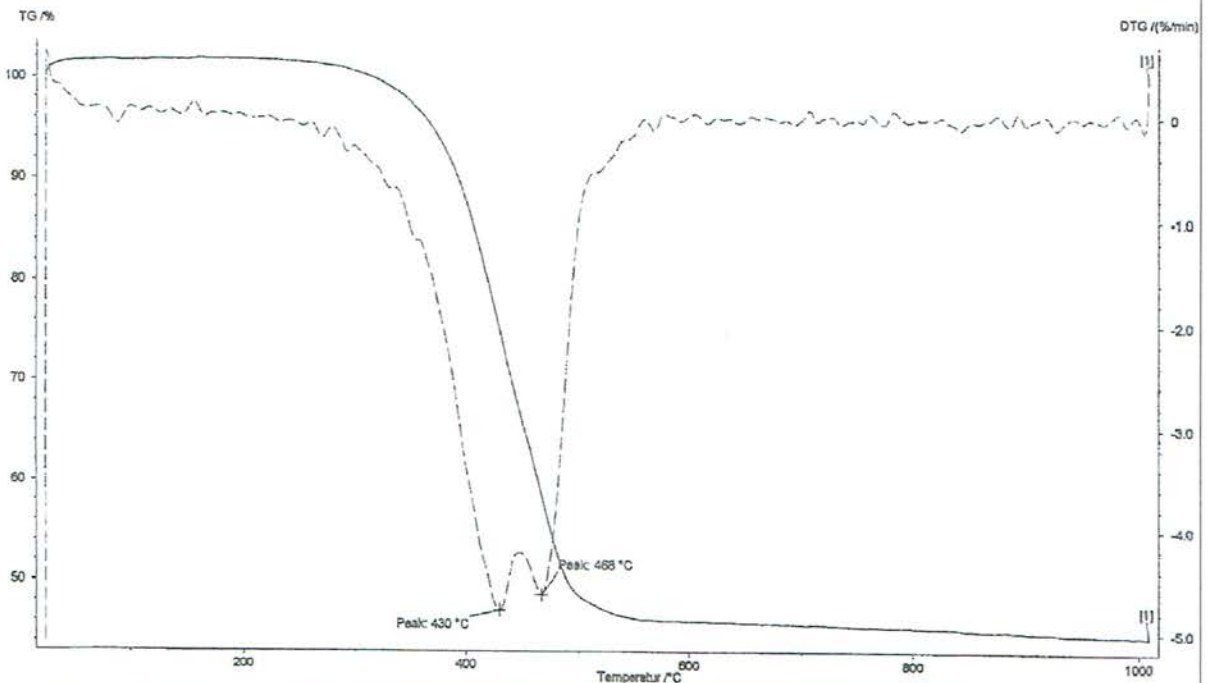

IR spectrum

The recording of the infrared spectrum took place without further pretreatment with the aid of the Golden Gate single reflection ATR unit on a Perkin-Elmer FTIR device of the type Spectrum 2000 Explorer in the wave number range from 4000 cm^{-1} to 600 cm^{-1} . The layer thickness was selected such that the requirements contained in DIN 51 451 regarding the extinction ratios are met.



Thermogravimetric analysis

The thermogravimetric analysis took place on the basis of EN ISO 11358. The heating rate was 10 K/min. The measurement took place with a thermoanalysis station under a nitrogen atmosphere. The loss of mass was determined in the temperature range from 25 to 1000 °C.



RubberElast – installation instructions

1. Installation only on cured concrete parts.
2. In the joint area the concrete surface must be dry, clean and free of cement paste, dust, release agent, post-treatment agents and other adhesion reducers in order to achieve optimum adhesion of the RubberElast sealing material.
3. Place the RubberElast sealing tape centrally on the surface to be joined with the protective backing paper facing upwards and press on forcefully over the entire length in order to avoid the shifting of the seal when placing the next component.
4. The joint area must be implemented as follows:
The two ends must be cut at an angle (30° - 45°) so that they are connected on top of each other after pressing together before they are pressed onto the component.
5. Immediately before placing the next component, the protective backing paper must be removed and a check must be carried out to ensure that the RubberElast sealing strip is fixed firmly and immovably in the desired place.
6. In order to achieve the optimum sealing effect, care must be taken that the material has been compressed to $\leq 20\%$ of its original height before the joint is loaded.

Product	Nominal size			Height when compressed by 80 %
	Width	Height	Length	
RubberElast 17x17	17 mm	17 mm	4.5 m	3.4 mm
RubberElast 25x19	25 mm	19 mm	4.4 m	3.8 mm
RubberElast 22x22	22 mm	22 mm	4.4 m	4.4 mm
RubberElast 32x25	32 mm	25 mm	4.4 m	5.0 mm
RubberElast 37x28	37 mm	28 mm	3.2 m	5.6 mm
RubberElast 38x32	38 mm	32 mm	3.2 m	6.4 mm
RubberElast 46x40	46 mm	40 mm	2.25 m	8.0 mm
RubberElast 48x42	48 mm	42 mm	2.25 m	8.4 mm

Supplementary assembly instructions for precast walls and complex components

1. Install RubberElast on floors and wall surfaces as described above.
2. Pre-position the next component, for instance suspended on the crane. Protect existing components with RubberElast (e.g. with wooden laths) so that the new component can cease swinging.
3. Remove the protective backing paper and begin with the assembly of the components. Initially, reduce the width of the joint only so that the compression of the RubberElast is around 50 %.

certified as true translation
of the original
PTS GmbH
1A rue de la Laiterie
L-9910, Troisvierges
www.pts.lu



4. Lower and reduce the width of the joint with the already existing components so that the new component / precast wall slides slowly, for example into corners, and the compression of 80 % is reached only at the end of the positioning.

Further instructions:

1. Storage: Do not expose RubberElast to high temperatures or direct sunlight for long periods.
2. Stacking height: A maximum of five original cartons may be stacked on top of one another.
3. When installing in wet conditions, the concrete must be kept dry in order to achieve the appropriate adhesive forces.

certified as true translation
of the original

PTS GmbH

1A, rue de la Laiterie
L-9910 Troisvierges

www.pts.lu

