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Institut für Baustoffe, Massivbau und Brandschutz | Materialprüfanstalt für das Bauwesen

General building authority test certificate

-Translation-

Test certificate number:	P-1200/009/15 MPA-BS
Subject:	ProElast film in conjunction with InnoElast Type I or InnoElast Type II adhesives for use as an exterior, strip-type joint sealing in concrete components with a high resistance to water penetration against pressing and non-pressing water and against ground moisture in accordance with the Administrative Provisions – Technical Building Rules, sequential no C 3.30
Applicant:	B.T. innovation GmbH Sudenburger Wuhne 60 39116 Magdeburg, Germany
Date of first issue:	17/11/2015
Issue date:	12/11/2020
Valid until:	11/11/2025

This general building authority test certificate consists of 7 pages and 4 annexes.

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

A General provisions

(1) This general building authority test certificate demonstrates the usability of the construction product as defined by the German State Building Codes.

(2) The general building authority test certificate does not replace the permits, approvals and certificates required by law for the execution of construction projects.

(3) The general building authority test certificate is granted without prejudice to the rights of third parties, including, but not limited to, private intellectual property rights.

(4) Without prejudice to any further regulations under the "Special provisions" section, manufacturers and distributors of the construction product must provide the user of the construction product with copies of the general building authority test certificate and point out that the general building authority test certificate must be available at the application site. On request, copies of the general building authority test certificate shall be made available to the authorities concerned.

(5) The general building authority test certificate may only be reproduced in full. Publication of excerpts requires the consent of the Braunschweig Civil Engineering Materials Testing Institute (MPA Braunschweig). Texts and drawings of advertising material must not contradict the general building authority test certificate. Translations of the general building authority test certificate must bear the following notice: “This translation of the German original document has not been checked by the MPA Braunschweig”.

(6) The general building authority test certificate may be revoked at any time. The provisions may be supplemented or amended subsequently, especially if this is required due to new technical knowledge.

B Special provisions

1 Subject and field of application

1.1 Subject

This general building authority test certificate applies to the production and application of the ProElast film in conjunction with the InnoElast Type I adhesive or the InnoElast Type II adhesive as an exterior, strip-type waterproofing for joint seals in concrete components with a high resistance to water penetration in areas in contact with the ground in accordance with the Administrative Provisions – Technical Building Rules, sequential no C 3.30.

The ProElast film is an EPDM waterproofing sheet that is produced in a width of 300 mm and a thickness of 1.0 mm or 1.5 mm. The InnoElast Type I adhesive and InnoElast Type II adhesive are single-component polyurethane-based adhesives.

1.2 Field of application

ProElast film in conjunction with InnoElast Type I or InnoElast Type II adhesives may be used for the exterior, strip-type waterproofing for construction joints, controlled crack joints in precast walls and controlled crack cross-sections in cast-in-place concrete constructions in concrete components with a high resistance to water penetration, with a maximum opening width of 1.0 mm against:

- Ground moisture and non-pressing water
- Pressing water up to a maximum water pressure of 2 bar (20 m water column).

The sealing system is suitable for water exchange areas. The sealing system fulfils the requirements of use class A for wear class 1 and 2 in accordance with the German directive for water impermeable concrete structures (WU-Richtlinie)[1].

The sealing system shall always be installed in accordance with the specifications under 4 (Execution).

2 Provisions for the construction product

2.1 Characteristics and properties

The construction products have the characteristics listed in Table 1 and Annexes 1 and 2 and shall correspond to same.

The verification of the suitability for use of the sealing system was verified though in-house tests at the Braunschweig Civil Engineering Materials Testing Institute (see Assessment Reports No. 1200/010/15, No. 1200/284/15, No. 2300/299/15 and No. 1201/426/18). The test program corresponded to the testing principles for the granting of general building authority test certificates for joint sealing systems for concrete components with a high resistance to water penetration in the area in contact with the ground (PG-FBB), Part 1, last updated September 2017.

The joints sealed using the sealing system are sufficient for the fields of application listed under Section 1.2

[1] German Committee for Reinforced Concrete Directive "Water impermeable concrete structures" Issue June 2017

- stable
- adhesive
- water-impermeable
- resistant to ageing

The construction product meets the requirements of construction material class E in accordance with DIN EN 13501-1.

2.2 Manufacture, packaging, transport, storage and marking

2.2.1 Manufacture

The construction products are factory-produced.

2.2.2 Packaging, transport and storage

The components are packaged using film and cardboard boxes. Transport and storage must ensure that the construction product's mode of action is unaffected. The specifications of the manufacturer must be observed.

The information provided on the packaging in relation to requirements arising from other legal areas must be observed.

2.2.3 Markings

2.2.3.1 National conformity mark (Ü-Zeichen)

The construction products must be marked with the national conformity mark (Ü-Zeichen) by the manufacturer in accordance with the Conformity Marking Ordinance of the federal states. The national conformity mark (Ü-Zeichen) with the information prescribed there:

- Name of manufacturer
- Numbers of the general building authority test certificates

are to be applied to the packaging or, if this is not possible, to the packing slip. The mark may only be applied if the requirements in accordance with Section 3 are fulfilled.

2.2.3.2 Additional information

The following information must be included on the packaging of the construction product or the packing slip:

- Product name
- Batch number
- Intended use
- Reference to the associated processing regulations

3 Attestation of conformity

3.1 General details

Conformity of the construction product with the provisions of this general building authority test certificate must be provided for every manufacturing plant with a declaration of conformity by the manufacturer on the basis of the initial test and the factory production control in accordance with 3.2 and 3.3. The declaration of conformity shall be provided by the manufacturer by labelling the construction product with the conformity marking ("Ü-Zeichen") in accordance with 2.2.3.1.

3.2 Initial test of the construction product by a recognised testing centre

As part of the initial test, the tests of the characteristic values in accordance with Table 1 shall be carried out. The test values may not deviate from the reference values by more than the tolerances specified there.

The initial test of the product can be omitted, if the samples for the tests were taken from current production of the manufacturing plant as part of the usability certification.

If there are changes to the production conditions, a new initial test must be carried out.

3.3 Factory production control

A factory production control system shall be set up and implemented in the manufacturing plant in accordance with DIN 18200.

The factory production control shall be carried out in accordance with the provisions of the specifications listed in Table 1, adapted to the product and its production conditions. The specified requirements are based on the results of the basic test.

The results from the factory production control are recorded and evaluated by the manufacturer. The records shall at least include the following information:

- Product designation
- Type of monitoring
- Date of manufacture and test
- Result of monitoring and comparison with requirements
- Signature of the person responsible for factory production control

The records shall be kept for at least five years and shall be submitted on request.

If the monitoring results are unsatisfactory, the manufacturer shall immediately take the necessary measures to remedy the defect. Construction products which do not meet the requirements shall be handled in such a manner that they cannot be mixed up with compliant products which are free from defects. After the defect has been remedied, the respective test shall be repeated, if this is required to verify that the defect has been eliminated.

Table 1: Type and frequency of the tests to be carried out as part of the factory production control

Properties	Test conditions	Requirements	Frequency
ProElast film			
Check of source materials	Manufacturer's declarations or suitable tests	no indication of changes	per batch supplied
Geometry	EN 1850-2	Dimensions Thickness 1.0 mm ± 0.05 mm or Thickness 1.5 mm ± 0.075 mm, Width 300 mm ± 9 mm	per batch
Mass	EN 1850-2	Thickness 1 mm = 1,115 g/m² ± 3% or Thickness 1.5 mm = 1,805 g/m² ± 3%	per batch
Tensile properties	Test report 1200/284/15 and 1201/426/18	Tensile strength (see Annex 1) ± 10% Elongation at break (see Annex 1) ± 10%	per batch
Shear resistance of the joint seam	EN 12317-2	≥ 175 N/50 mm	2x per year
InnoElast Type I adhesive and InnoElast Type II adhesive			
Check of source materials	Manufacturer's declarations or suitable tests	no indication of changes	per batch supplied
Infrared spectrum	see Annex 2	no indication of changes	2x per year
Non-volatile matter content	Test report 1200/010/15	99.0% ± 3% (InnoElast Type I) 98.6% ± 3% (InnoElast Type II)	2x per year
Density	DIN EN ISO 1183-1, dipping method	1.46 g/cm³ ± 3% (InnoElast Type I) 1.50 g/cm³ ± 3% (InnoElast Type II)	per batch
Adhesion to concrete	Test report 1200/010/15 Climate 23/50-2	≥ 0.5 N/mm²	2x per year

4 Implementation

In the joint area, the concrete surface shall be dry or slightly damp, level, clean and free from loose parts, cement slurries and separating agents. The waterproofing sheet must be affixed so that the joints are covered by a 15 cm overlap on both sides. Joints are completely glued with a ≥ 10 cm overlap.

The surface must not be exposed to water until the adhesive has gone through the curing phase.

Product information and manufacturer specifications on implementation are contained in Annexes 3 and 4 and shall be observed.

5 Legal basis

This general building authority test certificate is granted on the basis of Article 19 of the Lower Saxony Building Code (NBauO) in conjunction with the with the Administrative Provisions – Technical Building Rules, sequential no C 3.30.

6 Legal remedies

An objection can be raised against this general building authority test certificate within one month of issue. The objection must be filed in writing or for the record with the management of the Civil Engineering Materials Testing Institute, Beethovenstraße 52, 38106 Braunschweig, Germany. The date of receipt of the notice of objection at the testing centre shall be decisive when determining whether the objection has been made in due time.

i. A.

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

M. Pankalla
Engineer/Official in Charge

Properties of the ProElast film

- Thickness: 1.0 mm and 1.5 mm
- Width: 300 mm
- Mass: 1,115 g/m² and 1,805 g/m²
- Watertight: watertight up to 0.6 bar (DIN EN 1928, slot pressure, procedure A)
- Resistance to ageing (12 weeks 70 °C): watertight up to 0.6 bar (DIN EN 1928, slot pressure, procedure A)
- Durability against chemicals (16 weeks alkaline solution): watertight up to 0.6 bar (DIN EN 1928, slot pressure, procedure A)
- Resistance to static loads (15 kg): watertight (DIN EN 12730, substrate: concrete)
- Tensile properties:

Maximum tensile force	Expansion under maximum tensile force
Thickness 1 mm	
across x = 390 N/50 mm	across x = 503%
lengthwise x = 403 N/50 mm	lengthwise x = 455%
Thickness 1.5 mm	
across x = 503 N/50 mm	across x = 554%
lengthwise x = 535 N/50 mm	lengthwise x = 531%

Properties of InnoElast Type I and InnoElast Type II adhesive

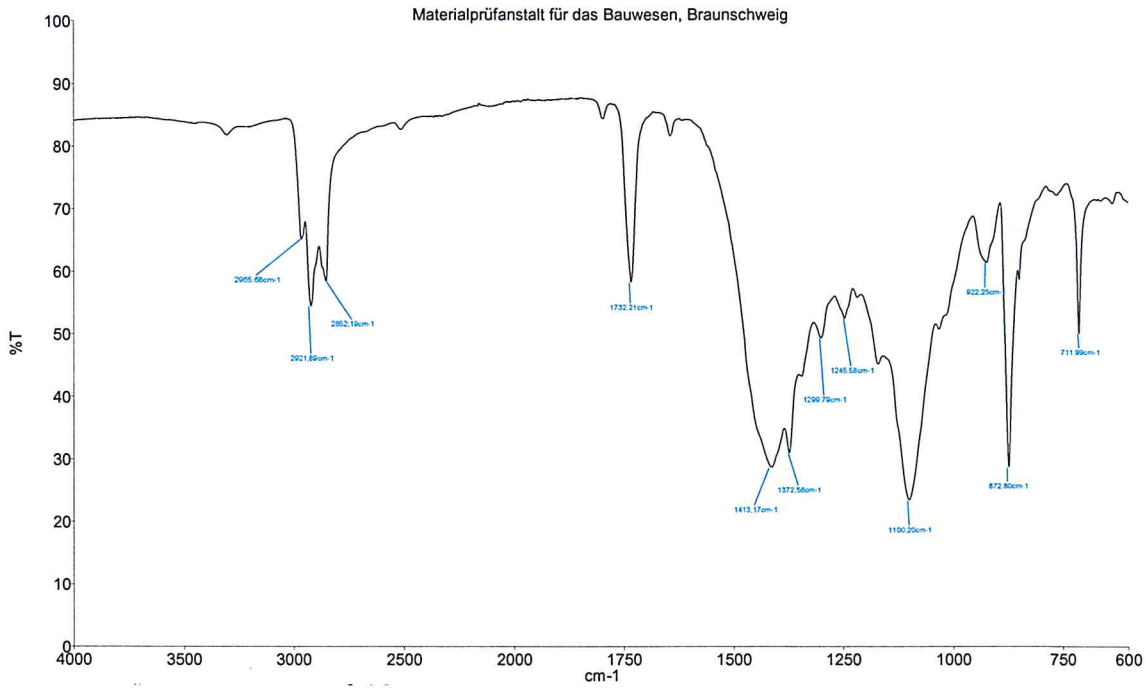
- Colour: InnoElast Type I: concrete grey; InnoElast Type II: black
- Consistency: pasty, homogeneous
- IR spectrum: see Annex 2
- Tensile properties after storage (Alkaline resistance):

	InnoElast Type I		InnoElast Type II	
	Tensile strength	Elongation at max. tens. str.	Tensile strength	Elongation at max. tens. str.
Standard climate	0.46 N/mm²	372%	1.75 N/mm²	284%
demineralised water	0.34 N/mm²	663%	1.11 N/mm²	402%
alkaline liquid (ETAG 004)	0.34 N/mm²	596%	1.21 N/mm²	495%

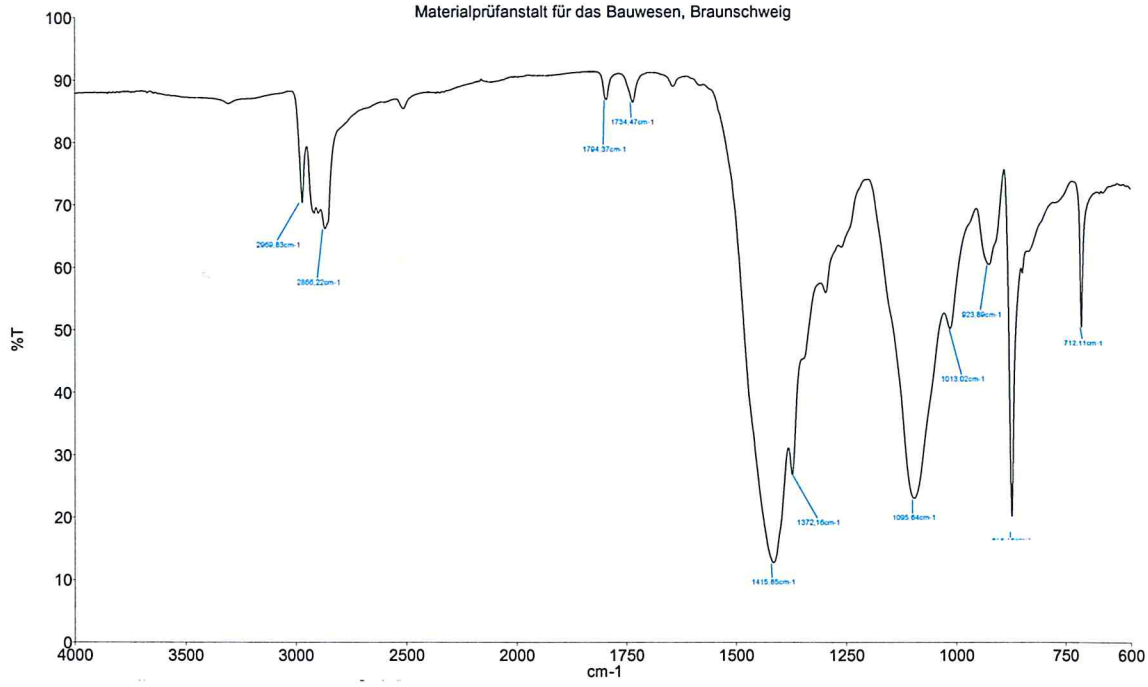
- Adhesion on concrete in conjunction with the waterproofing sheet:

	Adhesive strength	
	InnoElast Type I	InnoElast Type II
7 d climate 23/50	0.51 N/mm²	0.68 N/mm²
56 d climate 23/50	0.60 N/mm²	0.86 N/mm²

IR spectrum **InnoElast Type I**



IR spectrum **InnoElast Type II**



The infrared spectra were recorded in a wave number range between 4,000 cm^{-1} and 600 cm^{-1}. The coating thicknesses were selected to comply with the requirements of DIN 51451 in relation to the extinction ratios.

Manufacturer's processing instructions

- *ProElast® system*

Properties:

The ProElast® system is a proprietary system for the sealing of construction joints and controlled crack cross-sections against ground moisture, non-pressing water, intermittent standing seepage water and pressing water. It consists of the following components:

- *ProElast®* film (EPDM waterproofing sheet)
- *InnoElast® Type I* or *InnoElast® Type II* (joint and surface adhesive)

The *ProElast® system* has a general building authority test certificate as proof of usability for the above mentioned applications. Mechanical fastening (clamping rails/flanges) of the edges is not required.

Technical data:

For the technical data of individual components, please refer to the relevant technical data sheets.

Processing:

Substrate preparations:

The substrate to be sealed must provide load-bearing capacity and must be free from grease and dust. It must not chalk or flake. Any cement skin, protruding burrs, contaminants and existing coatings must be removed. The substrate may be prepared by blasting with high-pressure water. If formwork release oil cannot be removed completely, the substrate must be pre-treated. There are no special requirements for substrate moisture. The *InnoElast® Type I* or *InnoElast® Type II* adhesives may be applied to both dry and slightly damp substrates (matt sheen surface without shiny film of water, pores not saturated with water). Wet, saturated substrates must be dried before applying the adhesive. Required fillets and curved areas in corners must be carried out with system-compatible repair mortars. Edges must be chamfered to prevent damaging the *ProElast® film.* Gravel pockets, cavities or other imperfections must be filled flush with a system-compatible repair mortar before application of the sealing system.

Order:

- **Sealing of construction joints and controlled crack cross-sections**

When using 600 ml tubular bags, the *InnoElast® Type I* or *InnoElast® Type II* adhesive is applied to the cleaned substrate in tracks of approx. 15 mm using a *hand press*. When using tin buckets, the surface adhesive is taken directly with a notched trowel. The adhesive should be spread on the substrate to be sealed with a B3-toothed strip to create a uniform adhesive layer with a thickness of approx. 1.5 mm. The *ProElast® film* is placed on the adhesive layer and rolled into the adhesive from the middle to the edges with a wide pressure roller. The pressure must be applied in such a way that no air pockets are trapped under the film while also making sure that no adhesive will escape at the open edges. Excess adhesive on the outside of the film must be removed before sealing.

The *ProElast® film* must be consistent with the joint run. Overlaps of the *ProElast® film* required at the edges of the film web must be formed at a length of 100 mm with an adhesive bond over the entire surface. Inside corners can be sealed by cutting into half of the film and creating a suitable overlap. The width of the film should be selected according to the intended use. The minimum width for use as a joint sealing against pressing water is 300 mm. In the area of a floor/wall connection with a protruding floor panel, the *ProElast® film* must be lowered from the wall area over the floor panel by at least 100 mm onto the end face of the floor panel. All film edges of the *ProElast® film* are then sealed using *InnoElast® Type I* or *InnoElast® Type II* and spread over the substrate so that no free film edge is visible. All *ProElast® system* sealings in contact with the

ground must be protected against mechanical damage before filling using a suitable full surface protective layer.

Consumption:

Film width [cm]	Consumption InnoElast® Type I or II [ml/m.]
20	300
25	375
30	450
40	600
50	750
80	1,200
100	1,500
150	2250

(The consumption details are based on experience and can vary depending on the condition of the substrate.)

Please note:

Use of the *ProElast® system* requires the installer to have sufficient expertise. If you are uncertain how to carry out the sealing procedure for a specific design, please contact a technical advisor at one of the telephone numbers provided below.

The correct and thereby successful application of our products is beyond our control. A guarantee can therefore only be given for the quality of our products as part of our terms and conditions of sale and delivery and not for their successful application. All data and specifications in this leaflet are based upon the current state of the art; we explicitly reserve the right to make changes and adaptations in the course of the development. The consumption details stated can only be based on average empirical values; deviations in individual cases are possible and cannot be excluded.

Version 11/2015 – This data sheet has been subject to technical revisions. Previous versions are invalid, any technically revised new editions invalidate this version. Please ensure that you are in possession of the latest version.