



General building authority test certificate

Test certificate number:

P-5252/587/13-MPA BS

**Subject and
scope of application:**

Application provisions for a plastic waterproofing sheet in accordance with DIN EN 13967 for construction waterproofing pursuant to Construction Products List A, Part 3, sequential no. 1.2, which deviates from the requirements of DIN V 20000-202, Section 5.3.

Here: Polyfleece SX[®] 1000 waterproofing sheet
for construction waterproofing

Applicant:

StekoX[®] GmbH Abdichtungstechnik
Blumenstraße 42/1
71106 Magstadt, Germany

Issue date:

01/08/2016

Valid until:

31/07/2021

This general building authority test certificate consists of 8 pages and 4 annexes.



A General provisions

- (1) This general building authority test certificate demonstrates the usability of the construction method listed as the subject within the meaning of 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, especially private property rights.
- (4) Without prejudice to any further regulations under the “Special provisions” section, manufacturers and distributors of the construction method 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 must 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. 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 Braunschweig Civil Engineering Materials Testing Institute.”
- (6) The general building authority test certificate may be revoked at any time. The provisions of the general building authority test certificate may be supplemented or amended subsequently, especially if this is required due to new technical knowledge.

B Special provisions

1 Subject and scope of application

1.1 Subject

The subject of the general building authority test certificate are the application provisions for the plastic waterproofing sheet with the product name “Polyfleece SX[®] 1000” from Stekox GmbH Abdichtungstechnik, pursuant to Construction Products List A, Part 3, sequential No 1.2, as a construction method for construction waterproofing. The sheet complies with DIN EN 13967 pursuant to Construction Products List B, Part 1 sequential No. 1.10.2. On the basis of Annex ZA to this standard, the manufacturer has declared the sheet’s conformity by means of a declaration of performance and has provided the sheet with a CE marking. The product data sheet containing the declared properties is included as Annex 1.



The "Polyfleece SX 1000" construction product is a sealing fleece equipped with a hydrophilic coating made of modified polymers (manufacturer's information) and has the following structure (from top to bottom):

- PP/PES fleece, weight per unit area approx. 150 g/m², colour white
- Dual-component, silane-modified polymer coating with hydrophilic absorbers, colour "grey", positioned on one side (the underside) on the lengthwise edge of the sheet with cold self-adhesive strips for adhering the longitudinal seam
- Protective film

The seams of the sheet are adhered to each other by means of self-adhesion with at least 75 mm overlap.

The sealing function of the "Polyfleece SX[®] 1000" waterproofing sheet is carried out by the entire structure. The total thickness of the sheet is 1.3 mm.

The construction product Polyfleece SX[®] 1000 is used in the production of waterproofing in conjunction with the following components:

- Polyfleece SX[®] 1000 adhesive tape (adhesive on both sides): acrylate based, width 75 mm
- SX[®] 100 polymer hydrophilic paste: single-component SM polymer with hydrophilic absorbers, colour white

The "Polyfleece SX[®] 1000" waterproofing sheet achieves its waterproofing function in combination with fresh concrete, which connects adhesively to the sheet across the entire surface and thus prevents water from running between the reinforced concrete component and the "Polyfleece SX[®] 1000" waterproofing sheet. The waterproofing sheet is installed on the side of the component facing the water before concreting.

The waterproofing sheet is equipped with an approx. 75 mm wide self-adhesive edge strip on one lengthwise side. End joints or cross seams and any required cuts are adhered using the Polyfleece SX[®] 1000 adhesive tape in conjunction with the SX[®] 100 polymer hydrophilic paste.

The product "Polyfleece SX[®] 1000" is classified in table 2, No. 4 (FPO) with regard to its type of material, and in table 3, No. 7 (sheets with lamination) application type BA of DIN V 20000-202 with regard to its product structure and intended application. The building authority application provisions for sheets in accordance with DIN EN 13967 are taken from Part II of the List of Technical Building Regulations (LTB), sequential No. 5.38 (DIN V 20000-202, Section 5.3). The features pursuant to DIN V 20000-202, Section 5.3.3.7, table 21 (plastic and elastomer sheets with lamination for construction waterproofing) are used to determine the specified classification of the sheet. The values declared for the sheet pursuant to Annex 1 deviate from the requirements prescribed with regard to the shear resistance of the joint seam, the tear resistance and the resistance to impact (procedure A) as follows:



| Values in accordance with DIN EN 13967 | | | Requirement in accordance with DIN V 20000-202; table 21 (BA) |
|----------------------------------------|----------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Property | Test procedure | Declaration in accordance with Annex 1 | |
| Shear resistance of the joint seam | EN 12317-2 | ≥ 100 N/50 mm | Break outside the joint seam |
| Tensile properties – tear resistance | EN 12311-2 | Tear resistance [N/50 mm] lengthwise > 250 across > 200 | ≥ 500 ≥ 500 |
| Resistance to impact | EN 12691 | Procedure A 200 mm drop height tight | ≥ 300 |

The sheet deviates with regard to its structure as follows:

- Lamination on the upper side as opposed to lamination on the underside

1.2 Scope of application

When used in combination with fresh concrete, the “Polyfleece SX® 1000” waterproofing sheet is suitable for the production of single-layer construction waterproofing in the following building authority-related application areas:

- External waterproofing of floor panels in contact with the ground and concrete outer wall surfaces against soil moisture (capillary water, retained water), non-standing and standing seepage water, as well as pressing water up to an immersion depth of 20 metres of water.

Comment:

For any existing transition between the surface waterproofing and concrete components with a high resistance to water penetration, a separate proof must be produced in accordance with Construction Products List A, Part 2, sequential no 2.48.

- The waterproofing sheet may be used on construction joints and controlled crack joints.

Comment:

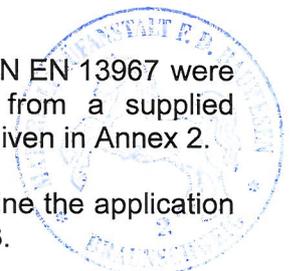
The waterproofing sheet must not be used on expansion joints.

2 Properties and application provisions

2.1 Properties and characteristics of the sheet

The verifiable properties and characteristics in accordance with DIN EN 13967 were established by the MPA Braunschweig (NDS01) on samples from a supplied “Polyfleece SX® 1000” plastic waterproofing sheet. The results are given in Annex 2.

Additional tests were carried out by the testing laboratory to determine the application provisions. The type of tests and the results are compiled in Annex 3.



2.2 Application provisions for the construction method

On the basis of the properties determined pursuant to Section 2.1, the “Polyfleece SX[®] 1000” waterproofing sheet may be used as a sheet in accordance with DIN V 20000-202 table 3, no. 7 (application type BA), as a single-layer construction waterproofing adhered to a concrete component across the entire surface in combination with fresh concrete, in the application areas specified under 1.2. In this respect, the following application provisions shall apply:

Base

- The base on which the waterproofing sheet is laid before concreting must be solid and sufficiently stable, as well as free of loose parts and sharp edges. Cavities, cracks and imperfections must be closed with suitable materials according to the manufacturer’s specifications.

Laying

- The “Polyfleece SX[®] 1000” must always be positioned on the outside of the structure.
- The sealing sheet must be laid loosely with the fleece side upwards and at least 75 mm overlap on the lengthwise edge (area of overlap). The lengthwise seams are adhered with self-adhesive strips by removing the protective films (adhesive tape and upper waterproofing sheet on the polymer side) and pressing on the overlap.
- End joins or cross seams and any required cuts are adhered using the Polyfleece SX[®] 1000 adhesive tape in conjunction with the SX[®] 100 polymer hydrophilic paste. The sheet is laid with an overlap of at least 100 mm, the 75 mm wide SX[®] 1000 Polyfleece adhesive tape being adhered to the fleece side 25 mm away from the edge (on the front side). A track (Ø approx. 20 mm) of SX[®] 100 polymer hydrophilic paste is applied to the 25 mm wide, non-adhered fleece edge strip. Once the protective films have been removed (adhesive tape and upper waterproofing sheet on the polymer side) the overlap is pressed on using a spatula; surplus SX[®] 100 polymer hydrophilic paste has to escape at the edge.
- The seams must be positioned offset. Cross joints are not permitted.
- All adhesive surfaces must be dry and free of impurities. They must not have any creases and the overlaps must be pressed on carefully.
- In the floor/wall connection area, the waterproofing sheet should be laid all around on the edge formwork as a strip, without damaging it. Overlaps in the corner areas should be produced according to the manufacturer’s instructions using the Polyfleece SX[®] 1000 adhesive tape in conjunction with the SX[®] 100 polymer hydrophilic paste (see end joins and cross seams).
- The sheet must be held at least 200 mm over the upper edge of the floor panel and attached without damaging it.



- The "Polyfleece SX[®] 1000" waterproofing sheet may be installed on the walls vertically (preferably) and horizontally. It should be installed from bottom to top when laid horizontally (lengthwise strip at the top). Fastening the sheets to the formwork if required must not cause damage to the waterproofing. The waterproofing must be laid and fastened at least 200 mm above the upper edge of the formwork.
- To connect to penetrations, the "Polyfleece SX[®] 1000" must be laid in accordance with the manufacturer's specifications such that a long-term watertight waterproofing is ensured.
- The waterproofing sheet may be used to seal construction joints and controlled crack joints. It must not be used as a primary waterproofing on expansion joints.
- In the area of construction joints and controlled crack joints, the "Polyfleece SX[®] 1000" must be laid at least 150 mm across the joint or across the concreted section.

Installation of the reinforcement and concrete

- When installing reinforcement and concrete, suitable measures must be taken to ensure that the waterproofing is not damaged. Only surface spacers in accordance with the manufacturer's specifications may be used as spacers for the reinforcement on the floor panel.
- Before installing the concrete, a thorough visual inspection of the "Polyfleece SX[®] 1000" must be performed. Any damage present must be eliminated in accordance with the manufacturer's specifications. Installation of the concrete must take place immediately after approval.
- Any adhering impurities which interfere with the fresh concrete adhesion must be removed before concreting.
- To protect the waterproofing sheet, concreting must be performed as soon as possible after it is installed. In the event of prolonged periods of open exposure, protective measures must be taken.
- The concrete must be of at least consistency class F3 to F5 and at least compressive strength class C20/25.
- Sprayed concrete must not be used in conjunction with the "Polyfleece SX[®] 1000".

Formwork stripping

- The formwork may only be stripped once the compressive strength of the concrete is at least 10 N/mm², in order to avoid adhesion faults.
- After the formwork is removed, the "Polyfleece SX[®] 1000" must be permanently protected from damage by positioning protective coatings or protective layers.



2.3 Storage, transport and marking

2.3.1 Storage and transport

The rolls of the “Polyfleece SX[®] 1000” waterproofing sheet must only be transported standing on welded pallets and must be stored standing vertically on the construction site. Stacking the sheets is not permitted. Until they are used, the sheets must be protected from heat, direct sunlight and moisture. Any stress caused by concentrated or linear loads or by solvent vapours should be avoided.

2.3.2 Marking

The product must be provided with a CE marking in accordance with DIN EN 13967 Annex ZA.3.

The product must not be marked in accordance with DIN V 20000-202. A reference to this general building authority test certificate must be made, clearly separated from the CE marking.

2.4 Design and dimensioning

The application provisions specified under 2.2 shall apply with regard to the design and dimensioning of construction waterproofing. Furthermore, the basic details of DIN 18195 Part 1 and supplementary sheet 1 as well as the manufacturer’s general information and laying and processing instructions shall also apply.

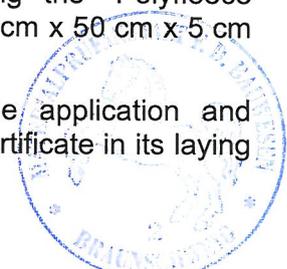
2.5 Implementation

The applicability of the waterproofing can only be assumed if it is processed in consideration of the particular application provisions in accordance with Section 2.2 and the manufacturer’s processing instructions and if the basic details of DIN 18195 Part 3, Part 4 and Part 6 as well as Part 8 to Part 10 are taken into account in the implementation and processing. To this end, the general building authority test certificate and the manufacturer’s laying instructions and operating instructions must be available on the construction site.

The implementation also comprises checks of the waterproofing during installation and of the finished product. The checks include a visual inspection of the base to ensure it complies with the requirements as well as a visual inspection of the waterproofing before installation of the reinforcement, before concreting and before application of a protective layer.

Furthermore, object-specific evidence of the sheet’s adhesion in conjunction with the concrete used on site after a curing period of at least 7 days must be provided for each batch of the plastic sheet. The verification checks must be performed on composite bodies (see also Annex 4), which are made using the “Polyfleece SX[®] 1000” waterproofing sheet in a formwork with dimensions 50 cm x 50 cm x 5 cm (width x length x thickness).

The manufacturer is obligated to consistently incorporate the application and implementation provisions of this general building authority test certificate in its laying and processing instructions.



2.6 Use, maintenance, servicing

N/A

3 User's certificate of conformity

The user of the construction method must confirm in a declaration of conformity that the construction method is implemented in compliance with the provisions of the general building authority test certificate and that the construction products used comply with the provisions of this general building authority test certificate. Annex 4 contains a template for a declaration of conformity for application of the product.

This general building authority test certificate is granted on the basis of Article 19 of the Lower Saxony Building Code (NBauO) as amended in the announcement of 03/04/2012 in conjunction with the Construction Products List A, Part 3, sequential no. 1.2. Corresponding legal bases are present in the German State Building Codes of other federal states.

4 Legal remedies

An objection or complaint against this decision is permitted in line with the legal regulations of the country in which the applicant is located. In the case of a right to object, the objection must be filed in writing or for the record at the Civil Engineering Materials Testing Institute, Beethovenstraße 52, 38106 Braunschweig, Germany, within a month after receipt of this decision. The date of receipt of the notice of objection at the Civil Engineering Materials Testing Institute in Braunschweig shall be decisive when determining whether the objection has been made in due time.

This document is the translated version of test certificate no. P-5252/587/13-MPA BS – dated 01/08/2016. The legally binding text is the aforementioned German test certificate.



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



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N. Meyer-Laurien
Engineer/Official in Charge

Braunschweig, 01/08/2016

List of annexes:

- Annex 1: Manufacturer's product data sheet with declared values
- Annex 2: Identified properties and characteristics of the Polyfleece SX[®] 1000 plastic waterproofing sheet in accordance with DIN EN 13967
- Annex 3: Identified properties and characteristics of the "Polyfleece SX[®] 1000" waterproofing sheet in accordance with additional tests by MPA Braunschweig
- Annex 4: Template for the user's declaration of conformity

Annex 1: Manufacturer's product data sheet with declared values

Technisches Datenblatt · Polyfleece SX[®] 1000



Technische Daten:

| | | | |
|-------------------------------------------------------------------|-------------------------------------------------------|-------------------|------------------|
| Farbe: | weiß / grau | | |
| Umweltverträglichkeit: | Lösemittel-, Isocyanat-, PVC-, Phtalat-, Silikon-frei | | |
| Maße: | Länge (nach DIN EN 1848-2): | 10,0m, bzw. 20,0m | (±5,0cm; MDV*) |
| | Breite (nach DIN EN 1848-2): | 1,0m | (±3,0cm; MDV*) |
| | Gesamtdicke (nach DIN EN 1849-2): | 1,31mm | (±5,0%; MDV*) |
| Flächengewicht: | 1.235g/m ² | | (±10,0%; MDV*) |
| Wasserdichtheit: (nach DIN EN 1928) | | | |
| Verfahren A | Wasserdruck: 2kPa (0,02 bar) | 24 Std. | Bestanden |
| Verfahren B | Wasserdruck: 400kPa (4,0bar) | 72 Std. | Bestanden |
| Dauerhaftigkeit gegenüber Wärmealterung: (nach DIN EN 1928) | | | |
| Wasserdichtheit Verfahren A | Wasserdruck: 2kPa (0,02bar) | 24 Std. | Bestanden |
| Dauerhaftigkeit gegenüber Chemikalien: (nach DIN EN 1928) | | | |
| Wasserdichtheit Verfahren A | Wasserdruck: 2kPa (0,02bar) | 24 Std. | Bestanden |
| Verträglichkeit mit Bitumen: (nach DIN EN 1928) | | | |
| Wasserdichtheit Verfahren A | Wasserdruck: 2kPa (0,02bar) | 24 Std. | Bestanden |
| Zug-Dehnungsverhalten: (nach DIN EN 12311-2) | längs: ≥ 250N/50mm quer: ≥ 200N/50mm | | (MLV*) (MLV*) |
| Höchstzugkraftdehnung: (nach DIN EN 12311-2) | längs: ≥ 20,0% quer: ≥ 50,0% | | (MLV*) (MLV*) |
| Scherfestigkeit der Fugenähte: (nach DIN EN 12317-2) | Klebeaht: ≥ 100N/50mm | | (MLV*) |
| Weiterreißwiderstand: Nagelschaft (nach DIN EN 12310-1) | längs: ≥ 150N quer: ≥ 150N | | (MLV*) (MLV*) |
| Widerstand gegen Stoßbelastung: (nach DIN EN 12691) | | | |
| Verfahren A (Al-Platte) | ≤ 200mm-Fallhöhe: | | (MLV*) |
| Verfahren B (EPS-Platte) | ≤ 500mm-Fallhöhe: | | (MLV*) |
| Widerstand gegen statische Belastung: (nach DIN EN 12730) | | | |
| Verfahren B | Auflast: ≤ 20kg | | (MLV*) |
| Wasserdampfdurchlässigkeit: (nach DIN EN 1931) | | | |
| Verfahren B | sD-Wert = 0,8m | | (MDV*) |
| g = 5,2 * 10 ⁻⁷ kg/(m ² *s) ± 30% | | | |
| Brandverhalten: (nach DIN EN 13501-1) | Klasse E | | |
| Adhesion am Beton: | mind. 0,4N/mm ² | | |
| Temperaturbeständigkeit: | -40°C / +100°C | | |

*MDV: Manufacturer's declared value (Herstellerangabe mit Toleranz)
*MLV: Manufacturer's limiting value (Grenzwert des Herstellers)



Annex 2: Identified properties and characteristics of the Polyfleece SX® 1000 waterproofing sheet in accordance with DIN EN 13967

| Values in accordance with DIN EN 13967 | | | | Requirement in accordance with DIN V 20000-202; table 21 (BA; FPO) |
|----------------------------------------------------------------------------------------------|---------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Property | Test procedure | Unit Type of result | Findings | |
| Watertight against water in liquid phase | DIN EN 1928 procedure A | [-] passed | tight to 2 kPa ⇒ passed | tight to 2 kPa ⇒ passed |
| Resistance to static loads | EN 12730 procedure B | [kg] | Procedure B imposed load 20 kg tight | N/A |
| Tensile properties - maximum tensile force - Expansion under maximum tensile force | EN 12311-2 | [N/50 mm] [%] | Maximum tensile force [N/50 mm] lengthwise x = 384 s = 12.0 across x = 278 s = 8.53 Expansion under maximum tensile force [%] lengthwise x = 22.7 s = 1.51 across x = 75.1 s = 2.70 | ≥ 500 N/50 mm ≥ 500 N/50 mm ≥ 2 % ≥ 2 % |
| Durability of water tightness against artificial ageing | EN 1296 and EN 1928 procedure A | [-] passed | after stress tight to 2 kPa | N/A |
| Durability of water tightness against chemicals (alkali resistance) | EN 1847 and EN 1928 procedure A | [-] passed | after stress tight to 2 kPa | N/A |
| Tear resistance – nail shank – | EN 12310-1 | [N] | lengthwise x = 165 s = ± 29.8 across x = 189 s = ± 12.6 | N/A N/A |
| Resistance to impact | EN 12691 | [mm] | Procedure A 200 mm drop height tight Procedure B 500 mm drop height tight | ≥ 300 N/A |
| Shear resistance of the joint seams | EN 12317-2 | [N/50 mm] | Lengthwise edge (self-adhesive strip) x = 193 N/50 mm s = ± 9.77 Shearing in the joint seam | Break outside the joint seam |

x = mean value, s = ± standard deviation;

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Annex 2: Continuation of table
 Identified properties and characteristics of the
 Polyfleece SX[®] 1000 waterproofing sheet in accordance with DIN EN 13967

| Values in accordance with DIN EN 13967 | | | | Requirement in accordance with DIN V 20000-202; table 21 (BA; FPO) |
|----------------------------------------|---------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Property | Test procedure | Unit Type of result | Findings | |
| Water vapour permeability | EN 1931 | [m] and [kg/m ² ·s] | d: 0.94 mm (composite structure) g: 5.23·10 ⁻⁷ (kg/m ² ·s) μ: 835 sd: 0.78 m | N/A |
| Compatibility with bitumen | EN 1847 and EN 1928 | [-] passed | tight to 2 kPa ⇒ passed | tight to 2 kPa ⇒ passed |
| Fire behaviour | EN 13501-1 | [-] Class E | Class E | Class E |
| Length | EN 1848-2 | [m] | x = 20.0 m | N/A |
| Width | EN 1848-2 | [mm] | x = 990 mm | N/A |
| Thickness | EN 1849-2 | [mm] | Total thickness x = 1.31 mm | ≥ 1.2 mm |
| Mass | EN 1849-2 | [g/m ²] | x = 1,235 g/m ² | N/A |
| Straightness | EN 1848-2 | [mm] ≤ 75 passed | ≤ 75 mm passed | ≤ 75 mm passed |
| Visible defects | EN 1850-2 | no visible defects | no visible defects | no visible defects |

N/A: no requirement

x = mean value, d = thickness

μ = water vapour diffusion resistance factor, g = density of moisture flow rate,

sd = diffusion-equivalent air layer thickness



Annex 3: Identified properties and characteristics of the Polyfleece SX[®] 1000 waterproofing sheet in accordance with additional tests

| Property | Test procedure | Findings |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water tightness of the sheet against water in liquid phase | DIN EN 1928 procedure B with 400 kPa over 72 hrs. | tight to 400 kPa |
| Water tightness of the joint seams or adhesive seams against water in liquid phase | Test based on DIN EN 1928 procedure A; joint or adhesive seam positioned centrally under a pressure cylinder Ø 30 cm; water pressure: 100 kPa over 72 h | T-joint: tight Lengthwise seam: tight Cross-seam: tight |
| Shear resistance of the joint seams as delivered | DIN EN 12317-2 Test specimen 50 mm x 360 mm v = 100 mm/min Free clamping length: 200 mm Seam width: 120 mm Test atmosphere: DIN EN ISO 291-23/50-2 | <u>Seam with "sealing" (SX[®] 100 polymer hydrophilic paste)</u> Shear resistance [N/50 mm] x = 411 s = ±13.5 Shearing in the adhesive seam |
| Shear resistance of the joint seams after water ageing | DIN EN 12317-2 Test specimen 50 mm x 360 mm v = 100 mm/min Free clamping length: 200 mm Seam width: 100 mm Test atmosphere: DIN EN ISO 291-23/50-2 Storage temperature: 50°C Storage period: 28 d 24 hrs Conditioning 23/50 | <u>Lengthwise edge (self-adhesive seam)</u> Shear resistance [N/50 mm] x = 226 s = ±75.6 Shearing in the adhesive seam <u>Seam with "sealing" (SX[®] 100 polymer hydrophilic paste)</u> Shear resistance [N/50 mm] x = 365 s = ±10.1 Shearing in the adhesive seam |
| Test of prevention of water running behind in the event of damage | Test based on DIN EN 1928 procedure A; damaged area positioned centrally under a pressure cylinder Ø 50 cm; Test on composite body Substrate: Concrete C 20/25 (28 d) Water pressure: 500 kPa Test duration: 7 d or 28 d | <u>Test duration 7 d:</u> - watertight, - no lateral water penetration into the boundary layer: tight <u>Test duration 28 d:</u> - watertight, - no lateral water penetration into the boundary layer: tight |

x = mean value, s = ± standard deviation;



Annex 3: Table continued
Identified properties and characteristics of the
“Polyfleece SX[®] 1000” waterproofing sheet in accordance with additional tests

| Property | Test procedure | Findings |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Adhesive strength sheet/concrete - Reference for control check | DIN 1048 Haul-off speed: 100 N/s Substrate: C 20/25 Sample age: 7 d | Adhesive strength x = 0.47 N/mm ² k = 0.40 N/mm ² g = 0.53 N/mm ² 100% adhesion coating/fleece |
| Adhesive strength sheet/concrete | DIN 1048 Haul-off speed: 100 N/s Substrate: C 20/25 Sample age: 28 d | Adhesive strength x = 0.47 N/mm ² k = 0.41 N/mm ² g = 0.52 N/mm ² 100% adhesion coating/fleece |
| Adhesive strength sheet/concrete after thermal ageing | DIN 1048 Haul-off speed: 100 N/s Substrate: C 20/25 Storage temperature: 50°C Storage period: 28 d | Adhesive strength x = 0.44 N/mm ² k = 0.35 N/mm ² g = 0.54 N/mm ² 100% adhesion coating/fleece |
| Functional test for joint bridging – water tightness | Based on PG – FBB (Testing principles for joint seals) Test pressure: 5 bar/28 days Proven joint expansion: 1 mm Test vertical to the joint with: - positioned seam with seam securing (sheets abutted) | tight – no water penetration in the joint area, no visible damp spots on the concrete surface |
| Test of crack-bridging ability | EN 14224 - substrate: concrete C20/25 (28/d) - test atmosphere: DIN EN ISO 291-23/50-2 - crack generation 0.2 mm - crack expansion: 0.2 to 2.0 mm in 60 s - Hold time 24 hrs Test of water tightness after stress in accordance with ASTM D 5385 at 5 bar | No cracks or tears; crack-bridging and watertight to 5 bar |

x = arithm. mean value, k = min. value, g = max. value



