Covenant
K91669-01

Issued 2016-04-01

Replaces

Flexobit

STATEMENT BY KIWA
With this Covenant, issued in accordance with the Kiwa Regulations for Product Certification, Kiwa declares that legitimate confidence exists that the products supplied by

Bitufa Waterproofing BV

as specified in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate may, on delivery, be relied upon to comply with Kiwa Covenant manual-K15013 January 2016

Luc Leroy
Kiwa

Publication of the certificate is allowed.

Advice: consult www.kiwa.nl in order to ensure that this certificate is still valid.

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289/150609

1 Scope of the Kiwa Covenant

1.1 Definition of Flexobit unreinforced waterproofing system

The waterproofing system consists of an unreinforced membrane of SBS modified bituminous compound, top side finished with sand, bottom side finished with foil.

Specification nominal value:

Length:	5,0 m - 6,0 m
Width:	1,0 m
Thickness:	5,0 mm
Delivered:	on roll

Intended use of the waterproofing system:
Tanking and water protection of underground structures (foundations) and non exposed inverted roof systems by bituminous unreinforced membrane.

1.2 Assumed working life of the waterproofing system

The provisions and the verification and assessment methods included or referred to in this Kiwa Covenant have been written based upon the assumed working life of the waterproofing system for the intended use of at least the life expectance of waterproofing system of 20 years. These provisions are based upon the current state of the art and the available knowledge and experience.

"Assumed working life" means that, when an assessment following the Kiwa Covenant provisions is made, and when this working life has elapsed, the real working life may be, in normal use conditions, considerably longer without major degradation affecting the requirements.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee given by the product manufacturer or his representative or Kiwa Nederland B.V. issuing the Kiwa Covenant, but are regarded only as a means for choosing the appropriate products in relation to the expected economically reasonable working life of the works.

1.3 Common terms relating to the waterproofing system

Tanking sheet (EN 13969)
Factory made flexible membrane made of bitumen material or composites used in wall construction, or on or under floors or ground slabs to prevent liquid water under hydrostatic pressure passing from the ground into the internal environment or from one section of the structure to another.

Unreinforced membrane
Factory made flexible membrane without incorporating carriers, supplied in roll form ready to use.

NL-BSB: Dutch Environmental requirements for products in contact with soil.

SBS: Styrene butadiene styrene

2 Fitness for use

2.1 Meaning of ‘fitness for use’

‘Fitness for (the intended) use’ of the waterproofing system means that the products have such characteristics that, the BITUFA WATERPROOFING SYSTEM, when properly designed and built, satisfies the requirements of this Kiwa Covenant and is fit for its intended use and in this connection satisfies the requirements of this Kiwa Covenant, when properly installed.

2.2 Assessment of fitness for use

The relevant characteristics of the waterproofing system for its fitness for use (requirements) and the required verification methods to be employed are given in chapter 3, as well as the actual performed assessment of fitness for use and proven conformance to the relevant characteristics of the waterproofing system and its components.

3 Relevant characteristics of the waterproofing system, the required verification methods and the assessments of fitness for use

3.1 Dimensions

Characteristic	Verification Method	Assessment of the characteristic
Length	EN 1848-1	5,0-6,0 -0 m
Width	EN 1848-1	1,0 -0 m
Thickness	EN 1849-1	5,0 ± 0,5 mm
Mass / m2	EN 1849-1	5200 ± 520 g/m^2
Visual defects	EN 1850-1	No visible defects

3.2 Reaction to fire

Characteristic	Verification Method	Assessment of the characteristic
Reaction to Fire	EN 13501-1+A1:2009	Class E-d2

3.3 Environment

Characteristic	Verification Method	Assessment of the characteristic
environmental declaration	BRL 9327	Certificate BD-077/3 issued by Intron dated 2015-12-10.

3.4 Raw materials

Raw materials are inspected upon arrival according to procedures laid down in ISO 9001:2015

3.5 Characteristics of the waterproofing system

Characteristic	Verification Method	Assessment of the characteristic
Chemical resistance (seaside chemicals)	EN 13969 and EN 13707	Annex A of both standards indicates that the product is resistant to chemicals that are present in seawater like Chlorides, Nitrates and Sulphates
Low Temperature Flexibility	EN 1109	-25 °C
Impact resistance	EN 12691	substrate aluminium: No perforation @ 500 mm substrate EPS 150: No perforation @ 2.000 mm
Tensile strength	ISO 37	1,2 ± 0,2 N/mm2
Elongation at break	ISO 37	1600 ± 150 %
Vapour Transmission	EN 1931	Density moisture flow rate (g): 1,54.10-9 kg.m^{-2}.s^{-1} Moisture resistance factor (μ): 50.400

Static loading	EN 12730:2015 method C	@ 20 kg load no leakage
Vapour Transmission after ageing	EN 1296 and EN 1931[1]	Density moisture flow rate (g): 1,01 10-9 kg.m-2.s-1 Moisture resistance factor (μ): 78.800
Water tightness	EN 1928 (load 500 kPa) After ageing: 12 weeks @ 80°C	Watertight Watertight

3.6 Joints

Characteristic	Verification Method	Assessment of the characteristic
Peel resistance of joints	EN 12316-1	Did not fail[2]
Shear resistance of joints	EN 12317-1	Did not shear[2]

4 Initial inspection and continuous surveillance by Kiwa

4.1 Initial inspection

During an initial inspection the IQC-scheme is audited, testing is witnessed and samples are taken for verification. Continuous surveillance will be performed two times a year, during which the process, the IQC-scheme is inspected.

4.2 Continuous surveillance

Test frequency

Characteristic	Method	Test frequency
Length	EN 1848-1	once per batch
Width	EN 1848-1	once per batch
Thickness	EN 1849-1	once per batch
Mass / m^2	EN 1849-1	once per batch
Visual defects	EN 1850-1	once per batch
environmental declaration	BRL 9327	Validity of the certificate
Chemical resistance (seaside chemicals)	EN 13969 and EN 13707	Validity of the relevant standards once per year
Low temperature flexibility	EN 1109	once per week
Impact resistance	EN 12691	once per 5 years
Tensile strength	ISO 37	once per month
Elongation at break	ISO 37	once per month
Vapour Transmission	EN 1931	once per 5 years
Vapour Transmission	EN 1296 and EN 1931	once per 5 years
Reaction to fire	EN 13501-1:2007+A1:2009	once per 5 years
Water tightness	EN 1928	once per 5 years
Peel resistance of joints	EN 12316-1	once per 5 years
Shear resistance of joints	EN 12317-1	once per 5 years

5 Conditions under which the fitness for the intended use is assessed

5.1 Manufacture of the product

Flexobit is produced from a combination of materials according to written specifications as

[1] Soft support: EPS CS(10)150 according EN 13163; thickness 50 mm
[2] The indication did not fail or shear relates tot he fact that the samples have been tested until the maximum capacity of the testing equipment and therefore no exact value can be given.

documented in the formulation. The formulation is part of the IQC-scheme and of the audits performed by Kiwa.
The production facility is situated in Wapenveld, The Netherlands.
The product is produced in rolls:

- Nominal thickness 5mm;
- Nominal length and width 5 x 1 m or 6 x 1 m;
- 25 rolls are stored on a pallet with a unique identification number;
- Each pallet shall also carry the Kiwa word mark: Kiwa, the certificate number or the applicable logo.

5.2 General conditions for product application, storage and transport

The rolls must be protected against moisture and exposure to sunlight
The rolls are not allowed to be stored in the vicinity of a heat source
The rolls must be stored flat

5.3 Recommendations for customers

Check at the time of delivery whether:

- the supplier has delivered in accordance with the agreement;
- the mark and the marking method are correct;
- the products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:
Bitufa Waterproofing BV
and, if necessary,
Kiwa Nederland B.V.

Consult the supplier’s processing guidelines for the proper storage and transport methods.