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Test Report

Report No.:	**2200990 -2-eng**	**Date:** 2024-02-02
Client:	Conica AG Industriestraße 26 8207 Schaffhausen Switzerland	
Subject:	Synthetic surface product "CONIPUR EPDM/SP 11+3mm", Product-Group "CONIPUR", texture coated surfacing; red colour PUR-bound synthetic surface on EPDM-base with EPDM-based texture coating, nominal thickness 14 mm, water permeable	
Task:	Product Compatibility Test / Reassesment according to EN 14877, intended use for “Athletics facilities”	
Order:	Order of 2022-03-30	
Date of sampling:	—	
Location of sampling:	No samples taken by OFI staff Samples provided by the client	
Receipt of samples:	2022-05-03, additional: 2023-05-10 (sample-ID 2022 / internal ID by client: 120043450; sample 2023 / internal ID by client: 120047083)	

Nicht akkreditierte Verfahren sind als solche gekennzeichnet.
Non-accredited procedures applied have been named as such.

1 SCOPE OF WORK

According to the order a sample of the Synthetic surface product designated as "**CONIPUR EPDM/SP 11+3mm**", product-group "CONIPUR, provided by the client were to be tested for the purpose of a Product Compatibility Test / Reassesment according to EN 14877: 2013, intended use for “Athletics facilities”.

According to the specification of the Synthetic surface-product "CONIPUR EPDM/SP 11+3mm", this product is a PUR-bound synthetic surface on EPDM-base with an EPDM-based texture coating (red coloured EPDM-granules), nominal thickness 14 mm, water permeable. The product corresponds to the type “texture coated surfacing” as described in EN 14877:2013, Annex A, Tab. A-1, Type A, figure 1 (examples of surfacing and fields of application).

For the purpose of the Reassesment the client provided a Product Compatibility Test acc. EN 14877:2013 of 2014: test report issued by Institut für Sportbodentechnik IST, Report-ref. 8432/Kol/gl, 15.10.2014 (internal No by client: 14C74), intended use: „Athletics facilities“ [1]).

1) use for “Multi-sports facilities” and “Tennis facilites” was not a subject of the testing / evaluation.

The new samples of the product „**CONIPUR EPDM/SP 11+3mm**“, provided by the client and sent to OFI – Technologie & Innovation GmbH (receipt at OFI: 03.05.2022, additional: 10.05.2023) were designed in a different specification regarding to the sample / the tests in 2014. Reference to the specification in 2014 and 2023 (new samples) are stated in clause 3.1 and 3.2. Some results of the Product Compatibility Test of 2014 (see above) are taken over in the reassessment, regarding to specifications and the technical background of the particular property.

No data were presented by the client regarding testing results of the installed product (facility testing) in the specification as stated in clause 3.2.

2 SCOPE OF APPLICATION

This test report serves as internal information for the client.

The results given in this Test Report have been obtained under the specific conditions of the individual tests. They shall serve as proof for the client of the conformity of the sample(s) tested to the requirements of the standard(s) given.

The assessment according to EN 14877. 2013, refers to the provided sample(s) of the surface product, manufactured and configured ready for testing only, without exception.

In the event of disclosure to third parties, the instructions in point 6, "Supplementary statement on the test results" regarding the use of this report for proofing the compatibility with the requirements in EN 14877:2013 must be observed.

For installations of the tested product on facilities, the performance requirements of EN 14877:2013 for testing at facilities shall be taken into account (see also clause 6.2).

Test Report has originally been drawn up in German. The German version shall be the authentic one and prevail over the English one for all matters of interpretation and construction. The English version shall only be deemed a translation for information purposes.

3 SAMPLE MATERIAL

3.1 Testing / Evaluation 2014, based on EN 14877: 2013

Document submitted by the client: Product Compatibility Test acc. EN 14877:2013: test report issued by Institut für Sportbodentechnik IST, Report-ref. 8432/Kol/gl, 15.10.2014 (internal No. by client: 14C74), intended use: „Athletics facilities“.

The sample submitted to IST for the purpose of the testing was specified as follows (sample received by IST on 04.04.2014 as stated in the report):

Synthetic surface product "**CONIPUR EPDM-SP**", texture coated surfacing, sample **2014:** Spec. by IST-Switzerland, No. 8432/Kol/gl, 15.10.2014 (internal No. by client: 14C74)

Texture coating:

EPDM-based texture coating, red-brown, PUR-Binder: CONICA AG, Type: n.s.[1])

Base layer:

- EPDM-Granules red, size 1 - 4 mm; producer: n.s.[1])
- PUR-Binder; producer: CONICA AG, Type: n.s.[1])

1) n.s.: not specified

The total thickness of the sample was stated with 13mm.

3.2 Testing / Evaluation 2023, based on EN 14877: 2013

The new samples of the synthetic surface product **„CONIPUR EPDM/SP 11+3mm“**, submitted to OFI for the purpose of the new Product Compatibility Test / Reassesment according to EN 14877 were specified as follows. The 1st sample was received by OFI on 03.05.2022, size 1,1 x 1,1m, sample-ID 2022 / internal ID by client: 120043450, the 2nd sample was received by OFI on 10.05.2023, size 1,1 x 1,1m and 0,5 x 0,5m², sample-ID 2023 / internal ID by client: 120047083. The samples were manufactured by the client in a new specification.

Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**", texture coated surfacing**, sample 03.05.2022, addit. 10.05.2023:**

Texture coating:

- EPDM-based texture coating, Granules type „CONIPUR EPDM 0,5-1,5mm“, red, granules-size: 0,5-1,5mm, and “CONIPUR EPDM powder 0,0-0,5mm”, granules-size: 0,0-0,5mm
- PUR-Binder: „CONIPUR 217“ [3]), producer: CONICA AG

Base layer:

- EPDM-Granules, red, granules size 1 - 3,5 mm; producer: pd-a.[2])
- PUR-Binder; “CONIPUR 322“ [3]) producer: CONICA AG (binder content: approx. 16%)

2) pd-a.: product data received by OFI

3) according to weather conditions and particular conditions at site different PUR-Binder-products may be used under supervision of CONICA AG, and according to the specifications by CONICA AG.

The total thickness of the sample was 13,5mm.

Fig. 1, 2: Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**", sample received by OFI on 03.05.2022 (fig. 1, left) and 10.05.2023 (fig. 2, right)

4 TESTS

4.1 Basis for testing

Testing period, Assessment 2014: 04.04. – 15.10.2014 (IST Switzerland, Report-ref. 8432/Kol/gl, 15.10.2014)

Testing period, Assessment 2023 (OFI): 10.05.2022. – 21.07.2023 (laboratory-testing)

Test regulation, Assessment 2014: EN 14877: 2013 (IST Switzerland, Report-ref. 8432/Kol/gl, 15.10.2014)

Test regulation, Assessment 2023 (OFI): EN 14877: 2013

Evaluation regulation, Assessment 2014: EN 14877: 2013 (IST Switzerland, Report-ref. 8432/Kol/gl, 15.10.2014), intended use: „Athletics facilities“

Evaluation regulation, Assessment 2023 (OFI): EN 14877: 2013, intended use: “Athletics facilities”

The tests at OFI were carried out in the individual technical departments within the scope of competence of the authorised signatories according to the OFI QM manual.

4.2 Testing / Assessment 2014, acc. to EN 14877: 2013

Reference: Product Compatibility Test acc. EN 14877:2013: test report issued by Institut für Sportbodentechnik IST, Report-ref. 8432/Kol/gl, 15.10.2014 (internal No. by client: 14C74), intended use: „Athletics facilities“.

Note: Testing / Exposure to UV-light was performed according to EN 14877: 2013, Exposure to UV-light acc. EN 14836: 2006.

4.3 Results of facility testing

No results were available for the Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**" in the specification as stated in clause 3.2 (sample for Reassesment-testing 2023).

4.4 Testing / Reassesment 2023, acc. to EN 14877: 2013 (OFI)

The Testing / Reassesment 2023 (OFI) was performed under lab-conditions, by using the sample(s) received on 13.10.2023, with the specification acc. clause 3.2, intended use: “Athletics facilities”.

Due to the change in the specification of the product the new sample(s) were tested according to the requirements in EN 14877: 2013, table 1 (Athletics facilities), except of indicated properties, see below. Conditions for testing: dry / 23°C, as not stated different.

Regarding the changes after Artificial (UV)-weathering acc. EN 14836 and changes of properties after Artificial (UV)-weathering test results were taken over from other samples with equivalent design / surface or other test-reports, where the involved samples can be assessed as equivalent for the particular property, they are marked in table 1 in *italics* and with an (Ü). Test results taken from report, reference [1]).

1) reference: testing results on sample of surface product „CONIPUR EPDM-SP“, EN14877-Assessment 2014, Report-ref. 8432/Kol/gl, 15.10.2014 (internal No. by client: 14C74), nominal thickness: 13mm.

Testing methods, summary, EN 14877 (sample 03.05.2022, see clause 3.2):

„**Sports Performance**“

- Friction: EN 13036-4 (non-accredited test procedure), condition: dry/wet, 23°
- Shock Absorption: EN 14808 (accredited test procedure), condition: dry, 10°/23°/40°C, before ageing / after accelerated ageing by exposing to hot air (EN 13817) and hot water (EN 13744) [1])
- Vertical deformation: EN 14809 (accredited test procedure), condition: dry, 10°/23°/40°C
- Vertical ball rebound: EN 12235 (accredited test procedure), note: testing only for use in “multi-sports facilities”

„**Material Characteristics**“

- Water permeability: EN 12616 (non-accredited test procedure)
- Resistance to wear: EN ISO 5470-1 / H18-grinding wheel (accredited test procedure),
  - condition: unaged: OFI-testing / [Ü1])
  - condition: after Artificial (UV)-weathering acc. EN 14836 [2]) [Ü1])
- Colour Loss: EN ISO 20105-A02 (accredited test procedure), condition: after Artificial (UV)-weathering acc. EN 14836: 2006 [2]) [Ü1]) (note: Artificial (UV)-weathering corresponds to „method 1“, acc. EN 14836: 2019).
- Tensile Properties (tensile strength / elongation at break): EN 12230 (accredited test procedure), condition: unaged / after accelerated ageing by exposing to hot air (EN 13817) and hot water (EN 13744)
- Spike Resistance: EN 14810 (non-accredited test procedure), including tensile properties acc. EN 12230 (accredited test procedure), condition: after Spike-testing / after accelerated ageing by exposing to hot air (EN 13817) and hot water (EN 13744)
- thickness: EN 1969 / method A (accredited test procedure)

Artificial ageing / weathering of the sample(s) (see above):

1) Accelerated ageing by exposure to hot air (EN 13817 / non-accredited test procedure) with ref. to ISO 188 (non-accredited test procedure) and to hot water (EN 13744 / non-accredited test procedure).
2) Artificial weathering according to EN 14836: 2006 (note: UV-weathering corresponds to „method 1“ acc. EN 14836: 2019), with ref. to EN ISO 4892-1 and EN ISO 4892-3 (accredited test procedure) [Ü1]).

Ü1): reference: testing results on sample of surface product „CONIPUR EPDM-SP“, EN14877-Assessment 2014, Report-ref. 8432/Kol/gl, 15.10.2014 (internal No. by client: 14C74), nominal thickness: 13mm.

Note: the additional sample received by OFI on 10.05.2023 (see clause 3.2) was used for verification of results of single „Sports Performance“ –, and “material characteristics” - properties. The results are not noted in table 1.

5 RESULTS

In table 1 all average test results are tabled opposed to the requirements in EN 14877: 2013, Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**".

Table 1: Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**", PUR-bound synthetic surface on EPDM-base with an EPDM-based texture coating (red coloured EPDM-granules), nominal thickness 14 mm, water permeable; components see clause 3.2; Results of Reassesment 2023, acc. to EN 14877: 2013, sample 03.05.2022, see clause 3.2; Test results taken over in (*italics)* and marked with (Ü), see clause 4.4; intended use: "Athletics facilities" (AF); as not stated different the requirements are valid for "Athletics facilities" (AF) and "Multi-sports facilities" (MSF)

No	Property Regulation	Test Condition		Result [-]	Requirement AF / MSF [1])
1	Friction EN 13036-4 (CEN-Rubber)	23 ± 2 °C	dry	**90** [%]	80 to 110
			wet	**55** [%]	55 to 110
2	Shock Absorption EN 14808	10 ± 2 °C (AF) 23 ± 2 °C 40 ± 2 °C (AF)		**36** [%] **37** [%] **38** [%]	AF (10°/23°/40°): 25% – 50% [2]) MSF (23°): 25% – 70% [2])
		After Accelerated ageing by exposure to hot air (EN 13817) and hot water (EN 13744)		**43** [%]	
	Shock Absorption Classification [2])	-		AF: **SA 35 to 50** MSF: (SA 35 to 44) [8])	
3	Vertical deformation EN 14809	10 ± 2 °C (AF) 23 ± 2 °C 40 ± 2 °C (AF)		**1,6** [mm] **1,7** [mm] **1,8** [mm]	AF (10°/23°/40°): ≤ 3 mm MSF (23°): ≤ 6 mm
4	Vertical ball rebound EN 12235 [3])	23 ± 2 °C		**n.t.** [%]	AF: -- MFS ≥ 85% (≥ 0,89 m)
5	Thickness (absolute) EN 1969, method A	23 ± 2 °C		**12,7** [mm] [6])	AF: ≥ 10 mm [4]) [5]) MSF: ≥ 7 mm [4])
6	Water permeability EN 12616	23 ± 2 °C		**14400 [mm/h]** [7])	≥ 150 mm/h
7	Resistance to wear EN ISO 5470-1 (H18-grinding wheel)	unaged 23 ± 2 °C		**0,59** [g] ***0,62*** *[g]* [Ü1])	< 4,0 g (mass loss between 500 and 1500 cycles)
		After Artificial (UV)-weathering acc. EN 14836		***0,61*** *[g]* [Ü1])	

Table continues next page

Table 1: Synthetic surface product "**CONIPUR EPDM/SP 11+3mm**", PUR-bound synthetic surface on EPDM-base with an EPDM-based texture coating (red coloured EPDM-granules), nominal thickness 14 mm, water permeable; components see clause 3.2; Results of Reassesment 2023, acc. to EN 14877: 2013, sample 03.05.2022, see clause 3.2; Test results taken over in (*italics)* and marked with (Ü), see clause 4.4; intended use: "Athletics facilities" (AF); as not stated different the requirements are valid for "Athletics facilities" (AF) and "Multi-sports facilities" (MSF)

No	Property Regulation	Test Condition	Result [-]	Requirement AF / MSF [1])
8	Tensile Properties (tensile strength / elongation at break) EN 12230	unaged 23 ± 2 °C	**0,70** [MPa] **72** [%]	tensile strength ≥ 0,4 MPa elongation at break ≥ 40%
		After Accelerated ageing by exposure to hot air (EN 13817) and hot water (EN 13744)	**0,57** [MPa] **85** [%]	
9	Spike Resistance EN 14810	Following spike abrasion 23 ± 2 °C	**0,70** [Mpa] **71** [%]	tensile strength ≥ 0,4 MPa elongation at break ≥ 40% **and**: changes in tensile strength and elongation at break compared with a new sample shall differ by no more than 20% of the unaged values
			Change to unaged value: **0 / -1%**	
		After Accelerated ageing by exposure to hot air (EN 13817) and hot water (EN 13744)	**0,56** [Mpa] **99** [%]	
			Change to unaged value: **-20 / +38%**	
10	Colour Loss EN ISO 20105-A02	After Artificial (UV)-weathering acc. EN 14836	***4 - 5** [-]* Ü1)	Colour fastness shall be no less than grey scale 3

1) Requirements acc. EN 14877:2013; intended use: "Athletics facilities" (AF) and "Multi-sports facilities" (MSF); as not stated different the requirements are valid for "Athletics facilities" (AF) and "Multi-sports facilities" (MSF)

2) The performance of the surface product (Shock Absorption Classification) according to EN 14877: 2013 shall be classified by the lowest result obtained under any of the test conditions

3) Vertical ball rebound: intended use: „Multi-sports facilities" (MSF), tested with basketball

4) minimum thickness (absolute) for the intended use

5) Athletics facilities: note: for areas used for long/triple jump run up, pole vault, javelin, high jump take-off areas, water jump landing should be of increased thickness

6) thickness as defined in method A, EN1969, top layer (surface) abraded approx. 50% (corresponding with the expression "layer thickness" acc. EN 1969); total thickness of the tested sample: 13,5mm

7) in the laboratory received permeability

8) the surface product is primary designed to be used for "Athletics facilities". While using it for "multi-sports facilities" according to the evaluation-temperature 23°C the shock absorption class SA 35 to 44 applies („*The performance of the surface product (Shock Absorption Classification) according to EN 14877: 2013 shall be classified by the lowest result obtained under any of the test conditions*").

Ü1 Test results taken over, see clause 4.4

n.t.: not tested

note: The *measurement uncertainty is not taken into account in evaluating the conformity of the test results.*

6 SUPPLEMENTARY STATEMENT ON THE TEST RESULTS

6.1 Evaluation of the Sports Performance and the material characteristics according to EN 14877:2013

OFI – Technologie & Innovation GmbH were given order to carry out a Product Compatibility Test / Reassesment of a synthetic surface-product designated as „**CONIPUR EPDM/SP 11+3mm**“ according to EN 14877:2013, for the intended use in “**Athletics facilities**”.

According to the specification of the Synthetic surface-product "CONIPUR EPDM/SP 11+3mm", this product is a PUR-bound synthetic surface on EPDM-base with an EPDM-based texture coating (red coloured EPDM-granules), nominal thickness 14 mm, water permeable. The product corresponds to the type “texture coated surfacing” as described in EN 14877:2013, Annex A, Tab. A-1, Type A, figure 1 (examples of surfacing and fields of application).

The test report contains all test results according to EN 14877: 2013 for the intended use “Athletics facilities”, that were received by testing on a new sample, as specified in clause 3.2. As far as test results were taken over from other samples with equivalent design / surface or other test-reports, where the involved samples can be assessed as equivalent for the particular property, they are marked in table 1 in *italics* and with an (Ü), further details see clause 4.4.

The tested sample [1]) **of the synthetic surface-product „CONIPUR EPDM/SP 11+3mm“, nominal thickness 14mm** [2]) **meets the requirements of EN 14877:2013 for the use in “Athletics facilities”** [3]) [4])**. According to the results of the shock absorption tests the classification Type SA 35 to 50 applies for the use in “Athletics facilities”. The surface-product corresponds to the type “texture coated surfacing” as described in EN 14877:2013, Annex A, Tab. A-1, Type A, figure 1.**

[1]) For evaluation of deviations between the test results of properties presented in this report, based on a sample as specified in clause 3.2, and properties measured on installed surfaces and samples (facility testing) the results in table 1 apply.

[2]) thickness (absolute) of the tested sample: 12,7mm (thickness as defined in method A, EN1969, top layer (surface) abraded approx. 50% (corresponding with the expression “layer thickness” acc. EN 1969)); total thickness of the tested sample: 13,5mm. the requirement of EN 14877: 2013 for minimum thickness in “Athletics facilities” is met.

[3]) the surface product is primary designed to be used for “Athletics facilities”. While using it for “Athletics facilities” the shock absorption class SA 35 to 50 applies („*The performance of the surface product* (Shock Absorption Classification) according to EN 14877: 2013 *shall be classified by the lowest result obtained under any of the test conditions*”). An evaluation for „Tennis facilities“ and a complete evaluation for the use in “Multi-sports facilities” is not subject of the order. While using the product for “Multi-sports facilities” the shock absorption class SA 35 to 45 applies at the evaluation-temperature 23°C.

[4]) The test results of elongation at break in testing the spike resistance shows a difference of more than 20% between the value after accelerated ageing in relation to the value of the unaged sample. As the value after accelerated ageing is an improvement that deviation can be tolerated.

6.2 General note

Regarding the use of this Product Compatibility Test it shall be noted, that the results were obtained while testing in the laboratory on a rigid surface, as defined in EN 14877: 2013 and the specifications in the testing standards. When installing the surface-product on site local circumstance regarding the installation and the construction underneath shall be taken into consideration. These influences may lead to different results for certain properties. In order to proof that the installed surface meets the requirements of EN 14877: 2013, facility testing according to EN 14877: 2013 shall be performed.

This Test Report No. **2200990 -2-eng** comprises
12 sheets with 1 table(s), 0 figure(s) and 0 appendix(es).

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