

# polytan

## LigaTurf Cross R

### Test Report No. K5928

#### 1. Client / fabricator

Polytan GmbH  
Gewerbering 3  
86666 Burgheim

Germany

#### 2. Type of Test

Artificial turf surface test according to

- DIN 18035-7:2019-12 „Sports ground - Part 7: Synthetic turf systems”, Annex B: Environmental protection recommendations;
- NF P90-112:2016-12-30 “Sport grounds – Unbound mineral surface for outdoor sport areas – Specifications for construction”.
- EN 71-3:2019 Safety of toys – Part 3: Migration of certain elements,
- EU Regulation (EC) N° 2021/1199 - REACH Annex XVII entry 50 (PAH) - test method AfPS GS 2019-05 GC-MS

#### 3. Test details

**Start of the test procedure:** December 7<sup>th</sup> 2021  
**End of the test procedure:** February 26<sup>th</sup> 2024  
**Approval by:** M. A. Matthias Schucht  
**Test status:** completed  
**Test result:** passed

#### 4. Test Specimen

##### Artificial turf surface

**Polytan LigaTurf Cross R 260 14/8**

**(Sample ID: 2021 - 352)**

Sample Size: 1.0 x 1.0 m

(received December 2<sup>nd</sup> 2021)

##### Artificial turf surface

**Polytan LigaTurf Cross R 235 14/8**

**(Sample ID: 2023 - 115)**

Sample Size: 4.0 x 1.0 m

(received April 13<sup>rd</sup> 2023)

Retained samples are kept in the laboratory. The results in this test report are only according to the Prepared sample itself, as well as to the individual parts.

## 5. Test results

### 5.1 Test result\*

**DIN 18035-7:2019-12 - Environmental protection recommendations.**

**Polytan LigaTurf Cross R - sample ID 2021 - 352**

#### Analysis original substance

	Testing	Unit	Requirement	Result
EOX	DIN 38414 S17	mg/kg TS	≤ 100	< 2.0
Phthalate (Sum 10 compounds)	DIN 18035-7: 2019-12	wt. %	-	< 0.005
Nonylphthalate Mixture	PA 413 / GC-MS	wt. %	-	neg.
Decylphthalate Mixture	PA 413 / GC-MS	wt. %	-	neg.
Chlorine Paraffins (SCCP)	Toluol Extraktion und Erfassung mittels GC- ECD	wt. %	0.15	< 0.008
Chlorine Paraffins (MCCP)	Toluol extraction data capturing using GC- ECD	wt. %	-	< 0.008

#### Analyse at 24h eluate according to DIN 18035-7: 2019-12

	Testing	Unit	Requirement	Results
DOC (KT) (dissolved organically bound carbon)	photometric according to lange	mg/l	50	11.0
Lead	DIN EN ISO 17294-2	mg/l	0.025	< 0.001
Cadmium	DIN EN ISO 17294-2	mg/l	0.005	< 0.0003
Chrome	DIN EN ISO 17294-2	mg/l	0.05	< 0.0001
Chrome (VI)	DIN 38405 D40	mg/l	0.008	< 0.008
Mercury	DIN EN ISO 12846	mg/l	0.001	< 0.001
Zinc	DIN EN ISO 17294-2	mg/l	0.50	< 0.01
Tin	DIN EN ISO 17294-2	mg/l	0.04	< 0.001

\* Test have been performed by the accredited chemical test laboratory „Dr. Stegemann“. Test report No. 121120246.

## 5.2 Test result\*

NF P90-112:2016-12-30 “Sport grounds – Unbound mineral surface for outdoor sport areas – Specifications for construction”.

### Polytan LigaTurf Cross R - Sample ID 2021 - 352

	Testing	Unit	Requirement	Results
Lead	NF EN ISO 11885	mg/l	< 0.025	< 0.001
Cadmium	NF EN ISO 11885	mg/l	< 0.005	< 0.0003
Chrome	NF EN ISO 11885	mg/l	< 0.050	0.0001
Tin	NF EN ISO 11885	mg/l	< 0.04	< 0.001
Zinc	NF EN ISO 11885	mg/l	< 0.5	Eluate 24 h: < 0.01
DOC	NF EN 1484	mg/l	< 50	11.0
Chrom (VI)	DIN 38405-24	mg/l	< 0.008	< 0.008
Mercury	NF EN ISO 12846 NF EN ISO 17852	mg/l	< 0.001	< 0.001
EOX	DIN 38414-17	mg/l	< 100	< 2.0
Chlorine Paraffins	Extraktion Toluol + fichage GC-ECD	mg/l	-	conform
Phthalate	PA 413 / GC-MS-	mg/l	-	conform

\* Test have been performed by the accredited chemical test laboratory „Dr. Stegemann“. Test report No. 121120246.

### 5.3 Test result\*

EN 71-3:2019 + A1:2021

Safety of toys – Part 3: Migration of certain elements.

**Polytan LigaTurf Cross R - Sample ID 2023 - 115**

	Testing	Unit	Requirement	Results
Aluminium	DIN EN ISO 17294-2: 2017-01	mg/kg	70.000	44.0
Antimony		mg/kg	560	< 0.05
Arsenic		mg/kg	47	< 0.05
Barium		mg/kg	18.750	1.8
Boron	DIN 38405 D17	mg/kg	15.000	< 5.0
Cadmium	DIN EN ISO 17294-2: 2017-01	mg/kg	17	< 0.025
Chrome		mg/kg	460	0.07
Chrome (VI)	DIN 38405 D40	mg/kg	< 0.053	< 0.05
Cobalt	DIN EN ISO 17294-2: 2017-01	mg/kg	130	< 0.05
Copper		mg/kg	7.700	0.23
Lead		mg/kg	23	< 0.05
Manganese		mg/kg	15.000	1.1
Mercury	DIN EN ISO 12846 E-12: 2012-08	mg/kg	94	< 0.05
Nickel	DIN EN ISO 17294-2: 2017-01	mg/kg	930	< 0.06
Selenium		mg/kg	460	< 0.05
Strontium		mg/kg	56,000	1.5
Tin		mg/kg	180,000	< 0.5
Zinc		mg/kg	46,000	0.52
Sum organotin compounds (8)	GLS OC 600:2019-01 GC-MS	mg/kg	12	< 0.05

\* Test have been performed by the accredited chemical test laboratory „Dr. Stegemann” Test report 124010593.

#### 5.4 Test result\*

**EU Regulation (EC) N° 2021/1199 - REACH Annex XVII entry 50 “Polycyclic aromatic hydrocarbons in articles supplied to the general public”  
(Tests According to AfPS GS 2015-05 GC-MS)**

**Polytan LigaTurf Cross R - Sample ID 2023 - 155**

	Testing	Unit	Requirement	Results
Naphthalene	AfPS GS 2015-05 GC-MS	mg/kg	-	< 0.2
Phenanthrene		mg/kg	-	< 0.2
Anthracene		mg/kg	-	< 0.2
Fluoranthene		mg/kg	-	< 0.2
Pyrene		mg/kg	-	< 0.2
Benzo(a)anthracene		mg/kg	-	< 0.2
Chrysene		mg/kg	-	< 0.2
Benzo(b)fluoranthene		mg/kg	-	< 0.2
Benzo(k)fluoranthene		mg/kg	-	< 0.3
Benzo(j)fluoranthene		mg/kg	-	< 0.4
Benzo(e)pyrene		mg/kg	-	1.0
Benzo(a)pyrene		mg/kg	-	< 0.2
Indeno(1,2,3-cd)pyrene		mg/kg	-	< 0.2
Dibenzo(a,h)anthracene		mg/kg	-	< 0.2
Benzo(ghi)perylene		mg/kg	-	< 0.2
<b>SUM PAH 15 (AfPS GS)</b>	mg/kg	-	1.0	

\* Test have been performed by the accredited chemical test laboratory Eurofins Umwelt Nord, Test report No. AR-24-DY-002071-01.

## 6. Evaluation - Assessment

The test results of the tested artificial turf surface “Polytan LigaTurf Cross R” correspond with the applicable standard to DIN 18035-7:2019-12 „Sports ground - Part 7: Synthetic turf systems”, Annex B: Environmental protection recommendations and NF P90-112:2016-12-30 “Sport grounds – Unbound mineral surface for outdoor sport areas – Specifications for construction”.

The tested artificial turf surface “Polytan LigaTurf Cross R” fully fulfills the requirements of NF P90-112:2016-12-30 “Sport grounds – Unbound mineral surface for outdoor sport areas – Specifications for construction”.

The tested artificial turf surface “Polytan LigaTurf Cross R” fully fulfills the requirements of EN 71-3:2019 + A1:2021-6 Safety of toys – Part 3: Migration of certain elements.

The test results of the tested artificial turf surface “Polytan LigaTurf Cross R” correspond with the EU Regulation (EC) N° 2021/1199 - REACH Annex XVII entry 50 (PAH) - test method AfPS GS 2019-05 GC-MS.

The test results exclusively relate to the test specimen.

Measurement uncertainties were not considered but can be provided on enquiry

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Test Report N° K59278 contents 6 pages.

Osnabrück, March 1<sup>st</sup>, 2024



Deutsche  
Akkreditierungsstelle  
D-PL-18702-01-00

DIN EN ISO/IEC 17025 by DakkS accredited test laboratory. The accreditation covers the test methods displayed on the certificate.

Matthias Schucht M.A.  
*Managing Director*

Eileen Wendeln B.A.  
*Creator of report*

End of test report No. K5928