

External Communication**Information**

TenCate is committed to the safety of athletes, players and others using our artificial turf products. Modern artificial grass surfaces enhance the performance and safety of players and athletes in comparison with natural grass surfaces. The even surface, enhanced shock absorption and consistent playing characteristics reduce the likelihood of injuries.

TenCate also takes maximum care to ensure that its products do not have any harmful effects on public health and the environment:

- We test all of our products, especially in connection with the environment and personal safety. We have no indications that there are any risks related to the use of our products in synthetic grass sport fields. There are no third party tests that give us any other indication. We continue to test our products to ensure safety at all times.
- We welcome any and all (external) tests regarding personal safety and/or environmental impact. TenCate has a constant drive for safety and protection which is a leading factor for the development of new products
- Contractors may use components from third parties in sport fields that have not been tested by TenCate. This limits our full control on the final product. Therefore we promote to and with our business partners the use of safe sport systems that are completely tested.
- Contamination in sport fields (whether artificial or natural) may arise from external factors. Examples are pollution from heavy traffic or industry near sport pitches. Such contamination is not related to the sports field. Proper maintenance of sports fields is important in this respect and includes regular cleaning.
- For obvious reasons, information regarding the origin of components used in synthetic sport pitches must be available to its users. TenCate assures that its products are made with the safety of people and the environment in mind.

Attached are two pages from our Technical Information Manual (TIM) with the analysis of heavy metal contents of our sports fields grass yarns. This analysis applies to more than 98% of sports fields grass yarns sold and shows that the heavy metal content is very small.



TENCATE GRASS
North America

External Communication

To the best of our knowledge there is no harmful effect to the safety of players or the environment since the lead containing pigments are locked into the fiber and do not leach out and are as such not "bio-available" .

We hope to have provided you herewith with adequate product safety information. Should you have any questions, please contact Mr. Ian Petrie of TenCate Grass North America.

Tel: 423 227 5556

Email: i.petrie@tencate.com

1131 Broadway Street
Dayton, TN 37321-1802

Tel (423) 775-0792
Tel (800) 251-1033

Fax (423) 775-5813
www.tencate.com

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Nearly all TenCate® fibers are made out of raw materials that do not contain any color pigments based on heavy metals. TenCate® fibers may be used anywhere and without any restrictions in sensitive areas.



The use of pigments without heavy metals has been possible for some time, but at the expense of the color fastness and lifetime. Since 1992 however, TenCate Grass has found the natural balance between environmental and quality requirements for most products. TenCate® fibers are easy to recycle based on the character of polyolefins.

In order to determine the concentrations of heavy metals in the TenCate® fiber styles Dr. Grunder from the Institute for Ecological Building Products has performed tests to measure the heavy metal concentrations. The requirements are based on the LAGA norm, which is a very strict German norm. The results are listed below:

Heavy metal	Unit	TenCate® PP	TenCate LSR®	TenCate® SPF	TenCate Xtreme®	NORM
Lead	mg/kg	< 3	< 3	< 3	< 3	85
Cadmium	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	0.8
Chromium total	mg/kg	0.8	1.9	1.0	6.4	100
Copper	mg/kg	24	18	32	18	-
Mercury	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2	0.3
Zinc	mg/kg	4.4	5.3	5.0	9.4	140
Tin	mg/kg	< 5	< 5	< 5	< 5	-

'<' Means that the measured value is below the detection limit of the measuring device.

These measurements confirm that TenCate Grass uses pigments and materials without heavy metals.

Besides the absolute concentration of heavy metals it is also important to know to which extent the present heavy metals are leachable. Dr. Grunder also measured this. The results can be found on the next page. The requirements are based on the DIN 18035-7 norm.

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Heavy metal	Unit	TenCate® PP	TenCate LSR®	TenCate® SPF	TenCate Xtreme®	NORM DIN 18035-7
Lead	mg/l	0.010	0.012	0.009	< 0.005	≤ 0.04
Cadmium	mg/l	< 0.0005	0.0011	< 0.0005	< 0.0005	≤ 0.005
Chromium total	mg/l	< 0.005	< 0.005	< 0.005	< 0.005	≤ 0.05
Copper	mg/l	< 0.01	0.05	< 0.01	0.05	-
Mercury	mg/l	< 0.0002	< 0.0002	< 0.0002	< 0.0002	≤ 0.001
Zinc	mg/l	0.01	0.27	0.02	0.094	≤ 3.0
Tin	mg/l	< 0.005	< 0.005	< 0.005	< 0.005	≤ 0.05

'<' Means that the measured value is below the detection limit of the measuring device.

These measurements confirm that TenCate® fibers may be used anywhere and without any restrictions in sensitive areas.