# PRO-gran: TECHNICAL INFORMATION

The ultimate in pitch performance

## **PRO-gran: THE ULTIMATE PITCH INFILL**

PRO-gran has literally 'changed the game' in high-performance infill for artificial sports pitches. A Polymeric Infill that provides exceptional performance, it is the winning formula for 100% pitch safety, both for players and the wider environment. What's more, it has been thoroughly tested and exceeds the EU's toughest toxicology standards since it releases no heavy metals, PAHs or micro plastics.

## **AN ALL-ROUND GREAT PERFORMANCE**



#### The ultimate performance

No other artificial pitch infill matches PRO-gran's performance for ball bounce, ball roll and surface stability.



#### Unbeatable playing experience

Enhanced playing experience through consistency of play, lower surface temperatures, no airborne particulates, creates almost no splash, excellent drainage properties and no aroma.



Up to 25% reduction in skin abrasion

With a big reduction in skin abrasion, players will be more than happy with PRO-gran's performance. Tests performed by Labosport, France.



#### No polluting or harmful substances

PRO-gran is the winning formula for 100% pitch safety. Safe for the players and the environment. Exceeds the EU's toughest standards and is approved for use by the Dutch Soil Decree as it releases no heavy metals, PAHs or micro plastics.

Meets the criteria for REACH 1272/2013 as an article.



#### **Future proof**

Releasing no PAHs, PRO-gran already exceeds stringent European toxicology standards.



UV stable

PRO-gran is UV stable and meets the requirements of FIFA Quality Programme for Football Turf and World Rugby Regulation 22.



#### Guaranteed to last the lifetime of the pitch

PRO-gran doesn't degrade or breakdown. It is high performing and lasts for at least 10 years' worth of use. (Test: LiSport XL 15,000 cycles)



#### **Quality assured**

Every batch is tested to ensure full compliance with industry standards. Tests include particle size distribution, environmental testing and wear tests.

#### Improves the look of the pitch

Available in both green and brown, PRO-gran makes artificial pitches look better than any other infill.



**Recyclable** Can be recycled and reused providing excellent value for money. No other infill performs better in artificial sports surfaces. Put PRO-gran to the test **murfittsindustries.com** 

## **PERFORMANCE SUMMARY**

Product Data and Performance		Toxicology and Environment	
Product classification:	Polymeric Performance Infill	NF P90-112:	PASS
Available colours:	Green & Brown	։n & Brown DIN 18035-7։	
Particle shape (EN 14955):	A2 and B2	REACH 1272/2013:	PASS as an ARTICLE
Particle size grading (BS EN 933-1):	0.8mm – 2.5mm	Dutch soil quality	PASS
Bulk density (BS EN 1097–3):	0.51 (g/cm <sup>3</sup> )	decree:	
Fines content (BS EN 933–1):	<1%		
Heat category:	1/2*		
UVA 9600 kJ (EN 14836):	PASS		
UVB 4896 kJ (EN 14836):	PASS		
Extended wear test (BS EN 15330-1):	PASS		
*Dependent on carpet			

## **EXTENDED DATA - 1: PAH SPECIFICATION**

**Test Report: No.** 0133 170130 P01 E **Date:** 31.01.2017. Results of the analysis of a plastic material sample for the 18 GS-PAHs according to AfPS GS 2014:01 PAH specification;



PAH compound	Unit	Concentration	LOQ	Test method
Naphthalene	mg/kg	nd	0.30	Afps GS 2014:01
Acenaphthylene*	mg/kg	nd	0.10	AfPS GS 2014:01
Acenaphthene*	mg/kg	nd	0.10	AfPS GS 2014:01
Fluorene*	mg/kg	nd	0.10	AfPS GS 2014:01
Phenanthrene*	mg/kg	nd	0.10	AfPS GS 2014:01
Anthracene*	mg/kg	nd	0.10	AfPS GS 2014:01
Fluoranthene*	mg/kg	nd	0.10	AfPS GS 2014:01
Pyrene*	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(a)anthracene**	mg/kg	nd	0.10	AfPS GS 2014:01
Chrysene**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(b)fluoranthene**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(j)fluoranthene**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(k)fluoranthene**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(e)pyrene**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(a)pyrene**	mg/kg	nd	0.10	AfPS GS 2014:01
Dibenzo(a,h/a,c)anthraceneª,**	mg/kg	nd	0.10	AfPS GS 2014:01
Benzo(ghi)perylene	mg/kg	nd	0.10	AfPS GS 2014:01
Indeno(1,2,3-cd)pyrene	mg/kg	nd	0.10	AfPS GS 2014:01
Subtotal of 8 PAHs**	mg/kg	nc	0.80	AfPS GS 2014:01
Total of the 18 GS-PAHs <sup>ь</sup>	mg/kg	nc	2.00	AfPS GS 2014:01

\*\* 8 PAH compounds specified by Commission Regulation (EU) No 1272/2013, amending Annex XVII to regulation (EC) No. 1907/2006 on REACH **nd** PAH compound not detected at levels above the indicated limit of quantification (LOQ)

nc Subtotal or total not calculated since none of the PAH compounds specified was detected at levels above LOQ co-eluting PAHs
a Co-eluting PAHs
b Not detected GS-PAHs were not included in the calculation of the total

## 2: DUTCH SOIL QUALITY DECREE (NEN 7383) Emission inorganic substance

The emission of inorganic substances is analyzed with the percolation test (NEN 7383).

Table 2. Emission of the percolation test NEN 7383 and the maximum emission form the Soil Quality Decree.



	Emission	Maximum Emission SQD
Component	(mg/kg dm)	(mg/kg dm)
Antimony (Sb)	<0.004	0.32
Arsenic (As)	<0.05	0.9
Barium (Ba)	<0.60	22
Cadmium (Cd)	<0.001	0.04
Chromium (Cr)	<0.1	0.63
Cobalt (Co)	<0.03	0.54
Copper (Cu)	<0.05	0.9
Mercury (Hg)	<0.0004	0.02
Lead (Pb)	<0.1	2.3
Molybdenum (Mo)	0.17	1
Nickel (Ni)	<0.05	0.44
Selenium (Se)	<0.007	0.15
Tin (Sn)	<0.02	0.4
Vanadium (Va)	<0.2	1.8
Zinc (Zn)	0.24	4.5
Bromide (Br)	14	20
Chloride (Cl)	24	616
Fluoride (F)	<1	55
Sulphate (SO <sub>4</sub> )	26	2430

The emission from all components complies with the maximum allowed emission from the Soil Quality Decree.

## Conclusion

The investigated sample TPE infill complies with the requirements on leaching and content from the Soil Quality Decree.

## 3: NF P90-112 (2016) TOXICOLOGY AND ENVIRONMENT

**Test Method:** EN 12457-4. **NF P90-112 (2016):** The first eluate after leaching without bubbling (24 hours) is analysed. If the tests on the analysis of zinc and COD are not consistent (respectively between 0.5 and 1 mg/l and between 50-100 mg/l), the second eluate after leaching without bubbling (48 hours) is analysed.



### NF P90-112 (2016)

Parameter	Unit	Test Method	Result	Requirements
Lead (Pb)	mg/l		< 0.001	<u>≤</u> 0.025
Cadmium (Cd)	mg/l		< 0.001	<u>≤</u> 0.005
Chromium total (Cr)	mg/l	NF EN ISO 11885	< 0.001	<u>≤</u> 0.05
Tin (Sn)	mg/l		< 0.001	<u>≤</u> 0.04
Zinc (Zn)	mg/l		0.011	<u>&lt;</u> 0.5
Dissolved organic carbone DOC	mg/l	NF EN 1484	13.5	<u>≤</u> 50
Chromium hexavalent (Cr)	mg/l	NF T90-043	< 0.008	≤ 0.008
		DIN 38405-24		
Mercury (Hg)	mg/l	NF EN 13506	< 0.0001	≤ 0.001
		DIN 12846		

#### DIN 18035-7

Parameter	Unit	Test Method	Result	Requirements
Extractable organic halides EOX	mg/kg	DIN 38414-17	42	≤ 100

Test on granules. Report No. R170567-A2

## 4: UVA & UVB

Testing undertaken on samples of PRO-gran infill material supplied by Murfitts Industries Ltd. The testing was undertaken in accordance with EN 15330-1, NF P90-112, DIN 18035-7 AND FIFA Quality Programme for Football Turf /World Rugby Regulation 22.

# LABOSPORT

### UVA (340 Nm) Ageing (9600 Kj) – En 14836

Colour	Green
Grey scale (EN 20105-A02)	4
Visual aspect	No agglomeration or cracking

View New

View After Ageing

## UVB (313 NM) AGEING (4896 KJ) – EN 14836

Colour	Green
Grey scale (EN 20105-A02)	4
Visual aspect	No agglomeration or cracking

View New

**View After Ageing** 









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