

Terra<sup>XPS</sup> is a thermoplastic elastomer for outdoor grass infill applications and is standard available in three colors: beige (Terra<sup>XPS</sup> 100101), green (Terra<sup>XPS</sup> 601101), brown (Terra<sup>XPS</sup> 801701).

Other colors and special features like flame retardancy are available upon request. General and country specific approvals e.g. from ISA Sport are available upon request.

Typical properties *	Test method	Typical value	Units S.I.
Density	ASTM 792	1480	kg/m <sup>3</sup>
Apparent Density		850	kg/m <sup>3</sup>
Color	RAL	Beige: RAL 1001	
Hardness (3 sec)	ASTM D 2240	52	Shore A
Dust amount	< 0,15 mm	0	Wt.%
Granule size		2,0 – 2,5	mm
Leaching	DIN 18035-7	Pass	
Abrasion resistance	ISO 1431A (5N)	305	mm <sup>3</sup>
Heat ageing	DIN 53508 (100°C/7 days)		
Stress/strain properties			
Retention of hardness		100	%
Retention of tensile strength		100	%
Retention of Elongation at break		100	%
UV ageing	D271389 (2500 hrs)	ΔE < 3	
Fire retardant (on request)	NEN 1775	Class T1	

\*Tests are conducted on injection-molded plaques unless indicated otherwise.

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**Terra<sup>XPS</sup> : a Quality Product**

Terra<sup>XPS</sup> is produced with carefully selected and approved raw materials in order to secure the playing performance, the long term properties and an environmental and health friendly product. The automated high tech production process secures an optimal control of the consistency of Terra<sup>XPS</sup>.

**Long term properties**

Terra<sup>XPS</sup> is an excellent stabilized product. This is the best condition for keeping an optimal playing performance even after years of outdoor use.

Terra<sup>XPS</sup> 100101 has passed 2500 hours of accelerated UV testing in an Atlas weather-O-meter Ci65A as described by PSA D27-1389. No significant change in hardness and mechanical properties are measured under these conditions and also the product stays free of cracks. The color change is minimal and hardly noticeable (delta E<3).

Under normal soccer playing conditions the UV test results are indicative for 10 years of outdoor use in western Europe and 8 years of out-door use in southern Europe.

Terra<sup>XPS</sup> is passing the thermal ageing test according DIN 18035-7:2002-6. No relevant change in hardness and mechanical properties is measured after 1 week of heat ageing at 100 °C. This is indicative for a good long term heat aging stability compared to other currently available infill materials.

**Environment and health**

DSM Thermoplastic Elastomers guarantees that only environmentally acceptable and friendly ingredients are used for Terra XPS. Terra XPS is meeting the environmental requirements as defined in DIN 18035-7:2002-6 for artificial turf systems with respect to heavy metals, EOX, DOC and other toxic ingredients, such as carcinogenic poly aromatic hydrocarbons (PACs).

**Consistent product quality**

DSM thermoplastic elastomers guarantees that on the date of delivery Terra XPS products will meet the product specifications and our additional quality controls. In this way a consistent product quality for the Terra products delivered now and in the future is secured.

**Recycling / regrind**

Terra<sup>XPS</sup> is a Thermoplastic Elastomer which can be reprocessed. Physical properties are generally not degraded due to reprocessing. Prior to reprocessing, the material needs to be dried. If used under normal soccer conditions, the material can be recycled at the end of the life time of a soccer field. The current recycle value for the recycle industry is about 0.1-0.2 Euro/kg. Current potential recycle applications are: e-layers, impact applications and low end TPO applications. If due to extreme conditions, the material can not be recycled, it can be used as an energy source if burned in a heating oven of an electricity plant.

**Storage & handling**

Terra<sup>XPS</sup> is standard available in 1200 kg big bags. It has a storage life at normal temperatures of several years. Please refer to the Material Safety Data Sheet for this grade prior to first time handling.