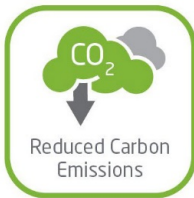

Woven Geotextiles as most sustainable solution

Woven Geotextiles | Durability reference

For a new runway of 160.000m² at Ostend-Bruges Airport, a durable woven geotextile is installed with remarkable impact in CO₂ emissions.

Reduced carbon impact comes on multiple levels:

1. **Product:** Geotextile Terralys LF 57/57 versus 10 cm Gravel
2. **Raw Material:** PP – PET Granulate
3. **Geotextile Type:** Woven versus Non-woven



Most sustainable solutions
Low CO₂ footprint for civil engineering



Woven Geotextiles | Reduced carbon impact

1. Product: Woven Geotextile Terralys LF 57/57 versus 10 cm Gravel

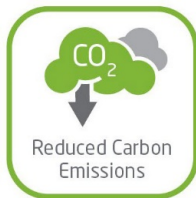
A 10 cm layer of gravel on a surface of 160.000m² results in 16.000 tonnes of material (2 ton/m³). Taking into account 27 tons/truck, this results in 593 trucks bringing material to the site.

Functional unit: 1 m³

Cradle-to-Grave

Layer	Size	CO ₂ emissions	# Truck
Gravel	10 cm	(7,8 kg CO ₂ /30 cm)*10 cm = 2,6 kg CO ₂	593
Terralys LF 57/57	220 gsm	(0,81 kg CO ₂ /175 gsm)* 220 gsm = 1,02 kg CO ₂	2-3

Source: EAGM, own assumptions



Conclusion:
This choice resulted in 252.800 kg CO₂ savings.

Woven Geotextiles I Reduced carbon impact

2. Raw Material: PP – PET Granulate

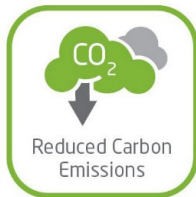
The most common polymers used in the manufacture of geotextiles are PP and PET.
What is the impact of the raw material?

Functional unit: 1 kg granulate

Cradle-to-Gate

Raw Material	CO ₂ emissions
PP-granulate	1,63 kg CO ₂ / kg granulate
PET-granulate	2,19 kg CO ₂ / kg granulate

Source: *Plastic Europe*



Conclusion:
This choice results in 17.920 kg CO₂ savings.

Woven Geotextiles I Reduced carbon impact

3. Geotextile Type: Woven versus Non-woven

Performance characteristic: Tensile strength of 17 kN/m

Functional unit: 1m²


Cradle-to-Grave

Geotextile Type	CO ₂ emissions
Woven (92 g/m ²):	0,48 kg CO ₂ /m ²
Non-woven (190 g/m ²)	0,99 kg CO ₂ /m ²



Conclusion:
This choice brings 81.600 kg CO₂ savings.

Woven Geotextiles | Only benefits with woven geotextiles

Woven geotextiles versus gravel	PP versus PET raw material	Woven versus Nonwoven geotextile
<ul style="list-style-type: none"> ✓ Significantly less CO₂ emissions ✓ Minimized transport ✓ Reduced use of materials ✓ Possibility to reuse soil of the excavation (even if the soil has a poor quality) 	<ul style="list-style-type: none"> ✓ Best-in-class polymer in CO₂ emission ✓ Low environmental impact ✓ Durable long life span ✓ Non-toxic, no harmful substances ✓ Highly resistant to microbiological and chemical degradation 	<ul style="list-style-type: none"> ✓ > 50% less virgin material ✓ Less weight ✓ Less volume, less transport ✓ Reduced CO₂ emissions
 <p>Case Ostend-Bruges: 252.800 kg CO₂ savings</p>	<p>Case Ostend-Bruges: 17.9200 kg CO₂ savings</p>	<p>Case Ostend-Bruges: 81.600 kg CO₂ savings</p>