

1. DESCRIPTION LFX is a range of multilayer geocomposites designed specifically for use in landfill basal applications providing both membrane protection and drainage. The use of LFX allows for the replacement of up to 250mm of the drainage aggregate used in the leachate drainage system at the base of the cell. The composite consists of a tri-planer geonet encapsulated between two specially developed woven filters overlaying a lower interchangeable protection geotextile which can be engineered to suit specific site requirements.

2. FEATURES

- Reduces use of expensive and scarce primary aggregate
- Void saving to allow more efficient and productive use of space
- Reduced haulage of construction materials to site – a single truck of LFX can replace up to 90 trucks of aggregate
- The CQA inspection can be carried out in a factory environment
- The drainage core has a proven flow rate and it has been tested up to 1000kPa allowing for use in the deepest landfills



	Test	Unit	MEAN VALUES						
			LFX 8	LFX 11	LFX 14	LFX 17	LFX 19	LFX 22	
3. MECHANICAL PROPERTIES – Composite									
Static puncture (CBR)	EN ISO 12236	kN	8	11	14	17	19	22	
Tensile strength (MD/CMD)		kN/m	38	57	78	90	98	126	
Tensile elongation (MD/CMD)	EN ISO 10319	%	18/28	18/28	18/28	18/28	18/28	18/28	18/28
Cone drop	EN ISO 13433	mm	0	0	0	0	0	0	0
4. FILTER PROPERTIES – Upper Geotextile									
Apparent opening size	EN ISO 12956	µm	300						
Water permeability v_{H50}	EN ISO 11058	l/(m ² ·s)	60						
5. HYDRAULIC PROPERTIES – Composite									
Water flow capacity in the plane (rigid/soft)			(i=1)						
@ 200kPa	EN ISO 12958	m ² /s	3.1×10^{-4}						
@ 1000kPa			1.7×10^{-4}						

Notes:

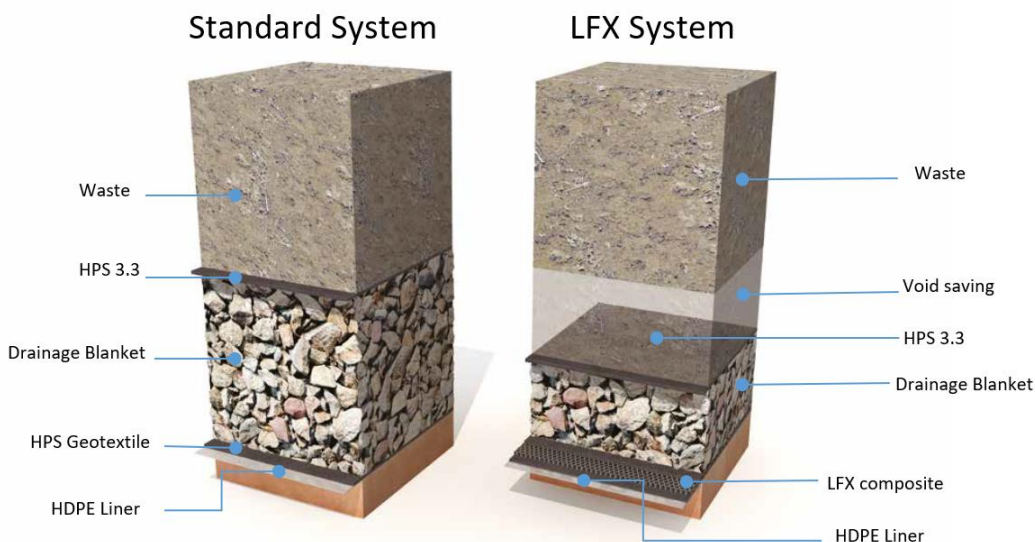
- Mean values indicate the arithmetic mean derived from the samples taken for any one test as defined in the standard – usually an overall mean of five samples. Mean values are subject to tolerances based on 95% confidence limits as published on the product CE declaration of performance.
- MD: Machine Direction (longitudinal to the roll).
- CMD: Cross Machine Direction (across the roll).
- Tensile testing is performed using extensometers.

	Test	VALUES	
6. DURABILITY – Composite			
Weathering 50 MJ/m ² (1 month)	EN ISO 12224	>90% Retained Strength	
Microbiological resistance	EN ISO 12225	No loss in strength	
Resistance to acids & alkalis	EN ISO 14030	No loss in strength	
Oxidation at 112 days (100 years)	EN ISO 13438	>90% Retained Strength	

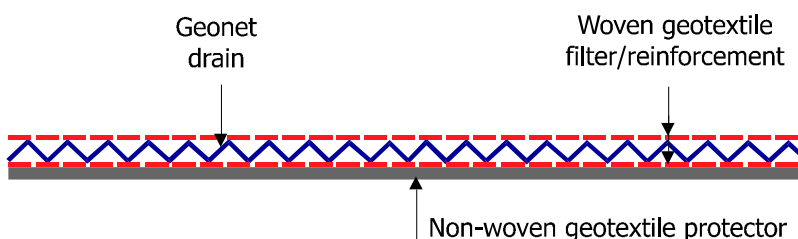
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7. DIMENSIONS							
Standard roll length	m	3.9	3.9	3.9	3.9	3.9	3.9
Standard roll width	m	65	50	50	50	50	50
Approximate roll weight	kg	510	485	570	610	640	665

LFX Protection & Drainage Geocomposites

- 8. NEEDLE DETECTION** During manufacture, the protection geotextile passes close to three sets of magnets which remove metal particles up to 12g and >2mm. Just before the roll up, the geotextile passes through an electronic metal detection field. Audio and visual alarms indicate if metal particles are detected. Rolls are sent to stock if they pass through the field without an alarm event or, in the case of an alarm event, the operator inspects the suspect area, locates any metal particles and removes them. If unsuccessful, or if any doubt remains as to the presence of metal particles, then the roll goes to the re-inspection facility.
- 9. TESTING** All materials are tested every 6000m² in an UKAS accredited ISO 17025 laboratory to all mechanical properties prior to release.
- 10. STORAGE** The geocomposites are supplied in packaging designed to protect the product from damage during handling, storage and degradation as a result of UV exposure. The product should be kept in appropriate packaging until such time that it is required for installation. The product is clearly and indelibly marked with the product name along the edge of the roll at regular intervals no greater than 5m. The packaging is labelled clearly to identify the product supplied in accordance with EN ISO 10320: Geotextile and Geotextile related products – Identification on site. Use slings where provided. Product weights are given on roll tickets. Use equipment appropriate to weight and dimension. Store and handle in accordance with good occupational hygiene and safety practice.
- 11. APPLICATION** LFX has been designed and engineered specifically for use within the basal area of a landfill cell and it is able to provide protection of the liner and allows for the replacement of 50% of the granular drainage aggregate.



12. COMPONENTS



Note: nonwoven protection grade is increased/decreased in line with site requirements.