



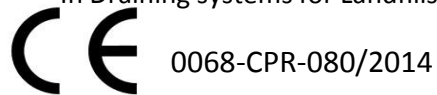
APETEK SRL
Corso Italia, 19 24040 Osio Sopra (Bg) - ITALY
Tel. +39 (0) 35 49 42 201 - Fax +39 (0) 35 49 97 158
info@apetek.net - www.apetek.net

REFO PROTECT DF12 160

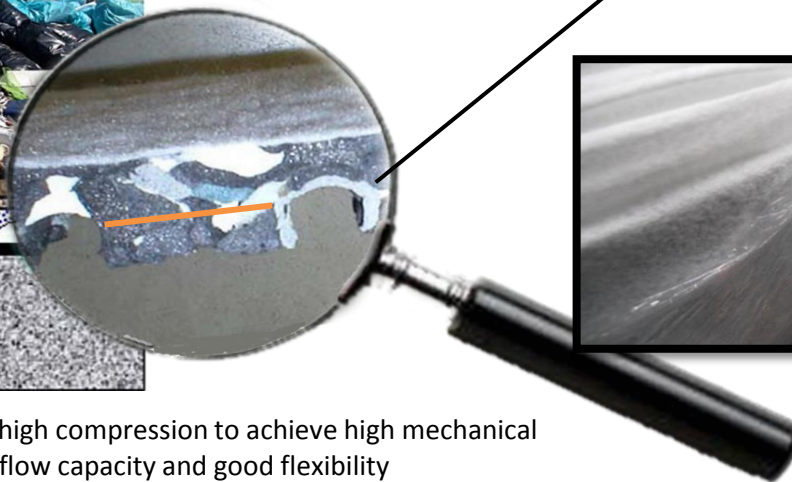
Geocomposite consisting of a drainage mat polyethylene closed-cell foam, chipboard and pressed with horizontal grooves in the round perforated, 12 mm thick, laminated to a DOUBLE nonwoven geotextile

APPLICATIONS

Applications according to product standards: UNI EN 13252:2005 UNI EN 13257:2005 UNI EN 13255:2005
In Draining systems for Landfills and Roof Gardens



Channels made during the high compression to achieve high mechanical strength, high flow capacity and good flexibility



Distance feature from channel to channel, about 5 cm



FEATURES GEOCOMPOSITE	UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
PHYSICAL CHARACTERISTICS				
Mass per unit area	g/mq	3.500	± 5%	EN ISO 9864
Thickness at 2 kPa	mm	12	± 5%	EN ISO 9863
CHARACTERISTICS MECHANICAL				
Tensile strength longitudinal	kN/m	19,5	-1,5	UNI EN 10319:2008
Tensile strength transverse	kN/m	24,9	-1,6	UNI EN 10319:2008
Elongation at break	%	61	± 10 %	UNI EN 10319:2008
Elongation transverse	%	61	± 10 %	UNI EN 10319:2008
Resistance to impact static	N	5053	/	UNI EN ISO 12236:2006
Resistance to impact dynamic	mm	No drilling	/	UNI EN ISO 13433:2006
Residual depth to the test impact of damage	%	88	/	EN ISO 13428
HYDRAULIC CHARACTERISTICS				
Drainage capacity in the plane (i=1)	l/s*m (10 kPa)	2,29	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (20 kPa)	1,95	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (40 kPa)	1,15	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (100 kPa)	0,87	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=1)	l/s*m (200 kPa)	0,71	/	UNI EN ISO 12958:2010

Drainage capacity in the plane (i=0,1)	l/s*m (10 kPa)	1,94	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=0,1)	l/s*m (20 kPa)	1,41	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=0,1)	l/s*m (40 kPa)	1,05	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=0,03)	l/s*m (10 kPa)	0,99	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=0,03)	l/s*m (20 kPa)	0,81	/	UNI EN ISO 12958:2010
Drainage capacity in the plane (i=0,03)	l/s*m (40 kPa)	0,69	/	UNI EN ISO 12958:2010
Water permeability normal to the plane	m/s	0,07	± 30	UNI EN ISO 11058:2010

DURABILITY

The residual strength of the product at the end of this test, it appears to be <20% as required in Table B.1 of Appendix B of the UNI EN ISO 13252:2005

Protection efficiency

Standard used: UNI EN 13719: 2004
Product standard: UNI EN 13255:2005

Test Conditions: 300 kN/m²

Result: < 2,0 %

FEATURES GEOTEXTILE	UNIT OF MEASURE	VALUE	TOLERANCE	REFERENCE STANDARD
PHYSICAL CHARACTERISTICS				
Mass per unit area	g/mq	160	/	EN ISO 9864
Thickness at 2 kPa	mm	1,9	/	EN ISO 9863/1
Thickness at 20 kPa	mm	1,2	/	EN ISO 9863/1
Thickness at 200 kPa	mm	0,3	/	EN ISO 9863/1
CHARACTERISTICS MECHANICAL				
Tensile strength longitudinal	kN/m	11,2	-1,5	UNI EN 10319:2008
Tensile strength transverse	kN/m	12,2	-1,6	UNI EN 10319:2008
Elongation at break	%	80	± 16	UNI EN 10319:2008
Elongation transverse	%	80	± 16	UNI EN 10319:2008
Resistance to impact static	N	1800	- 180	UNI EN ISO 12236:2006
Resistance to impact dynamic	mm	15,5	2,8	UNI EN ISO 13433:2006
HYDRAULIC CHARACTERISTICS				
Drainage capacity in the plane (i=1)	m ² /s x 10 ⁻⁶ (20 kPa)	4,9	-1,7	UNI EN ISO 12958:2010
Water permeability normal to the plane	l:s*mq	72	± 30	UNI EN ISO 11058:2010
Opening Size feature	µm	63	± 30	UNI EN ISO 12956:2010