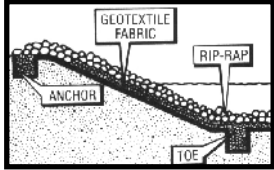


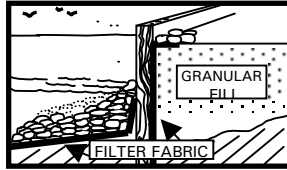
Long Term Filtration and Drainage

■ Woven 'Monofilament' Geotextiles

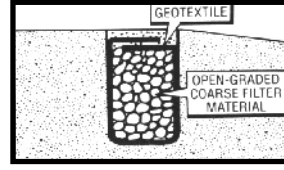
Woven monofilament geotextiles can provide 'long term' solutions for nearly any drainage/filtration application, thus making them the filter fabric of choice for bulkheads, subsurface drainage systems and under hard armor. Effective levels of *Percent Open Area*, a property found critical to long term filtration, are unique to woven monofilaments. Values $\geq 4\%$ indicate that a sufficient quantity of 'direct paths' through the fabric exist to allow for the release of troublesome migrating fines. The subsequent formation of a free flowing *filter cake* against the surface of a free flowing *filter fabric* is the designers' insurance against long term clogging of their systems.



Erosion Control



Bulkheads



Subsurface Drainage

Carthage Mills' woven monofilaments were America's first filter fabrics and the *only ones* that have been used successfully for more than 45 years. They can be found in literally thousands of projects designed and managed by the US Army Corps of Engineers, all levels of foreign and local governments, and private entities around the world. Carthage Mills can quickly fabricate custom widths and lengths for your specific project thereby reducing waste and installation times.

PROPERTY	TEST METHOD	UNITS	Carthage 6%™	Carthage 15%™	Carthage 30%™	FX™-230M ¹
<input type="checkbox"/> Hydraulics / Filtration						
Apparent Opening Size	ASTM D 4751	US Std Sieve	70	30 - 40	20 - 30	40
Percent Open Area	CW-02215	%	4 - 6%	11 - 15%	20 - 30%	≤ 1%
Permittivity	ASTM D 4491	sec ¹	0.28	1.10	1.50	0.90
Permeability		cm/sec	0.01	0.05	0.20	0.07
Flow Rate		gpm/ft ²	18	110	200	70
<input type="checkbox"/> Mechanical						
Grab Tensile	ASTM D 4632	lbs	370 x 250	370 x 220	255 x 275	400 x 315
Grab Tensile Elongation		%	15%	15%	15%	15%
Wide Width Tensile	ASTM D 4595	lbs/in	215 x 110	200 x 135	130 x 130	250 x 230
Mullen Burst	ASTM D 3786	psi	480	470	420	800
Puncture	ASTM D 4833	lbs	120	115	135	150
Trapezoidal Tear	ASTM D 4533	lbs	100 x 70	115 x 75	40 x 50	165
<input type="checkbox"/> Endurance						
UV Resistance	ASTM D 4355	%	90%	90%	90%	90%
<input type="checkbox"/> Physical						
Mass Per Unit Area	ASTM D 5261	oz/yd ²	5.9	5.7	6.1	8.0

¹ FX-230M is woven with a combination of monofilament and fibrillated yarns, possesses <4% Open Area, and is *not* a true monofilament; however, it has exhibited good filtration and flow capabilities in certain well graded soils.

Please see papers entitled *Why Percent Open Area?* and *Independent Research on Fabric Clogging* included with our information package.

The properties reported above are effective 09/18/03 and are subject to change without notice.

Distributed By:

Carthage Mills

4243 Hunt Road • Cincinnati, Ohio 45242
513-794-1600 • 800-543-4430 • 513-794-3434 FAX



"Since 1958 - America's First Geotextile Company"

Seller makes no warranty, expressed or implied, concerning the product furnished hereunder other than at the time of delivery it shall be of the quality and specification stated herein. Any implied warranty of fitness for a particular purpose is expressly excluded, and, to the extent that it is contrary to the foregoing sentence, any implied warranty of merchantability is expressly excluded. Any recommendations made by seller concerning the uses or applications of said product are believed reliable and seller makes no warranty of results to be obtained. If the product does not meet Carthage Mills current published specifications, and the customer gives notice to Carthage Mills before installing the product, then Carthage Mills will replace the product without charge or refund the purchase price.

02/01/03

Carthage Mills