Progetto di ricerca di interesse nazionale 2005, Cofinanziato dal MIUR
Titolo generale della ricerca:
PERCORSI E GESTIONE DELLE INFORMAZIONI TECNICHE PER LA PROMOZIONE E IL CONTROLLO DELL'INNOVAZIONE NEI MATERIALI E NEL PROGETTO DI ARCHITETTURA
Responsabile nazionale Attilio Nesi, Università degli Studi di Reggio Calabria

Titolo della ricerca dell'unità di ricerca del Politecnico di Milano, Dipartimento BEST
MEMBRANE E SCOCCHE PER L'ARCHITETTURA DIFFUSA

Responsabile dei contenuti:
Alessandra Zanelli

Progetto a cura di:
Andrea Campioli, Cristina Mazzola, Carol Monticelli, Alessandra Zanelli

Contenuti a cura di:
Paolo Beccarelli, Davide Bertanza, Andrea Campioli, Lara Casati, Rocco Ciurlia, Emilio Elli, Pamela Foresti, Chiara Geroldi, Elisabetta Ginelli, Monica Lavagna, Roberto Maffei, Cristina Mazzola, Carol Monticelli, Ilaria Oberti, Fabrizio Noto, Valentina Pellegrino, Francesca Plantamura, Federica Rongone, Stefano Rizzi, Silvia Rotondi, Gessica Salerno, Paola Tardini, Lucia Ticozzi, Alessandra Zanelli

Consulente tecnico:
Francesca Focolari

Consulente esterno per la realizzazione dei contenuti video:
Giovanni Lasi

Materiale di base

SELEZIONE DI SCHEDE TECNICHE DAI PRINCIPALI PRODUTTORI

I dati pubblicati nelle schede sono stati forniti dalle aziende e sono indicativi. Per una corretta e più aggiornata informazione si consiglia il contatto diretto con i loro uffici commerciali.

1W70
1W78

A.C.E.® Polyester Fiber

The Industrial Achiever

A.C.E.® POLYESTER FIBER IS A HIGH-TENACITY INDUSTRIAL POLYESTER YARN WITH EXCELLENT MECHANICAL QUALITY, DYEABILITY, AND TENSILE STRENGTH. A.C.E.® POLYESTER FIBER IS DESIGNED FOR A BROAD SPECTRUM OF APPLICATIONS, INCLUDING NARROW AND BROAD WOVENS, AS WELL AS CORDAGE.

PHYSICAL PROPERTIES

Product		**1W70**								**1W78**			
Denier	(nominal)	840	840	1000	1000	1000	1300	1300	2600	1000	1500	2000	3000
Decitex	(nominal)	930	930	1110	1110	1110	1440	1440	2890	1100	1670	2200	3300
Filament Count		192	140	192	192	140	192	192	384	1192	250	384	500
Breaking Strength	(lbs.)	16.9	16.6	19.8	20.3	20.3	25.5	26.2	51.6	20.4	30.7	40.9	61.0
	(kg.)	7.7	7.6	9.0	9.2	9.2	11.5	11.9	23.5	9.3	13.9	18.5	27.7
	(N.)	75	74	88	90	90	114	116	230	91	137	182	271
Tenacity	(g/d)	9.1	9.0	9.0	9.2	9.2	8.9	9.2	9.0	9.2	9.2	9.2	9.2
	(cN/d.tex.)	8.0	7.9	7.9	8.1	8.1	7.9	8.0	7.9	8.1	8.1	8.1	8.1
Elongation at Break (%)		14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	10.6	10.6	10.6	10.6
Toughness (g/d)		0.70	0.69	0.70	0.71	0.71	0.67	0.73	0.71	0.54	0.54	0.54	0.54
	(cN/d.tex.)	0.62	0.61	0.62	0.61	0.61	0.59	0.64	0.61	0.48	0.48	0.48	0.48
Thermal Shrinkage @177°C (%)		9.0	9.0	7.5	9.0	8.9	7.5	9.0	9.0	4.5	4.5	4.5	4.5

** As per ASTM D-4974. Tested @ 177°C with 0.05 gpd load for 2 minutes in Testrite.*

Applications

- Low creep and elongation properties ideal for truck tie-downs, round slings, tow-straps and pet leashes.
- Available with SeaGard® marine overlay finish for superior wet performance in cordage applications.
- Excellent dye pick-up for colorful cordage or outdoor furniture, as well as narrow fabrics.

Performance Fibers™
Toll Free:+1-800-486-0148
Europe: +33 3 82 44 80 00
Asia: +86 750 2278 000
www.performancefibers.com

1X30
1X50
1X90

DSP® High Performance Fibers

Dimensionally stable yarns that provide value and high performance in today's tire and auto industries.

USED IN A VARIETY OF INDUSTRIAL AND CONSUMER APPLICATIONS, THESE HIGH-MODULUS, LOW-SHRINKAGE POLYESTER FIBERS PROVIDE HIGH-PERFORMANCE REINFORCEMENT WITH EXCELLENT DIMENSIONAL, THERMAL AND CHEMICAL STABILITY; VIRTUALLY NO MOISTURE ABSORPTION, HIGH STRENGTH, AND TOUGHNESS.

PHYSICAL PROPERTIES

Product		**1X30**			**1X50**				**1X90**	
Denier	(nominal)	1000	1300	1500	1000	1300	1500	2000	1000	1500
Decitex	(nominal)	1100	1440	1670	1100	1440	1670	2200	1100	1670
Breaking Strength	(lbs.)	17.2	22.4	25.3	17.2	22	25.6	34.2	17.7	26.5
	(kg.)	7.8	10.2	11.5	7.8	10	11.6	15.5	8.0	12
	(N.)	77	100	113	77	98	114	152	79	118
Tenacity	(g/d)	7.8	7.8	7.6	7.7	7.7	7.7	7.8	8	8
	(cN/d.tex.)	6.9	6.9	6.7	6.9	6.8	6.8	6.9	7.1	7.1
Elongation at 45N (%)		4.9	4.5	3.9	5	4.2	3.9	3	6	3.8
Elongation at Break (%)		10.5	11	11	10	10	10	10-12	11	11
Thermal Shrinkage* (%)		5.0	4.5	5.0	3 - 4.5	3 - 4.5	3 - 4.0	3 - 4.0	5.9	5.5

**ASTM D - 4974 -177°C - 2 min - 0.5 cN/tex*

Note: Some properties may be customized to meet regional demand, contact your PFI representative for more information.

Product Characteristics:

DSP Yarns

- Excellent combination of high modulus and low shrinkage
- Available in adhesive activated versions for excellent rubber adhesion with single dip systems
- Heavier deniers allow tire and textile engineers greater flexibility in meeting a range of design criteria, providing extra value
- Benefits to tire makers and consumers include longer tire life, improved tire uniformity, higher intermediate modulus cords and reduced sidewall indentation
- Able to meet the stringent demands of high speed and dynamic flexing in mechanical belts
- Cost-effective reinforcement for transmission belts in new generation automobiles. DSP® fiber technology promotes improved product performance and design flexibility
- Used for tire, hoses, mechanical belts and other engineered reinforcements, including conveyor belts

Performance Fibers

Toll Free:+1-800-486-0148
Europe: +33 3 82 44 80 00
Asia: +86 750 2278 000
www.performancefibers.com

1Y85
1Q85

WickGard® Anti-Wick Finish

Improves the durability and appearance of outdoor fabrics

WICKGARD® FINISH IS A PROPRIETARY "NO-WICK" FINISH SPECIFICALLY DESIGNED FOR USE IN OUTDOOR FABRICS. ITS ANTI-WICKING PROPERTIES PREVENT THE WEAKENING OF BOND STRENGTH (DELAMINATION) DUE TO MOISTURE, AND INHIBITS UNAPPEALING AESTHETIC PROBLEMS SUCH AS MILDEW AND DISCOLORATIONS.

PHYSICAL PROPERTIES

Physical Property	PET Fibers with WickGard® Finish	PET Fibers without WickGard® Finish
Fiber Water Repellency(1)	Very high contact angle (close to 100 degrees) indicates non-wetting properties.	Significantly lower contact angle (close to 30 degrees) indicates greater wetting.
Fabric Wicking Performance(2)	One-quarter inch maximum(3)	Approximately 5-1/2 inches
Fabric Properties	Superior retention of original mechanical and physical properties.	Coated fabric is vulnerable to loss of mechanical integrity due to moisture pickup and mildew growth.
Cost Savings	Eliminates need for post-treating fabrics for water repellency. Fiber can be woven, knitted or weft-inserted on a variety of equipment.	Fabrics may require costly and time-consuming after-treatments for water repellency.
Durability	Repeated water washings show no effect on non-wetting properties of treated fibers, which are cured for permanence and superior durability.	Coatings applied to fabric instead of fiber result in uneven, less durable coatings.

(1) Estimated from wetting force measurements of fibers in water using Wilhelmy-type Electro Balance.
(2) Fabric immersed in dye solution for 2 hours; vertical migration after 2 hours at room temperature measured on a 6-inch long substrate.
(3) Fiber coating in fabric cured at 320°F for 30 seconds.

Product Characteristics:

- Ideal for outdoor fabrics where appearance and performance are paramount, including backlit signs, tents and architectural structures, roofing membranes, awnings, casual and marine furniture
- Specially formulated to enhance the performance of Substraight® polyester fibers in deniers from 220 to 2000.
- Use of WickGard® finish in coated and laminated fabrics will not adversely affect the tensile, dimensional stability or adhesion properties of the fabric itself.

Performance Fibers™
Toll Free:+1-800-486-0148
Europe: +33 3 82 44 80 00
Asia: +86 750 2278 000
www.performancefibers.com