

# ZOLTEK™ PXFB CARBON FABRICS

## DESCRIPTION & TYPICAL PROPERTIES

ZOLTEK PXFB carbonized fabrics are produced from 100% ZOLTEK OX fabrics; being continuously carbonized and supplied in roll form. Continuous carbonization ensures thickness uniformity throughout the roll. ZOLTEK PXFB carbonized fabrics can be used in many applications, including stationary energy storage batteries, fire protective insulation, high temperature and chemically corrosive applications and as carbon composite materials for friction end uses. Customers can apply their own post treatments and the carbonized fabric is easy to cut and process for specific end use applications.



MATERIAL OVERVIEW	PXFB PW03 PLAIN WEAVE FABRIC		PXFB SW08 SATIN WEAVE FABRIC		PXFB PW06 PLAIN WEAVE FABRIC	
	SI	US	SI	US	SI	US
Fiber Precursor Type	PAN					
Fabric OX Yarn Count	2/27 Wc		2/10 Wc		2/10 Wc	
Fabric Construction (Warp x Weft)	210 x 170 Yarns / 10 cm	53 x 43 Yarns / inch	166 x 154 Yarns / 10 cm	42 x 39 Yarns / inch	144 x 136 Yarns / 10 cm	37 x 35 Yarns / inch
Areal Weight <sup>1</sup>	143 g/m <sup>2</sup>	4.2 oz/yd <sup>2</sup>	363 g/m <sup>2</sup>	10.7 oz/yd <sup>2</sup>	310 g/m <sup>2</sup>	9.14 oz/yd <sup>2</sup>
Thickness <sup>2</sup>	0.45 mm	0.017 in	1.4 mm	0.055 in	0.86 mm	0.039 in
Fabric Bulk Density	0.32 g/cm <sup>3</sup>	0.0116 lb/in <sup>3</sup>	0.26 g/cm <sup>3</sup>	0.009 lb/in <sup>3</sup>	0.36 g/cm <sup>3</sup>	0.013 lb/in <sup>3</sup>
Roll Width	69 cm	27 in	97 cm	38 in	89 cm	35 in
Roll Length <sup>3</sup>	73 m	80 yds	36 m	40 yds	36 m	40 yds
Fiber Diameter	7 - 9 µm					
Fiber Density	~1.78 g/cc (~0.0643 lb/in <sup>3</sup> )					
Carbon Content	~95%					
Electrical Resistivity <sup>4</sup>	4.7 Ω mm		7.3 Ω mm		-	
BET Surface Area	~1 m <sup>2</sup> /g					
Open Porosity <sup>5</sup>	82%		85%		80%	
Tensile Strength in Warp / Weft Direction <sup>6</sup>	19.0 MPa/20.8 MPa		10.8 MPa/10.5 MPa		-	
Elongation in Warp / Weft Direction <sup>6</sup>	2.9% / 3.9%		5.9% / 13.7%		-	
Trace Metals	Fe < 20 ppm, Na < 30 ppm, Ca < 20 ppm					

<sup>1</sup>All data provided are typical properties and are not specification values. (Revision Date 05.07.20)



# ZOLTEK™ PXFB CARBON FABRICS

- 1 – Areal weights are determined from 100 mm diameter circular samples.
- 2 – Thickness is determined via ASTM D1777, at a compression level of 4.14 kPa.
- 3 – Due to the manufacturing process, individual roll lengths will vary.
- 4 – Z-direction electrical resistivity is determined at 1 A current with 30 x 30 mm samples, at 20% compression, in the thickness direction.
- 5 – Open porosity is calculated as  $1 - \frac{w_a}{d * \rho_c}$  where  $w_a$  is the felt areal weight,  $d$  is the felt thickness and  $\rho_c$  is the fiber density.
- 6 – Tensile and Elongation properties are tested according to ASTM D 5035-06.

The properties listed in this datasheet do not constitute any warranty or guarantee of values. This information should only be used for the purposes of material selection. Please contact us for more details.

## TYPICAL PACKAGING

All fabrics are wound on 3" diameter cores, sealed in plastic, and placed in a cardboard box. Listed below are the standard box dimensions. All dimensions are internal measurements.

26 inch fabric width: 12" x 12" x 37"

37 inch fabric width: 12" x 12" x 50"

## SAFETY

Obtain, read, and understand the Material Safety Data Sheet (SDS) before use of this or any other ZOLTEK product.

\*All data provided are typical properties and are not specification values. (Revision Date 05.07.20)

