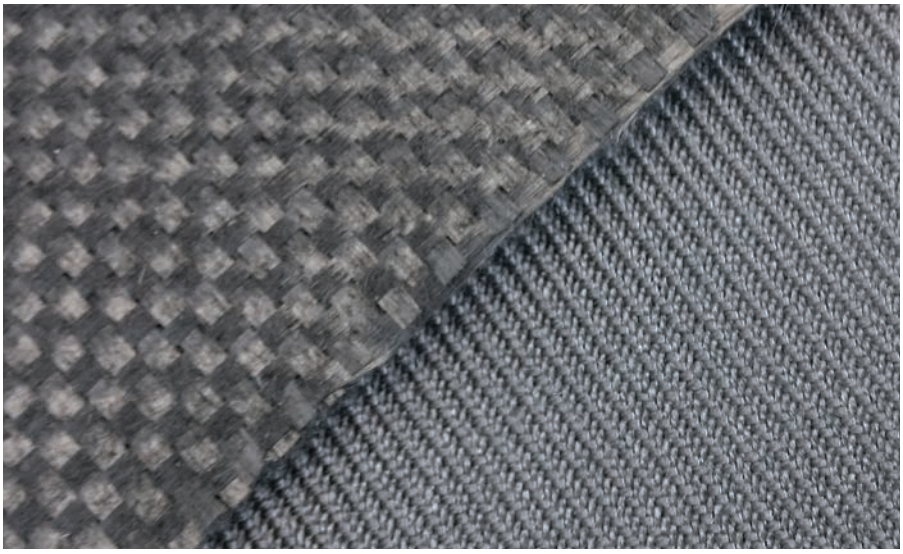
sgl carbon

R&D Materials – preliminary data sheet

Hybrid textiles for filter applications

Nonwovens reinforced with carbon fiber based scrims

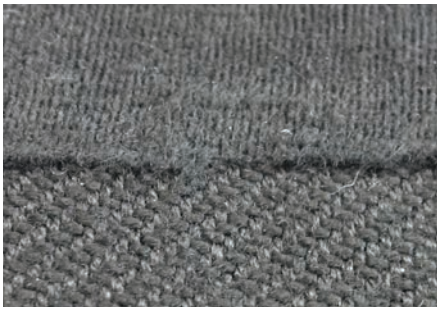


↑ Possible reinforcement structures for nonwovens

Nonwovens based on oxidized PAN fibers [PANOX®] can be manufactured by consolidation of two or more carded webs. This process enables the integration of a reinforcement structure into the nonwoven, e. g. by incorporating a carbon fiber woven fabric.
By combining these different materials hybrid textiles with adapted tensile strength, air permeability and temperature stability can be made, without losing the chemical stability of the textile. These properties make the semi-finished product suitable for use in filter applications.
By varying the fabrication process e. g. by means of thermal post treatment, the chemical stability, the antistatic properties and max. application temperature can be further adjusted.

Material data of reinforced nonwoven materials (preliminary)

Properties	Units	Example-1	Example-2	Example-3
Construction (nonwoven/scrim)		PANOX/C	C/C	C/C
Thickness	mm	2.5	2.4	2.2
Area weight	g/m²	540	680	460
Tensile strength MD	daN/5 cm	150	60	120
Tensile strength CD	daN/5 cm	40	50	50
Max. elongation MD	%	3	4	4
Max. elongation CD	%	3	17	2
Air permeability at 200 Pa	l/dm²/min	70	70	80
Chemical stability		good	excellent	excellent
Max. application temperature	°C	< 200	< 250	< 250



↑ PANOX nonwoven with carbon fiber based reinforcement

11 2018/0 E Printed in Germany

Central Innovation | SGL CARBON GmbH
Werner-von-Siemens-Straße 18 | 86405 Meitingen/Germany
Dr. Rainer Schmitt | Phone +49 8271 83-1357
rainer.schmitt@sglcarbon.com
www.sglcarbon.com