suter-kunststoffe ag
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Optiveil®

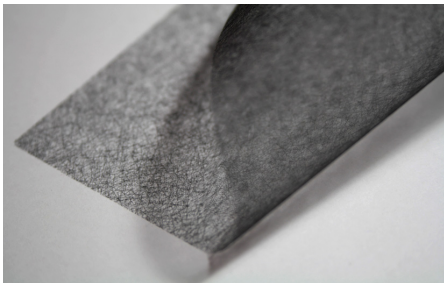
TECHNICAL DATA SHEET

20301A
Carbon Veil

Optiveil® is a customisable range of highly porous nonwoven veils which are produced from short chopped engineered fibres. These materials have been specifically developed for use in advanced composite structures and are used in a variety of industries worldwide, including aerospace, defence, automotive, construction, industrial, consumer electronics and energy.

The key benefits of **Opti**veil® nonwovens include; excellent resin uptake, tuneable properties and exceptionally even fibre distribution. This makes **Opti**veil® the ideal candidate for providing a high quality surface finish and effective surface engineering of composites, as well as aiding fabrication through acting as a lightweight support or carrier.

MATERIAL COMPOSITION



Description:	Wet-laid nonwoven carbon fibre veil
Fibre Type:	PAN Carbon
Fibre Length:	6 mm / 0.25" & 12 mm / 0.5"
Fibre Diameter:	7 µm
Binder Type:	PVA (poly vinyl alcohol)

MATERIAL PROPERTIES

Areal Weight	g/m²	8	10	17	20	30	34
	oz/yd²	0.2	0.3	0.5	0.6	0.9	1.0
Thickness at 10 kPa/(1.45lb/in²)	mm	0.12	0.14	0.21	0.24	0.37	0.41
	mil	5	6	8	9	15	16
MD Tensile Strength	N/15mm	14	18	31	36	54	61
	lb/in	5	7	12	14	21	23
CD Tensile Strength	N/15mm	4	5	9	10	15	17
	lb/in	1.5	1.9	3.4	3.8	5.7	6.5
*MD Surface Resistivity	ohm/sq	10	8	5	4	3	3
*CD Surface Resistivity	ohm/sq	22	12	14	9	7	7

If a higher areal weight is required TFP also offers **Optimat®**, a range of nonwoven mats of 35 g/m² and above.

The data in the table represents indicative values only. The user must be satisfied that the product is entirely suitable for the intended application.

*Surface resistivity is measured using a Vermason 75mm square contact block. The contact block is placed on a sample measuring 10cm x 10cm and a 1.0kg deadweight is loaded centrally on top of the contact block assembly.

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MATERIAL SUPPLY

Supply Form		Continuous Rolls
Max Roll Width	mm	1650
Min Roll Width	mm	10
Other supply forms		Sheets and cut shapes

TFP also offers in-house lamination and powder scatter capability, providing further ways to add value to **Opti**veil® materials. These include:

- **Production of hybrid (multi-layer) materials,** for example, a nonwoven can be combined with a reinforcement, or a structure consisting of alternating conductive and dielectric layers produced. These materials offer potential to simplify part fabrication and assembly or provide unique function.
- **Application of pressure sensitive adhesive (PSA)** to nonwovens.
- **Production of surface coated materials** through powder scatter application of polymeric and active powders to the material surface.
- **Compression** of the nonwoven to deliver up to a 50% reduction in thickness with improved drape and flexibility.

MATERIAL USE

Optiveil® is compatible with all common resin systems and fabrication techniques. The broad choice of nonwovens offered can enable composite compatibility via matching of the fibre coefficient of thermal expansion (CTE) with that of the underlying reinforcement, whilst polymer binder can be selected to suit the resin system in use and meet processing requirements.

Process Compatibility	Suitable for all common composite manufacturing techniques including RTM, RIM, compression moulding, filament winding, hand lay-up, vacuum infusion and pultrusion
Key Properties	Electrical conductivity, high temperature resistance, high thermal stability, EMI shielding, static dissipation, chemical resistance
Typical Applications	Surfacing veils for composites, adhesive carriers & supports, EMI shielding of composite enclosures, resistive heating, static control in assembly areas, use in fuel cell assemblies

Technical Fibre Products Ltd is accredited to ISO 9001 Quality Systems, ISO 14001 Environmental Management and OHSAS 18001 Occupational Health and Safety Standards. A F.O.D. prevention programme is also in place in accordance with NAS412.

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