DNV·GL

TYPE APPROVAL

Certificate No.:	Issued:	Valid until:
TA-DNVGL-CP-0434-06214-0	2020-06-16	2025-06-15

Issued for:

Carbon Fibre Products

with type designation(s)

Biaxial Carbon Fibre Fabrics

(+/- 45⁰ and 0/90⁰ in the range of 140 – 1500g/m²)

Issued to:

Sky Advanced Materials Kft.

East Gate Business Park A1, 221/12
2151 Fót, Hungary

According to:

DNVGL-SE-0436:2018-04 Shop approval in renewable energy

and

DNVGL-CP-0434: 2016-04 Type approval – Uni-and multi-axial multi-ply fabrics made of carbon fibres

Applying:

DNVGL-SE-0441:2016-06 Type and component certification of wind turbines

Based on the documents listed in Annex 1:

This Type Approval consists of this page and Annex 1 which is integral part of the approval.
Any significant change in design and / or quality of the material will render this Type Approval invalid.

Hellerup, 2020-06-16

For DNV GL Renewables Certification
Bente Vestergaard
Service Line Leader

Hamburg, 2020-06-16

For DNV GL Renewables Certification
Florian Willers
Senior Project Manager

TYPE APPROVAL – ANNEX 1

Approved variants
SKY X B2-Y P5Z-W13, SKY X B2-Y P5Z-T73
SKY X ZN Y T5Z-W13, SKY X ZN-Y T5Z-T73

Product description and application:
Multi-axial fabric made of carbon fibres typically used in the field of Wind Energy, Marine and Industry

Type Approval documentation

Technical data sheet	BIAXIAL 0/90º CARBON FIBER FABRIC, SKY X ZN Y T5Z-W13, received on 2020-06-02
	BIAXIAL 0/90º CARBON FIBER FABRIC, SKY X ZN-Y T5Z-T73, received on 2020-06-02
	BIAXIAL ±45º CARBON FIBER FABRIC, SKY X B2-Y P5Z-W13, received on 2020-06-02
	BIAXIAL ±45º CARBON FIBER FABRIC, SKY X B2-Y P5Z-T73, received on 2020-06-02
Inspection Report	Work inspection report, WIR-06122-001-Rev. 0, issued on 2020.05.20
Quality control documentation	Several CoAs
	ISO 9001:2015 valid up to 2022-12-12

Properties	Test method	Variant 1	Variant 2	Variant 3	Variant 4	Unit
Name	N/A	SKY X B2-Y P5Z-W13	SKY X B2-Y P5Z-T73	SKY X ZN Y T5Z-W13	SKY X ZN-Y T5Z-T73	-/-
Ply construction	N/A	+45° / -45°	+45° / -45°	0° / 90°	0° / 90°	-/-
Mass per unit area	ISO 3374	140 up to 1500 ± 5%	140 up to 1500 ± 5%	140 up to 1500 ± 5%	140 up to 1500 ± 5%	g/m^2
Width	ISO 5025	100 up to 2540 ± 5%	100 up to 2540 ± 5%	100 up to 2540 ± 5%	100 up to 2540 ± 5%	mm
Thickness	ISO 5084	0.1 up to 0.83 ± 5%	0.1 up to 0.83 ± 5%	0.1 up to 0.83 ± 5%	0.1 up to 0.83 ± 5%	mm
Resin compability	N/A	Epoxy	Vinyl Ester	Epoxy	Vinyl Ester	-/-
Carbon fibre type	Zoltek	PX3505015W-13	PX3505015T-73	PX3505015W-13	PX3505015T-73	
	N/A	7.2	7.2	7.2	7.2	microns

The roving size shall not exceed 50K Filaments.

Approved Production Site
Sky Advanced Materials Kft
East Gate Business Park A1, 221/12
2151 Fót, Hungary
Last workshop inspection: 2020.05.06

Periodical assessment
2.5 years after the last workshop inspection, Sky Advanced Materials Kft. shall inform DNV GL about any modifications in production. An intermediate inspection might be needed based on the implemented changes.

For renewal, an inspection 5 years after the last workshop inspection shall be carried out.