



FLAX LOW TWIST ROVING TEX 1000

Technical Datasheet

SPECIFICATIONS

GENERAL PARAMETERS

LINEAR DENSITY:	TEX	1000	COLOR:	NATURAL
	Nm	1.0	FLAX CONTENT:	100%
TORSION:	tpm	30	FLAX ORIGIN:	EU non-EU

FIBER TREATMENTS

WASHING:	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NONE	Alkali washing
BLEACHING:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NONE	
SIZING:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NONE	
ADDITIVES:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NONE	
OTHER:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NONE	

STANDARD BOBBIN CONDITIONING

CORE:	INTERNAL UNWINDING
TYPE:	CYLINDRIC
WEIGHT:	1.3 kg
DIAMETER:	135 mm
HEIGHT:	140 mm
LENGTH:	~1300 m
HUMIDITY:	~9 %

STORAGE

Recommended low humidity storage (< 50% R.H.); limited exposure to sunlight

DRY FLAX ROVING PARAMETERS

BREAKING STRENGTH	TENACITY	CV BREAKING	ELONGATION	RKM	RKM	RKM	RKM	Um
(N)	(cN/TEX)	STRENGTH (%)	(%)	min	3 points mini	max	medium	(%)
146,8	14,68	17,5	1,8	9,1	9,4	21,5	15,0	12,2

CVm	Points g	Points g	Points g	Points g	Points g	Points g	Points g	Points g
(%)	(-40%)	(-50%)	(+35%)	(+50%)	(+70%)	(+100%)	(+200%)	(+400%)
15,4	801,3	66,7	185,3	12,0	1,3	1,3	6,7	0,0

data obtained according to Uster specification for natural fibers

PARAMETERS	UNITS	VALUES
TENSILE STRENGTH	MPa	206
TENSILE MODULUS	GPa	12.0
TENSILE ELONGATION	%	1.8
DENSITY OF FLAX FIBERS	g/cm ³	1.44



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COMPOSITE PARAMETERS

MECHANICAL PROPERTIES OF MATRIX

PARAMETERS	UNITS	VALUES
TYPE OF RESIN		EPOXY
STRENGTH	MPa	70
MODULUS	GPa	2 < E < 3
STRAIN	%	> 4

MANUFACTURING PROCESS

THERMOCOMPRESSION

BASED ON ISO 10618:2004 (ADAPTED TO NATURAL FIBERS)

MECHANICAL PROPERTIES OF COMPOSITE*

*tensile tests performed according to standard ISO 527

TYPE OF VALUES		EXPERIMENTAL Vf=57%	NORMALIZED ³ Vf=50%
PARAMETERS	UNITS	VALUES	
TENSILE STRENGTH	MPa	381	340
TENSILE MODULUS E1 ¹	GPa	38.8	34.2
TENSILE MODULUS E2 ²	GPa	28.1	24.8
TENSILE ELONGATION	%	1.3	1.3

¹ E1 - strain (%) between 0,0005 and 0,001

² E2 - strain (%) between 0,003 and 0,005

³ Experimental results recalculated to given fiber volume fraction Vf

PERFORMANCE OF FLAX FIBER IN COMPOSITE (BACKCALCULATED)*

*according to CELC guidelines

PARAMETERS	UNITS	VALUES
FIBER STRENGTH	MPa	644
TENSILE MODULUS E1 ¹	GPa	68.4
TENSILE MODULUS E2 ²	MPa	49.6
SPECIFIC STRENGTH	$\frac{MPa}{g \times cm^3}$	447
SPECIFIC STIFFNESS	$\frac{GPa}{g \times cm^3}$	48

¹ E1 - strain (%) between 0,0005 and 0,001

² E2 - strain (%) between 0,003 and 0,005

PROCESSING GUIDELINES

1. Flax roving is compatible with epoxy and polyester resins.
2. Flax reinforcement can be used directly however to obtain the highest performance in composite it is recommended to dry fibers prior to impregnation (110°C / 15min or 60°C / 4h).
3. For textile manufacturing (weaving, knitting etc.) it is important to respect the requirements for natural fiber processing (air relative humidity ~64%, temperature ~22°C).

For further details please contact us on: www.safilin.fr