



BASFIBER® ROVING

Basfiber® roving of this series is mainly recommended for filament winding, pultrusion, processing into woven fabrics, UD tapes and multi-axial fabrics, prepregs and other products based on polyester, vinyl ester and epoxy resins.

NOMENCLATURE

Our nomenclature is based on three letters followed by three numbers split by dots and dashes.

Example: RAS-13.1200-11

The first letter will be always R which stands for our Rovings products. The following letters AS – GN – DR represent the roving type:

AS - Assembled Roving: External unwinding bobbin roving with on a tube or Internal unwinding (tubeless).

GN - Gun Roving: Internal unwinding (tubeless)

DR - Direct Roving: Direct Unwinding

APPLICATIONS

High pressure vessels, CNG cylinders, boat building, bridge profiles, concrete reinforcing bars, fabrics for sound and heat insulation and for corrosion applications.

MECHANICAL PROPERTIES:

Nomenclature	Monofilament diameter, µm	Linear density, tex (g/km)	Tensile strength, MPa,		E-modulus, GPa,	Tensile strength, mN/tex, ASTM
			ASTM D2343	ASTM D2343	ASTM D3822	
RDR-10.90	10 ±0.5	90 ±5.0%	2900-3200	90-94	≥750	
RDR-11.110	11 ±0.5	110 ±5.0%	2900-3200	89-93	≥750	
RDR-13.150	13 ±0.5	150 ±5.0%	2900-3200	88-92	≥700	
RDR-17.250	17 ±1.0	250 ±5.0%	2900-3200	86-90	≥650	
RDR-17.600	17 ±1.0	600 ±5.0%	2900-3200	86-90	≥650	
RAS-10.270	10 ±0.5	270 ±5.0%	3000-3200	85-90	≥700	
RAS-13.300	13 ±0.5	300 ±5.0%	3000-3200	85-90	≥650	
RAS-13.600	13 ±0.5	600 ±5.0%	3000-3200	85-90	≥650	
RAS-13.1200	13 ±0.5	1200 ±5.0%	3000-3200	85-90	≥650	
RAS-13.2400	13 ±0.5	2400 ±5.0%	3000-3200	85-90	≥650	
RAS-17.1200	17 ±1.0	1200 ±5.0%	2800-3000	85-90	≥600	
RAS-17.2400	17 ±1.0	2400 ±5.0%	2800-3000	85-90	≥600	
RAS-17.4800	17 ±1.0	4800 ±5.0%	2800-3000	85-90	≥600	

OTHER MECHANICAL PROPERTIES:

Property	10	13	17
Monofilament diameter, µm	10	13	17
Tensile test according ASTM D-3822 (dry fiber), tensile strength, mN/tex	≥ 700	≥ 650	≥ 600
Tensile test according ASTM D-2343 (in epoxy impregnated strand), tensile strength, MPa	3200	3100	2900
Tensile test according ASTM D-2343 (in epoxy impregnated strand), tensile modulus, GPa	90-94	88-92	86-90
Tensile test according ASTM D-2101 (Basalt monofilament), tensile strength, MPa	4300	4200	4000
Tensile test according ASTM D-2101 (Basalt monofilament), tensile modulus, GPa	95	93	92

CHEMICAL STABILITY

Test	Cem FIL	Basfiber®	E-glass
Weightlessness:			
3-hour boiling in water	-	0.2%	-
3-hour boiling in saturated cement solution (pH 12,9)	0.15%	0.35%	4.5%
3-hour boiling in 2N solution HCl (hydrochloric acid)	-	2-7%	38.5%
3-hour boiling in 2N solution NaOH (sodium hydroxide)	-	6%	-
30 minutes and in 180 minutes in H2SO4 (sulphuric acid)	-	2% - 6%	14% - 22%

SIZING COMPATIBILITY

No. OF SIZING	TYPE	COMPATIBILITY	SIZING CONTENT, % WEIGHT	MOISTURE, % WEIGHT	SINGLE-END	MULTI-END
10	Silane	EP, PF, PP*, acrylate, PA	0,4-0,8	<0,1	10-22 µm, 90- 600 tex	10-22 µm, 270- 4800 tex
11	Silane	UP, VE, EP	0,4-0,8	<0,1	10-22 µm, 90- 600 tex	10-22 µm, 270- 4800 tex
12	Silane	EP, PF	0,4-0,8	<0,1	10-22 µm, 90- 600 tex	10-22 µm, 270- 4800 tex
13	Silane	concrete, EP, PF, acrylate	0,4-0,8	<0,1	11-19 µm, 90- 750 tex	13-17 µm, 300- 4800 tex

THERMAL OPERATION RANGE OF BASFIBER®

Thermal load duration	Temperature range
Permanent	From -260 up to +400 °C
(1) Stage 1: amorphous fiber with sizing on the fiber surface	Up to +200 °C
(2) Stage 2: burning of sizing (10-15 minutes), amorphous fiber	From +200 up to +350 °C
(3) Stage 3: amorphous fiber without sizing on the fiber surface	From +350 up to +400 °C
Short term (few minutes)	From +400 up to +850 °C
(4) Stage 4: transition of FeO into Fe2O3 and beginning of crystallization	From +400 up to +850 °C
Short term (few seconds)	From +850 up to +1250 °C
(5) Stage 5: all the Fe2O3 is in crystal form, the material is extremely brittle, its mechanical properties are extremely poor but without stress and vibration it continues working as thermo insulation pretty good	From +850 up to +1050 °C
(6) Stage 6: sintering temperature	From +1050 up to +1250 °C

PACKAGING INFORMATION

Rovings are supplied on a 120x80 cm pallet with 2-4-6 layers, each bobbin wrapped in thermal retractable film.

LINEAR DENSITY, TEX	DIAMETER	HEIGHT	NET WEIGHT BOBBIN, KG			
90	200mm	255mm	3	4	-	-
110-350	200mm	255mm	3	4	5	-
350-840	200mm	255mm	3	4	5	8
On a 4-layered pallet could be supplied			60 bobbins - ca. 180 kg	60 bobbins - ca. 240 kg	56 bobbins - ca. 280 kg	44 bobbins - Ca. 352 kg
On a 6-layered pallet could be supplied			90 bobbins - ca. 270 kg	90 bobbins- ca. 360 kg	84 bobbins - ca. 420 kg	66 bobbins - ca. 528 kg
Bobbin SE-, AE-roving	76mm	260mm	3	5	-	9
Tube by SE - roving	76mm	270mm	3	5	8	-
On a 4-layered pallet could be supplied			192 bobbins – ca. 576 kg	140 bobbins – ca. 700 kg	96 bobbins – ca. 768 kg	88 bobbins – ca. 792 kg

TENSILE STRENGTH CHANGE BY THE HEATING OF BASFIBER®

Temperature	+20°C	+200°C	+400°C
Tensile Strength Change	100%	95%	80%

Disclaimer of Liability: This data is offered solely as a guide in the selection of reinforcement. The information contained in this publication is based on actual laboratory data and field test experience. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume any liability arising out of its use or performance. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production. It is important for the user to determine the properties of its own commercial compounds when using this or any other reinforcement.

