



RainbowWorks

Unleashing the Power of HMPE: Your Trusted Partner in Industrial Yarn Solutions

Since our inception in 2009, we have been committed to exploring the limitless potential of HMPE. We offer superior quality yarns at competitive prices. With an annual production capacity exceeding 40,000 tons, we ensure top-tier products tailored to meet diverse industrial needs. Our focus on quality, reliability, and proactive service has made us a trusted name in markets worldwide, from marine applications to heavy industry. We value transparency and strive to build lasting partnerships, growing together with our clients through innovation and excellence.





RainbowWorks

We're proud of our top-rated UHMWPE fiber products, meeting all industrial needs with varieties from 10D-6400D.

For fiber ropes, nets, and slings requiring higher strength, our RBW has proven world-class strength.

For permanent mooring needing anti-creep performance, our RB series delivers the best performance globally.

	RBW	RB1	RB2
Nominal linear density (dtex)	1760	1760	1760
Strength at break (cN/dtex)	33	32	28
Elongation at break (%)	3.44	3.6	3.3
Modulus (cN/dtex)	1300	1250	1100
Creep elongation rate/h (70°C, 300Mpa)	0.3%	0.02%	0.005%
Creep elongation rate/h (70°C, 600Mpa)	2.2%	0.15%	0.05%

Applications: Synthetic Fiber Ropes for Mooring, Fishing Nets, Heavy lift Sling



RainbowWorks

Ultimate Cut Protection: Where Your Hands Are, Our Concern Begins

Same cut level thinner fibers

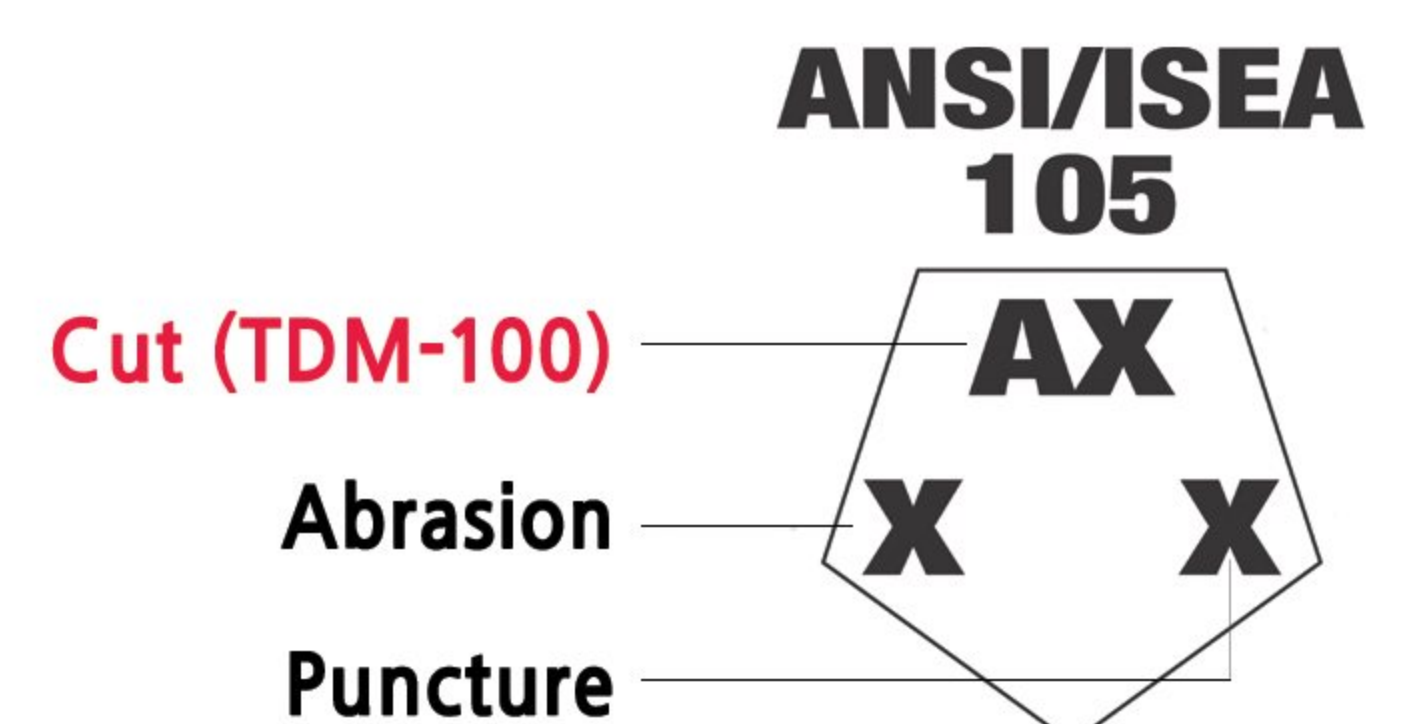
	RBG23	RBG34	RBG5
Nominal linear density (dtex)	444	412	533
Strength at break (cN/dtex)	30.9	18.99	16
Elongation at break (%)	3.9	2.45	2.31
Modulus (cN/dtex)	1154	996.2	870.36
Cut Level	2-3	3-4	5

With the same cut level (based on ANSI/ISEA 105), our yarn is considerably thinner than aramid or other common fibers like nylon, providing you with enhanced accuracy and safety in your workspace

※ ANSI/ISEA 105-2023

Cut Protection for Every Need:

- RBG1: An economical choice with cut level 1.
- RBG23: Commonly used, offering cut levels 2-3.**
- RBG34: Achieves cut levels 3-4.
- RBG5: Our most powerful grade, providing **cut level 5.**





UD fabric enhances ballistic performance by aligning fibers in a single direction, offering directional strength and effective energy absorption. Its lightweight nature ensures comfort without compromising protection, while design flexibility allows tailored applications in diverse protective gear.

Feel safe like you're in an armored vehicle
RBD Series guarantees the safety

Series	Fiber tenacity	UD	App.	Density	For GA2	For GA3	NIJ 3A 9mm	NIJ 3A .44	AK MSC	M80
RBD99	31	2U/4U/6U	Soft	80/160/240 GSM	4.5KG/m ²	5.8KG/m ²	5.5KG/m ²	5.8KG/m ²		
		2U/4U	Hard	120/240 GSM		6KG/m ²		6KG/m ²	18KG/m ²	19.8KG/m ²
RBDX99	33	2U/4U/6U	Soft	80/160/240 GSM	4.2KG/m ²	5.5KG/m ²	5.2KG/m ²	5.5KG/m ²		
		2U/4U	Hard	120/240 GSM		5.8KG/m ²		5.8KG/m ²	17KG/m ²	18.5KG/m ²
RBD100	33	2U/4U/6U	Soft	80/160/240 GSM	4.2KG/m ²	5.5KG/m ²	5.2KG/m ²	5.5KG/m ²		
		2U/4U	Hard	120/240 GSM		5.8KG/m ²		5.8KG/m ²	17KG/m ²	18.5KG/m ²
RBD200	36	2U/4U/6U	Soft	80/160/240 GSM	3.5KG/m ²	5.2KG/m ²	5KG/m ²	5.2KG/m ²		
		2U/4U	Hard	120/240 GSM		5.5KG/m ²		5.5KG/m ²	15.5KG/m ²	17.5KG/m ²
RBD280	39	2U/4U/6U	Soft	80/160/240 GSM	3.2KG/m ²	5KG/m ²	4.8KG/m ²	5KG/m ²		
		2U/4U	Hard	120/240 GSM		5.2KG/m ²		5.2KG/m ²	14.5KG/m ²	16.5KG/m ²
RBD300	40	2U/4U/6U	Soft	80/160/240 GSM	3KG/m ²	3.8KG/m ²	3.5KG/m ²	3.8KG/m ²		
		2U/4U	Hard	120/240 GSM		4.2KG/m ²		4.2KG/m ²	13KG/m ²	15.5KG/m ²
RBD400	43	2U/6U	Hard	120/240 GSM		4KG/m ²		4KG/m ²	12KG/m ²	14.5KG/m ²

Warning:

Based on customer experience, results may vary due to different pressure and temperature processes. These data are for reference only. Adjust layers by 1-3 as needed.



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RBW - unparalleled durability & strength

Coefficient of Friction: Enhances grip, preventing net slippage in adverse conditions like strong winds or heavy rains, crucial for stable deployment.

Adverse Climate: Withstands extreme temperatures, humidity, and UV exposure, ensuring prolonged outdoor durability in diverse environments.

Highly Demanding Tides and Currents: Maintains secure anchoring in intense marine conditions, essential for reliable fishing operations without drift or damage.

Wildlife Protection: Resists wildlife attacks, providing defense against predators like sea lions and birds, ensuring net integrity in aquaculture settings.

Pick
your Denier

1600D

1200D

2400D

	RBW
Nominal linear density (dtex)	1760
Strength at break (cN/dtex)	33
Elongation at break (%)	3.44
Modulus (cN/dtex)	1300
Creep elongation rate/h (70°C, 300Mpa)	0.3%
Creep elongation rate/h (70°C, 600Mpa)	2.2%

'more denier, less ply'

High denier simplifies composite processes, while low denier aids in crafting precise smaller nets.

Our **RBW** guarantees uniform strength in every scenario



RainbowWorks

Compared to wire rope
same **strength**
10 times
lighter!

comared to Aramid

UHMWPE

- * **Lighter** than Aramid
- * Approx.40% **Higher Strength**
(under 90 degrees Celsius)
- * Distinctly **Softer and smoother**
which enhances its resistance
to cuts and abrasion.

Looking for Twisted yarn?

Including 25 TPM yarn,
which is mostly used in this
sling industry, we can provide
what you're looking for.



RBW based lifting slings are widely used across industries for heavy-duty lifting and safety-critical operations. They offer low elongation during heavy loads, ensuring safe transport without twisting on hooks. Compared to steel wire rope slings, they are significantly lighter (about **1/8 to 1/10 the weight at equivalent strength**), easier to handle in tight spaces, and exhibit superior durability with lower fatigue. These qualities make them ideal for enhancing productivity and preventing industrial injuries.



RainbowWorks



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