

Synthetic ropes and cables that last longer

Long-lasting film-based solutions

High-performance synthetic materials are here to stay in the rope and cable industry. With properties such as high strength, high modulus and low weight, they provide a much-preferred alternative to steel. Teijin Aramid's Endumax® takes the advantages of ultra-high molecular weight polyethylene ropes and cables even further, offering long-lasting film-based solutions.

In tough conditions, ropes and cables made with Endumax® film typically keep their original strength much longer than those made with UHMWPE yarn-based solutions. This is because the much thicker film is less susceptible to wear and tear than relatively thin yarn filaments. This makes Endumax® particularly suitable for applications where ropes and cables are subject to high levels of abrasion, heat, chemicals or UV light, such as in the forestry, marine and offshore sectors.

Key benefits of Endumax®

- Excellent durability
- Better wear and tear properties
- High corrosion resistance
- Chemical & UV resistance
- High thermal conductivity
- High modulus
- Low weight
- Low creep
- Environmentally friendly production

At a glance

Endumax® is an ultra-high-molecular-weight polyethylene (UHMWPE) film, with a standard width of 2mm and a thickness of 55 µm. For its weight, it is the strongest available film. Its mechanical properties include low creep, high dimensional stability, and high modulus.

Endumax® film TA23

Construction	Flat tape	3Z50/3S50	4Z45/4S45	10Z30/10S30	
Linear Density (dtex)	930	2835	3775	9400	
Strength	N/tex	2.3	1.9	2.0	1.8
	GPa	2.2	1.8	1.9	1.8
Modulus	N/tex	185	117	118	110
	GPa	180	114	115	107
Elongation at break (%)	1.7	1.7	1.8	1.8	

Endumax® is available in the form of flat film or in twined constructions.

Potential applications

Endumax® is a popular choice for rope and cable manufacturers. It is particularly suitable for applications that require high resistance against corrosion, abrasion, chemicals and UV light. Its high thermal conductivity also makes Endumax® very useful for applications at elevated temperatures or when heat is generated in the rope by friction.

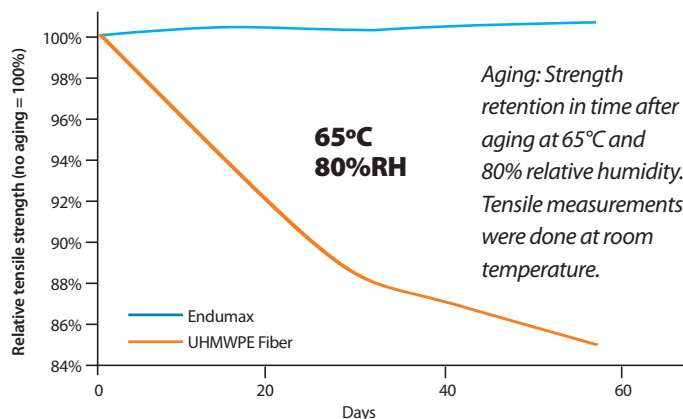


The neutral buoyancy of ropes, slings and cables produced with Endumax® makes them ideal for a wide range of offshore working and towing applications. Moreover, although Endumax® is flexible, its inherent stiffness means it offers high responsiveness and direct contact between payload and operator.

Mooring lines covered with Endumax® are less prone to external abrasion or cutting, while **lifting slings** made with Endumax® are light and flexible, making them easy and safe to handle.

Another interesting application is **lines for kite surfing** and **water skiing**. Thanks to the high UV resistance of Endumax®, the lines will stay in perfect condition for a long time. And because Endumax® is film-based, the ropes and cables will hold less water and dry quickly.

Thermal stability of Endumax®



Finally, Endumax® is ideal for ropes and cables used in the **forestry** sector, where failure due to degradation and abrasion is a major issue.

Environmentally friendly processing

Endumax® is made using an environmentally friendly solvent-free process. It can be used on existing rope-producing equipment and does not require any additives or coatings. This also limits contamination of equipment, potential adhesion problems, and concerns about compatibility with other surface coatings.

Experience and support

Teijin Aramid is a service-oriented company with enormous experience in the rope and cable industry. Our aramid fibers Twaron® and Technora® have long been used in running and standing rigging and in ropes and cables of all types. We are used to working closely with our customers throughout the design process to achieve the best results. If you are interested in exploring the possibilities of Endumax®, do not hesitate to contact us to request samples. We will be happy to support you in further developing Endumax® for your specific needs.



To find out more about Endumax and Teijin, or request a sample. Please visit www.teijinendumax.com please send an email to ballistic@teijinaramid.com

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EnduMax®

Connect and Protect