

Introduction on “Flexible Carbon Wire”

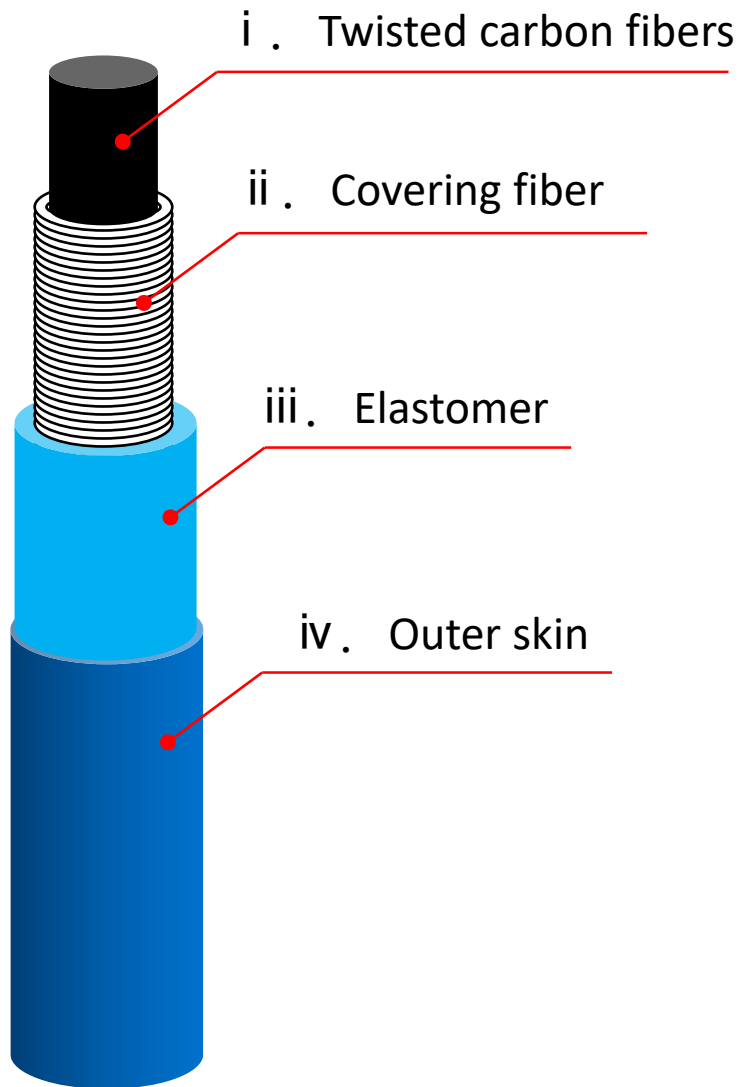


KAJI GROUP

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Technical summary of carbon wire



Schematic of Flexible Carbon fiber

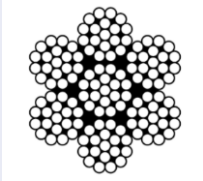
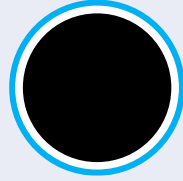
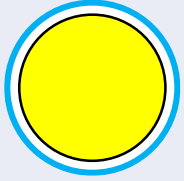
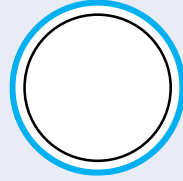
【Technical summary】

- i . Twisting process improves bending resistance of carbon fibers.
- ii . Covering process enhances the strength of the carbon fiber bundle.
- iii . Impregnated elastomer brings flexibility.
- iv . Outer skin enables wire slide smoothly and protected to friction.

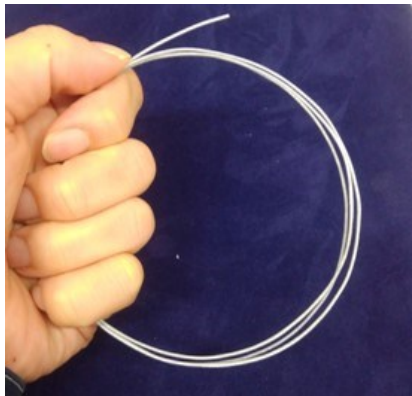


Combining i to iv technologies, KAJI Group created
“Light and flexible carbon wire with excellent strength”.

Comparison to each wire

Object	SUS304 (7x19)	Carbon wire	Kevlar wire	Dyneema wire
Diameter, mm	1.05	1.1	1.1	1.1
Fineness, g/m	4.63	1.07	0.91	0.70
Breaking load, N	830	1,620	1,285	1,164
Breaking load, kgf	84.7	165	131	119
Estimation	Catalog spec	Measured	Calculated※	Calculated※
Image of cross-section				

※Calculated by catalog spec if these wires has same structure as the carbon wire

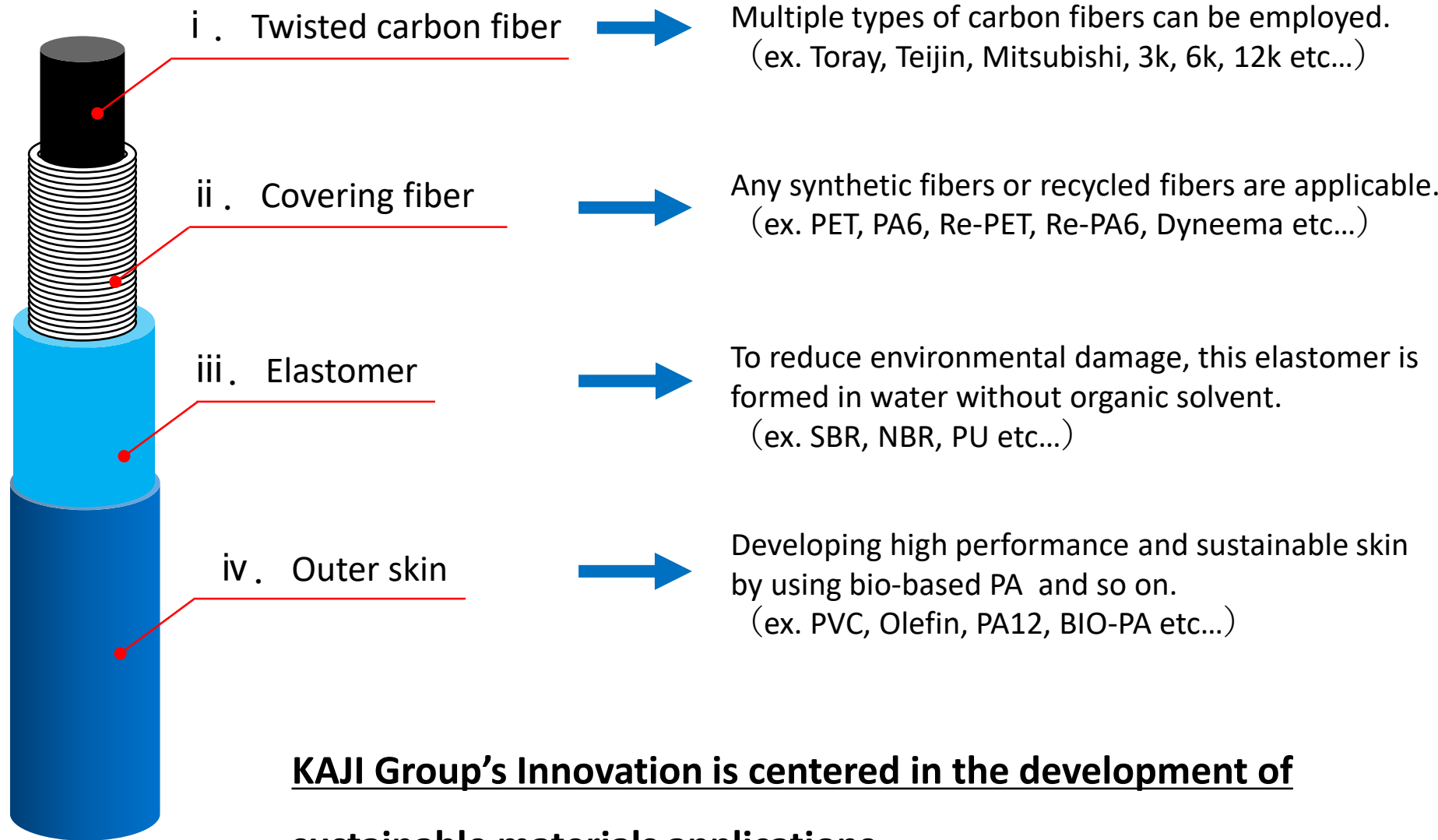


Our carbon wire has a quarter weight and twice strength comparing to stainless wire.

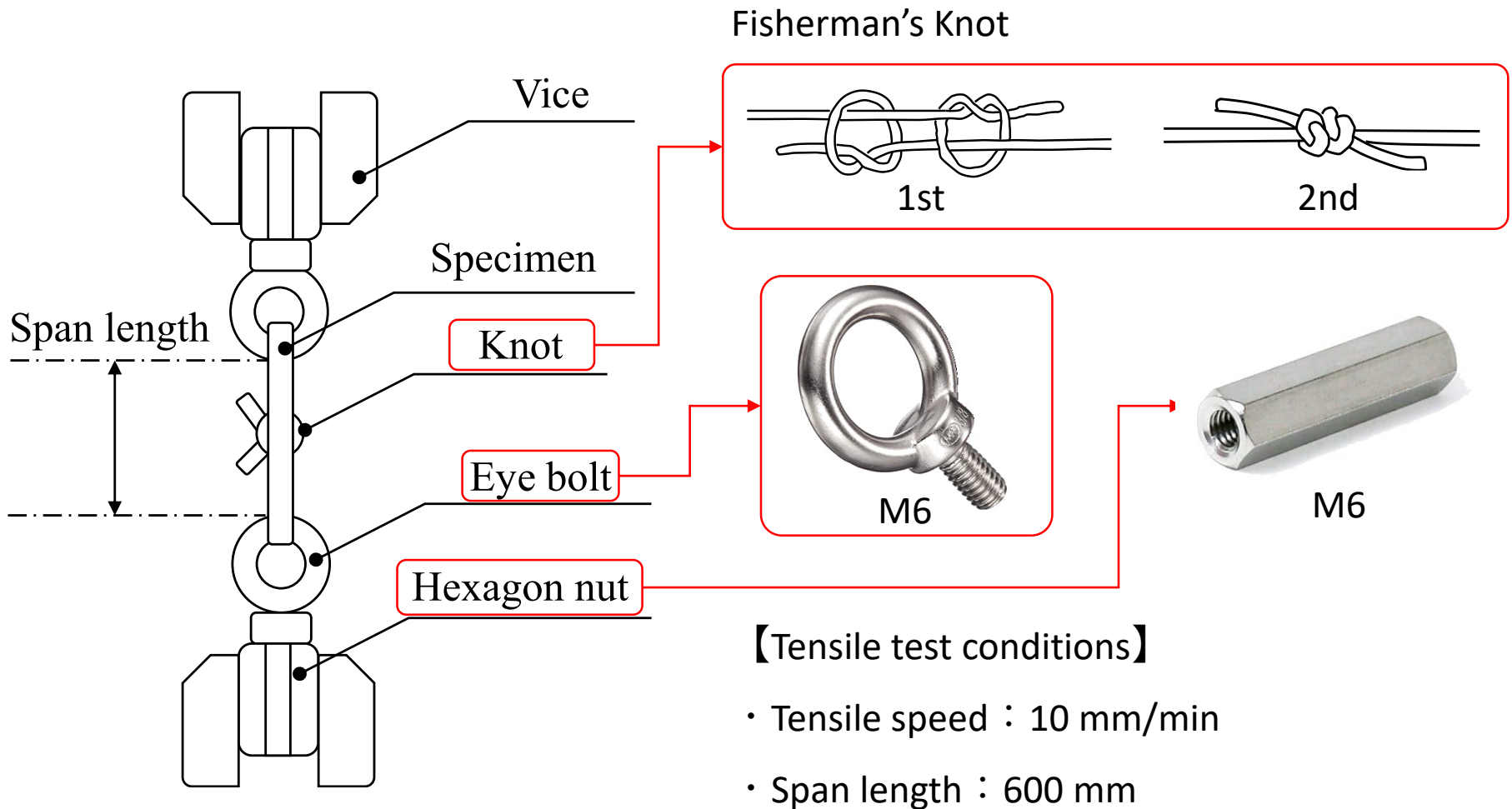
Carbon wire's strength is superior to Kevlar and Dyneema wires.

Appearance of carbon wire (no outer skin)

Technical specification



KAJI Group's Innovation is centered in the development of sustainable materials applications.



【Tensile test conditions】

- Tensile speed : 10 mm/min
- Span length : 600 mm

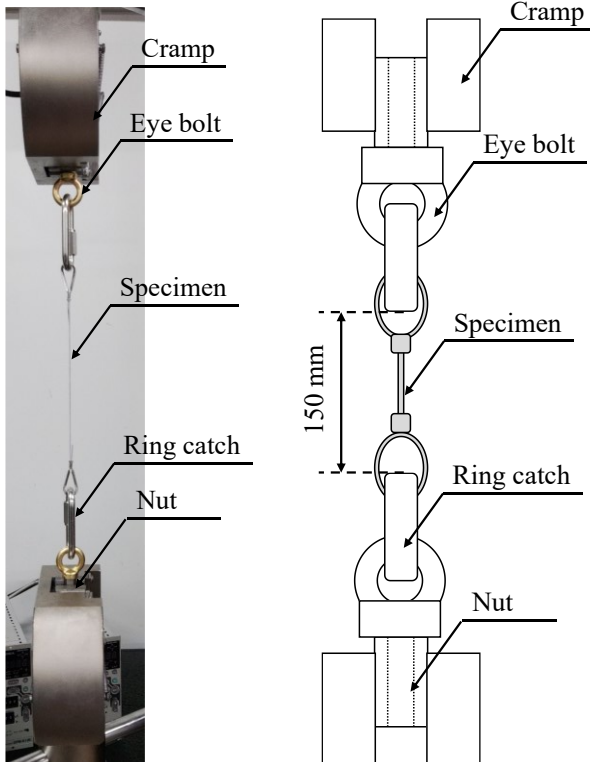
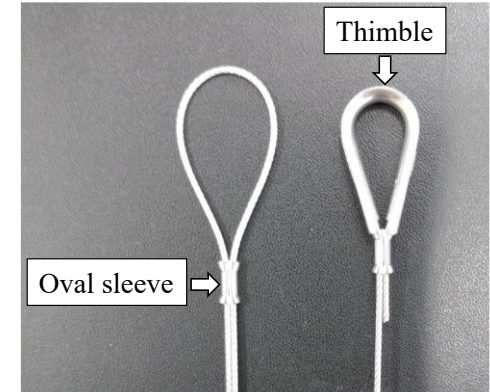


Fracture point : near by eye bolt (= Not Knot point)

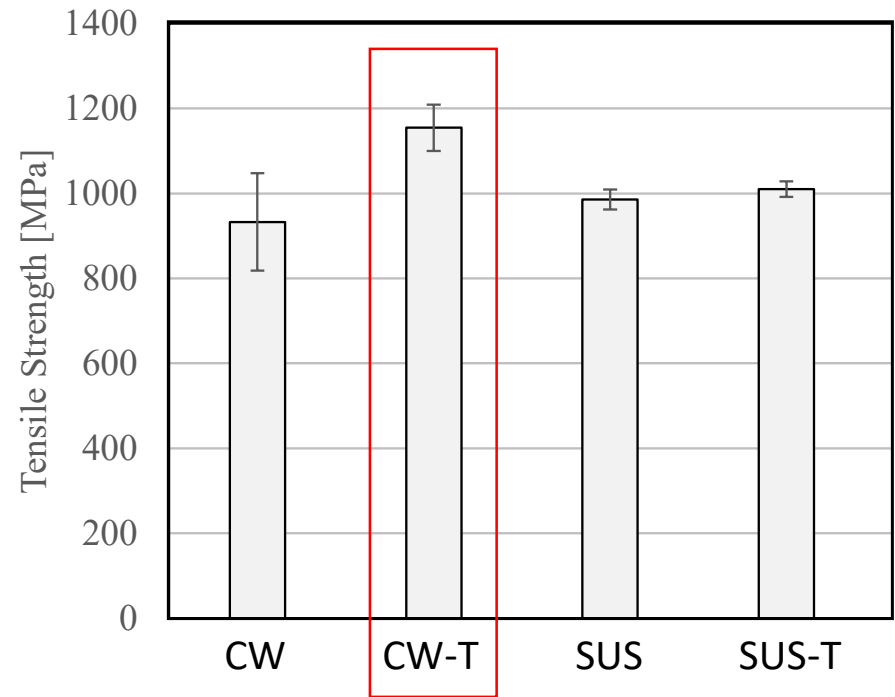
Maximum load : About 650 N

Technical data / Bonding

Specimens	CW	CW-T	SUS	SUS-T
Name	F-CW	F-CW	SUS	SUS
Diameter, mm	1.1	1.1	1.0	1.0
Thimble	-	Use	-	Use
Swage	SUS oval sleeve			



About tensile test



Higher than SUS wire! (F-CW × Thimble)

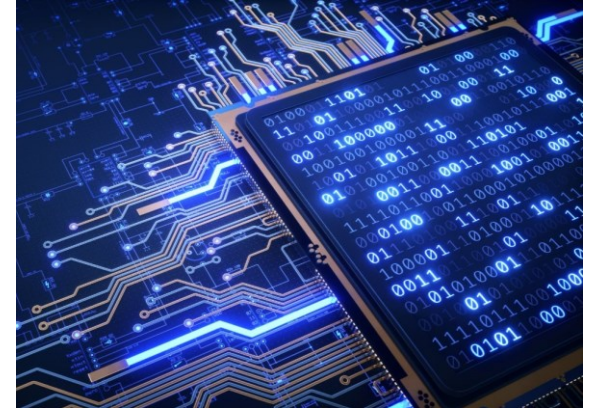
Future



Robotics for industry and consumer



Off-shore buildings



5G, IoT, Optical fibers



Drone or mobility



Anti-tension core code for cables



Bike or Motorcycle

By carbon wire's advantages "Light, High Strength, Flexible, High corrosion resistance etc...", our aim is to solve the various problems that conventional wires never solved.



Heating system