

# Product lineup

# **Specifications and Comparison of properties**

			Legend : 5=Highest, 1=Lowest applicability									
Category	Item		Туре	Specifica OD(mm)	tion(Trial) ID(mm)	Ito1 Torque	High-speed rotation	Push/Pull	Compression	Flexibility	Feature	
Hollow cable	Torque coil		3layer 2layer flat auger*	0.36-6.05 0.30-5.17 -	0.18-5.25 0.15-3.55 -	5	1		2	4	bi-directional (3 layer) or unidirectional (2 layer) rotation *Archimedes screw with spiral wire	
	Torque Hypotube	0	-	0.20-1.10	0.10-0.70	5	2	5	5	1	high breaking strength and elongation resistance	
	ACT ONE		standard flat ultra thin auger*	0.21-5.22 0.21-4.70 0.42-3.90	0.13-4.00 0.16-3.95 0.34-3.35	4	3	4	3	3	well balanced properties  *Archimedes screw with spiral wire	
	Wire coil		round	0.10-3.50 0.10-5.90	~1.80 0.07-5.30	1	1	2	4	5	high flexibility and compression resistance	
				OD(mm)	ID(mm)	Torque						
Cable	Drive Cable		2-6layer	0.41-6.00	-	5	5	5	4	2		
	Torque rope		1x3,1x7, 1x12,1x19	0.30-3.00	-	4	3	5	4	3	High breaking strength and elongation resistance	
	Wire rope		1x7,1x19 7x7,7x19 7x7x7, etc.	0.09-3.00	-	1	1	5	4	3		
	Outer coating		Extrusion Dip coat Spray Floropolymer Nylon, etc.		To add lubricity, ablation resistance or biocompatible sealing to cable							
Coating	Inner tube		Floropolymer			Inner coating applied to hollow cable						
	Precoating		PTFE			Coating for both inner and outer of hollow cable without losing property of the cable						
Assembly	J			er welding, Grinding De assembly		Variety of welding and machining available for assembly or additional mechanical property						
	End termination		Ball, Eye, Lo	all, Eye, Loop, etc.		For end of cable or used for intermidiate attaching.						
Power transmission	Synchromesh wire rope	950	AWS40 1.10-3.40 -			Synchronous round belt, ideal for linear-motion system drawn in 3-dimensional.						
	Cable rack		CL0.8S / H W3.0xH3.6 -			With stainless cable core, ideal when the Rack need to be flexible and high-force movement required.						



# **Outer coating**



A stainless steel cable assembly may be sprayed, dipped, or extruded with PTFE, Nylon, and other coatings for your particular abrasion-resistance, lubricity, low coefficient of friction, and long-term durability requirements. Asahi Intecc can precisely mask the ends of the coated stainless steel cable assemblies to attach various in-house iron (FE), stainless steel (SUS, SS), Aluminum (AL), Copper (Cu), and other metallic finishes.

### **Comparison of properties**

Туре	Resin	Abbreviation	Cost (1=lowest)	Heat resistance	Flexibility	Chemical resistance	Lubricity	Minimum thickness
Polyamide	Nylon 12	PA	3	3	2	3	2	20μ
Polyamide	Nylon 6	PA	3	5	2	3	2	20μ
Polyurethane	Polyurethane	PU	4	2	5	3	1	20μ
Polyethylene	Polyethylene	PE	1	2	3	3	2	20μ
	Fluorinated ethylene propylene	FEP	4	3	2	5	5	20μ
Fluororesin	Perfluoroalkoxy alkanes	PFA	4	5	2	5	3	20μ
	Ethylene tetrafluoroethylene	ETFE	3	3	2	3	2	20μ
	Polytetrafluoroethylene	PTFE	5	5	2	5	5	7μ

#### Legend

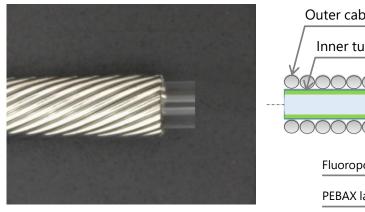
5 = Highest applicability

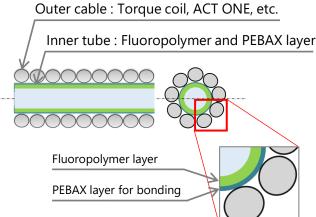
1 = Lowest applicability

Datasheet: Coating: Inner



# Inner tube





The Inner tube is designed for internal coating applied to hollow cable tubes like ACT ONE, Torque coil, or Wire coil for adding lubricity, chemical isolation, or surface preparation to the inside of the hollow cable. Ideal for applications requires lumen lubricity, sealing, or chemical resistance, for customers developing a delivery system.

# **Specifications**

Minimum wall thickness (including Fluoropolymer and PEBAX layer)

\*It depends on Inner tube ID as below, which is not include tolerance.

Inner tube ID	Min. wall thickness	Inner tube ID	Min. wall thickness
0.20 - 0.73 mm	0.03 mm	1.58 - 1.85 mm	0.07 mm
0.74 - 1.01 mm	0.04 mm	1.86 - 2.13 mm	0.08 mm
1.02 - 1.29 mm	0.05 mm	2.14 - 2.33 mm	0.09 mm
1.30 - 1.57 mm	0.06 mm	2.34mm $\sim$	N/A

Coating material (Fluoropolymer layer)

- PTFE greatest lubricity and chemical resistance

- PFA similar in chemical resistance to PTFE, but less lubricity

- FEP similar to PFA, slightly less susceptible to water absorption than others

- ETFE greatest strength and abrasion resistance

Length up to 1800mm (Trial: up to 3000mm)

End treatment of inner tube manually cut using utility knife

End treatment of outer cable EDM cut, chamfering



# **Precoating**



By forming PTFE precoated fine wires, fully coated each filar add excellent lubricity to both inside and outside of cable without losing the property of the cable. This processing applied to one layer hollow cable like ACT ONE or Wire coil. Ideal for applications requires lubricity and chemical resistance in addition to the property of the hollow cable like 1 to 1 Torque response and flexibility.

## **Specifications**

Min. coating thickness 0.01 mm

Coating material PTFE

Length up to 1500mm

End treatment Grind or manual cut (EDM cut is not available)

Available for ACT ONE, Wire coil



# Machining & Assembly

#### **Processing on surface**



#### **Swaging process**

We can decrease O. D. without both I. D. change and decrease of stiffness by beating surface of rope. It improves the anti-elongation



#### Flat-grinding process

We can perform Flat-grinding on surface of rope in whole length. It improves flexibility of rope without changing I. D..



#### <u>Auger</u>

We can set additional filar on rope. This structure adds the transportation function to rope.



### Marking process

We can put marking to make clear the its position of the wire rope.

#### **End treatment**



# **Electric discharge method**

This method makes individual filars avoid being crushed by cutting with nipper.



#### **End treatment by laser**

We can unite individual filars into one end by laser welding.



#### Plasma welding

We can make hemisphere shape at the end of rope. It improves both safety and sliding performance.



#### **L-grinding process**

We can perform high precision grinding process to make L-shaped end of rope. This shape helps to connect rope to other materials.

## **Assembly**



#### Laser welding

We can weld different kind of materials by laser welding.



## **Solder welding**

We can weld different kind of materials by soldering.