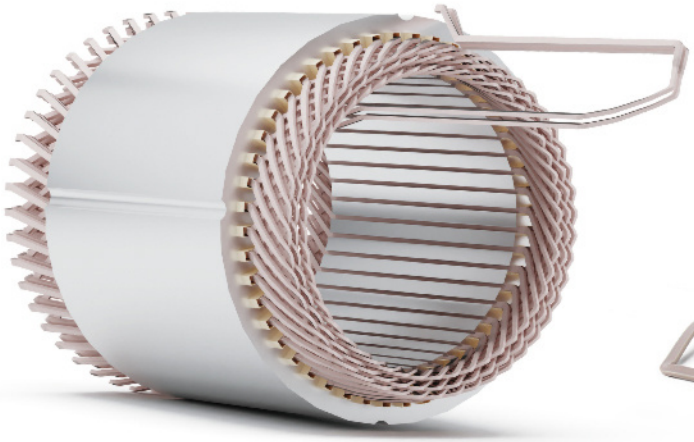
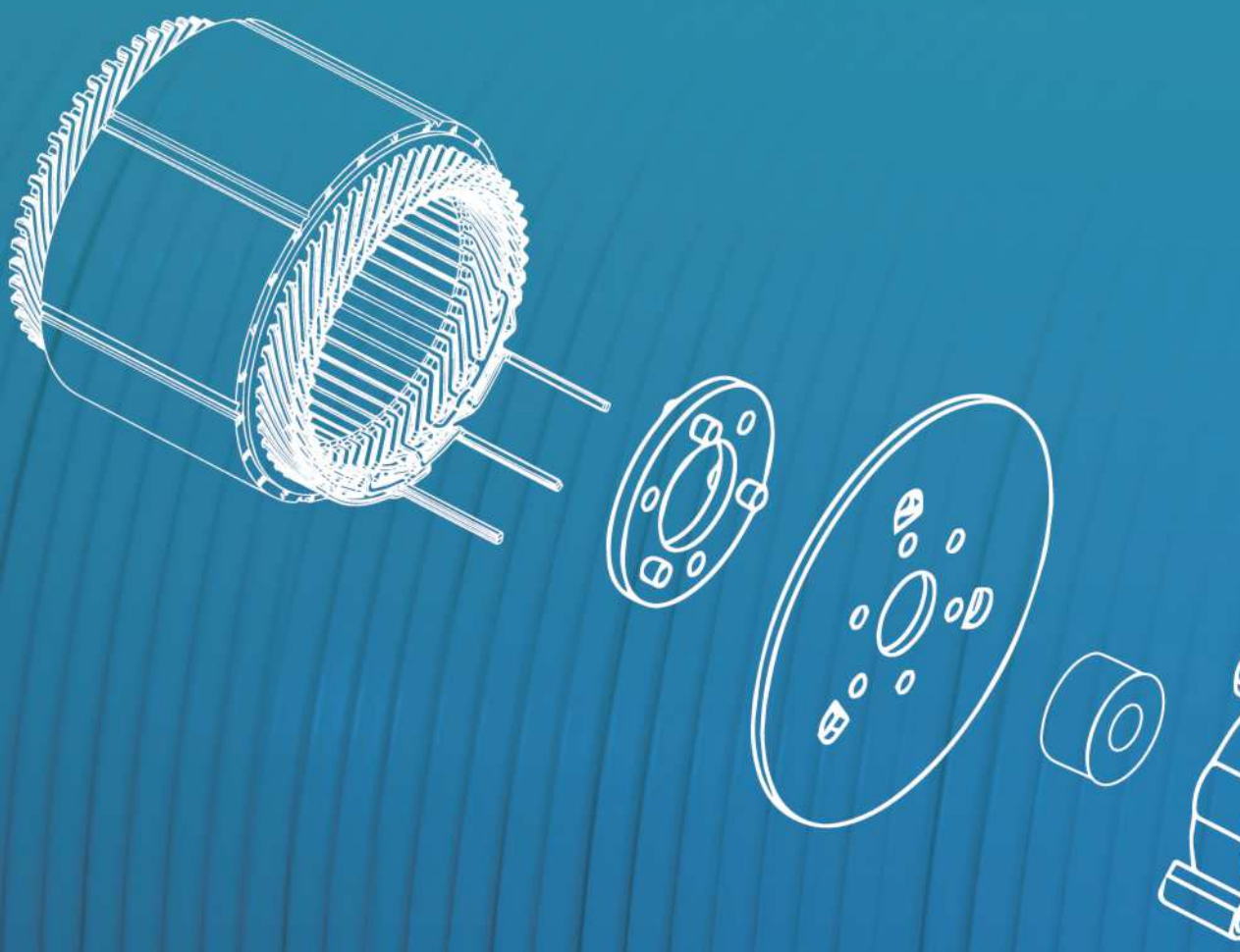
君华股份
JUNHUA PEEK

PEEK High-Performance Cables and Insulation Systems

Full Solution from High-Quality Raw Materials
to Precision Finished Products



JiangSu JunHua HPP Co., Ltd.



BUSINESS PHILOSOPHY

Integrity, Pragmatism, Cooperation, Innovation, Win-win

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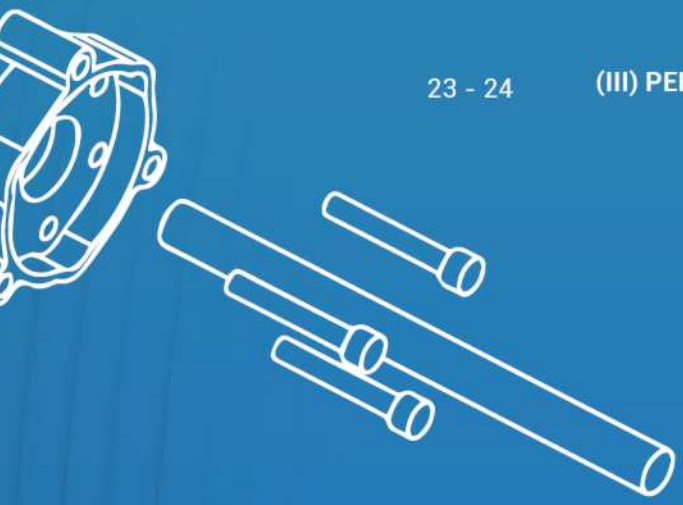


COMPANY PROFILE

8000+
Elite Customers Across Various Industries

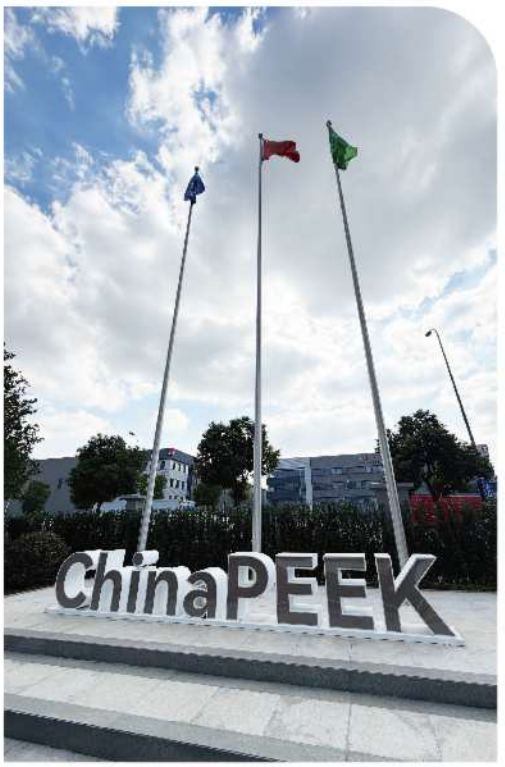
20000+
PEEK Product Application Cases

50000+
Square Meters of Standardized Factory Plants

Jiangsu Junhua HPP Co., Ltd. focuses on the application R&D and production of high-performance special engineering plastics such as PEEK (Polyetheretherketone) and PI (Polyimide). We have established a complete industrial chain covering PEEK resin raw material polymerization, modified granulation, continuous extrusion of profiles (plates, rods, tubes, and sheets), as well as injection molding and machining of finished parts.

Our high-performance plastic parts (PEEK, PI, etc.) have been widely used in fields such as new energy vehicles, textile printing and dyeing machinery, food processing, packaging and beverage filling, aerospace, special equipment, electronic semiconductors, medical devices, and petrochemical machinery.

Junhua HPP looks forward to exchanging ideas and cooperating with research institutions and users of special engineering plastics. Together, we can promote the application of PEEK, PI, and other special engineering plastic parts in various industries and achieve product upgrades. We welcome you to visit our company for guidance and exchange.



>>> Manufacturing Capabilities of Junhua HPP

- ◇ Formulation design and composite modification of special engineering plastic raw materials such as PEEK and PI;
- ◇ Reverse engineering, 3D modeling and manufacturing based on physical plastic parts
- ◇ Design and manufacturing of injection molds for special engineering plastic products;
- ◇ Cooperating with customers for the application development and production of new special engineering plastic products;
- ◇ Possession of nearly 2,000 types of injection molds for PEEK and PI parts across various industries;
- ◇ Continuous extrusion production of PEEK plates, rods, tubes, and sheets;
- ◇ Providing testing services for hardness, mechanical properties, and friction/wear performance indicators.

>>> Core Advantages

144 Patents
Continuous R&D and innovation capabilities

Full PEEK Industry Chain
Raw material polymerization - Profile extrusion - Finished parts

ISO9001 Quality Management System
IATF16949 Quality Management System
AS9100D Aerospace Quality System

20 Years of
PEEK application R&D and production experience

1250mm
Imported multi-million level extra-large size profile extrusion equipment

50000m²
Standardized factory plants

ENTERPRISE HONOR

>>> R&D Platforms & Patents

81 authorized invention patents and 63 utility model patents, including "Preparation method of phenyl-terminated polyaryletherketone polymers" and "A continuous CF/PEEK thermoplastic composite material and its preparation method".

Jiangsu Industrial Design Center

Collaborating with customers to optimize the design of PEEK parts in terms of structure, function, and appearance. Extensive experience in PEEK precision mold design and manufacturing, utilizing advanced processes like hot runners to significantly reduce costs.

Jiangsu Enterprise Technology Center

Leveraging the platform's advantages to layout the "industry chain + innovation chain," solving "bottleneck" technical problems, attracting scientific talents, and improving the R&D management system to enhance the conversion rate of achievements, becoming a high-quality enterprise with core technologies in the PEEK industry.

Jiangsu Engineering Technology Research Center

The center is positioned to focus on the industrial needs of high-performance special engineering plastics like PEEK, aiming to promote scientific innovation and strengthen the construction of engineering R&D platforms.

>>> System Certifications

The company has passed third-party certifications including ISO9001, IATF16949, ISO13485, AS9100D Aerospace Quality System, FDA Food Grade, and RoHS testing.

>>> Qualifications Certificates

(I) PEEK Insulated Cable: Conductor & Performance

This section focuses on PEEK (Polyetheretherketone) insulated specialty cables. With its exceptional high-temperature resistance, chemical resistance, outstanding wear resistance, and high toughness, PEEK is an ideal insulation material for harsh environments.

We strictly control raw materials and precision extrusion processes, combined with a comprehensive testing system, to ensure that the cables achieve stable and reliable signal and power transmission even under extreme conditions, providing you with complete connectivity solutions based on high-performance materials.

PEEK Wire/Cable Raw Materials

>>> PEEK Cable Special Material 5601DG

PEEK 5601DG is a special material grade for cables with excellent processing performance. Its superior wear resistance and high toughness ensure that cables resist physical damage and fatigue cracking during installation and dynamic use, extending service life. More importantly, it maintains stable electrical insulation across a wide temperature and frequency range.

The flame-retardant sleeving made of PEEK 5601DG has passed UL component safety certification. Certification File No.: E550047

Test Item	Unit	Result	Standard	Test Standard
Density	g/cm³	1.288	1.3±0.05	ISO 1183
Rockwell Hardness	HRR	121	/	ISO 2039.2
Tensile Strength	MPa	94	≥92	ISO 527
Tensile Modulus	GPa	3.62	>3.20	150 527
Elongation at Break	%	26.2	/	I50 527
Flexural Strength	MPa	156	≥145	ISO 178
Flexural Modulus	GPa	3.66	≥3.00	ISO 178
Impact Strength	kJ/m²	5.2	≥4.0	ISO 180

>>> High-Performance Colored PEEK Cable Materials

Pigments are added to PEEK 5601DG without sacrificing the material's inherent excellent properties. The pigments can withstand high processing temperatures without decomposition or fading. Furthermore, the pigments themselves are insulating and uniformly dispersed, ensuring they do not reduce dielectric strength or increase dielectric loss. Color consistency across batches is highly maintained to ensure stable product quality.

Colored Pure Material Grades:

- Black 5601DGH
- Red 5601DGR
- Blue 5601DGB
- Green 5601DGG
- Yellow 5601DGY
- Purple 5601DGR01
- Grey 5601DGH01
- White 5601DGW
- Orange 5601DGR02

Test Item	Unit	Test Result	Test Standard
Density	g/cm³	1.290	ISO 1183
Rockwell Hardness	HRR	121	ISO 2039.2
Tensile Strength	MPa	92	ISO 527
Tensile Modulus	GPa	3.59	ISO 527
Elongation at Break	%	26.5	ISO 527
Flexural Strength	MPa	155	ISO 178
Flexural Modulus	GPa	3.65	ISO 178
Impact Strength	kJ/m²	NB	ISO 179

>>> High Bonding Strength 5601DG-KB

PEEK 5601DG-KB offers outstanding insulation and performs well across a wide temperature range. Its excellent heat aging resistance and chemical resistance make it suitable for various harsh environments. By introducing bonding monomers, it achieves adhesion with conductors, ensuring the insulation layer remains free of wrinkles, peeling, or cracking after the product is stranded or bent. Improved flexibility allows for processing into more complex shapes.

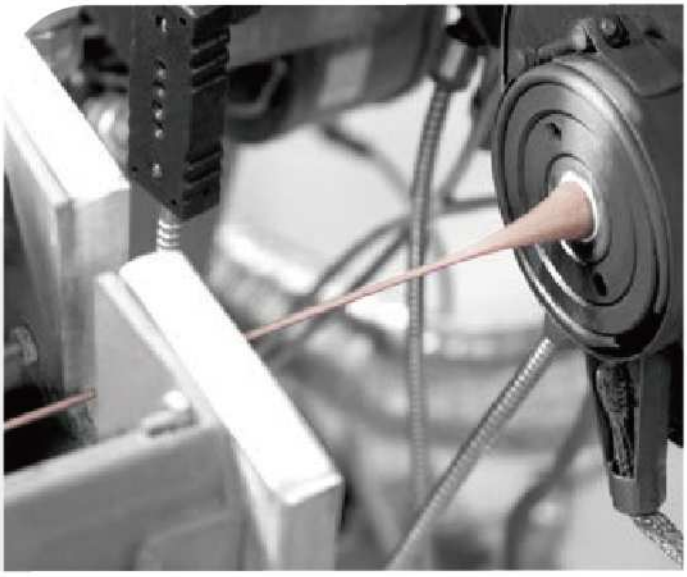
Test Item	Unit	PEEK5601DG-KB	PEEK5601DG-KA	Test Standard
Density	g/cm³	1.324	1.321	ISO 1183
Rockwell Hardness	HRR	98	98	ISO 2039.2
Tensile Strength	MPa	61.56	61.56	ISO 527
Tensile Modulus	GPa	2.42	2.48	ISO 527
Elongation at Break	%	16.33	14.36	ISO 527
Flexural Strength	MPa	75	76	ISO 178
Flexural Modulus	GPa	1.77	1.74	ISO 178
Impact Strength	kJ/m²	No Break	No Break	ISO 179
Dielectric Constant	/		2.69	IEC 60250

>>> Low Dielectric 5601DG-KA

PEEK 5601DG-KA is a PEEK-based special engineering plastic specifically designed for high-performance special cables. Through advanced polymer modification technology, it significantly reduces the dielectric constant and dissipation factor while maintaining PEEK's inherent excellent properties, making it an ideal insulating material for electrical interconnection applications.

PEEK Wire/Cable Extrusion Process & Equipment

Extrusion is divided into equipment for ordinary round wires and shaped wires, **with the latter requiring higher precision**.

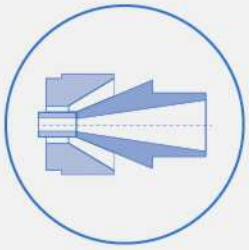


>>> PEEK Drying Process

PEEK raw materials have a very low moisture content, generally around 5‰. The pretreatment process is as follows: usually dried in a desiccant dryer at 150°C for about 5 hours; test moisture with about 10g; moisture must be less than 0.1% before starting the machine.

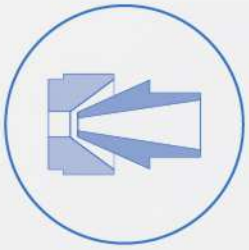
>>> PEEK Extrusion Process

Extrusion methods are divided into two types: tube extrusion and compression extrusion.



Tube Extrusion

The plastic is formed into a tubular shape by the mold before extrusion, then stretched and coated onto the wire or cable core.



Pressure Extrusion

The plastic is directly extruded and coated onto the wire or cable core through the pressure of the mold.

>>> Comparison Table: Tube Extrusion vs. Pressure Extrusion

Feature	Tube Extrusion	Pressure Extrusion
Principle	Plastic forms a tube through the die and is coated onto the wire/cable core through stretching (draw-down).	Plastic is directly extruded and coated onto the wire/cable core by pressure.
Efficiency	**High:** Fully utilizes plastic stretchability; fast line speed and large extrusion output.	**Low:** Large counter-force at the die orifice; lower extrusion output.
Structure	• Lower density; • Slightly lower bonding tightness with the core; • Pitch marks may remain on the surface.	**Excellent:** • Dense and solid structure; • Tight bonding without gaps; • Reliable insulation strength.
Appearance	Surface is flat, but may retain stranding marks of the core wire.	**Excellent:** Outer surface is flat and smooth, exceptionally round.
Concentricity	**Excellent: Easy to adjust;** uniform coating thickness; unaffected by core wire bending.	**Poor: Difficult to adjust;** prone to severe eccentricity due to core wire bending.
Mechanical	**Excellent:** "Orientation" through stretching results in good mechanical strength and bending performance.	**Poor:** Poor bending performance of the extruded core wire.
Tool Life	**Long:** Large mold clearance; low wear and long service life.	**Short:** Molds wear easily; high dependence on precision.
Operation	**Good:** Simple tooling matching; high mold versatility; **material saving**.	**High Requirements:** Extremely strict accuracy for tooling matching; high dependence on the mold.
Application	**Most insulation layers, especially suitable for:** • High-efficiency production • Shaped cores (Sector-shaped, Tile-shaped) • Applications with high requirements for flexibility/bendability	**Specific requirement scenarios:** • Small cross-section cores • Requirements for exceptionally tight coating and perfectly round appearance • Plastics with a draw-down ratio that is too small

To improve the coating quality of the tube extrusion process, the density of the plastic layer and the adhesion with the core can be effectively enhanced by **increasing the draw-down ratio** and **adopting vacuum extrusion methods**.

Our PEEK Wire/Cable Service Content

We are committed to being your trusted strategic partner for PEEK cable solutions.

This means not only providing compatible raw materials and prototyping services but also offering continuous technical support and production optimization throughout the project lifecycle.

01

Technical Service Requirements & Interaction

Through precise questioning and professional listening, clarify customer technical pain points and recommend compatible raw materials.

02

Presentation of Technical Service Value

Tailored optimization solutions for your equipment molding process and technical team focusing on high efficiency, cost, and risk control, providing value-added benefits throughout the entire process.

04

Convenient One-stop Sampling

We have two advanced cable production lines equipped with advanced visual imaging inspection systems to provide customers with convenient one-stop prototyping services.

03

Guarantee for Long-term Partners

As our long-term strategic partner, we provide year-round technical services and testing, conduct regular follow-up visits, and assist customers in optimizing production parameters to maximize profitability.

Our PEEK Wire/Cable Testing Items

As a provincial-level testing center, we have complete testing equipment to provide customers with tests ranging from raw materials to physical and electrical performance indicators.

>>> Performance Testing Equipment

Dielectric Constant Tester

Accurately measure the relative magnitude of the material's ability to store an electric charge at specific frequencies and temperatures, providing a key basis for high-frequency circuit design and material selection.

In-line Voltage Resistance Test

Use high-frequency spark testers for inspection to ensure the cable meets the required high-voltage safety standards. This equipment can simulate the voltage conditions that wires may encounter in practical use, detecting the insulation performance of the wires through high-frequency spark testing to ensure the reliability and safety of the product in high-voltage environments.

Differential Scanning Calorimeter

Accurately determine the maximum voltage ramp that an insulating material can withstand under continuous voltage boost conditions, which is a core indicator for evaluating insulation safety.

Dielectric Strength Tester

Differential Scanning Calorimetry (DSC) is a technique that measures the energy difference (or power difference) per unit time between a substance and a reference material as a function of temperature under programmed temperature control.

>>> Material Testing Equipment

Density Tester

Mainly used to detect the actual density of products.

Hardness Tester

Mainly used to detect the Rockwell hardness of products.

Thermogravimetric Analyzer

A Thermogravimetric Analyzer（TGA） is an instrument that uses thermogravimetry to detect the relationship between the temperature and mass changes of a substance.

Charpy Impact Tester

Measures the total energy absorption of the material under impact to ensure the overall impact resistance of the component.

FTIR Spectrometer

FTIR is mainly used for material identification; it features an automatic identification and matching function, capable of distinguishing materials with different group structures such as PEEK, PPS, PPSU, and PI.

Universal Testing Machine

Used to detect conventional mechanical performance parameters such as tensile strength, bending strength, and modulus of the product.

Izod Impact Tester

Evaluates the impact resistance of notched materials and provides early warning for the risk of brittle fracture at stress concentration points.

(II) PEEK Protective Components: Insulation & Protection

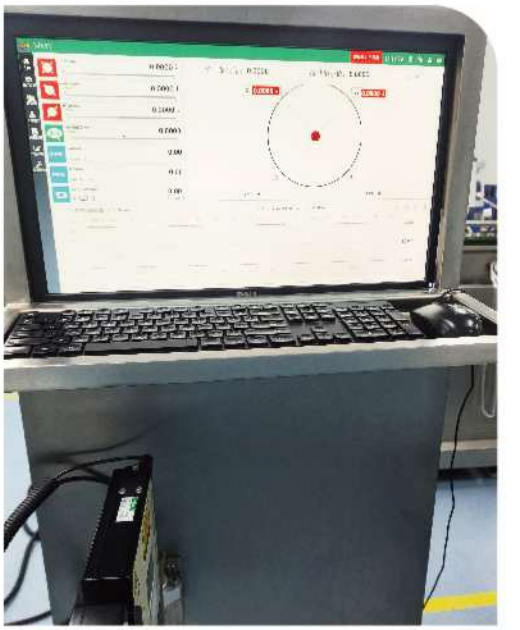
This section focuses on various insulation and protective components made of PEEK. With its excellent high-temperature resistance, chemical resistance, high mechanical strength, and stable electrical insulation, PEEK provides comprehensive and reliable protection for cables, pipelines, and precision components.

We transform PEEK into precision components such as sleeves and jackets through braiding, extrusion, and molding. Backed by strict quality control, this ensures durable, stable protection for your core components under complex mechanical and chemical conditions — delivering a complete safety solution.

PEEK/PI/TPI Insulating Tubing

>>> Equipped with 10 specialized tubing extrusion lines.

>>> Precision in-line testing equipment.



>>> TPI Insulating Tubing

TPI tubing (Thermoplastic Polyimide) features excellent high and low temperature resistance, with a continuous service temperature exceeding 240°C. It possesses high mechanical strength, excellent chemical resistance, and outstanding flame-retardant and electrical insulation properties.

TPI insulating sleeves are manufactured using extrusion molding. The main advantage of extrusion molding is that it enables continuous production with high efficiency. By integrating a cutting mechanism at the downstream of the extrusion line, seamless online fixed-length cutting can be achieved, which improves production efficiency and quality consistency.

TPI Insulating Tubing Specification Table

No.	Outer Diameter (OD)	Inner Diameter (ID)
1	φ0.5	φ0.3 φ0.4
2	φ0.8	φ0.3 φ0.4 φ0.5 φ0.6
3	φ1.0	φ0.4 φ0.6 φ0.8 φ0.9
4	φ1.2	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1
5	φ1.4	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2
6	φ1.5	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3
7	φ1.6	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5
8	φ1.8	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.5 φ1.6 φ1.7
9	φ2.0	φ0.3 φ0.5 φ0.7 φ0.9 φ1.0 φ1.2 φ1.4 φ1.6 φ1.7 φ1.8
10	φ2.2	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.1
11	φ2.4	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5 φ1.7 φ1.9 φ2.1 φ2.3
12	φ2.6	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.2 φ2.4 φ2.5
13	φ2.8	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5 φ1.7 φ1.9 φ2.1 φ2.3 φ2.5 φ2.7
14	φ3.0	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.2 φ2.4 φ2.6 φ2.8 φ2.9

>>> PI Insulating Tubing

PI tubing is refined using an advanced coating and core-pulling process. By coating a polyimide solution onto a high-precision mandrel, followed by high-temperature curing and precise core removal, a tubular product with a smooth inner wall and uniform wall thickness is obtained.
This process provides it with long-term temperature resistance exceeding 315°C, along with excellent dimensional stability, mechanical strength, and electrical insulation. It serves as a critical insulation and protection material for extreme environments in aerospace, high-end electronics, and other sectors.

Inner Diameter (ID)	Wall Thickness	Tolerance
0.10-2.00mm	0.01-0.10mm	±0.01mm

>>> PEEK Insulating Tubing

PEEK insulating tubing is a high-performance thermoplastic insulation protection component. Its most notable advantage lies in the combination of outstanding comprehensive properties and excellent processing flexibility.PEEK capillary tubing can achieve extremely thin and uniform wall thicknesses and minute inner diameters, featuring high dimensional precision and consistent smoothness on both internal and external walls. At the same time, it retains the inherent high strength, wear resistance, and fatigue resistance of PEEK material, as well as excellent chemical corrosion and hydrolysis resistance.

In terms of temperature resistance, PEEK tubing can be used long-term in environments up to 260°C.This makes it an ideal choice for applications requiring precision wiring and resistance to harsh environments, such as fluid transmission, optical fiber protection, or miniature sensor insulation in medical devices, automotive, and aerospace fields.

PEEK Insulating Tubing Specification Table

No.	Outer Diameter (OD)	Inner Diameter (ID)
1	φ0.5	φ0.3 φ0.4
2	φ0.8	φ0.3 φ0.4 φ0.5 φ0.6
3	φ1.0	φ0.4 φ0.6 φ0.8 φ0.9
4	φ1.2	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1
5	φ1.4	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2
6	φ1.5	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3
7	φ1.6	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5
8	φ1.8	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.5 φ1.6 φ1.7
9	φ2.0	φ0.3 φ0.5 φ0.7 φ0.9 φ1.0 φ1.2 φ1.4 φ1.6 φ1.7 φ1.8
10	φ2.2	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.1
11	φ2.4	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5 φ1.7 φ1.9 φ2.1 φ2.3
12	φ2.6	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.2 φ2.4 φ2.5
13	φ2.8	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5 φ1.7 φ1.9 φ2.1 φ2.3 φ2.5 φ2.7
14	φ3.0	φ0.4 φ0.6 φ0.8 φ1.0 φ1.2 φ1.4 φ1.6 φ1.8 φ2.0 φ2.2 φ2.4 φ2.6 φ2.8 φ2.9
15	φ3.2	φ0.3 φ0.5 φ0.7 φ0.9 φ1.1 φ1.3 φ1.5 φ1.7 φ1.9 φ2.1 φ2.3 φ2.5 φ2.7 φ2.9 φ3.0
16	φ4.95	φ4.15 φ4.25 φ4.35 φ4.55
17	φ10	φ8.7
18	φ12	φ10 φ11
19	1/32"	φ0.25 φ0.5
20	1/16"	φ0.1 φ0.13 φ0.25 φ0.38 φ0.5 φ0.75 φ1.0 φ1.2
21	1/18"	φ0.5 φ0.75 φ1.0 φ1.2 φ2.0 φ2.2

PEEK Monofilament & Braided Insulating Sleeving

>>> PEEK Monofilament

Continuous fiber made of PEEK, combining high strength, high-temperature resistance, and excellent flexibility.

Nine Colors Available:

Natural Black Blue Green Purple Red Orange Pink Yellow

Monofilament Specification Table

Nominal Diameter (mm)	Dimensional Tolerance (mm)	Applications
0.025-0.05	±0.01	Reinforcement fabric for hydrogen proton exchange membranes (PEM)
0.05-0.1	±0.015	Medical sutures and ligament materials
0.1-0.15	±0.02	Specialized sports shoes and anti-slip apparel industry
0.15-0.35	±0.03	Sleeving, filter press mesh (refined filtration, oxidation filtration)
0.35-0.4	±0.04	Pressure-resistant braided layer for hydraulic hoses in construction machinery
0.5-1.75	±0.05	Support mesh for filter press, 3D printing filaments

Performance Table of Monofilaments

Nominal Diameter (mm)	Dimensional Tolerance (mm)	Typical Specs (mm)	Linear Density (dtex)	Breaking Force (N)	Breaking Tenacity (cN/tex)	Elongation at Break (%)	Thermal Shrinkage (%)
0.025-0.05	±0.01	0.025	6	0.42	67.13	15	/
		0.03	9	0.63	69.93	15	/
		0.035	13	0.6	48.93	20	/
0.05-0.1	±0.015	0.05	26	1.15	45.95	20	1-3
		0.1	102	6.35	63.44	20	2-3
0.1-0.15	±0.02	/					
0.15-0.35	±0.03	0.2	408	17	42.46	25	3-5
		0.25	638	27	43.16	30	2-5
		0.3	919	32	35.52	25	5-7
0.35-0.4	±0.04	0.4	1634	55	34.34	30	5-7
> 0.5	±0.05	0.5	2553	80	31.97	25	5-7
		1.75	31269	/	/	/	/
		1.95	38824	/	/	/	/

>>> PEEK Braided Sleeving

Precision-woven from PEEK monofilaments using single-strand or multi-strand processes, achieving a perfect balance between flexibility and toughness. The sleeving inherits the outstanding characteristics of PEEK, such as high-temperature and corrosion resistance, while significantly enhancing wear resistance, bending resistance, and 3D-following performance, providing durable dynamic protection for cables in complex motion environments.

Single-strand Braid

Continuously braided from a single PEEK monofilament, featuring a uniform structure, concise appearance, and good cost-effectiveness. It is suitable for applications where requirements for the braided structure are not high and basic protection is needed.

Multi-strand Braid

Braided by combining multiple PEEK monofilaments, featuring a dense structure that significantly enhances the mechanical strength and wear resistance grade of the sleeving. It is suitable for applications with stringent requirements for mechanical protection or those needing complex functional structures.

Braiding Equipment

PEEK Braided Sleeving Formation

PEEK Corrugated Insulating Tubing

PEEK corrugated tubing is a high-performance flexible conduit that combines the excellent properties of PEEK material with the unique advantages of a corrugated structure. Its core advantages are as follows:

Superior Flexibility and Fatigue Resistance

The unique corrugated structure provides excellent bending performance, allowing for easy wiring and installation in narrow and complex spaces. It can withstand frequent bending and expansion/contraction movements without cracking or fatigue failure.

High Mechanical Protection Strength

The corrugated shape acts as "reinforcing ribs" on the tube wall, effectively resisting external crushing, rolling, and abrasion, providing robust physical protection for internal optical fibers, cables, or precision components.

High Temperature and Thermal Shock Resistance

Inheriting the temperature resistance of PEEK material, the long-term service temperature can reach 260°C, with higher short-term temperature peaks. It can withstand sharp temperature changes while maintaining stable performance.

Excellent Chemical Corrosion Resistance

It resists erosion from a wide range of chemicals, including acids, alkalis, hydrocarbons, and salt solutions, protecting internal components in harsh chemical environments and ensuring a long service life.

Lightweight and Easy to Install

Compared to metal corrugated tubes, PEEK corrugated tubes are extremely lightweight, effectively reducing system load. They are easy to install without the need for complex tools.

In summary, with its flexible yet robust structure and comprehensive performance in high temperature and chemical resistance, PEEK corrugated tubing is an ideal choice for applications with stringent requirements for reliability and flexibility (such as robotic wire harness protection, aerospace, high-end medical devices, semiconductor manufacturing equipment, etc.).

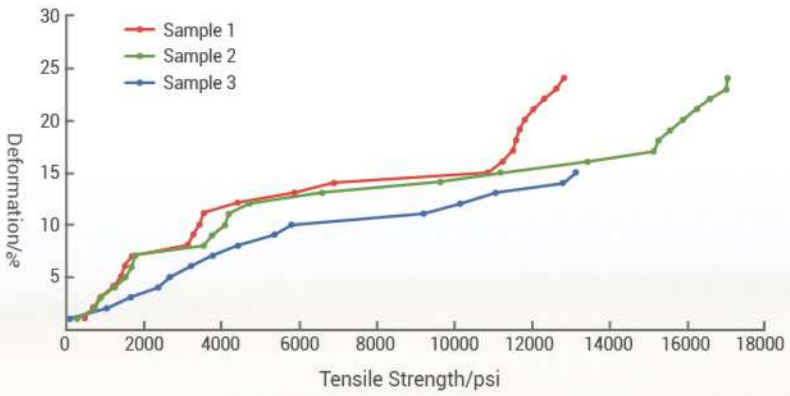
Specifications & Models

Specification No.	Nominal Inner Diameter (ID)	Minimum Inner Diameter (ID)	Maximum Outer Diameter (OD)	Number of Convolutions per 25.4mm ±1 (Right-hand Helix)	Minimum Bending Radius
12	0.375	0.364	0.500	8	0.750
24	0.750	0.730	0.890	8	1.250
32	1.000	0.980	1.195	7	1.750
48	1.500	1.480	1.780	7	2.750

PEEK Corrugated Tubing Performance Table

Test Item	φ12*φ9	φ22*φ18	φ30*φ24	φ44*φ37
Density (g/cm³)	1.260	1.261	1.262	1.261
Tensile Strength (psi)	13859	14365	14272	18121
Secant Modulus (psi)	385	542	900	680
Elongation (%)	258	230	212	210
Crush Resistance (lbs)	42.79	27.83	28.67	27.71
Weight (g/m)	18.5	31.3	50.2	88.3

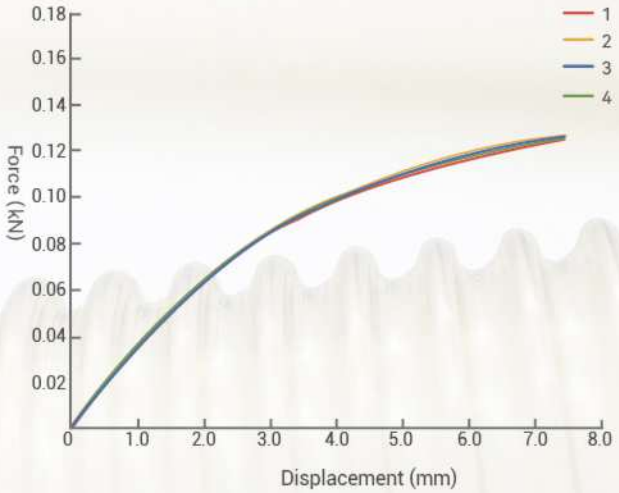
Tensile Performance Test



Tensile Performance Testing of Different PEEK Corrugated Tubing Samples

Crush Resistance Test

Test Item	1	2	3	4
Outer Diameter (OD) (mm)	30.13	30.17	30.16	30.15
Load at 25% Compression (lbs)	28.33	29.01	28.78	28.55



(III) PEEK Multi-solutions: Innovation & Value

This section systematically demonstrates the innovative applications of PEEK materials in capillaries, cables, filaments, and e-cigarettes.

PEEK Insulated Cables

The Core Choice for Apple Charger Internals

High Temperature Resistance: Withstands up to 250°C with consistently stable performance.

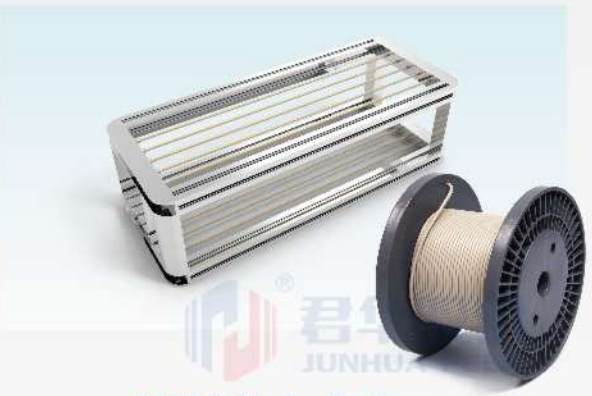
Full Power Efficiency: Ultimate insulation ensures lossless energy transmission.

Tough and Durable: High strength and fracture resistance for a longer service life.

Pure and Safe: Ultra-low outgassing/extraction to prevent corrosion and contamination.

PEEK Capillary Tubing Applications

With excellent biocompatibility, high-temperature resistance, high strength, and corrosion resistance, PEEK capillary tubes are widely used in high-precision fields such as medical interventional catheters, analytical instrument fluid paths, and semiconductor liquid cooling lines. Precision manufacturing processes ensure dimensional accuracy up to ±0.02mm, with a minimum OD of φ0.1mm and a minimum ID of φ0.05mm.



PEEK Cable Applications

With superior electrical properties, high toughness, and corrosion resistance, PEEK cables are widely used in geomagnetic wires, signal transmission lines, and fast-charging equipment, becoming the preferred material for high-end cables. As an ideal alternative to fluoroplastics, it has been adopted by brands such as Apple and Huawei. We provide full-process technical support from precision sampling to mass production.

PEEK Monofilament & Corrugated Tubing Applications

Combining high strength, lightweight properties (density is 60% of fluoroplastics), and corrosion resistance, PEEK filaments and corrugated tubes are suitable for lightweight aerospace cable sleeving, chemical/pharmaceutical filter cloth, and hydrogen energy membrane support meshes. Specifically, the support mesh woven from PEEK 0.025mm monofilament has become an essential choice in the hydrogen energy sector due to its extreme precision and reliability.

E-cigarette Component Applications

With its high-temperature resistance, low outgassing, low coefficient of thermal expansion, and ease of injection molding, PEEK material is widely used in HNB (Heat-Not-Burn) e-cigarette heater components. By adding glass microspheres, modified PEEK materials further enhance thermal conductivity and optimize the user experience.

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