Technical Specifications for Polyamide 6 (PA6) Nylon Pneumatic Pipes

Polyamide 6 (PA6) Nylon Pneumatic Tubing Technical Data Sheet

Document No.: TDS-PA6-2026-V4
Manufacturer: Hefei Yuannai Pneumatic Equipment Co., Ltd.
Quality Commitment: 20 years of dedication · 100% pure raw materials · zero recycled materials

1. Product Overview and Application Positioning

Produced exclusively through extrusion using 100% virgin material; no recycled or reclaimed materials are added. The product is designed for industrial pneumatic connections, equipment piping installation, and general industrial conveying applications.

- **Applicable media:** compressed air, lubricating oil, mineral oil, fuel oil, ethylene glycol antifreeze, etc.
- **Application Scope:** Connection of industrial automation equipment, fixed pneumatic piping, instrumentation, and auxiliary power piping. Dynamic applications, such as continuous chain dragging and repeated small-radius bending, require specialized validation.
- **Environmental compliance documentation:** Compliance with RoHS, REACH, and other regulations shall be based on valid declarations or test reports for the actual raw materials, color masterbatch, and finished products.
- **Special uses:** food contact, drinking water, medical applications, respiratory gases, braking systems, and flame retardancy; these are not the default commitments for products covered by this standard.

2. Physical and Mechanical Properties

Test item	Numeric value
Density	Approximately 1.13 g/cm^3
Hardness	75 ± 5 Shore D
Tensile stress at yield	Dry state:>65 MPa; moisture-regulated state:>35 MPa
Tensile Modulus	Dry state: approximately 2,500–3,200 MPa; moisture-regulated state: approximately 800–1,500 MPa
Melting Temperature	Approximately 215°C
Balanced moisture absorption rate	Approximately 2.5%–3.5%
Pneumatic operating temperature range	-40°C ~ +130°C

3. Specifications and Dimensions, and Pressure-Resistance Parameters (Standard Environment at 23 °C)

(1) Metric Sizes

Model	External diameterOD	Bore sizeID	Common difference	Working pressureWP	Bursting pressure of tank shellBP	Bending radius	Length of the standard examination paper
YN-PA6 0425	4.0 mm	2.5 mm	±0.10 mm	41 bar (592 psi)	122 bar (1777 psi)	40 mm	200 m
YN-PA6 0640	6.0 mm	4.0 mm	±0.10 mm	35 bar (512 psi)	105 bar (1536 psi)	35 mm	200 m
YN-PA6 0850	8.0 mm	5.0 mm	±0.10 mm	28 bar (412 psi)	85 bar (1237 psi)	45 mm	100 m
YN-PA6 0855	8.0 mm	5.5 mm	±0.10 mm	28 bar (412 psi)	85 bar (1237 psi)	47 mm	100 m
YN-PA6 0860	8.0 mm	6.0 mm	±0.10 mm	23 bar (341 psi)	70 bar (1024 psi)	48 mm	100 m
YN-PA6 1065	10.0 mm	6.5 mm	±0.10 mm	31 bar (455 psi)	94 bar (1365 psi)	65 mm	100 m
YN-PA6 1080	10.0 mm	8.0 mm	±0.10 mm	18 bar (265 psi)	54 bar (796 psi)	80 mm	100 m
YN-PA6 1280	12.0 mm	8.0 mm	±0.10 mm	22 bar (331 psi)	68 bar (995 psi)	70 mm	100 m
YN-PA6 1410	14.0 mm	10.0 mm	±0.10 mm	25 bar (363 psi)	77 bar (1123 psi)	140 mm	100 m
YN-PA6 1612	16.0 mm	12.0 mm	±0.10 mm	22 bar (327 psi)	67 bar (981 psi)	160 mm	100 m

(2) Imperial Specifications (Fractional / Inch Sizes)

Nominal specifications	External diameterOD	Bore sizeID	Common difference	Working pressureWP	Bursting pressure of tank shellBP	Bending radius	Length of the standard examination paper
1/8″	3.175 mm	1.58 mm	±0.10 mm	20 bar (290 psi)	80 bar (1160 psi)	32 mm	200 m
1/4″	6.35 mm	4.35 mm	±0.10 mm	14 bar (203 psi)	56 bar (812 psi)	65 mm	200 m
3/8″	9.525 mm	6.35 mm	±0.10 mm	14 bar (203 psi)	56 bar (812 psi)	100 mm	100 m
1/2″	12.70 mm	9.60 mm	±0.10 mm	10 bar (145 psi)	40 bar (580 psi)	130 mm	100 m

4. Packaging, Appearance, and Customization Support (OEM/ODM)

1. Standard colors: milky white, deep blue, black, red (customizable)
2. Example of metered inkjet coding for the pipe body: AIR PASSAGE PA6 8X5 001M (supports custom client brand logos, model numbers, and continuous meter-based inkjet coding)
3. Packaging specification: stretch film packaging

The indicators in this data sheet represent reference values for room-temperature laboratory testing; for specific operating conditions, please refer to the actual test results.