

Manufacturer : NINGBO TIMEJOY PNEUMATIC&HYDRAULIC CO.,LTD
product : Nylon Tube



TEST REPORT

REPORT NO: 1160002739
DATE : Mar.4th.2013
VEISION: 00

Name: Ningbo timejoy pneumatic&Hydraulic co.,ltd
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Sample name	Nylon Tube	Size	6*4, 8*6, 10*8, 12*9, 14*10, 16*12
Entrusting party	Ningbo Timejoy pneumatic& hydraulic co.,ltd	Add	No.3 Gongs Road, Zhuangshi Industrial Zone, Ningbo City,Zhejiang Province 315201,China
Manufacturer	Ningbo Timejoy pneumatic& hydraulic co.,ltd	Testing Classification	Commissioned Testing
Quantity of Samples	43	Date	Feb 25 th .2013
No. of Samples	NS121119-01#~04#		
Testing Standard	DIN73378 《Polyamide tubing for motor vehicles》、DIN 74324 《polyamide tubing for air braking systems》、SAE J844 《Nonmetallic Air Brake System tubing》、ASTM D638 《Standard test method for tensile properties of plastics》	Testing item	Density,Melting point,Hoop stress,Impact energy,Thickness ID,Thickness OD,Burst pressure,Tensile strength,Elongation,Minimum bending radius
Testing conclusion	Please refer to Testing result.		

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TUV Rheinland/CCIC(Ningbo) Co.,Ltd.

Geprüft und Genehmigt
(Reviewed and approved)

Engineer

黄恒/

TÜV Rheinland Group

1. Source & Purpose of sample:

Commissioned by TIMEJOY PNEUMATIC& HYDRAULIC CO.,LTD, Nylon Tube will be tested.

2. Test basis:

2.1 Test method according to DIN 73378 《Polyamide tubing for motor vehicles》、DIN 74324 《polyamide tubing for air braking systems》、SAE J844 《Nonmetallic Air Brake System Tubing》、ASTM D638 《standard test method for tensile properties of plastics》 .

2.2 Decision criterion: -----

3. Sample situation:

3.1 Ways of delivery: Submitted by client

3.2 Sample quantity: 43 PCS

3.3 Sample information: -----

4. Test project & grouping: See table |

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4. Test project & grouping: See table 1

Table 1

Sample Name	Sample No.	Test Projects	Remark
Nylon Tube	NS130130-01#	Density	-----
Nylon Tube	NS130130-02#	Melting point	-----
Nylon Tube	NS130130-03#-08#	Hoop stress	-----
Nylon Tube	NS130130-09#-20#	Impact energy	-----
Nylon Tube	NS130130-21#-26#	Thickness ID、 Thickness OD	-----
Nylon Tube	NS130130-27#-32#	Burst pressure	-----
Nylon Tube	NS130130-33#-37#	Tensile strength、 Elongation	-----
Nylon Tube	NS130130-38#-43#	Minimum bending radius	-----

5 Test period & address:

Test time:Feb 25,2013 to Feb.28,2013

Test field:NINGBO AUTOMOTIVE COMPONENT TESTING CENTER

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6. Test results:

S/N	Test projects	Requirements	Sample type	Test results
1	Density	The test environment of 23 °C, with the immersion method.	-----	The density of the sample is 1.04 kg/dm ³ .
2	Melting point	The temperature rose from 50 °C to 200 °C with the heating rate of 20 °C / min.	-----	The sample melting temperature is 174 °C.
3	Hoop stress	Burst test in the environment of 23 °C, and then obtained by calculating the stress intensity σ .	6×4	Sample stress intensity is 23.78N/mm ² .
			8×6	Sample stress intensity is 20.63N/mm ² .
			10×8	Sample stress intensity is 17.64N/mm ² .
			12×9	Sample stress intensity is 23.49N/mm ² .
			14×10	Sample stress intensity is 25.98N/mm ² .
			16×12	Sample stress intensity is 25.86N/mm ² .

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4	Impact energy	The sample shall be impact with the pendulum speed of 3.6 ~ 4m/s; and the pendulum impact energy is 7.5J. the impact test shall be taken at toom temperture of 23°C and -40°C.	6×4	Room temperture: no broken; low temperature: no broken.
			8×6	Room temperture: no broken; low temperature: no broken.
			10×8	Room temperture: no broken; low temperature: no broken.
			12×9	Room temperture: no broken; low temperature: no broken.
			14×10	Room temperture: no broken; low temperature: no broken.
			16×12	Room temperture: no broken; low temperature: no broken.

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5	Thickness ID、 Thickness OD	-----	6×4	Thickness ID:3.96mm; Thickness OD:5.99mm.
			8×6	Thickness ID:5.98mm; Thickness OD:8.01mm.
			10×8	Thickness ID:7.99mm; Thickness OD:9.97mm.
			12×9	Thickness ID:8.95mm; Thickness OD:12.03mm.
			14×10	Thickness ID:9.96mm; Thickness OD:14.01mm.
			16×12	Thickness ID:11.98mm; Thickness OD:16.03mm.
6	Burst pressure	The sample shall be put in the room temperature of 24°C for 0.5~3.0 hours, and the burst test shall be tested within 3s to 15s.	6×4	11.89MPa
			8×6	6.88MPa
			10×8	4.41MPa
			12×9	7.83MPa
			14×10	10.39MPa
			16×12	8.62MPa

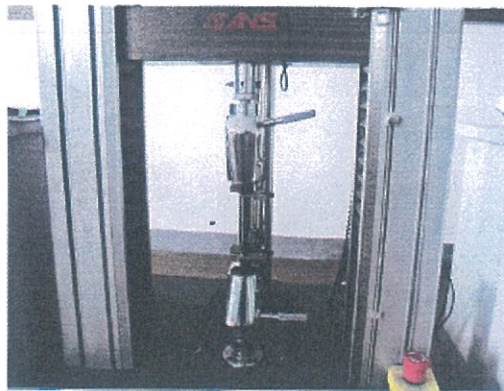
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7	Tensile strength, Elongation	Test speed:50mm/min; L ₀ :50mm.	-----	The tensile strength is 44.7MPa; and the elongation is 365.6%.
8	Minimum bending radius	-----	6×4	9.3mm
			8×6	24.4mm
			10×8	32.5mm
			12×9	38.0mm
			14×10	41.7mm
			16×12	52.2mm

Appendix A:Test picture



Picture 01: Burst pressure test



Picture 02: Tensile test

-----The End-----