

## Plastic hoses

# Series AC



The polyurethane, polyammide and copolyester tubes are produced in Italy according to the reference ISO norms as warranty of high quality level and answer to the followings technical specifications and applications.

## Technical sheet

FLUIDS	Liquids and gases, compressed air (for information contact our Technical Dept.)
APPLICATIONS	Pneumatic circuits, low pressure hydraulic applications, according to DIN 3861-3870 norms.
CONNECTING FITTINGS	Normally not applied directly to pipes, however present in installations and defined according to application.
TEMPERATURE AND PRESSURE	Temperatures and pressures usually depend by the features of the employed tubes and are detailed on the next pages
MATERIALS	Polyuerathane TPU Polyamide PA12 Polyuerathane / Copolyester TPA



## POLYURETHANE TUBE

A material with exceptional mechanical properties, this tube is designed to solve the problems associated with particularly heavy-duty applications.

**Technincal property:**

<i>Hardness Shore A:</i>	98
<i>Temperature working range:</i>	-20°C +70°C
<i>Breaking Elongation:</i>	540% (DIN 53504)
<i>Density (gr./cm<sup>3</sup>):</i>	1.18 (DIN 53479)
<i>Abrasion loss (mm<sup>3</sup>):</i>	55 (DIN 53516)
<i>Tensile strength (KN/m):</i>	120 (DIN 53515)

**Technical features:**

Excellent resistance at the abrasion.  
High flexibility at the lowest temperatures.  
Good resistance at the atmospheric effects.  
Good ageing process  
Extremely endeavor resistance.  
Very low "click" and "stress cracking" effects.

**Other features:**

*Tolerances:* Outer diameter +/- 0,1 mm Thickness +/-0,1 mm  
*Available colours:* Light blue, Red, Black, Green, Yellow, Neutral, Grey, Cristal blue, Cristal  
*Packing:* 100 mt. Rolls in plastic film

**Main application:**

Pneumatic, Robotic, agriculture, garage, etc.

**General notices:**

Polyurethane tube material has exelent mechanical features and it is particularly addressed to mostly solve the heavy applications. Anyway polyurethanes, althoughthey are much resistant at the endeavor and at the flexion stress, trend to keep heat when working with continuous variable pressure and in case of high atmosphere temperature it could bring to the swelling or breaking of the tubing itself, specially on sizes 8x6, 10x8, 14x12. Polyurethane is normally also resistant to ozone, hydrocarbon, oils and greases, fuel and moderate chemical solutions. It is not, or very low, resistant to concentrated acids, ketons, esters and chlорide hydrocarbons.

The int. x ext. diameter, material type and batch number are marked on the tube for traceability.  
Each batch of material is accompanied by a certificate of conformity.

## POLYAMIDE TUBE

The polyamide is the most diffused material among the technical applications for its characteristics of flexibility and mechanical performances.

**Characteristics:**

High mechancl properties to traction and to continuous & alternate flexion, notable flexibility, good stability to heat, notable resistance to ageing, law water absorption, notable resistance to hydrocarbons and oils and good inertness to chemical agents.

<b>Mechanical/physical properties</b>	<b>Trial method</b>	<b>Value</b>
<i>Density:</i>	ASTM D-792	1,03g/cm <sup>3</sup>
<i>Hardness :</i>	ASTM D-2240	65ShD
<i>Elongation at break:</i>	ASTM-D638	>300%
<i>Elastic modulus:</i>	ASTM D-790	410MPa
<i>Working temperature:</i>	-	-40°C/+70°C

*Tolerances:* Outer diameter +/- 0,1 mm Thickness +/-0,1 mm  
*Available colours:* Light blue, black and neutral.  
*Packing:* 100 mt. Rolls in plastic film

**Application:**

This kind of material is particularly indicated for the realization of tubing for pneumatic, robotic, steel, industrial machineries, ecc..., when there is the necessity of notable flexibility.

**Reference norms:**

ISO 1874 - DIN 73378 - DIN 74324

## POLYURETHANE TUBE/COPOLYESTER

The "coex", copolyester coated with polyurethane, is a material that has made mits entry into the pneumatic applications in the recent years, in particular to meet the needs of applications and availability. Today is a good alternative for both, technical and economic reasons, to the tubes storically used.

**Characteristics:**

Very high flexibility also at low temperatures, excellent elastic return, low sensibility to "click" and "stress cracking" effect, excellent resistance to abrasion, good resistance to atmospheric agents, good aging, extremely resistant to fatigue, good chemical resistance, excellent resistance to cut and lubrication oil at low/medium temperature.

<b>Mechanical/physical properties</b>	<b>Trial method</b>	<b>Value</b>
<i>Hardness:</i>	DIN 53505 - ISO868	95 ShA
<i>Water absorpion:</i>	a 23°C 50% r.h.	<1%
<i>Density:</i>	DIN 53479 - ISO1183	1,20 g/cm <sup>2</sup>
<i>Elongation at break:</i>	DIN 53504 - ISO37	500%
<i>Flexural elastic modulus:</i>	ASTN D790	110 Mpa
<i>Abrasion loss:</i>	DIN 53516 - ISO4649	25 mm <sup>3</sup>
<i>Break resistance:</i>	DIN 53504 - ISO37	55 Mpa
<i>Working temperature:</i>	-	40°C - +65°C

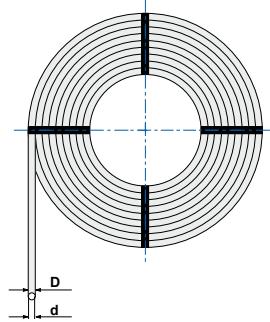
*Tolerances:* External diameter +/- 0,1 mm (+/- 0,15 from diam. 10mm).  
Internal diameter +/- 0,2 mm (+/- 0,3 from diam. 7,5mm).  
*Available colours:* See technical page 197  
*Packing:* 100 mt. Rolls in plastic film

**Application:**

Tubes made with this row material have all the credentials to fit in pneumatics, agriculture, in general when is required resistance with grease, emulsified oils, lubrication. The use with continuous pulsating pressures can create heat accumulation.

ART. **TPU****Polyurethane tube**

COD.	Dxd mm	P bar	P1 bar	R mm	◎
TPU0315	3 x 1,5	13,5	54	7,5	100
TPU0402	4 x 2	15	60	11	100
TPU0425	4 x 2,5	10(10)	40(40)	15	100
TPU0604	6 x 4	10	40(36)	18	100
TPU0805	8 x 5	13	52	25	100
TPU0855	8 x 5,5	9 (8)	37 (34)	30	100
TPU0806	8 x 6	7	28	35	100
TPU1065	10 x 6,5	10(7)	40(28)	30	100
TPU1075	10 x 7,5	6,5(6)	27(25)	40	100
TPU1008	10 x 8	5,5	22	45	100

**Ordering code****TPU 0315 B**

**TYPE**  
**TPU** = Polyurethane tube 98 Shore

**EXTERNAL DIAMETER - INTERNAL DIAMETER**  
**0315** = 3 x 1,5  
**0402** = 4 x 2  
**0425** = 4 x 2,5  
**0604** = 6 x 4  
**0505** = 8 x 5  
**0855** = 8 x 5,5  
**0806** = 8 x 6  
**1065** = 10 x 6,5  
**1075** = 10 x 7,5  
**1008** = 10 x 8

**COLOURS**

**Blank** = Neutral  
**B** = Black  
**BU** = Light Blue  
**G** = Green  
**R** = Red  
**GR** = Grey  
**T** = Transparent/Crystal  
**Y** = Yellow

For other colours please contact our sales department

In the application choice the user must keep in mind the different use variables (pressure, temperature, environment conditions) and all the things that can interfere with the application. These information must be considered only as a general indication. The validation of the application is always at the user charge. Medifly keeps the right to modify or adjourn the technical data in any moment without notify duty. This document has no contract value.

**Adjusting scale on atmospheric temperature basis****Correction value scale for working pressure in consideration of the temperature variation**

Temp °C	-20	0	+23	+30	+40	+50	+60	+70
Coefficient	x 1,87	x 1,4	x 1	x 0,84	x 0,70	x 0,60	x 0,52	x 0,47

**Legend**

**D** = External diameter  
**d** = Internal diameter  
**P** = Working pressure  
**P1** = Breaking pressure  
**R** = Bending radius  
 = Roll packing (mt)

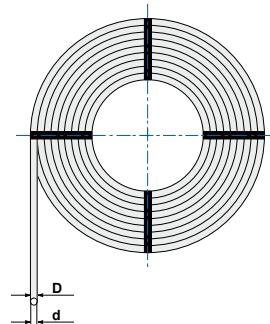


ART. **PA12**

**Polyamide tube**



COD.	Dxd mm	P bar	P1 bar	R mm	Q
PA120402 (*)	4 x 2	37	130	20	100
PA120425	4 x 2,5	32	112	20	100
PA120427	4 x 2,7	23	80	25	100
PA120604	6 x 4	26	90	30	100
PA120806	8 x 6	20	70	40	100
PA121007 (*)	10 x 7	25	88	70	100
PA121008	10 x 8	15	52	60	100
PA121210	12 x 10	12	42	85	100
PA121412	14 x 12	11	33	90	100



Note: = sizes only available on request.

**Ordering code**

**PA12 0402 B**

**TYPE**  
**PA12** = Polyamide tube PA12

**EXTERNAL DIAMETER - INTERNAL DIAMETER**  
**0402** = 4 x 2  
**0425** = 4 x 2,5  
**0427** = 4 x 2,7  
**0604** = 6 x 4  
**0806** = 8 x 6  
**1007** = 10 x 7\*  
**1008** = 10 x 8  
**1210** = 12 x 10  
**1210** = 14 x 12

**COLOURS**

**Blank** = Neutral  
**B** = Black  
**BU** = Light Blue

\*Only available on request

For other colours please contact our sales department

**Adjusting scale on atmospheric temperature basis**

**Correction value scale for working pressure in consideration of the temperature variation**

Temp °C	-20	0	+23	+30	+40	+50	+60
Coefficient	x 1,87	x 1,4	x 1	x 0,90	x 0,80	x 0,70	x 0,60

**Legend**

**D** = External diameter  
**d** = Internal diameter  
**P** = Working pressure  
**P1** = Breaking pressure  
**R** = Bending radius  
**Q** = Roll packing (mt)

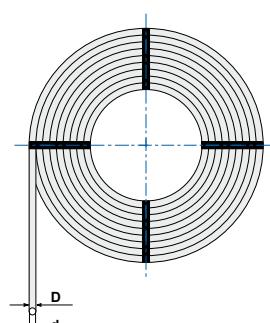
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ART. **TPA**

**Polyurethane tube/Copolyester ALLOY SOFT**



COD.	Dxd mm	P bar	P1 bar	R mm	Q
TPA0425	4 x 2,5	18	72	12	100
TPA0604	6 x 4	14	56	15	100
TPA0806 (*)	8 x 6	10	40	25	100
TPA1008 (*)	10 x 8	8	34	35	100
TPA1209	12 x 9	8	34	45	100
TPA1411	14 x 11	6	24	120	100
TPA1412	14 x 12	3	12	160	100
TPA1612	16 x 12	5,5	22	150	100



Note: the sizes marked with an asterisk are also available in the PLUS version with an inner diameter reduced by 0.3 mm.  
Available in light blue. For other colours please contact our sales department.

**Adjusting scale on atmospheric temperature basis**

**Correction value scale for working pressure in consideration of the temperature variation**

Temp °C	-20	0	+23	+30	+40	+60	+70	+70
Coefficient	x 1,87	x 1,4	x 1	x 0,90	x 0,80	x 0,70	x 0,50	x 0,47

**Legend**

**D** = External diameter  
**d** = Internal diameter  
**P** = Working pressure  
**P1** = Breaking pressure  
**R** = Bending radius  
**Q** = Roll packing (mt)