



## DATA-SHEET PE-X/Al/PE-X PIPES

### WINNY-AL - WINNY-AL COVERED - WINNY-AL GAS

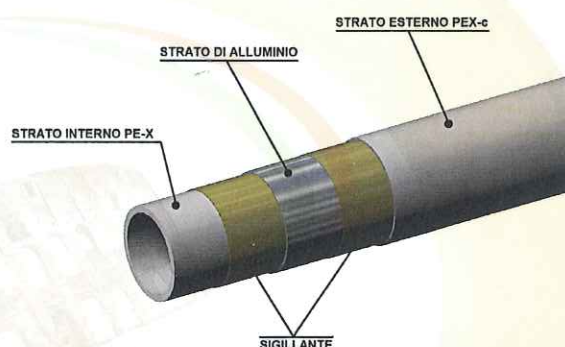
#### WINNY-AL (Naked)

Type multilayer pipe with layer by PE-X/Al/PE-X; The intermediate layer of aluminum is laser welded and sealed between the polyethylene layers; This is indicated for hot and cold water conveyance and water intended for humane consumption in hydro thermo sanitary plants.

The Winny-Al pipe is homologated by DVGW according to EN ISO 21003.

#### GENERAL TECHNICAL INFORMATION

- Full compatibility with water (H<sub>2</sub>O);
- External colour: Neutral;
- Working temperature range: 0÷80 °C;
- Maximum working temperature: 95°C;
- Maximum working pressure at 95°C: 10bar;
- Thermal conductivity: 0.43 W/mK;
- Thermal linear expansion coefficient: 0.026 mm/mK;
- Oxygen diffusion : 0.0 mg/l;



**TAB.1: TECHNICAL INFORMATION FOR SPECIFIC DIMENSIONS**

REFERENCE		14x2.0 Al 0.2	16x2.0 Al 0.2	16x2.0 Al 0.3	18x2.0 Al 0.25	20x2.0 Al 0.25	20x2.0 Al 0.4	25x2.5 Al 0.3
<b>External Diameter</b>	mm	14 (-0;+0.15)	16 (-0;+0.25)	16 (-0;+0.25)	18 (-0;+0.25)	20 (-0;+0.25)	20 (-0;+0.25)	25 (-0;+0.25)
<b>Thickness</b>	mm	2.0 (-0.05;+0.25)	2.0 (-0.05;+0.3)	2.0 (-0.05;+0.3)	2.0 (-0.05;+0.3)	2.0 (-0.05;+0.3)	2.0 (-0.05;+0.3)	2.5 (-0.05;+0.3)
<b>Internal Diameter</b>	mm	10 (-0.25;+0)	12 (-0.3;+0.1)	12 (-0.3;+0.1)	14 (-0.3;+0.1)	16 (-0.3;+0.1)	16 (-0.3;+0.1)	20 (-0.3;+0.1)
<b>Aluminium Thickness</b>	mm	0.2	0.2	0.3	0.25	0.25	0.4	0.3
<b>Weight</b>	Kg/m	0.107	0.125	0.138	0.132	0.147	0.195	0.230
<b>Volume H<sub>2</sub>O contained</b>	l/m	0.077	0.113	0.113	0.154	0.201	0.201	0.314
<b>Working T°</b>	°C	0-80	0-80	0-80	0-80	0-80	0-80	0-80
<b>Max. working T°</b>	°C	95	95	95	95	95	95	95
<b>Max. Pressure at T=95°C</b>	bar	10	10	10	10	10	10	10
<b>Internal surface roughness</b>	µm	7.0	7.0	7.0	7.0	7.0	7.0	7.0
<b>Coil length</b>	m	100	100	100	100	100	100	100
<b>Bars length</b>	m	-	-	-	-	-	-	-



**TAB.1: TECHNICAL INFORMATIONS FOR SPECIFIC DIMENSIONS**

REFERENCE		26x3.0 Al 0.3	26x3.0 Al 0.65	32x3.0 Al 0.4	40x3.5 Al 0.8	50x4.0 Al 1.2	63x4.5 Al 1.5
External Diameter	mm	26 (-0;+0.25)	26 (-0;+0.25)	32 (+0.15;+0.4)	40 (-0;+0.25)	50 (-0.2;+0.25)	63 (-0.2;+0.25)
Thickness	mm	3.0 (-0.05;+0.3)	3.0 (-0.05;+0.3)	3.0 (-0.05;+0.3)	3.5 (-0.15;+0.3)	4.0 (-0.05;+0.3)	4.5 (-0.2;+0.3)
Aluminium Thickness	mm	20 (-0.3;+0.1)	20 (-0.3;+0.1)	26 (-0.15;+0.25)	33 (-0.3;+0.3)	42 (-0.55;+0.15)	54 (-0.55;+0.25)
Weight	mm	0.30	0.65	0.4	0.8	1.2	1.5
Volume H <sub>2</sub> O contained	Kg/m	0.252	0.352	0.388	0.570	0.820	0.950
Working T°	l/m	0.314	0.314	0.531	0.960	1.385	2.289
Max. working T°	°C	0-80	0-80	0-80	0-80	0-80	0-80
Max. Pressure at T=95°C	°C	95	95	95	95	95	95
Internal surface roughness	bar	10	10	10	10	10	10
Aluminium Thickness	µm	7.0	7.0	7.0	7.0	7.0	7.0
Coil length	m	100	100	50	-	-	-
Bars length	m	-	-	-	Bars 5m	Bars 5m	Bars 5m

### WINNY-AL with corrugated sheath

The WINNY-AL pipe naked as before described is provided with an external pipe corrugated protection. The material of this protection is Polypropylene red or blue colored as from customer required; The pipe corrugated protection is suitable to be embedded in concrete and can resist to the shock of the jet and the stresses that arise during its hardening, according to standard CEI EN;

REFERENCE	[unit]	16X2.0	18X2.0	20X2.0	26X2.0
Internal / External diameter of covering	mm	21/25	23/28	23/28	32/40
Resistance to crashing	Kg/5cm	75	75	75	75
Class of crashing resistance	-	Class 3	Class 3	Class 3	Class 3
Coil length	m	50	50	50	50





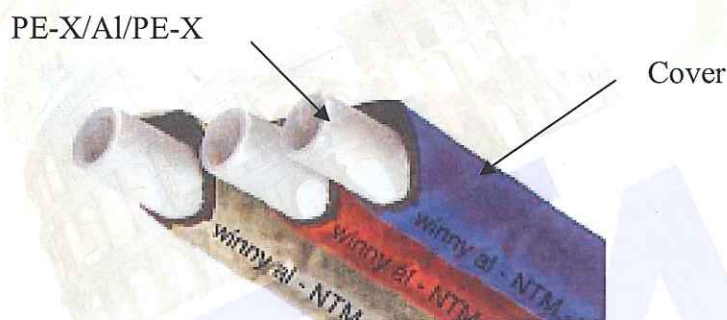
### WINNY-AL insulating covered

The technical characteristics of PE-X/Al/PE-X *WINNY-AL Covered* are the same as specified in TAB.1 referred to *WINNY-AL Naked pipes*; The commercial diameter and the technical characteristics conferred by the insulation (called *WINNY-AL RIVESTITO*) are in TAB.2.

#### INSULATING COVER

The cover is realized by two expanded polyethylene (PE) layer:

1. Internal layer (in contact with the pipe) is in polyethylene with low density PE-LD ( $30\text{kg/m}^3$ ) and closed cells, without CFC and HCFC;
  - Class fire resistance: Class 1;
  - Thermal conductivity:  $0.0369\pm 0.0397\text{ W/mK}$ ;
2. External layer anti-scratch, realized in polyethylene with low density PE-LD ( $30\text{kg/m}^3$ ) and closed cells, the material is nontoxic, odourless and without CFC e HCFC;
  - Class fire resistance: Class 1;
  - Colour: Red, Blue and Neutral;



**TAB.2: TECHNICAL INFORMATIONS FOR SPECIFIC NOMINAL PIPE DIMENSIONS**

RIFERIMENTO	[unit]	14X2.0	16X2.0	18X2.0	20X2.0	25X2.5	26X3.0	32X3.0
Thickness	mm	6	6	6	6	10	10	10
Resistance to water vapour diffusion	$\mu$	5297	5297	5297	5297	5297	5297	5297
Coil length	m	50	50	50	50	50	50	25

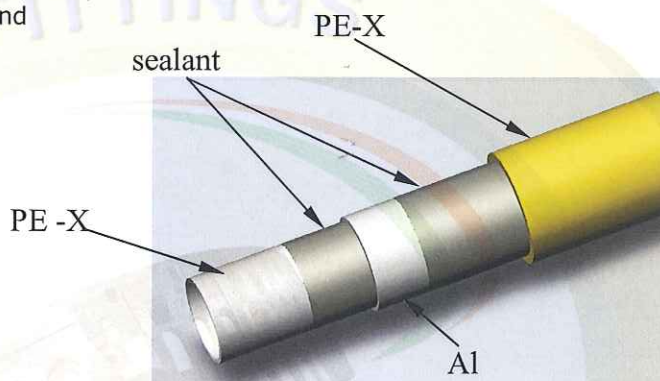


## WINNY-AL GAS

Type multilayer pipe with layer by PE-X/Al/PE-X. The intermediate layer of aluminum is laser welded and sealed between the polyethylene layers; The pipe is homologated according to European standard EN 1775:2007 and Italian UNI 7129:2008 and UNI/TS 11343:2009 for to be used in domestic gas plants with gases of family 1, 2 e 3.

### GENERAL TECHNICAL INFORMATIONS

- External colour: Yellow;
- Working temperature:  $-20 \div 70$  °C;
- Max working pressure: MOP 0.5bar;
- Thermal linear expansion coefficient: 0.026 mm/mK;
- Complete compatibility with: GPL, Methane and Manufactured Gases.



**TAB.3: TECHNICAL INFORMATIONS FOR SPECIFIC NOMINAL PIPE DIMENSIONS**

REFERENCE		16x2.0 Al 0.4	20x2.0 Al 0.4	26x3.0 Al 0.6	32x3.0 Al 0.8
External Diameter	mm	16 (-0;+0.2)	20 (-0;+0.25)	26 (+0.1;+0.30)	32 (+0.15;+0.40)
Thickness	mm	2.0 (-0.05;+0.3)	2.0 (-0.05;+0.3)	3.0 (-0.05;+0.3)	3.0 (-0.05;+0.3)
Internal Diameter	mm	12 (-0.3;+0.5)	16 (-0.3;+0.1)	20 (-0.2;+0.2)	26 (-0.15;+0.25)
Aluminium thickness	mm	0.4	0.4	0.6	0.8
Weight	Kg/m	0.112	0.155	0.301	0.400
Working T°	°C	-20÷70	-20÷70	-20÷70	-20÷70
Max. working pressure	bar	0.5	0.5	0.5	0.5
Internal surface roughness	µm	7.0	7.0	7.0	7.0
Coil length	m	100	100	100	50
Bars length	m	-	-	-	-



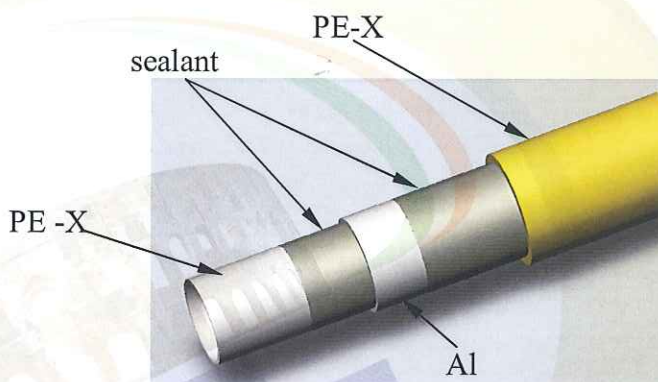


**WINNY-AL GAS with corrugated sheath**

The WINNY-AL pipe naked as before described is provided with an external pipe corrugated protection colored yellow. The material of this protection is self-extinguishing according to UNI EN 7129:2008;

**GENERAL TECHNICAL INFORMATIONS**

- External colour: Yellow;
- Working temperature: -20÷70 °C;
- Waterproof with: GPL, Methane and Manufactured Gases(\*).
- Resistant to UV rays;
- Resistant to corrosion of concrete materials: cement, mortar, lime, etc.;



RIFERIMENTO	[unit]	16X2.0	20X2.0	26X2.0	32X2.0
<b>Cover Internal Diameter</b>	mm	26	30	36	42
<b>Cover External Diameter</b>	mm	36	40	46	52
<b>Coil length</b>	m	50	50	50	50

(\*) Properties related to a perfect conditions of the cover;

Please not that: This technical characteristics, are declared by NTM and can be subjected anytime of variation for performance improving of the product, according to the standard and/or after internal tests.

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22/03/2011

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