silmet
High Performance Copper

PRODUCT
Catalogue

silmet
High Performance Copper

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The History of a major industrial company

Founded in 1973, Silmet is one of the major Italian operators in the metallurgical industry and part of the deeply-rooted Ghidini group, which goes back as far as 1929 when the Ghidini families were already specialised in the machining of non-ferrous metals such as copper, brass, aluminium and nickel silver.
A historic dynasty that is currently led by Commander Giampietro Ghidini, the company produces brass and plastic traps for the plumbing sector, brass tubes and bars for various industrial applications, copper plates and wires for use in the building and electrical sectors and copper tubes for water and gas in sanitary, heating and industrial applications.
The group's factories are on the cutting-edge of technology and are equipped with sophisticated, modern plants.
Electricity requirements are met by the group's own hydro-electric power stations and by a modern photovoltaic power station with an installed capacity of 6,325 MW; raw materials are purchased directly from mines in Chile, the Congo, Peru and Zambia, guaranteeing supplies of excellent quality and standards.
Silmet is equipped with metal smelting blast furnaces, large extrusion presses, powerful bull-block and combined draw-plates and very modern annealing and metal normalizing furnaces.

Since 1994, the whole process is monitored according to standards and in compliance with the international ISO 9001:2015 standards with certified Quality System.

The whole production undergoes checks, tests and inspections with the aid of its own test and alloy-analysis laboratories, equipped with the most up-to-date instruments.

Silmet is the world leader in the production of copper tubes for water, heating and sanitary applications and industrial use in Level Wound Coils. In 2007, the company started up its production of copper strips for building and industrial applications and copper downspouts. It manufactures its range of products in accordance with all world manufacturing standards and in compliance with customers' particular needs.

HIGH PERFORMANCE COPPER

ISO 9001:2015
Certification

Internally-produced
electricity
Environmental care

6,325 MW

Qualities and Advantages of Copper

Copper tubes can be used as pipes to carry water for human consumption in accordance with the provisions laid down in Presidential Decree no. 1095 of 3 August 1968. Their conformity is also extended to the provisions laid down in the European Directive 98/83, on the quality of water for human consumption, and Ministerial Decree no. 174 of 6 April 2004, which implements the aforesaid Directive, making it possible to use copper tubes as pipes for carrying drinking water and water for human consumption.
Heat technicians, installation engineers and end consumers can safely use copper tubes in plumbing installations without any risk.

Copper tubes are used on a worldwide scale for carrying drinking water, for heating systems, gas distribution, in hospital medical gas transport systems, as well as in air-conditioning and refrigeration applications and various types of industrial use.

The modern technologies used to work the raw material and subsequently manufacture the finished product, together with strict quality controls, make copper tubes a leading and absolutely reliable product in all applications for which they are intended to be used.

Copper is a metal with an extremely high electrical and thermal conductivity, second only to silver; it is highly resistant to corrosion and is not magnetic. It is easy to work, extremely ductile and malleable, easy to recycle and has a high scrap recovery rate. Its impermeability, resistance to ultraviolet light and to low temperatures, which enable it to be installed in cold periods without any risk of breakage, constitute a high added value and give the product unique features that are a permanent guarantee of maximum reliability. In addition, copper is bacteriostatic, that is, it combats the proliferation of bacteria on its surface. It has been found that the proliferation of Legionella is reduced when copper tubes are used. The capacity of this metal to inhibit the proliferation of bacteria on its surface was already known in the nautical field: many anti-fouling varnishes (used to inhibit the growth of algae and molluscs) to be applied to the keels of ships contained copper salts; every summer, recommendations are made to insert a copper wire in wells to kill mosquito larvae; in many American hospitals, it is compulsory to make door handles and banisters of brass (a copper-zinc alloy) to avoid the transmission of diseases and pathogenic bacteria. Copper is by far the best material against Legionella and other pathogenic bacteria, such as Escherichia Coli, Streptococcus Faecalis and Staphylococcus Aureus.
Furthermore, copper ions kill other micro-organisms that Legionella feed on and reduce the growth of the biofilm, which tends to form a protective shield for bacteria.
Its bacteriostatic property, together with other physico-chemical and economic characteristics played a major role in the choice of copper alloys in the coinage of the new Euro coin.

Due to its high thermal conductivity, it is one of the most effective materials for heat exchanges: this is why it is used in heat exchangers, solar panels, and wall and floor-mounted radiating panels. The alternative products, made up of several layers of different materials, have no thermal conductivity and have different mechanical/chemical and flow characteristics for each of the layers making them up, unlike copper which has a univocal, low thermal expansion coefficient and uniform mechanical/chemical and flow characteristics. In addition, copper tubes can be supplied in various physical states (soft, half-hard and hard) and thus adapt better to users' needs. Copper is an eco-friendly product, in the forefront as far as new design concepts are concerned, due to its extreme adaptability to all manufacturing and installation innovations.

ADVANTAGES OF COPPER

Melting point
1084,6 °C

Electrical conductivity
59,6 • 10^6 S/M

Thermal conductivity
390W/(m • k)

Copper tubes

HIGH PERFORMANCE COPPER

ESENCOR

THE COPPER TUBE OF THE THIRD MILLENNIUM

The ideal choice for supplying drinking water, for heating systems and for the distribution of gases and combustible liquids.

Manufactured with the most modern technologies available on today's world market, the result of scientific studies and tests that guarantee a considerably lower level of residual carbon than is required by the European manufacturing standard EN 1057, it is an excellent product against corrosion caused by the characteristics of waters present in water beds and in the public water mains.

It complies with Presidential Decree no. 1095 of 3 August 1968, European Council Directive no. 98/83/EC, Decree no. 31 of 2 February 2001 and Ministerial Decree no. 174 of 6 April 2004 and is therefore suitable for use in the reception, treatment, transfer and distribution of drinking water.

EN 1057 is the European reference standard on a continental level for the manufacture of copper gas and water tubes in water and heating applications. It establishes characteristics in terms of chemical composition, mechanical properties, dimensions and tolerances and the tests that must be carried out during production in order to manufacture a product that complies with specifications.

Sampling plans during manufacture are applied according to the provisions of standard EN 1057 and guarantee the product's conformity on the basis of tests performed by the internal and independent laboratory that is part of the Corporate Quality System certified according to EN ISO 9001:2015.

The copper tube EN 1057 is marked CE as required by EU 305/2011 EU Construction Products Regulation (CPR).

TECHNICAL CHARACTERISTICS			
Alloy – Rif. EN 1976	Cu-DHP CW024A (Cu = 99,90% min. - P = 0,015 ÷ 0,040%)		
Physical state according to EN 1057	Annealed R220	Half-Hard R250	Hard R290
Unit tensile strength– R min.	220 N/mm²	250 N/mm²	290 N/mm²
Percentage elongation – A min.	40%	20% or 30%	3%
Total carbon	C ≤ 0,20 mg/dm² max. according to standard EN 1057		
Inner surface	Shiny		
Marking on tube	CE SILMET EN 1057 Cu 99.9 Ø X th. year quarter ǂǂ[1] ESENCOR		
Dimensions and tolerances	According to standard EN 1057		
Internal surface roughness	RA - 1/10 micron		
Linear thermal expansion coefficient	0.00168 mm/m °C		
Thermal conductivity at 20°C	364 W/m · K		

[1] the symbol ǂǂ is present only in the half-hard physical state

TUBES IN COILS - ANNEALED PHYSICAL STATE R220

dimensions Ø X wt. mm	length of coils m	water content l/m	bursting pressure MPa	operating pressure MPa	coils per pack n	total meters per pack m	app. gross weight complete pack kg
6 X 1	50	0,0126	74,8	18,7	44	2.200	335
8 X 1	50	0,0283	56,1	14,03	36	1.800	375
10 X 1	50	0,0503	44,88	11,22	28	1.400	335
12 X 1	50	0,0785	37,4	9,35	22	1.100	315
14 X 1	50	0,1131	32,06	8,01	20	1.000	335
15 X 1	50	0,1327	29,92	7,48	18	900	335
16 X 1	50	0,1539	28,05	7,01	18	900	350
18 X 1	50	0,2011	24,93	6,23	14	700	315
22 X 1	25	0,3142	20,4	5,1	14	350	225
22 X1,5	25	0,2835	30,6	7,65	14	350	320

TUBES IN STRAIGHT LENGTHS - HALF-HARD PHYSICAL STATE R250

dimensions Ø X wt. mm	water content l/m	bursting pressure MPa	operating pressure MPa	bundles of tubes n	meters of bundles m	n° bundles n	meters master bun. m	app. gross weight complete master bundle kg
10 X 1	0,0503	51	12,75	40	200	11	2.200	530
12 X 1	0,0785	42,5	10,63	35	175	11	1.925	540
14 X 1	0,1131	36,43	9,11	30	150	11	1.650	530
15 X 1	0,1327	34	8,5	30	150	10	1.500	520
16 X 1	0,1539	31,88	7,97	25	125	11	1.375	520
18 X 1	0,2011	28,33	7,08	20	100	12	1.200	520
22 X 1	0,3142	23,18	5,8	15	75	13	975	515
28 X 1	0,5309	18,21	4,55	10	50	15	750	500

TUBES IN STRAIGHT LENGTHS - HARD PHYSICAL STATE R290

dimensions Ø X wt. mm	water content l/m	bursting pressure MPa	operating pressure MPa	bundles of tubes n	meters of bundles m	n° bundles n	meters master bun. m	app. gross weight complete master bundle kg
6 X 1	0,0126	98,6	24,65	--	--	--	--	--
8 X 1	0,0283	73,95	18,49	--	--	--	--	--
10 X 1	0,0503	59,16	14,79	10	50	20	1.000	230
12 X 1	0,0785	49,3	12,33	10	50	20	1.000	285
14 X 1	0,1131	42,26	10,56	10	50	20	1.000	360
15 X 1	0,1327	39,44	9,86	10	50	20	1.000	360
16 X 1	0,1539	36,98	9,24	10	50	20	1.000	520
18 X 1	0,2011	32,87	8,22	10	50	20	1.000	520
22 X 1	0,3142	26,89	6,72	5	25	20	500	270
22 X 1,5	0,2835	40,34	10,08	5	25	20	500	340
28 X 1	0,5309	21,13	5,28	5	25	20	500	535
28 X 1,5	0,4909	31,69	7,92	5	25	20	500	500
35 X 1	0,8553	16,9	4,23	4	25	12	300	260
35 X 1,5	0,8042	25,35	6,34	4	25	12	300	380
42 X 1	1,2566	14,09	3,52	--	--	--	--	--
42 X 1,5	1,1946	21,13	5,28	--	--	--	--	--
54 X 1,5	2,0428	16,43	4,11	--	--	--	--	--
54 X 2	1,9635	21,91	5,48	--	--	--	--	--
64 X 2	2,8274	18,49	4,62	--	--	--	--	--
76,1 X 2	4,0828	15,55	3,89	--	--	--	--	--
88,9 X 2	5,6612	13,31	3,33	--	--	--	--	--
108 X 2,5	8,3323	13,69	3,42	--	--	--	--	--
133 X 3	12,6677	13,34	3,34	--	--	--	--	--

MEDICAL

THE IDEAL CHOICE FOR PLANTS FOR THE DISTRIBUTION OF MEDICAL GASES AND VACUUM SYSTEMS.

Manufactured according to the most modern technologies on the current world market, in observance of European standard EN 13348, compatible with equipment manufactured in accordance with the Medical Device Directive 93/42/EEC and the result of scientific studies and tests that guarantee the maximum compatibility for distributing the following gases and systems:

- oxygen, nitrous oxide, nitrogen, helium, carbon dioxide, xenon;
- air for breathing;
- specific mixtures of these gases mentioned above;
- air for operating surgical instruments;
- anaesthetic gases and vapours;
- vacuum.

The inner surface meets the requirements of reference standard and is also free from incompatible materials with medical gases. The standard EN 13348 is harmonized under the PED Directive 97/23/EC (EU Pressure Equipment Directive), therefore the Silmet MEDICAL tubes also meet the requirements of that Directive.

TECHNICAL CHARACTERISTICS			
Alloy	Cu-DHP CW024A (Cu = 99,90% min. - P = 0,015 ÷ 0,040%)		
Physical state according to EN 13348	Annealed R220	Half-Hard R250	Hard R290
Unit tensile strength – R min.	220 N/mm²	250 N/mm²	290 N/mm²
Percentage elongation – A min.	40%	20% or 30%	3%
Total carbon	C ≤ 0.02 g/m² max. in compliance with standard EN 13348		
Inner surface	Glossy		
Marking on tube	SILMET MEDICAL EN 13348 Ø X sp. Year quarter ǂǂ[1] LOT XX		
Dimensions and tolerances	In compliance with standard EN 13348		
Internal surface roughness	RA - 1/10 of micron		
Linear thermal expansion coefficient	0.00168 mm/m °C		
Thermal conductivity at 20°C	364 W/m · K		

[1] the symbol ǂǂ is present only in the half-hard physical state

TABLE OF DIMENSIONS										
external nominal diameter *d*	nominal thickness *e* mm									
mm	0,6	0,7	0,8	0,9	1	1,2	1,5	2	2,5	3
6					R V					
8			R V		R V					
10	V		R V		R V					
12	V		RV		R V					
14					R V					
15		R V			R V					
18					R V					
22				R V	R V		R V			
28				V	V		V			
32					V					
35					V	V	V			
42					V	V	V			
54					V	V	V	V		
64								V		
66,7										
76,1							V	V		
88,9								V		
108							V		V	
133										V

R tubes in coils

V tubes in straight lengths

Other sizes can be supplied by agreement between the purchaser and the supplier.
For availability and feasibility of these measures and for other sizes please contact our sales department.

ICE

THE IDEAL CHOICE FOR REFRIGERATION
AND AIR-CONDITIONING SYSTEMS.

Manufactured according to the most modern technologies available on today's world market, in observance of European standard EN 12735-1, it is the result of scientific studies and tests that guarantee maximum compatibility with the latest generation of cooling liquids available on the market.

EN 12735-1: Copper and copper alloys - Seamless, round copper tubes for air conditioning and refrigeration - Tubes for piping systems

TECHNICAL CHARACTERISTICS OF ICE COPPER TUBE			
Alloy – Rif. EN 1976	Cu-DHP CW024A (Cu = 99,90% min. - P = 0,015 ÷ 0,040%)		
Physical state according to EN 12735-1	Annealed R220	Half-Hard R250	Hard R290
Unit tensile strength – R min.	220 N/mm^2	250 N/mm^2	290 N/mm^2
Percentage elongation – A min.	40%	20% or 30%	3%
Total carbon	C ≤ 0,20 mg/dm^2, lower than expected to standard EN 12735-1		
Internal surface	glossy		
Marking on tube[1]	SILMET EN 12735-1 Cu 99.9 Ø X wt year quarter ǂ[2] ICE		
Dimensions and tolerances[1]	According to EN 12735-1 standard		
Internal surface roughness	RA - 1/10 di micron		
Linear thermal expansion coefficient	0,00168 mm/m °C		
Thermal conductivity at 20°C	364 W/m · K		

[1] Products with marking, dimensional tolerances and various lengths can be prepared on specific Customer request.

[2] the symbol ǂ is present only in the half-hard physical state

TABLE OF DIMENSIONS

external nominal diameter *d*			nominal thickness *e* mm						
metric series	imperial series								
mm	mm	in	0,8	1	1,25	1,5	1,65	2	2,5
	3,18	1/8	•						
	3,97	5/32	•	•					
	4,76	3/16	•						
6			— •	•					
	6,35	1/4	•	•					
	7,94	5/16	•	•					
8			— •	•					
	9,52	3/8	•	•					
10			— •	— •					
12				— •					
	12,7	1/2	•	— •					
15				— •					
	15,87	5/8		— •					
18				— •					
	19,05	3/4		•	—				
22				— •					
	22,22	7/8		•	—				
	25,4	1		—					
28						—			
	28,57	1 1/8		—	—				
	34,92	1 3/8			—				
35						—			
	41,27	1 5/8			—				
42						—			
	53,97	2 1/8			—		—		
54								—	
64								—	
	66,67	2 5/8			—		—	—	
76,1								—	
	79,37	3 1/8					—		—
	88,9	3 1/2						—	
	92,07	3 5/8					—		—
	104,77	4 1/8					—		—
108									—
133									—

—	straight lengths
•	coils

STANDARD DIMENSIONS - THICKNESS 0.80 MM - COILS					
diameter		thickness	water content/m	bursting pressure	operating pressure
mm	in	mm	l/m	MPa	MPa
6	-	0,8	0,0152	59,84	14,96
6,35	1/4	0,8	0,0177	56,54	14,14
7,94	5/16	0,8	0,0316	45,22	11,3
8		0,8	0,0322	44,88	11,22
9,52	3/8	0,8	0,0493	37,71	9,43
10		0,8	0,0554	35,9	8,98
12		0,8	0,0849	29,92	7,48
12,7	1/2	0,8	0,0968	28,27	7,07

STANDARD DIMENSIONS - THICKNESS 1.00 MM – COILS					
diameter		thickness	water content/m	bursting pressure	operating pressure
mm	in	mm	l/m	MPa	MPa
6	-	1	0,0126	74,80	18,70
6,35	1/4	1	0,0149	70,68	17,67
7,94	5/16	1	0,0277	56,52	14,13
8		1	0,0283	56,10	14,03
9,52	3/8	1	0,0444	47,14	11,79
10		1	0,0503	44,88	11,22
12		1	0,0785	37,40	9,35
12,7	1/2	1	0,0899	35,34	8,83
15		1	0,1327	29,92	7,48
15,87	5/8	1	0,1511	28,28	7,07
18		1	0,2011	24,93	6,23
19,05	3/4	1	0,2286	23,55	5,89
22	-	1	0,3142	20,40	5,10
22,22	-	1	0,3211	20,20	5,05

PALLETISATION					
diameter		thickness	coils per pallet	meters per pallet	approx. gross weight
mm	in	mm	n	m	kg
6	-	0,8	44	2.200	274
6,35	1/4	0,8	44	2.200	300
7,94	5/16	0,8	36	1.800	333
8		0,8	36	1.800	304
9,52	3/8	0,8	28	1.400	298
10		0,8	28	1.400	302
12		0,8	22	1.100	289
12,7	1/2	0,8	20	1.000	287
6	-	1	44	2.200	339
6,35	1/4	1	44	2.200	361
7,94	5/16	1	36	1.800	380
8		1	36	1.800	383
9,52	3/8	1	28	1.400	364
10		1	28	1.400	383
12		1	22	1.100	368
12,7	1/2	1	20	1.000	354
15		1	18	900	379
15,87	5/8	1	16	800	359
18		1	14	700	357
19,05	3/4	1	10	500	277
22	-	1	14*	350*	230
22,22	7/8	1	14*	350*	235

* 25 metre coils

TEN

A COPPER TUBE PRE-INSULATED WITH LOW-DENSITY CLOSED CELL EXPANDED POLYETHYLENE, IN COMPLIANCE WITH LAW 10/91, FORMER LAW 373, REGARDING THE DESIGN, INSTALLATION, RUNNING AND MAINTENANCE OF THERMAL SYSTEMS FOR BUILDINGS, FOR THE PURPOSES OF ENERGY CONSUMPTION CONTROL.

Ideal for water distribution systems, classified in fire resistance Class 1, the coating has been designed in the smallest details to respond excellently to the ever more qualified requirements in the design of modern plants.
The protective film is corrugated to provide greater adherence to cement mortars and has an excellent resistance to external agents.
The coating is odourless, non-toxic and is made without the use of CFCs. It is suitable to be used in plants with operating temperatures ranging from -30°C to +95°C.

The **TEN** copper tube is supplied in 50-metre coils (25 metres with Ø 22 mm) marked at intervals also indicating the relative meters.
The core of the **TEN** is the **ESENCOR** copper tube, providing excellent protection against corrosion, the result of scientific studies and tests that guarantee a considerably lower level of residual carbon than is required by manufacturing standards.

The copper tube EN 1057 is marked CE as required by EU 305/2011 EU Construction Products Regulation (CPR).

INSULATION DENSITY	:	30 kg/m^3
THICKNESS OF THE INSULATING SHEATH	:	from 6 to 9 mm
OPERATING TEMPERATURES	:	-30 °C +95 °C
THERMAL CONDUCTIBILITY	:	0,0397 W · m^{-1} · K^{-1}
RESISTANCE TO FIRE	:	Class 1 (self-extinguishing)
WRAPPING	:	coils individually wrapped with transparent film to give further protection

CHARACTERISTICS OF THE ESENCOR COPPER TUBE	
Alloy	Cu-DHP CW024A (Cu = 99.90% min. – P = 0.015 ÷ 0.040%)
Physical state	Annealed
Unit tensile strength	220 MPa/mm^2 min.
Percentage elongation	40% min.
Internal cleanliness	C max. 0,20 mg/dm^2
Dimensions and tolerances	in compliance with standard EN 1057
Internal surface roughness	RA 1/10 micron
Linear thermal expansion coefficient	0.00168 mm/m °C
Thermal conductivity at 20 °C	364 W/m k

PALLETISATION OF SILMET TEN COATED COILS					
dimensions Ø x thickness mm	coil length m	coils per pallet n	meters per pallet m	approx. gross pallet weight kg	dimensions of pack cm
10 X 1	50	17	850	222	h 220 X Ø 80
12 X 1	50	16	800	240	h 220 X Ø 80
14 X 1	50	15	750	270	h 220 X Ø 80
16 X 1	50	13	650	265	h 220 X Ø 80
18 X 1	50	13	650	305	h 220 X Ø 90
22 X 1	25	14	350	217	h 220 X Ø 90

TABLE OF DIMENSIONS OF THE SILMET TEN COPPER TUBE						
dimensions without insulation mm	diameter with insulation mm	thickness of insulating sheath mm	bursting pressure MPa	operating pressure MPa	coil length m	water content per meter l/m
10 X 1	22	6	44,88	11,22	50	0,0503
12 X 1	24	6	37,4	9,35	50	0,0785
14 X 1	26	6	32,06	8,01	50	0,1131
16 X 1	29	6,5	28,05	7,01	50	0,1539
18 X 1	31	6,5	24,93	6,23	50	0,2011
22 X 1	40	9	20,4	5,1	25	0,3142

The packs cannot be stacked.
A maximum of 2 packs with a large diameter (h 220 x Ø 90 cm) and available for other coated products, are loaded onto the pallet side-by-side together with a third smaller pallet.
The others can be loaded side-by-side in threes.

TEN copper tube is suitable for the following fields of use and with the following references:

HEATING

Law no. 10 of 9 January 1991
Rules for the implementation of the national energy plan in the field of rational energy use, saving energy and developing renewable sources of energy.

Presidential Decree no. 412 of 26 August 1993
Regulation laying down rules for the design, installation, operation and maintenance of thermal systems of buildings in order to control energy consumption, implementing art. 4, paragraph 4, of Law no. 10 of 9 January 1991.

POTABLE WATER, HOT AND COLD

Presidential Decree no. 1095 of 3 August 1968
Amendment to Article 125 of the General Health Regulation approved by Royal Decree no. 45 of 3 February 1901 and amended by Royal Decree no. 369 of 23 June 1904.

European Directive 98/83/EC of 3 November 1998
on the quality of water intended for human consumption (OJ No. L 330, 12.05.1998).

Decree no. 31 of 2 February 2001
Implementation of Directive 98/83/EC on water intended for human consumption.

Ministerial Decree no. 174 of 6 April 2004
Regulation of materials and objects that can be used in stationary plants for collection, treatment, supply and distribution of water intended for human consumption.

CONDY

THE COPPER TUBE IDEAL FOR TRANSPORTING COOLING GASES.

It is supplied with caps at the ends to retain the high level of cleanliness of the internal surface required for installation.

The particularly well-designed coating is made from very low-density closed cell expanded polyethylene and guarantees an excellent resistance to the spread of water vapour with a subsequent reduction in the formation of humidity on the outer surface of the tube.

The coating is odourless, non-toxic and made without the use of CFCs. Its external surface is corrugated giving further mechanical protection. It is classified as Class 1 fire resistant and is suitable for use in plants with operating temperatures ranging from -80°C to +98°C.

The **CONDY** copper tube is supplied in 50-metre coils marked at intervals also indicating the relative metres.

The core of the **CONDY** is the **SILMET** copper tube manufactured according to the European standard EN 12735-1 and with a level of internal cleanliness that also complies with standard ASTM B280.

INSULATION DENSITY	:	45 kg/m^3
THICKNESS OF THE INSULATING SHEATH	:	from 7,5 a 10 mm
USAGE TEMPERATURE	:	-80 °C +120 °C
WATER VAPOUR DISPERSION COEFFICIENT	:	5482
THERMAL CONDUCTIVITY	:	0,0397 W · m^{-1} · K^{-1}
FIRE RESISTANCE	:	Class 1 (self-extinguishing)
WRAPPING	:	coils individually wrapped with transparent film giving further protection

CHARACTERISTICS IF THE ICE COPPER TUBE	
Alloy	Cu-DHP CW024A (Cu = 99.90% min. – P = 0.015 – 0.040%)
Physical state	Annealed
Unit tensile strength	220 MPa/mm^2 min.
Elongation percentage	40% min.
Internal cleanliness	C max. 0.20 mg/dm^2
Dimensions and tolerances	according to standard EN 12735-1
Internal surface roughness	RA 1/10 micron
Linear thermal expansion coefficient	0.00168 mm/m °C
Thermal conductivity at 20 °C	364 W/m k

TABLE OF DIMENSIONS OF THE SILMET CONDY COPPER TUBE						
dimensions without insulation mm	diameter with insulation mm	thickness of insulating sheath mm	bursting pressure MPa	operating pressure MPa	coil length m	water content per meter l/m
thickness 0,70 mm						
6,35 X 0,70 – 1/4"	21,35	7,5	49,47	12,37	50	0,0192
9,52 X 0,70 – 3/8"	25,52	8	33,00	8,25	50	0,0518
12,70 X 0,70 – 1/2"	32,7	10	24,74	6,18	50	0,1003
thickness 0,80 mm						
6,35 X 0,80 – 1/4"	21,35	7,5	56,54	14,14	50	0,0177
9,52 X 0,80 – 3/8"	25,52	8	37,71	9,43	50	0,0493
12,70 X 0,80 – 1/2"	32,7	10	28,27	7,07	50	0,0968
15,87 X 0,80 – 5/8"	35,87	10	22,62	5,66	50	0,1599
thickness 1 mm						
6,35 X 1 – 1/4"	21,35	7,5	70,68	17,67	50	0,0149
9,52 X 1 – 3/8"	25,52	8	47,14	11,79	50	0,0444
12,70 X 1 – 1/2"	32,7	10	35,34	8,83	50	0,0899
15,87 X 1 – 5/8"	35,87	10	28,28	7,07	50	0,1511
19,05 X 1 – 3/4"	39,05	10	23,55	5,89	50	0,2286
22,22 X 1 - 7/8"	42,22	10	20.20	5.05	25	0.3211

PALLETISATION OF SILMET CONDY COATED COILS					
measurement Ø x thickness mm	coil length m	coils per pallet n	meters per pallet m	approx. gross pallet weight kg	dimensions of pack cm
thickness 0,70 mm					
6,35 X 0,70 - 1/4"	50	16	800	113	h 220 X Ø 80
9,52 X 0,70 - 3/8"	50	14	700	145	h 220 X Ø 80
12,70 X 0,70 - 1/2"	50	15	750	200	h 220 X Ø 80
thickness 0,80 mm					
6,35 X 0,80 - 1/4"	50	16	800	128	h 220 X Ø 80
9,52 X 0,80 - 3/8"	50	14	700	162	h 220 X Ø 80
12,70 X 0,80 - 1/2"	50	15	750	225	h 220 X Ø 80
15,87 X 0,80 - 5/8"	50	12	600	227	h 220 X Ø 90
thickness 1 mm					
6,35 X 1 - 1/4"	50	16	800	150	h 220 X Ø 80
9,52 X 1 - 3/8"	50	14	700	190	h 220 X Ø 80
12,70 X 1- 1/2"	50	15	750	290	h 220 X Ø 80
15,87 X 1 - 5/8"	50	12	600	288	h 220 X Ø 90
19,05 X 1 - 3/4"	50	10	500	285	h 220 X Ø 90
22,22 X 1 - 7/8"	50	20	500	328	h 220 X Ø 90

The packs cannot be stacked.
A maximum of 2 packs with a large diameter (h 220 x Ø 90 cm) and available for other coated products, are loaded onto the pallet side-by-side together with a third smaller pallet.
The others can be loaded side-by-side in threes.

PVC

THE IDEAL COPPER TUBE FOR CARRYING DRINKING WATER AND SUITABLE FOR BUILDING PLANTS FOR GAS DISTRIBUTION.

SILMET PVC, a copper tube pre-insulated with PVC, produced with cutting-edge machinery, in compliance with all the international reference standards and manufactured according to Presidential Decree no. 1095/68 and Ministerial Decree no. 174 of 6 April 2004 of the Italian Department of Health - ref. European Council Directive no. 98/83/EC regarding the transport of drinking water and suitable for building plants for transporting gas (UNI CIG 7129).

The characteristics of our PVC coating make the tube resistant to abrasions and corrosion and the particular internal star-shaped structure allows the correct expansion of the copper tube without jeopardising the condition of the coating. The PVC coating is odourless, non-toxic and is made without the use of CFCs. It is suitable to be used in plants with operating temperatures ranging from -80°C to +100°C.

The PVC copper tube is supplied in 50-metre coils (25 metres with Ø 22 mm) marked at intervals also indicating the relative metres.

The core of the **SILMET PVC** is the **ESENCOR** copper tube providing excellent protection against corrosion and is the result of scientific studies and tests that guarantee a considerably lower level of residual carbon than that required by manufacturing standards.

The main characteristics of the **SILMET PVC** sheath are excellent plasticity, mechanical resistance to abrasions and corrosion, all ensuring that the tube lasts for a long time.

The pre-insulated copper **PVC SILMET** tube is mainly used in under-floor heating plants, water distribution systems and in the production of gas and air lines.

The copper tube EN 1057 is marked CE as required by EU 305/2011 EU Construction Products Regulation (CPR).

THICKNESS OF THE INSULATING SHEATH	:	2 mm
USAGE TEMPERATURES	:	-80 °C +100 °C
HERMAL CONDUCTIVITY	:	0,0397 $W \cdot m^{-1} \cdot K^{-1}$
RESISTANCE TO FIRE	:	self-extinguishing
WRAPPING	:	coils individually wrapped with transparent film for further protection

CHARACTERISTICS OF THE ESENCOR COPPER TUBE	
Alloy	Cu-DHP CW024A (Cu = 99.90% min. – P = 0.015 ÷ 0.040%)
Physical state	Annealed
Unit tensile strength	220 MPa/mm^2 min.
Percentage elongation	40% min.
Internal cleanliness	C max. 0,20 mg/dm^2
Dimensions and tolerances	in compliance with standard EN 1057
Internal surface roughness	RA 1/10 micron
Linear thermal expansion coefficient	0.00168 mm/m °C
Thermal conductivity at 20 °C	364 W/m k

TABLE OF THE DIMENSIONS OF THE SILMET PVC COPPER TUBE						
dimensions without insulation mm	diameter with insulation mm	thickness of insulating sheath mm	bursting pressure MPa	operating pressure MPa	coil length m	water content per meter l/m
6 X 1	10	2	74,8	18,7	50	0,0126
8 X 1	12	2	56,1	14,03	50	0,0283
10 X 1	14	2	44,88	11,22	50	0,0503
12 X 1	16	2	37,4	9,35	50	0,0785
14 X 1	18	2	32,06	8,01	50	0,1131
15 X 1	19	2	29,92	7,48	50	0,1327
16 X 1	20	2	28,05	7,01	50	0,1539
18 X 1	22	2	24,93	6,23	50	0,2011
22 X 1	26	2	20,4	5,1	25	0,3142

PALLETISATION OF SILMET PVC COATED COILS					
measurement Ø x thickness mm	coil length m	coils per pallet n	meters per pallet m	approx. gross pallet weight kg	dimensions of pack cm
10 X 1	50	30	1.300	350	h 220 X Ø 80
12 X 1	50	30	1.300	400	h 220 X Ø 80
14 X 1	50	27	1.350	545	h 220 X Ø 80
15 X 1	50	26	1.100	400	h 220 X Ø 80
16 X 1	50	25	1.250	600	h 220 X Ø 80
18 X 1	50	23	1.000	480	h 220 X Ø 90
22 X 1	25	26	500	400	h 220 X Ø 90

The packs cannot be stacked.
A maximum of 2 packs with a large diameter (h 220 x Ø 90 cm) and available for other coated products, are loaded onto the pallet side-by-side together with a third smaller pallet.
The others can be loaded side-by-side in threes.
PVC copper tube is suitable for the following fields of use and with the following references:

POTABLE WATER, HOT AND COLD

Presidential Decree no. 1095 of 3 August 1968
Amendment to Article 125 of the General Health Regulation approved by Royal Decree no. 45 of 3 February 1901 and amended by Royal Decree no. 369 of 23 June 1904.
European Directive no. 98/83/EC of 3 November 1998
on the quality of water intended for human consumption (OJ No. L 330, 12.05.1998).
Decree no. 31 of 2 February 2001
Implementation of Directive no. 98/83/EC on water intended for human consumption.
Ministerial Decree no. 174 of 6 April 2004
Regulation of materials and objects that can be used in stationary plants for collection, treatment, supply and distribution of water intended for human consumption.

DISTRIBUTION OF LIQUID AND GASEOUS FUELS BY:

UNI CIG 7129
Gas systems for household and similar powered by the distribution network - Design and installation.

HEATING

Subject to the provisions of Law no. 10 of 9 January 1991 and Presidential Decree no. 412 of 26 August 1993.

PVC GAS

THE IDEAL COPPER TUBE FOR BUILDING PLANTS FOR GAS DISTRIBUTION.

SILMET PVC GAS, a copper tube pre-insulated with PVC, produced with cutting-edge machinery, in compliance with all the international reference standards and manufactured according to Presidential Decree no. 1095/68 and Ministerial Decree no. 174 of 6 April 2004 of the Italian Department of Health - ref. European Council Directive no. 98/83/EC regarding the transport of drinking water and suitable for building plants for transporting gas (UNI CIG 7129).
It is coated with a yellow polyvinyl chloride (PVC) sheath that makes it easy to recognise during installation; it is non-toxic, odourless and free from chlorofluorocarbons (CFCs).
The characteristics of our coating in **PVC GAS** make the tube resistant to abrasions and corrosion and the particular internal structure allows the correct expansion of the copper tube without jeopardising the condition of the coating.

The **PVC** coating is odourless, non-toxic and is made without the use of CFCs. It is suitable to be used in plants with operating temperatures ranging from -80°C to +100°C.

The PVC GAS copper tube is supplied in 50-metre coils (25 metres with Ø 22 mm) marked at intervals also indicating the relative metres.

The main characteristics of the **PVC GAS** sheath are excellent plasticity, mechanical resistance to abrasions and corrosion, all ensuring that the tube lasts for a long time. Perfect adherence to the tube without insulation: the coating complies with UNI 10823 "Coated copper tubes for gas application in underground zones".
The copper tube EN 1057 is marked CE as required by EU 305/2011 EU Construction Products Regulation (CPR).

THICKNESS OF THE INSULATING SHEATH	:	2 mm
USAGE TEMPERATURES	:	-80 °C +100 °C
THERMAL CONDUCTIVITY	:	0,0397 W · m^{-1} · K^{-1}
RESISTANCE TO FIRE	:	self-extinguishing
WRAPPING	:	coils individually wrapped with transparent film for further protection

CHARACTERISTICS OF THE ESENCOR COPPER TUBE	
Alloy	Cu-DHP CW024A (Cu = 99.90% min. – P = 0.015 ÷ 0.040%)
Physical state	Annealed
Unit tensile strength	220 MPa/mm^2 min.
Percentage elongation	40% min.
Internal cleanliness	C max. 0,20 mg/dm^2
Dimensions and tolerances	in compliance with standard EN 1057
Internal surface roughness	RA 1/10 micron
Linear thermal expansion coefficient	0.00168 mm/m °C
Thermal conductivity at 20 °C	364 W/m k

TABLE OF THE DIMENSIONS OF THE SILMET PVC GAS COPPER TUBE						
dimensions without insulation mm	diameter with insulation mm	thickness of insulating sheath mm	bursting pressure MPa	operating pressure MPa	coil length m	water content per meter l/m
10 X 1	14	2	44,88	11,22	50	0,0503
12 X 1	16	2	37,4	9,35	50	0,0785
14 X 1	18	2	32,06	8,01	50	0,1131
15 X 1	19	2	29,92	7,48	50	0,1327
16 X 1	20	2	28,05	7,01	50	0,1539
18 X 1	22	2	24,93	6,23	50	0,2011
22 X 1,5	26	2	30,6	7,65	25	0,2835

PALLETISATION OF SILMET PVC GAS COATED COILS					
measurement Ø x thickness mm	coil length m	coils per pallet n	meters per pallet m	approx. gross pallet weight kg	dimensions of pack cm
10 X 1	50	30	1.300	350	h 220 X Ø 80
12 X 1	50	30	1.300	400	h 220 X Ø 80
14 X 1	50	27	1.350	545	h 220 X Ø 80
15 X 1	50	26	1.100	400	h 220 X Ø 80
16 X 1	50	25	1.250	600	h 220 X Ø 80
18 X 1	50	23	1.000	480	h 220 X Ø 90
22 x 1,5	25	26	500	400	h 220 X Ø 90

The packs cannot be stacked.
A maximum of 2 packs with a large diameter (h 220 x Ø 90 cm) and available for other coated products, are loaded onto the pallet side-by-side together with a third smaller pallet.
The others can be loaded side-by-side in threes.

PVC GAS copper tube is suitable for the following fields of use and with the following references:

DISTRIBUTION OF LIQUID AND GASEOUS FUELS BY:
UNI CIG 7129
Gas systems for the household and similar powered by the distribution network - Design and installation.

SYSTEM GAS

THE IDEAL COPPER TUBE FOR GAS DISTRIBUTION
IN CIVIL CONSTRUCTION.

SYSTEM GAS, Tube in Cu DHP 99.9% copper - EN 1057, insulated with sheath in closed cell, expanded polyethylene, produced with cutting-edge machinery and explicitly made for building gas transport plants in civil residential buildings and according to the provisions under the UNI CIG 7129 standard for chased in pipes.

The internal air chamber between the copper tube and the coating itself allows gas to exit the building if there are any leaks from the feeding plant.

Silmet **SYSTEM GAS** is the optimal solution for building chased in gas transport systems.

The core of the **SILMET SYSTEM GAS** is the **ESENCOR** copper tube, providing excellent protection against corrosion, and is the result of scientific studies and tests that guarantee a considerably lower level of residual carbon than that required by manufacturing standards.

The Silmet **SYSTEM GAS** copper tube is supplied in 50-metre coils (25 metres with Ø 22 mm) marked at intervals also indicating the relative metres.

The copper tube EN 1057 is marked CE as required by EU 305/2011 EU Construction Products Regulation (CPR).

INSULATION DENSITY	:	130 kg/m^3
THICKNESS OF THE INSULATING SHEATH	:	6 mm
USAGE TEMPERATURES	:	-30 °C +95 °C
THERMAL CONDUCTIVITY	:	0,0397 W · m^{-1} · K^{-1}
RESISTANCE TO FIRE	:	Class 1 (self-extinguishing)
WRAPPING	:	coils individually wrapped with transparent film to give further protection

CHARACTERISTICS OF THE ESENCOR COPPER TUBE	
Alloy	Cu-DHP CW024A (Cu = 99.90% min. – P = 0.015 ÷ 0.040%)
Physical state	Annealed
Unit tensile strength	220 MPa/mm^2 min.
Percentage elongation	40% min.
Internal cleanliness	C max. 0,20 mg/dm^2
Dimensions and tolerances	in compliance with standard EN 1057
Internal surface roughness	RA 1/10 micron
Linear thermal expansion coefficient	0.00168 mm/m °C
Thermal conductivity at 20 °C	364 W/m k

TABLE OF THE DIMENSIONS OF THE SILMET SYSTEM GAS COPPER TUBE						
dimensions without insulation mm	diameter with insulation mm	thickness of insulating sheath mm	bursting pressure MPa	operating pressure MPa	coil length m	water content per meter l/m
12 X 1	24	6	37,4	9,35	50	0,0785
14 X 1	26	6	32,06	8,01	50	0,1131
15 X 1	27	6	29,92	7,48	50	0,1327
16 X 1	28	6	28,05	7,01	50	0,1539
18 X 1	30	6	24,93	6,23	50	0,2011
22 X 1,5	34	6	30,6	7,65	25	0,2835

PALLETISATION OF SILMET SYSTEM GAS COATED COILS					
measurement Ø x thickness mm	coil length m	coils per pallet n	meters per pallet m	approx. gross pallet weight kg	dimensions of pack cm
12 X 1	50	17	850	335	h 220 X Ø 80
14 X 1	50	16	800	363	h 220 X Ø 80
15 X 1	50	15	750	383	h 220 X Ø 80
16 X 1	50	15	750	394	h 220 X Ø 80
18 X 1	50	13	650	375	h 220 X Ø 90
22 X 1,5	25	18	450	456	h 220 X Ø 90

The packs cannot be stacked.
A maximum of 2 packs with a large diameter (h 220 x Ø 90 cm) and available for other coated products, are loaded onto the pallet side-by-side together with a third smaller pallet.
The others can be loaded side-by-side in threes.

SYSTEM GAS copper tube is suitable for the following fields of use and with the following references:

DISTRIBUTION OF LIQUID AND GASEOUS FUELS BY:
UNI CIG 7129
Gas systems for the household and similar powered by the distribution network - Design and installation.

LWC

QUALITY: THE SILMET LIFE STYLE.

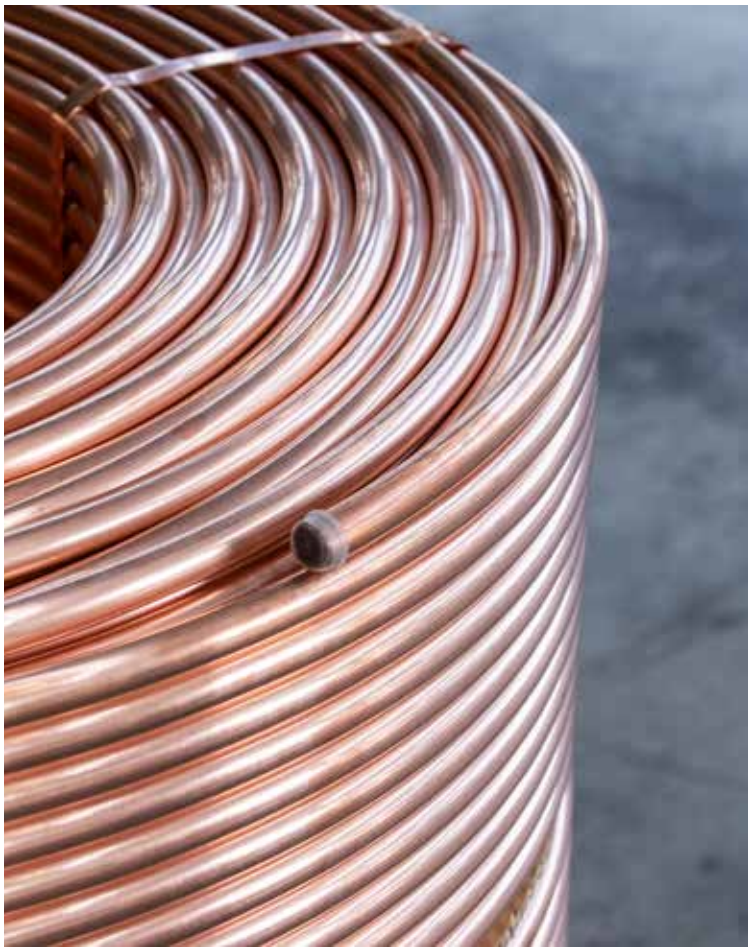
All Silmet Lewel Wound Coils for industrial use and ACR are produced in compliance with international standards and with the specific requirements of customers.

Particular attention is paid to dimensional uniformity, uniformity of the physical state, the absence of faults and internal cleanliness.
The length, weight, number of faults present, dimensions and all references aimed at guaranteeing the traceability of the product with regard to laboratory tests carried out in compliance with stringent sampling and control plans implemented during production, are highlighted for each individual coil.
The internal cleanliness of the tubes is considerably above the limit of 0.038 g/m^2.

The Silmet Quality System is certified in compliance with the ISO 9001:2015 standard; the Quality Service is assigned to highly qualified, constantly updated personnel whose functions are independent from production departments; they use the most sophisticated laboratory and production control equipment.

All phases of the production process, starting from acceptance of raw materials, are subject to very severe sampling and control plans aimed at guaranteeing that the end products achieve very high quality standards.

Silmet S.p.A. has been manufacturing copper tubes for usage in water and gas tubes in sanitary and heating applications and in the industrial sectors since 1973. Over recent years, thanks to its excellent conductivity, machinability, resistance to corrosion and user-friendliness, the copper tube has made a name for itself as the ideal product for air-conditioning/refrigeration equipment, for the heating industry and for the production of heat exchangers.
Silmet has always been aware of the needs of the market and is constantly up-to-date technologically.
With all these things in mind, in order to help its customers with the growing trend in production automation and to be able to satisfy their requirements, Silmet is equipped with cutting-edge Level Wound Coils production plants.



COPPER CHEMICAL/PHYSICAL/TECHNOLOGICAL PROPERTIES	
Symbol	Cu
Atomic number	29
Atomic weight	2.6625
Crystalline structure	cubic with faces centred with the side of the cube 3.6078 Å
smelting temperature	1083° C
Boiling temperature	2595° C
Volumic mass (density) at 20° C	8.94 g/cm^3
Coefficient of linear thermal expansion at 20° C	0.0000165 · K^{-1}
Solidification shrinkage	4.92%
Specific heat at 20° C	385 J/kg K
Latent smelting heat	205 kj/kg
Thermal conductivity at 20° C	391 W/m K
Electric resistivity at 20° C annealed physical state	0.017241 Ω mm^2/m
Electric resistivity temperature coefficient at 20° C	0.00393 · K^{-1}
Alloy for the production of LWC	Cu-DHP or CW024A (Cu = 99.90% min. - P = 0.015 ÷ 0.040%)

TOLERANCES ON OUTSIDE DIAMETER

nominal outside diameter mm		tolerances on nominal diameter	
over	up to and included	tolerances on mean nominal outside diameter	applicable to any diameter including deviation from circular form
EN 12449			
3	6	± 0,06 mm	± 0,30 mm
6	10	± 0,06 mm	± 0,50 mm
10	20	± 0,08 mm	± 0,70 mm
20	30	± 0,12 mm	± 0,90 mm
EN 12451			
6	14	-	0 -0.12
14	26	-	0 -0.20

EN 12735-2		tolerances on mean nominal outside diameter	
		con spessore < 0,4 mm	con spessore > 0,4 mm
6	13	± 0,04 mm	± 0,04 mm
13	16	± 0,05 mm	± 0,04 mm
16	28	-	± 0,05 mm

EN 12735-2 nominal wall thickness		maximum deviation from circular form				
over	up to	for Ø from 6 up to 9,8	Ø over 9,8 up to 13	Ø over 13 up to 16	Ø over 16 up to 22	Ø over 22 up to 67
-	0,41	4,00%	5,00%	7,00%	by agreement between the purchaser and the supplier	
0,41	0,7	3,50%	4,00%	6,00%		
0,7	-	3,00%	3,50%	5,00%		

MECHANICAL PROPERTIES

material condition EN 12449	hickness *t* mm max.	tensile strength Rm N/mm² min.	0,2% proof strength Rp0,2 N/mm²		elongation A % min.	average grain size µm		hardness			
								HV		HB	
			min.	max.		min.	max.	min.	max.	min.	max.
R200	20	200	-	110	40	-	-	-	-	-	-
H040	20	-	-	-	-	-	-	40	65	35	60
EN 12451											
R220	20	220	-	-	40	15	50	-	-	-	-
EN 12735-2											
Y040	-	220	40	90	40	15	40	-	-	-	-
Y035	> 0,6 mm	210	35	80	40	30	60	-	-	-	-

TOLERANCES ON WALL THICKNESS

nominal outside diameter mm		tolerances on nominal wall thickness *t*	
over	up to and included	*t* from 0.3 mm up to an included 1 mm	*t* over 1 mm up to and included 3 mm
EN 12449			
3	28	± 15%	± 13%

EN 12451	all wall ticknesses
all diameters	± 10%

EN 12735-2										
tolerances	nominal outside diameter *d*		nominal wall thickness *e*							
	over	up to and included	from 0,25 up to and icluded 0,3	over 0,3 up to and icluded 0,35	over 0,35 up to and icluded 0,4	over 0,4 up to and icluded 0,5	over 0,5 up to and icluded 0,63	over 0,63 up to and icluded 0,8	over 0,8 up to and icluded 1,5	over 1,5 up to and icluded 3
maximum permissible deviation at any point[a]	6	133	± 0,025	± 0,03	± 0,03	± 0,04	± 0,05	± 0,06	± 8%[b]	± 15%[b]
tolerances on mean wall thickness	6	9,52	± 0,01	± 0,01	± 0,01	± 0,015	± 0,02	± 0,02	-	-
	9,52	13	-	± 0,01	± 0,01	± 0,015	± 0,02	± 0,02	-	-
	13	16	-	-	± 0,01	± 0,015	± 0,02	± 0,02	-	-
	16	22	-	-	-	-	-	± 0,02	± 0,05	-
	22	40	-	-	-	-	-	± 0,02	± 0,05	-

a including deviation from concentricity

b value in percentage of nominal thickness

Copper strip and downspouts

COPPER STRIP AND SHEET

COPPER STRIPS AND SHEETS FOR BUILDING AND INDUSTRIAL APPLICATIONS

Silmet, a traditional copper tube manufacturer, has started manufacturing copper strip and sheet for building and industrial applications.

In line with its long tradition, Silmet has always invested in the very best and most advanced technologies available for this kind of product using state-of-the-art equipment.

Copper is used to produce the whole Silmet product range. Copper has many advantages over other materials including excellent electrical and thermal conductivity, unparalleled mechanical and physical properties, not to mention the fact that it is 100% recyclable.

The production and finishing lines, which are largely automated, guarantee the top quality standards of the products present on the market.

Silmet's copper strips and sheets are ideal for use in the construction industry, in particular for roofing and cladding. The copper strip can be used to make gutters, downpipes, cladding and roofing systems. In the industrial field Silmet copper strip meets the strictest quality standards set out in EN 1172, especially in regard to annealing, dimensional tolerance and coil weights.

Due to copper's excellent corrosion resistance, all strip supplied does not require any coating, such as painting or varnish, or special maintenance, and is highly resistant to corrosion, not to mention the purely cosmetic aspect which copper confers to the products it is made with.

The international standards to which Silmet strips conform are:
EN 1172
Sheet and strip for building purposes
EN 1652
Plate, sheet, strip and circles for general purposes
According to Specification
Products with marks, dimensional tolerances, physical states and other characteristics defined on specific request by the Customer, even in partial modification of the specifications indicated above

Supply Conditions:
Raw material:
Cu-DHP (Cu 99.9% min. – P from 0.015% to 0.040%)
Cu-ETP (Cu 99,9% min. – Bi max. 0,0005% – O max. 0,040%[1] – Pb max. 0,005%)
[1] An oxygen content up to 0.060% is allowed, by agreement between the buyer and the supplier

Maximum width: 1,250 mm
Thickness: from 0.10 mm to 2.5 mm
Inner diameter: 150 mm – 400 mm – 500 mm
Weight of coil: up to 12,000 kg

MECHANICAL PROPERTIES

designations			nominal thickness		tensile strength Rm		0,2% proof strength Rp0,2	elongation		hardness	
material			mm		N/mm²		N/mm²	A50mm thick-ness up to 2,5 mm inclu-ding % min.	A thickness over 2,5 mm % max.	HV	
symbol	number	material condition	from	up to and inclu-ding	min.	max.				min.	max.
Cu-ETP Cu-DHP	CW004A CW024A	R200	over 5		200	250	(max. 100)	42	-	-	
		H040			-	-	-	-	-	40	65
		R220	0,2	5	220	260	(max. 140)	33	42	-	-
		H040			-	-	-	-	-	40	65
		R240	0,2	15	240	300	(min. 180)	8	15	-	-
		H065			-	-	-	-	-	65	95
		R290	0,2	15	290	360	(min. 250)	4	6	-	-
		H090			-	-	-	-	-	90	110
		R360	0,2	2	360	-	(min. 320)	2	-	-	-
		H110			-	-	-	-	-	110	-

The values in parentheses are not standard requirements, but are given for information only

THICKNESS TOLERANCES

nominal thickness – mm		thickness tolerances for nominal widths - mm			
over	up to and including	up to and including 350	over 350 up to and including 700	over 700 up to and including 1 000	over 1 000 up to and including 250
0,1 (included)	0,2	± 0,018	-	-	-
0,2	0,3	± 0,022	± 0,03	± 0,04	-
0,3	0,4	± 0,025	± 0,04	± 0,05	± 0,07
0,4	0,5	± 0,030	± 0,05	± 0,06	± 0,08
0,5	0,8	± 0,040	± 0,06	± 0,07	± 0,09
0,8	1,2	± 0,050	± 0,07	± 0,09	± 0,10
1,2	1,8	± 0,060	± 0,08	± 0,10	± 0,11
1,8	2,5	± 0,070	± 0,09	± 0,11	± 0,13

WIDTH TOLERANCES FOR STRIP

nominal thickness - mm		width tolerances for nominal width - mm						
over	up to and including	up to and including 50	over 50 up to and including 100	over 100 up to and including 200	over 200 up to and including 350	over 350 up to and including 500	over 500 up to and including 700	over 700 up to and including 1 250
0,1 (including)	1	+ 0,20	+ 0,30	+ 0,40	+ 0,60	+ 1,00	+ 1,50	+ 2,00
		0	0	0	0	0	0	0
1	2	+ 0,30	+ 0,40	+ 0,50	+ 1,00	+ 1,20	+ 1,50	+ 2,00
		0	0	0	0	0	0	0
2	2,5	+ 0,50	+ 0,60	+ 0,70	+ 1,20	+ 1,50	+ 2,00	+ 2,50
		0	0	0	0	0	0	0

WIDTH TOLERANCES FOR SHEET AND PLATE

nominal thickness - mm		width tolerances for nominal width - mm	
over	up to and including	up to and including 350	over 350 up to and including 1 250
-	2	+ 2	+ 6
		0	0
2	5	+ 4	+ 8
		0	0

MECHANICAL PROPERTIES

designation			tensile strength Rm N/mm²		proof strength 0,2% Rp0,2 N/mm²		elongation A50mm %	hardness HV	
material		material condition							
symbol	number		min.	max.	min.	max.	min.	min.	max.
Cu-DHP	CW024A	R220	220	260	-	140	33	-	-
		H040	-	-	-	-	-	40	65
		R240	240	300	140	-	8	-	-
		H065	-	-	-	-	-	65	95
		R290	290	-	250	-	-	-	-
		H090	-	-	-	-	-	90	-

DIMENSIONS AND TOLERANCES

nominal dimensions mm				tollerances mm		
thickness	width up to and including	preferred length	coil inside diameter	thickness	width	length of sheet
from 0,4 to 1	1 250	2 000 or 3 000	300,400, 500 or 600	± 0,02	+ 2 0	+ 10 0
0,5						
0,6						
0,7						
0,8						
1						

Cu DOWNSPOUTS PLUVIO

ARC-WELDED DOWNSPOUTS IN COPPER - PLUVIO

STANDARD: EN 612

DIAMETER: 60 - 80 - 100 - 120 MM

THICKNESSES: 0,50 - 0,55 - 0,60 - 0,70 - 0,80 MM

STANDARD LENGTHS: 1.000 - 2.000 - 3.000 - 4.000 - 6.000 MM

MECHANICAL PROPERTIES										
Ø downspouts	thickness - mm					length - mm				
mm	0,5	0,55	0,6	0,7	0,8	1.000	2.000	3.000	4.000	6.000
60	X	X	X			X	X	X		
80	X	X	X	X	X	X	X	X	X	X
100	X	X	X	X	X	X	X	X	X	X
120			X	X	X	X	X	X	X	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