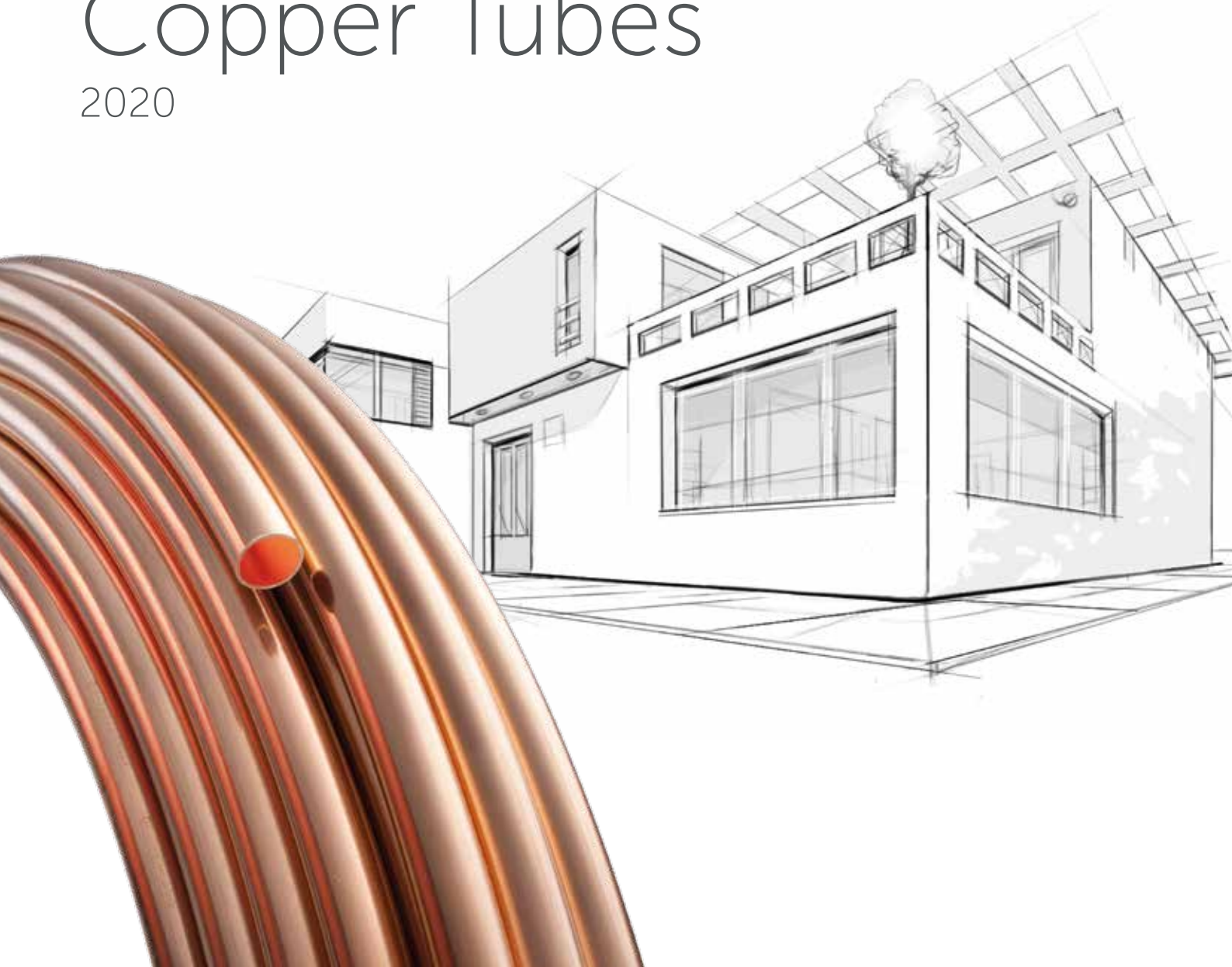
wieland

Plumbing, Heating, ACR and Medical Copper Tubes

2020



Copper

Copper is the shining reddish metal known by the Romans as aes cyprium (ore from Cyprus). However, copper has been known long before the Romans gave it this name. As a natural resource it is valuable in every form, be it as a vital trace element in the human body or a mineral found in the Earth's crust.

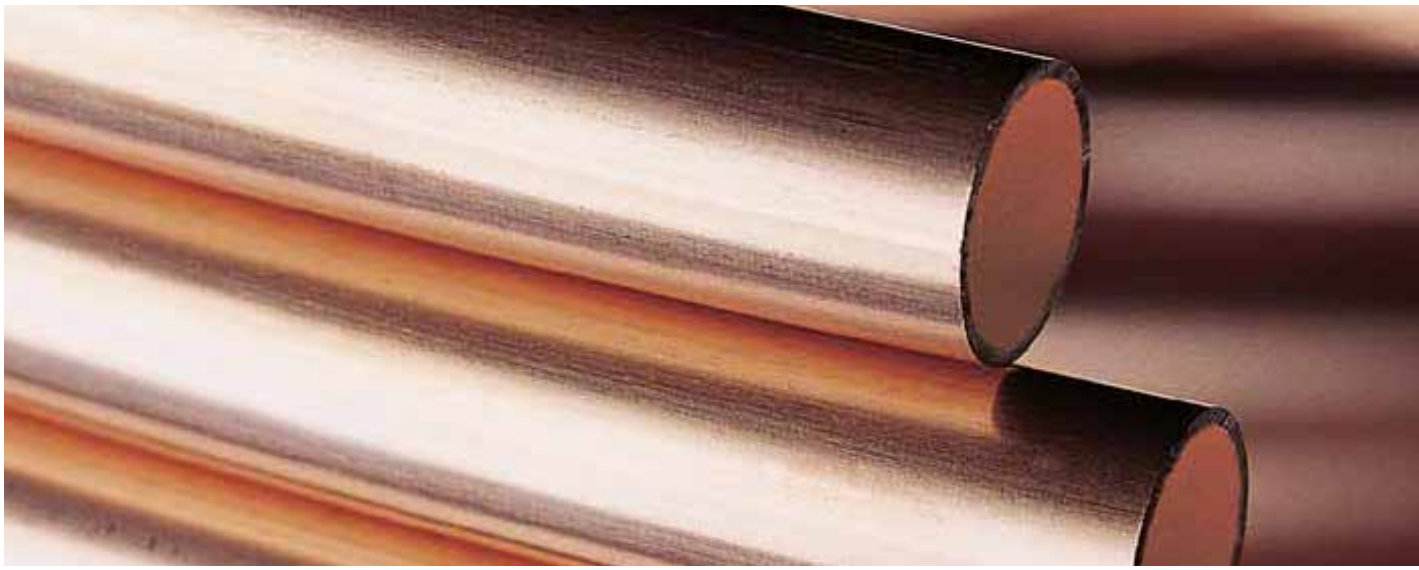
Over the centuries, man has discovered the many advantages of copper and its alloys, notably its excellent forming properties, strength, thermal and electrical conductivity. Copper has proved itself to be one of the most important worked metals in modern times.

Copper is a unique material for ecologically sustainable developments and is 100 percent recyclable. More than half of today's raw copper is already produced by reusing returned material.

Copper tubes

- are resistant to ageing and retain their properties
- e.g. pressure resistance and elasticity
- are gas- and diffusion-tight
- are subject to minimal thermal expansion
- exhibit good mechanical resistance
- are easy to install
- can be connected by a variety of techniques, which have
- proven over generations
- are not affected by temperature fluctuations
- are suitable for all domestic plumbing applications
- are readily available in all common sizes

The requirements to be satisfied by copper tubes for domestic plumbing systems are clearly specified in a single standard: EN 1057.



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SANCO®

SANCO plumbing tubes

Thanks to the patented production process, SANCO copper tubes are superior to the requirements defined in applicable standards and regulations.

The universal plumbing tube is subjected to continuous quality control and is constantly available in the full range of dimensions from 6 to 267 mm.

SANCO tubes are seamless drawn plumbing tubes consisting of pure deoxidised copper (Cu-DHP) of a quality standard that comfortably satisfies all contemporary requirements.

Applications:

- Domestic hot and cold water supply
- Heating systems
- Gas services for heating/cooking
- Liquefied gas
- Oil services for heating
- Solar heat installations
- Industrial compressed air
- Sprinkler systems
- Fire-fighting water pipes

Product range:

- EN 1057 from stock Ø 6 to 267
- ASTM B88 on demand ¼" to 11"
- Soft, half-hard and hard temper
- Straight length and soft coils
- Tube bundled and marked
- Wide range of certifications available, such as Kitemark, Afnor, KIWA, DVGW and many others

Technical properties:

- The patented production process means that the specifications of SANCO tubes are far superior to the requirements defined in applicable standards and regulations.
- Universal use in a range of finely differentiated dimensions.
- Optimal availability and compatibility with a wide range of fittings.
- Maximum operating temperature: 250 °C (check maximum operating pressure if temperature exceeds 100 °C)
- Fire resistance: DIN 4102-A1 (non-flammable)

SANCO tubes offer all the benefits associated with copper tubes plus excellent safety.

SANCO is Europe's No. 1 copper plumbing tube today.

SANCO - Coils

- Temper: **soft annealed**
- Delivery forms available ex stock. Further dimensions available e.g. ASTM ¼" to 7/8"

Tube	Dimension	Delivery form coils		Operating pressure*	Nominal weight	Water content	Tube length per litre
	mm	50 m	25 m	bar	kg/m	l/m	m/l
	6 x 1.0	•		194	0.140	0.013	79.58
	8 x 1.0	•		139	0.196	0.028	35.37
	10 x 1.0	•		109	0.252	0.050	19.89
	12 x 1.0	•		89	0.308	0.079	12.73
	15 x 1.0	•		70	0.391	0.133	7.53
	18 x 1.0		•	57	0.475	0.201	4.97
	22 x 1.0		•	46	0.587	0.314	3.18

** Calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of 100 °C*

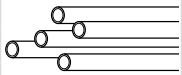
hh = half-hard straight lengths R 250

h = hard drawn straight lengths R 290

SANCO®

SANCO - Straight lengths

- Temper: **hard** or **half-hard**
- Dimensions ex stock, many further sizes available e.g. UK table X/Y, ASTM ¼" to 11"

Tube	Dimension mm	Tempers	Operating pressure* bar	Nominal weight kg/m	Water content l/m	Tube length per litre m/l
	6 x 1.0	h, hh	194	0.140	0.013	79.58
	8 x 1.0	h, hh	139	0.196	0.028	35.37
	10 x 1.0	h, hh	109	0.252	0.050	19.89
	12 x 1.0	h, hh	89	0.308	0.079	12.73
	14 x 1.0	h, hh	76	0.363	0.113	8.84
	15 x 1.0	h, hh	70	0.391	0.133	7.53
	15 x 1.5	h	109	0.566	0.113	8.84
	16 x 1.0	h, hh	66	0.419	0.154	6.50
	18 x 1.0	h, hh	57	0.475	0.201	4.97
	18 x 1.5	h	87	0.692	0.177	5.66
	22 x 1.0	h, hh	46	0.587	0.314	3.18
	22 x 1.1	hh	51	0.643	0.308	3.25
	22 x 1.5	h, hh	70	0.860	0.284	3.53
	28 x 1.0	h, hh	36	0.756	0.531	1.88
	28 x 1.2	hh	43	0.899	0.515	1.94
	28 x 1.5	h, hh	54	1.110	0.491	2.04
	35 x 1.0	h	28	0.951	0.855	1.17
	35 x 1.2	h	34	1.134	0.835	1.20
	35 x 1.5	h	43	1.410	0.804	1.24

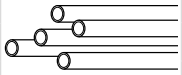
** Calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of 100 °C*

hh = half-hard straight lengths R 250

h = hard drawn straight lengths R 290

SANCO - Straight lengths

- Temper: **hard** or **half-hard**
- Dimensions ex stock, many further sizes available e.g. UK table X/Y, ASTM ¼" to 11"

Tube	Dimension mm	Tempers	Operating pressure* bar	Nominal weight kg/m	Water content l/m	Tube length per litre m/l
	42 x 1.0	h	26	1.146	1.257	0.80
	42 x 1.2	h	28	1.369	1.232	0.81
	42 x 1.5	h	36	1.700	1.195	0.84
	54 x 1.0	h	18	1.482	2.124	0.47
	54 x 1.2	h	22	1.772	2.091	0.48
	54 x 1.5	h	28	2.202	2.043	0.49
	54 x 2.0	h	37	2.910	1.963	0.51
	64 x 2.0	h	31	3.467	2.827	0.35
	76.1 x 2.0	h	26	4.144	4.083	0.24
	88.9 x 2.0	h	22	4.855	5.661	0.18
	108 x 2.5	h	23	7.374	8.332	0.12
	133 x 3.0	h	22	10.904	12.668	0.08
	159 x 3.0	h	19	13.085	18.385	0.05
	219 x 3.0	h	13	18.118	35.633	0.03
	267 x 3.0	h	11	22.144	53.502	0.02

** Calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of 100 °C*

hh = half-hard straight lengths R 250

h = hard drawn straight lengths R 290

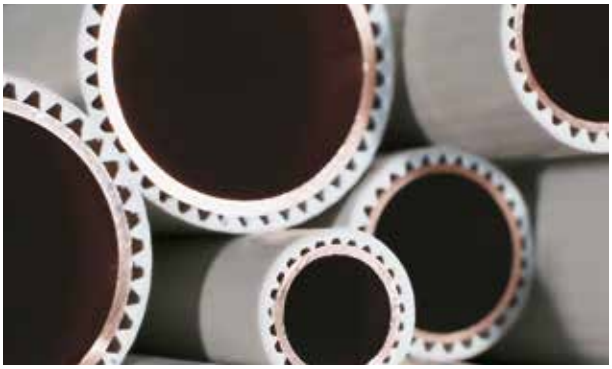
WICU®

WICU – System solutions

The WICU system consists of Wieland copper tubes equipped, thermal or noise insulation.

WICU tube

WICU tubes have a mill-applied protective coating. They are therefore suitable for concealed installation under plaster or in environments with an aggressive atmosphere, and for installation outdoors, either above or below ground.



Applications:

- Domestic hot and cold water supply
- Central heating systems
- Gas services for heating/cooking
- Liquefied gas
- Oil services for heating
- Rainwater
- Compressed air

Technical properties:

- The tubes conform to EN 1057 and are quality assured
- Protective coating conforms to EN 13349
- External protection: DIN 30672-1
- Fire resistance conforms to EN 13501-1-E
- Colour of coating: light grey
- Temperature range: up to 100 °C operating temperature

WICU®

WICU - Coils

| Temper: **hard R290**

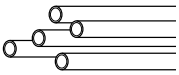
| packed in cartons / wrapped in plastic film

Tube	Dimension mm	Delivery form coils 50 m	Delivery form coils 25 m	Operating pressure* bar	Total outside diameter mm	Water content l/m	Tube length per liter m/l
	6 x 1.0	•		194	10	0.013	79.58
	8 x 1.0	•		139	12	0.028	35.37
	10 x 1.0	•	•	109	14	0.050	19.89
	12 x 1.0	•	•	89	16	0.079	12.73
	14 x 1.0	•	•	76	18	0.113	8.84
	15 x 1.0	•	•	70	19	0.133	7.53
	16 x 1.0	•	•	66	20	0.154	6.50
	18 x 1.0	•	•	57	23	0.201	4.97
	22 x 1.0		•	46	27	0.314	3.18
	22 x 1.1		•	51	27	0.308	3.25

WICU - Straight lengths

| Temper: **hard R290**

| packed in cartons / wrapped in plastic film

Tube	Dimension mm	Delivery form SL 5 m	Operating pressure* bar	Total outside diameter mm	Water content l/m	Tube length per liter m/l
	12 x 1.0	•	89	16	0.079	12.73
	14 x 1.0	•	76	18	0.113	8.84
	15 x 1.0	•	70	19	0.133	7.53
	16 x 1.0	•	66	20	0.154	6.50
	18 x 1.0	•	57	23	0.201	4.97
	22 x 1.0	•	46	27	0.314	3.18
	22 x 1.1	•	51	27	0.308	3.25
	28 x 1.0	•	36	33	0.531	1.88
	28 x 1.2	•	43	33	0.515	1.94
	35 x 1.2	•	34	40	0.835	1.20
	42 x 1.2	•	28	48	1.232	0.81
	54 x 1.5	•	28	60	2.043	0.49

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WICU®

WICU Flex

WICU Flex is a plumbing tube with a flexible coating for rapid installation. The coating consists of closed-cell PE foam covered by a structured protective film. WICU Flex is supplied in coils for rapid connection to manifolds, etc and for underfloor installations.

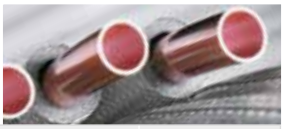
Applications:

- Connecting tubes
- Domestic hot and cold water supply
- Central heating systems

Technical properties:

- The tubes conform to EN 1057 and are quality assured
- Insulation reduces the heat loss of the tube by up to 80 %
- Thermal conductivity of the insulation layer λ = 0.040 W/mK (40 °C)
- Fire resistance conforms to EN 13501-1-E
- Colour of coating: light grey

WICU FLEX in coils 25 m and 50 m



- Temper: **soft annealed**

Tube	Dimension mm	Delivery form coils 50 m	Delivery form coils 25 m	Operating pressure* bar	Total outside diameter mm	Nominal copper weight l/m	Water content l/m	Tube length per liter m/l
	12 x 1.0	•	•	89	24	0.308	0.079	12.73
	14 x 1.0	•	•	76	26	0.363	0.113	8.84
	15 x 1.0	•	•	70	27	0.391	0.133	7.53
	16 x 1.0	•	•	66	28	0.419	0.154	6.50
	18 x 1.0	•	•	57	30	0.475	0.201	4.97
	22 x 1.0		•	46	34	0.587	0.314	3.18

cuprotherm CTX

cuprotherm CTX tubes are copper tubes with a firmly adherent coating. Due to their structure they can be easily processed and are characterized by a flexibility hitherto unknown in metal tubes. Compared to classical copper tubes, the cuprotherm CTX tube is almost 50 % lighter in weight and, therefore, much easier to handle.

The tube is cut with CTX shears instead of a tube saw, deburred and calibrated in one operation. The flexible copper tube can be joined both with CTX and commercial press fittings approved by Wieland. The joining technology is based on metal fittings and a copper core tube.

Technical properties

Dimension		14 x 2	16 x 2	18 x 2	20 x 2	26 x 3
Outer diameter, coating	mm	14	16	18	20	26
Wall thickness, coating	mm	1.70	1.65	1.65	1.50	2.50
Wall thickness, copper tube	mm	0.30	0.35	0.35	0.50	0.50
Temper as per DIN EN 1057		R 220	R 220	R 220	R 220	R 220
Permissible operating pressure up to 100 °C*	bar	30	29	25	31	25
Total weight	kg/m	0.147	0.189	0.215	0.311	0.451
Delivery format	in coils					
Coil length	m	100	100	100	50	50
Material, coating		PE-RT				
Thermal conductivity, coating / core tube	W/mK	0.35 / 344				
Coating color		white				
Reaction to fire		EN 13501-1 E				
Max. operating temperature	°C	95	95	95	95	95

** Calculated with 3.5 times safety coefficient on the basis of soft copper tubes with R m 200 N/mm² at an operating temperature of 100 °C*

CTX crimp fittings

Yellow brass/Si-bronze:

- Dezincification resistant
- Suitable for drinking water supply

Crimping sleeve:

- Stainless steel
- Tube viewer to control insert depth

Sealing elements:

- Double placed
- EPDM, acc. to DVGW W270 and KTW

Range of applications

Sanitary applications

Drinking water hot/cold

Copper throughout: copper-alloy fittings, inter-floor distribution with flexible CTX tubes, basement distribution and risers with straight SANCO tubes – as optimal solution in one material.

Copper is very hygienic as it does not release any nutrients to microorganisms. Its high temperature resistance makes it the material of choice in drinking water installations up to the very last tap. The combination of these advantages effectively counteracts the growth of microorganisms, including Legionella.

cuprotherm CTX tubes are tasteless and odourless and pose no health hazard. The material that comes into contact with water is copper. It contains no softeners, colouring pigments, flame-retardant additives, other additives, stabilisers or modifiers.

Heating

Underfloor heating/cooling

Tubes embedded in screed must fulfill two main requirements: diffusion tightness and aging resistance. cuprotherm CTX tubes are permanently 100 % diffusion tight and have an unlimited service life: no fouling, no embrittlement; thanks to copper.

The complete cuprotherm system, including insulating plates, fasteners, manifolds and controllers, is available for underfloor heating and cooling and can be used for all applications, i.e. also for sprung floor heating systems, outdoor surface heating systems and concrete core cooling systems.

Heating/radiator connection

The adapter for copper tube to CTX enables installation of heating systems completely in copper, of traditional bright copper tubes such as SANCO or factory heat-insulated tubes in combination with flexible CTX tubes. This ensures long service life irrespective of the operating temperature.

The fact that temperature variations result in only a minor change in tube length simplifies professional planning and installation.

Other fields of application:

- Industrial compressed air
- Geothermal collectors (water/glycol)

The flexible system

cuprotherm CTX tubes may be joined with both the CTX crimp fittings offered by Wieland and other crimp fittings available on the market and approved by Wieland (Type TH). This is beneficial as far as storage and availability are concerned. All fittings with the C^2 marking may also be used.

DVGW product

C² compatible · certified

Crimp fittings

CTX crimp fittings are intended for the use with CTX tubes and are approved, for example for drinking water installations up to pressure rage PN10. The connection is made with the CTX crimping tool contour TH. Commercially available crimping tools from other vendors can also be used (for details see technical documentation). Please contact the factory before using other contours.

Applications:

- Drinking water, hot
- Drinking water, cold
- Panel heating
- Panel cooling
- Hot water heating
- Concrete core activation
- Rainwater harvesting system

Technical properties:

- Fitting corpus resistant to dezincification
- Crimp sleeve made of stainless steel 1.4301, inspection window for checking the insertion depth
- Sealing elements double arranged, according to DIN DVGW W270 tested, in accordance with KTW requirements
- Pressure stage PN 10
- Version with black pastic ring: approved for drinking water according to DIN 50930-6, DVGW W534 and UBA list
- Version with white plastic ring: Use for heating and panel heating

Crimp fittings

Crimp fittings	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX coupling for joining of flexible copper tubes. **650114000** 14 x 2 **650116000** 16 x 2 **650118000** 18 x 2 **650120000** 20 x 2 **650126000** 26 x 3	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces	
	CTX adapter for joining flexible copper tubes to copper plumbing tubes. **650414120** 14 x 2 – Cu 12 mm **650414150** 14 x 2 – Cu 15 mm **650416140** 16 x 2 – Cu 14 mm **650416150** 16 x 2 – Cu 15 mm **650418150** 18 x 2 – Cu 15 mm **650420150** 20 x 2 – Cu 15 mm **650420180** 20 x 2 – Cu 18 mm **650420220** 20 x 2 – Cu 22 mm **650426220** 26 x 3 – Cu 22 mm **650426280** 26 x 3 – Cu 28 mm	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces 5 pieces	

Crimp fittings

Crimp fittings	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX reducer for reducing flexible copper tubes. **650316140** 16/14 x 2 **650318160** 18/16 x 2 **650320160** 20/16 x 2 **650320180** 20/18 x 2 **650326200** 26/20 x 2	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces	
	CTX elbow 90° for flexible copper tubes. **650814000** 14 x 2 **650816000** 16 x 2 **650818000** 18 x 2 **650820000** 20 x 2 **650826000** 26 x 3	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces	
	CTX adapter elbow 90° male with male threading. **652514120** 14 x R $^{1}/_{2}$" **652516120** 16 x R $^{1}/_{2}$" **652518120** 18 x R $^{1}/_{2}$" **652520120** 20 x R $^{1}/_{2}$" **652520340** 20 x R $^{3}/_{4}$"	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces	
	CTX adapter elbow 90° female with female threading. **652614120** 14 x Rp $^{1}/_{2}$" **652616120** 16 x Rp $^{1}/_{2}$" **652618120** 18 x Rp $^{1}/_{2}$" **652620120** 20 x Rp $^{1}/_{2}$" **652620340** 20 x Rp $^{3}/_{4}$"	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces	
	CTX tee Branches identical, for flexible copper tubes. **650514000** 14/14/14 **650516000** 16/16/16 **650518000** 18/18/18 **650520000** 20/20/20 **650526000** 26/26/26	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces	

Crimp fittings

Crimp fittings	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX reducing tee Branches reduced, for flexible copper tubes. **652120100** 16/14/14 **652120200** 16/14/16 **652120300** 16/20/16 **652120700** 18/16/18 **652120400** 20/16/16 **652120500** 20/16/20 **652120600** 20/20/16 **652121000** 26/16/26 **652120900** 26/20/20 **652120800** 26/20/26	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces 5 pieces 5 pieces	
	CTX tee with threading female middle branch with female threading, for flexible copper tubes. **652340200** 16 x Rp ½" x 16 **652340300** 18 x Rp ½" x 18 **652350300** 20 x Rp ½" x 20 **652350400** 26 x Rp ½" x 26	Packed in PE bag 10 pieces 10 pieces 10 pieces 5 pieces	
	CTX elbow 45° for flexible copper tubes. **651026000** 26 x 3	Packed in PE bag 5 pieces	
	CTX male adapter nipple Adapter with male threading, for flexible copper tubes. **650214120** 14 x 2 – R ½" **650216120** 16 x 2 – R ½" **650218120** 18 x 2 – R ½" **650220120** 20 x 2 – R ½" **650220340** 20 x 2 – R ¾" **650226340** 26 x 3 – R ¾" **650226100** 26 x 3 – R 1"	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces 5 pieces	
	CTX crimp union ¾" eurocone Nickel-plated, with thread connection 3/4“ female, eurocone 18 mm, for connection to manifolds. (Alternative to CTX crimp union with eurocone) **652714340** 14 x G ¾" **652716340** 16 x G ¾" **652718340** 18 x G ¾" **652720340** 20 x G ¾"	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces	

Crimp fittings

Crimp fittings	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX crimp union flat-sealing with freely rotating nut. **653916340** 16 x 2 – Rp $^{3}/_{4}$" **653918340** 18 x 2 – Rp $^{3}/_{4}$" **653920340** 20 x 2 – Rp $^{3}/_{4}$"	Packed in PE bag 10 pieces 10 pieces 10 pieces	
	CTX female adapter Adapter with female threading, for flexible copper tubes. **652214120** 14 x 2 – Rp $^{1}/_{2}$" **652216120** 16 x 2 – Rp $^{1}/_{2}$" **652218120** 18 x 2 – Rp $^{1}/_{2}$" **652220340** 20 x 2 – Rp $^{3}/_{4}$" **652226340** 26 x 3 – Rp $^{3}/_{4}$" **652226100** 26 x 3 – Rp 1"	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 5 pieces 5 pieces	
	CTX back plate elbow, short Brass body with crimp sleeve of stainless steel. **652816120** 16 x Rp $^{1}/_{2}$" **652820120** 20 x Rp $^{1}/_{2}$" **652820340** 20 x Rp $^{3}/_{4}$"	Packed in PE bag 10 pieces 10 pieces 10 pieces	
	CTX sound-insulating element, short for CTX back plate elbow, short ½“ (for articles 652814120, 652816120, 652820120), for CTX back plate elbow, short ¾“ (for article 652820340). **652900100** $^{1}/_{2}$" **652900200** $^{3}/_{4}$"	Packed in PE bag 10 pieces 10 pieces	
	CTX back plate elbow, long Brass body with crimp sleeve of stainless steel. **653016120** 16 x Rp $^{1}/_{2}$" **653020120** 20 x Rp $^{1}/_{2}$"	Packed in PE bag 10 pieces 10 pieces	
	CTX sound-insulating element, long (for articles 653016120, 653020120). **653100100** $^{1}/_{2}$"	Packed in PE bag 10 pieces	

Crimp fittings

Crimp fittings	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX back plate elbow, double, short Short version. **653416120** 16 x Rp $^1/_2$" x 16 **653420120** 20 x Rp $^1/_2$" x 20	Packed in PE bag 10 pieces 10 pieces	
	CTX sound-insulating element, double for back plate elbow, short (for articles 653416120, 653420120). **653500100** $^1/_2$"	Packed in PE bag 10 pieces	
	Mounting rail bent. **653500200**	Packed in PE bag 10 pieces	
	CTX stop end fitting to close the flexible copper tubes. **650914000** 14 x 2 **650916000** 16 x 2 **650918000** 18 x 2 **650920000** 20 x 2 **650926000** 26 x 3	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces 10 pieces	

Accesories for radiator connection

Accessories	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX skirting board connection set nickel-plated, with male thread and press fitting. **655816120** 16 x 2 Rp $^1/_2$" **655818120** 18 x 2 Rp $^1/_2$" **655820120** 20 x 2 Rp $^1/_2$"	Packed in PE bag 1 Set 1 Set 1 Set	
	CTX angle shut-off for radiator connection with CTX skirting board connection. Copper tubes, nickel-plated with compression fitting Rp ½'' and integrated shut-off. **655815120** 15 x 1	Packed in PE bag 2 pieces	
	CTX elbow union with union nut ¾'' eurocone and press connection CTX. **650816340** 16 x 2 Rp $^3/_4$" **650818340** 18 x 2 Rp $^3/_4$" **650820340** 20 x 2 Rp $^3/_4$"	Packed in PE bag 10 pieces 10 pieces 10 pieces	
	CTX connection bend 15 mm nickel-plated with press connection, Length: 300 mm. **650716150** 16 x 2 **650718150** 18 x 2 **650720150** 20 x 2	Packed in PE bag 2 pieces 2 pieces 2 pieces	
	CTX crossover tee with branches for crossover-free branching, for flexible copper tubes. Visible size 40 mm. **650616000** 16/16/16 **650620100** 20/16/16 **650620200** 20/16/20	Packed in PE bag 1 piece 1 piece 1 piece	
	CTX insulation box for crossover tee, (for articles 650616000, 650620100, 650620200). **650700100**	1 piece loose	
	CTX radiator connection block with insulation box of EPS, for grouting in the wall (mounting depth 50 mm), with curved CTX tube 16 x 2 mm, for horizontal radiator connection. Dimensions: Height: 200 mm, Width: 105 mm Mounting depth: 50 mm (base 230 mm) Tube pitch: 215 mm Insulation under: 14 mm **655800100**	1 piece loose	

Compression fittings

Accessories	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX union with eurocone Thread connection $^{3}/_{4}$" , female, brass, nickel-plated, for connection to the heating group manifold. **650014000** 14 x 2 **650016000** 16 x 2 **650018000** 18 x 2 **650020000** 20 x 2	Packed in PE bag 10 pieces 10 pieces 10 pieces 10 pieces	

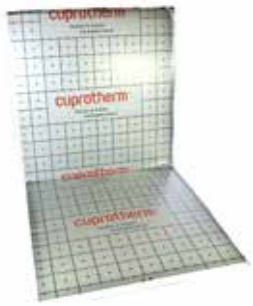
Compression sleeve

Accessories	Article Minimum Article number/Dimensions in mm	Minimum packaging unit	
	CTX compression sleeve for metallic-sealing joints, 5-part, consiting of body, 2 locking and 2 pressure rings. Material: CUPHIN. **654014200** 14 x 2 **654016200** 16 x 2 **654018200** 18 x 2 **654020200** 20 x 2	Packed in PE bag 2 Pieces 2 Pieces 2 Pieces 2 Pieces	

System accessories fixing

Accessories	Article Article number/Dimensions in mm	Minimum packaging unit	
	cuprotherm bracket of steel wire, for fastening the CTX tubes on the cuprotherm system insulation by hand. **625201900** Typ 14/16 for tube Ø to 16 mm **625202000** Typ 20 for tube Ø to 20 mm	Boxed 500 Pieces 500 Pieces	
	cuprotherm twin bracket of steel wire, for fastening the CTX tubes on the cuprotherm system insulation with a system tacker. **625202200** For tube outside diameter 14 to 20 mm	Boxed 1,000 Pieces	
	cuprotherm grid foil as insulating layer cover and installation aid with printed spacing grid (the PE foil is not needed when using the cuprotherm insulating boards). **625201000** 0.2 mm thick, 1,100 mm wide	1 roll = 50 m	
	cuprotherm adhesive tape self-adhesive for making joints. **625207000** 50 mm wide, length approx. 33 m, yellow	1 roll (33 m) loose	
	cuprotherm foam pad tape for padding tube bends, self-adhesive. **625206000** 4 x 30 mm, length 10 m	1 roll (10 m) loose	
	cuprotherm plate anchor 110 Plastic anchor with spreader nail. For fastening the wall heating register. Requirement: approx. 3 pc./m^2. **625407500** Dimensions: Plate Ø 50 mm Total length 110 mm Fastening length 80 mm Bore diameter 10 mm	1 piece loose	
	cuprotherm knob panel „ekoBoden“ Tube pas distances 7.5 cm, made from stable polystyrene, designed for CTX tube dimension 14x2 mm. Suited for meandering and bifilar (snail) tube installation. Fire resistance class DIN 4102-B2. Colour: black **625271000** 1,275 x 975 x 23 Incl. overlap Effective surface per panel: 1.08 m^2	1 box = 18 pieces = 19.44 m^2	
	cuprotherm door/distributor element for "ekoBoden" suitable for cuprotherm screed knob plate, made of solid polystyrene for the door and distribution area. With cut-outs for one-sided fixation on the burl foil. Building material class B2 according to DIN 4102. Colour: black anthacite. **625271200** 1,200 x 575 x 1 mm	1 Pieces lose	

Insulation

Accessories insulation	Article Article number/Dimensions in mm	Minimum packaging unit	
	**cuprotherm insulation board 30-2** EPS DES sg 30-2 mm, TCC 040, heat and impact sound insulation to DIN EN 13163 with plastic lining as protection cover to DIN 18560, equipped with 3 cm-wide overlap and adhesive strip on the top. Printed grid. **625270100** 2,000 x 1,000 x 30 mm **R_λ = 0.75 m²K/W** compressive strength: 5 kPa (5 kN/m²) Delivery size: folded to 1,000 x 1,000 x 30	Packed in PE bag 5 x 2 m² = 10 m²	
	cuprotherm insulation coil 30-2 EPS DES sg 30-2 mm, TCC 040, heat and impact sound insulation to DIN EN 13163 with plastic lining as insulating layer cover to DIN 18560, equipped with 3 cm-wide overlap and adhesive strip on the top. Printed grid. **625270400** 5,000 x 1,000 x 30 mm **R_λ = 0.75 m²K/W** compressive strength: 5 kPa (5 kN/m²)	Packed in PE bag 2 Rollen à 5 m² = 10 m²	
	cuprotherm insulation board 50-2 EPS DES sg 50-2 mm, TCC 040, heat and impact sound insulation to DIN EN 13163 with plastic lining as insulating layer cover to DIN 18560, equipped with 3 cm-wide overlap and adhesive strip on the top. Printed grid. **625270700** 1,000 x 1,000 x 50 mm **R_λ = 1.25 m²K/W** compressive strength: 5 kPa (5 kN/m²)	Packed in PE bag 5 m²	
	cuprotherm insulation plate PUR 30+3 made from PUR 30 mm, lined with aluminium on both sides, FCKW-free, TCC 025, with 3 mm PE foam layer **625282600** 1,000 x 1,000 x 33 mm **R_λ = 1.275 m²K/W** compressive strength: 40 kN/m²	Shrink-wrapped 10 boards = 10 m²	
	cuprotherm perimeter strip of extruded polyethylene foam, gauge 8 mm, height 180 mm with self-adhesive edge (renders tacking and nailing superfluous). With foam base 2 mm thick, 30 mm wide and welded-on foil overlap. **625280800** 8 x 180 mm, length 25 m	In plastic bag 4 rolls of 25 m each	
	cuprotherm perimeter stripe ekoBoden white, of extruded polyethylene foam with reduced height for cuprotherm ekoBoden and cuprotherm dry construction system, with self-adhesive edge (renders tacking and nailing superfluous). With foam base 2 mm thick, 70 mm wide. **625280901** 8 x 100 mm, length 25 m	In plastic bag 4 rolls of 25 m each	

Manifolds

Accessories Manifolds / Manifold cabinets	Article Article number/Dimensions in mm	Minimum packaging unit	
	cuprotherm manifold cabinet 110 Basic cabinet for recessed and on-wall mounting of matt galvanised steel plate 1 mm. Universal holder for manifolds. Space for wiring center “Alpha-Basis” or wireless control receiver. Front side equipped with special screed screen (with grouting mesh for direct grouting). Height: 705–830 mm (adjustable), depth 110 mm. **625371100** Size 1, width 450 mm, possible heating circuits without heat meter: 2–4 **625371200** Size 2, width 680 mm, possible heating circuits without heat meter: 5–8, with 2–5* **625371300** Size 3, width 830 mm, possible heating circuits without heat meter: 9–11, with 6–8* **625371400** Size 4, width 1,140 mm, possible heating circuits without heat meter: 12–14, with 9–14* *vertical installation	Boxed Size depending on the size of the cabinet 1 piece 1 piece 1 piece 1 piece	
	cuprotherm cabinet frame for recessed mounting Cabinet frame with door incl. turn-lock fastener. Matching the basic manifold cabinet of steel plate 1 mm, powder-coated, white, similar to RAL 9010, “new edge” design, depth adjustable to 70 mm, height 530 mm. **625376100** Size 1, width (overall size) 525 mm **625376200** Size 2, width (overall size) 755 mm **625376300** Size 3, width (overall size) 905 mm **625376400** Size 4, width (overall size) 1,215 mm	Boxed Size depending on the size of the cabinet 1 piece 1 piece 1 piece 1 piece	
	cuprotherm distributor hood for wall mounting suitable for basic distribution cabinet made of sheet steel, white powder-coated, similar to RAL 9010, Height 670 mm, depth 130 mm. **625378100** Size 1, width (overall size) 530 mm, sheet thickness 1.0 mm **625378200** Size 2, width (overall size) 760 mm, sheet thickness 1.0 mm **625378300** Size 3, width (overall size) 910 mm, sheet thickness 1.5 mm **625378400** Size 4, width (overall size) 1,210 mm, sheet thickness 1.5 mm	Boxed Size depending on the size of the cabinet 1 piece 1 piece 1 piece 1 piece	

Manifolds

Accessories Manifolds / Manifold cabinets	Article Article number/Dimensions in mm	Minimum packaging unit	
	cuprotherm-manifold Width including ball valve and end pieces. **625310200** 2 heating circuits Width 310 mm **625310300** 3 heating circuits Width 365 mm **625310400** 4 heating circuits Width 420 mm **625310500** 5 heating circuits Width 475 mm **625310600** 6 heating circuits Width 530 mm **625310700** 7 heating circuits Width 585 mm **625310800** 8 heating circuits Width 640 mm **625310900** 9 heating circuits Width 695 mm **625311000** 10 heating circuits Width 750 mm **625311100** 11 heating circuits Width 805 mm **625311200** 12 heating circuits Width 860 mm **625311300** 13 heating circuits Width 915 mm **625311400** 14 heating circuits Width 970 mm Of high quality seamless drawn brass tubing for two-way connection, 1“ flat sealing. Mounted on galvanized sound-insulated consoles acc. to DIN 4109. Manifold equipped with fill/drain cock valve ½“ and vent valve, 2 ball valves 1“ with union nut. Circuit ports equipped with lockable valves and flow controllers. Fixing set and self adhesive labels included. Manifold pressure tested and boxed. Height 310 mm, Gauge 90 mm.	Boxed 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece 1 piece	
	cuprotherm flow thermometer for the supply pipe. As contact thermometer, spring-fixed. Measuring range 0–80 °C. **625399800**	Loose 1 piece	
	cuprotherm return thermometer for heating circuit port with eurocone R ¾", Measuring range 0–50 °C. **625398700**	lose 1 piece	
	CTX union with eurocone Thread connection ¾", female, brass, nickel-plated, for connection to the heating group manifold. **650014000** 14 x 2 **650016000** 16 x 2 **650018000** 18 x 2 **650020000** 20 x 2	Packed in PE bag 10 Pieces 10 Pieces 10 Pieces 10 Pieces	
	cuprotherm compression fitting 3 pieces, consisting of union nut, clamping ring and support sleeve, Euro cone, for cuprotherm tubes. **625203300** union nut R ¾" x 12 x 0.7 mm **625203100** union nut R ¾" x 14 x 0.8 mm **625203400** union nut R ¾" x 15 x 0.8 mm	Packed in PE bag 10 Pieces 10 Pieces 10 Pieces	

Tools

Accessories	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX cutter for cutting Calibrating and deburring CTX tubes for use of CTX crimp fittings. **655100100** 14 / 16 / 18 / 20 x 2.0 **replacement cutter for CTX cutter** **655100200**	Loose 1 piece 1 piece	
	CTX tube cutter For cutting flexible copper tubes. With integrated deburrer and spare blade. Use, for example, in combination with CTX calibration and expanding pliers. **655900100**	Packed in PE bag 1 piece	
	CTX click grip for tube calibration insert **656000100**	Boxed 1 piece	
	CTX tube calibration insert Insert, for example, in combination with CTX click grip or cordless screwdriver. With steel protection cover, suitable for CTX crimp fittings. **656014200** 14 x 2 **656016200** 16 x 2 **656018200** 18 x 2 **656020200** 20 x 2 **656026300** 26 x 3	Boxed 1 piece 1 piece 1 piece 1 piece 1 piece	
	CTX calibration and expanding pliers Use only suitable in combination with CTX calibration attachment. For all sizes. **655700100** 14 to 26 mm	Loose 1 piece	
	CTX calibration attachment For simple and exact calibration of CTX tubes without the need for strength. Use only in combination with CTX calibration and expanding pliers or with suitable commercially available expanding pliers. For preparation of joints for CTX crimp fittings and CTX sliding sleeves. For tube dimensionsn **655714200** 14 x 2 **655716200** 16 x 2 **655718200** 18 x 2 **655720200** 20 x 2 **655726300** 26 x 3	Loose in PE bag 1 piece 1 piece 1 piece 1 piece 1 piece	
	CTX crimping tool contour: TH For joining CTX tubes with CTX crimp fittings. **655414000** 14 **655416000** 16 **655418000** 18 **655420000** 20 **655426000** 26	1 piece 1 piece 1 piece 1 piece 1 piece	

Tools

Accessories	Article Article number/Dimensions in mm	Minimum packaging unit	
	CTX bending spring for bending CTX tubes. **655314000** 14 **655316000** 16 **655318000** 18 **655320000** 20 **655326000** 26	 Loose 1 piece 1 piece 1 piece 1 piece 1 piece	
	cuprotherm bending pliers **M** for cuprotherm.blank 14 x 0.8, cuprotherm.plus 12 x 0.7 and CTX 14 x 2. **L** for CTX 18 x 2. **625412600** **M** **625220400** **L**	 Loose 1 piece 1 piece	
	cuprotherm tacker for easy fastening of cuprotherm double anchors, suitable for cuprotherm system insulation and commercially available insulation boards of EPS, PU, Styrodur, Foamglas, cork, autoclaved aerated concrete and wood soft fibre boards. **625220700**	 Loose 1 piece	

CUPROMED®

Copper tube for medical gas supply

The seamless drawn cupromed copper tube is suitable for the transportation of technical gases and refrigerants as well as medical gases and for vacuum.

cupromed meets the requirements for air-conditioning and refrigeration tube according to EN 12735-1 as well as the requirements of EN 378 and EN ISO 7396-1 regarding tube for medical gas supply units. cupromed meets the requirements of the Pressure Equipment 2014/68/EU.

The cupromed copper tube has a clean and dry inner surface and exceeds the requirements according to EN 13348.

The ends of cupromed copper tubes are closed in order to ensure the cleanliness of the inner surface during storage and transportation.

Material:	Cu-DHP, Wieland-K20
Design:	EN 13348 and EN 12735-1
Pressure Equipment Directive:	compliant
Environmental declaration:	according to ISO 14025

cupromed copper tube in coils

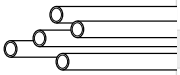
Temper:	soft R220
Ends:	closed with caps
Packing:	in foil
Dimensions:	on request

cupromed copper tube in straight lengths

Temper:	hard as drawn R290 from stock
Ends:	closed with plastic plugs/caps
Packing:	in lenghts of 5 m in cardboard boxes upon agreement

cupromed - Straight lengths

cupromed standard dimensions from stock*

Copper tube	Dimension	Weight nominal	Operating pressure**	Straight lengths
	mm	kg/m	bar	m/cardboard box***
	6 x 1	0.140	194	200
	8 x 1	0.196	139	100
	10 x 1	0.252	109	75
	12 x 1	0.308	89	50
	14 x 1	0.363	76	50
	15 x 1	0.391	70	50
	16 x 1	0.419	66	50
	18 x 1	0.475	57	50
	22 x 1	0.587	46	50
	28 x 1	0.755	36	50
	28 x 1.5	1.110	55	25
	35 x 1	0.951	28	25
	35 x 1.5	1.410	43	25
	42 x 1	1.146	24	25
	42 x 1.5	1.700	36	25
	54 x 1.5	2.202	28	20
	54 x 2	2.910	37	20
	64 x 2	3.467	31	5 m w/o cardboard
	76.1 x 2	4.144	26	5 m w/o cardboard
	88.9 x 2	4.859	22	5 m w/o cardboard
	108 x 2.5	7.374	23	5 m w/o cardboard

* *other dimensions are available on request*

** *calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

cuprofrio®

Copper tube for air conditioning and refrigeration

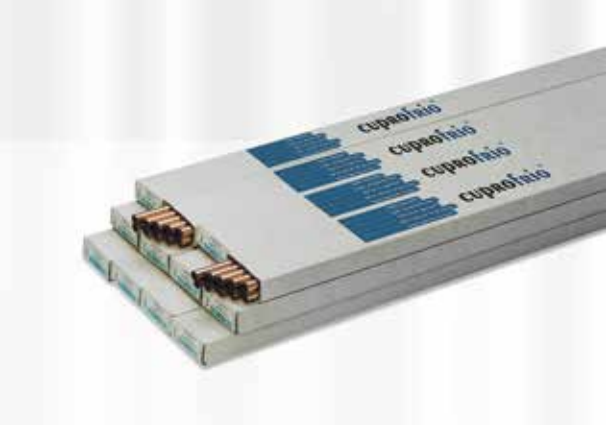
cuprofrio, the seamless drawn Wieland refrigeration tube is mainly used to transport technical gases and liquids in chillers, air-conditioning and refrigeration units as well as heat exchangers. An outstanding characteristic of cuprofrio is its clean and dry inner surface.

The tube ends are closed to maintain the defined condition of the inner surface also during storage and transportation.

cuprofrio tube meets the requirements of EN 12735-1 for copper tube used in air-conditioning and refrigeration. cuprofrio also meets the requirements of the Pressure Equipment Directive 2014/68/EU.

Wieland-Werke AG has concluded a separate warranty agreement with VDKF (Verband Deutscher Kälte-Klima-Fachbetriebe e.V. – Association of Refrigeration and Air Conditioning Contractors) covering property damage and bodily injury.

Material:	Cu-DHP, Wieland-K20
Design:	EN 12735-1
Pressure Equipment Directive:	compliant
Environmental declaration:	according to ISO 14025



** other dimensions are available on request*

*** calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

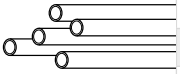
cuprofrio - Coils

cuprofrio standard dimensions from stock*

Copper tube	Dimension	Weight nominal	Operating pressure**	Coils
	mm	kg/m	bar	m/coil
	6 x 1	0.140	194	2 x 35
	8 x 1	0.196	139	2 x 35
	10 x 1	0.252	109	25
	12 x 1	0.308	89	25
	15 x 1	0.391	70	25
	16 x 1	0.419	66	25
	18 x 1	0.475	57	25

cuprofrio - Straight lengths

cuprofrio standard dimensions from stock*

Copper tube	Dimension	Weight nominal	Operating pressure**	Straight lengths
	mm	kg/m	bar	m/cardboard box***
	4 x 1	0.084	318	2 x 35
	6 x 1	0.140	194	2 x 35
	6 x 1	0.140	194	25
	8 x 1	0.196	139	2 x 35
	8 x 1	0.196	139	25
	10 x 1	0.252	109	25
	10 x 1	0.252	109	35
	12 x 1	0.308	89	25
	14 x 1	0.363	76	35
	15 x 1	0.391	70	25
	16 x 1	0.419	66	25
	18 x 1	0.475	57	25
	22 x 1	0.587	46	25

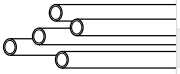
* *other dimensions are available on request*

** *calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

cuprofrio - Straight lengths

- cuprofrio standard dimensions from stock* in straight lengths
- Temper: **hard as drawn**

Copper tube	Dimension	Weight nominal	Operating pressure**	Straight lengths
	mm	kg/m	bar	m/cardboard box***
	6 x 1	0.140	194	200
	8 x 1	0.196	139	100
	10 x 1	0.252	109	75
	12 x 1	0.308	89	50
	14 x 1	0.363	76	50
	15 x 1	0.391	70	50
	16 x 1	0.419	66	50
	18 x 1	0.475	57	50
	22 x 1	0.587	46	50
	28 x 1	0.755	36	50
	28 x 1.5	1.110	55	25
	35 x 1	0.951	28	25
	35 x 1.5	1.410	43	25
	42 x 1	1.146	24	25
	42 x 1.5	1.700	36	25
	54 x 1.5	2.202	28	20
	54 x 2	2.910	37	20
	64 x 2	3.467	31	5 m w/o cardboard
	76.1 x 2	4.144	26	5 m w/o cardboard
	88.9 x 2	4.859	22	5 m w/o cardboard
	108 x 2.5	7.374	23	5 m w/o cardboard

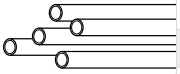
* *other dimensions are available on request*

** *calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

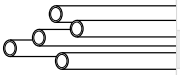
cuprofrio - Straight lengths

- cuprofrio standard dimensions from stock* in straight lengths
- Temper: **half hard**

Copper tube	Dimension	Weight nominal	Operating pressure**	Straight lengths
	mm	kg/m	bar	m/cardboard box***
	10 x 1	0.252	109	75
	12 x 1	0.308	89	50
	16 x 1	0.419	66	50
	18 x 1	0.475	57	50
	22 x 1	0.587	46	50
	28 x 1	0.755	36	50

cuprofrio - Straight lengths

- cuprofrio standard dimensions from stock* in straight lengths
- Temper: **soft**
- packed in wooden box

Copper tube	Dimension	Weight nominal	Operating pressure**	Straight lengths
	mm	kg/m	bar	m/cardboard box***
	28 x 1.5	1.110	55	600
	35 x 1.5	1.410	43	500
	42 x 1.5	1.700	36	350
	54 x 2	2.910	37	200

* *other dimensions are available on request*

** *calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

cuprofrio® plus

Pre-insulated refrigeration tube

This tube consists of a seamless drawn Wieland cuprofrio refrigeration tube with a heat-insulating coating. cuprofrio.plus is used for the transportation of technical gases and refrigerants.

cuprofrio.plus is very easy to unwind and to bend. This is possible because a heat-insulating coating is already applied during production.

The cuprofrio tube meets and exceeds the requirements of EN 12735-1 for copper tube for air conditioning and refrigeration. Wieland-Werke AG has concluded a separate warranty agreement with VDKF (Verband Deutscher Kälte-Klima-Fachbetriebe e.V. – Association of Refrigeration and Air Conditioning Contractors) covering property damage and bodily injury.

cuprofrio.plus meets the requirements of the Pressure Equipment Directive 2014/68/EU.

The coating consists of an elastomer-modified thermoplastic specially developed for air conditioning and refrigeration. The highly tear-resistant material proves its worth on building sites, for example when tubes are being fed through wall apertures.

Additional advantages of this material are low thermal conductivity and extremely high water vapour diffusion resistance, which, in combination with the insulating layer thickness, prevent the formation of condensation water on the tube surface. Together with modern refrigerants this ensures safe long-term operation.

The coating provides double UV protection resulting in a high level of colour fastness and stabilising material properties even in tube sections exposed to direct sunlight.

Energy losses are reduced by the factory-provided insulation. Furthermore, the insulation reduces the probability that humidity will condense on the tubes. Taking into account the air temperature and relative humidity, the following table shows the minimum media temperatures at which condensation does not occur on the insulation.

Air temperature	Tube dimension / relative humidity	6 x 1 mm	10 x 1 mm	12 x 1 mm	16 x 1 mm	18 x 1 mm	22 x 1 mm
25 °C	50 %	–37 °C	–29 °C	–27 °C	–23 °C	–22 °C	–20 °C
	60 %	–20 °C	–14 °C	–13 °C	–10 °C	–9 °C	–8 °C
	70 %	–6 °C	–2 °C	–1 °C	1 °C	1 °C	2 °C
30 °C	50 %	–36 °C	–27 °C	–25 °C	–21 °C	–20 °C	–18 °C
	60 %	–18 °C	–12 °C	–10 °C	–7 °C	–7 °C	–5 °C
	70 %	–3 °C	2 °C	3 °C	4 °C	5 °C	6 °C
35 °C	50 %	–34 °C	–26 °C	–23 °C	–19 °C	–18 °C	–16 °C
	60 %	–16 °C	–9 °C	–7 °C	–5 °C	–4 °C	–2 °C
	70 %	0 °C	5 °C	6 °C	8 °C	9 °C	10 °C
40 °C	50 %	–34 °C	–24 °C	–21 °C	–17 °C	–16 °C	–14 °C
	60 %	–14 °C	–7 °C	–5 °C	–2 °C	–1 °C	1 °C
	70 %	3 °C	8 °C	9 °C	11 °C	12 °C	13 °C

cuprofrio® plus

An outstanding characteristic of cuprofrio.plus is its bright, clean and dry inner surface. The tube ends are closed in order to keep the surface clean from storage and transportation through to installation.

- Material of core tube: Cu-DHP, Wieland-K20, R220 soft
- Tube design: EN 12735-1
- Pressure Equipment Directive: compliant
- Thermal insulation: elastomer-modified polyethylene HFC/CFC-free
- Operating temperature range: max. 105 °C
- Protective foil: UV-stabilised polyethylene
- Environmental declaration: according to ISO 14025
- Fire resistance: EN 13501-1-CL-s1-d0

cuprofrio.plus - Coils

- cuprofrio.plus standard dimension from stock (metric)

Tube	Dimension mm	Weight nominal kg/m	Operating pressure** bar	Insulating layer thickness mm	Coils m/coil
	6 x 1	0.140	194	9	25
	10 x 1	0.252	109	9	25
	12 x 1	0.308	89	9	25
	16 x 1	0.419	66	9	25
	18 x 1	0.475	57	9	25
	22 x 1	0.587	46	9	25

- cuprofrio.plus standard dimension from stock (inch)

Tube	Dimension mm	Weight nominal kg/m	Operating pressure** bar	Insulating layer thickness mm	Coils m/coil
	1/4" x 0.8	0.125	144	9	50
	3/8" x 0.8	0.197	92	9	50
	1/2" x 0.8	0.267	67	9	50
	5/8" x 1	0.417	67	9	25
	3/4" x 1	0.506	55	9	25
	7/8" x 1.2	0.707	57	9	25

* *other dimensions are available on request*

** *calculated with 3.5 times safety coefficient on the basis of soft copper tubes with Rm 200 N/mm² at an operating temperature of von 100 °C*

****packing unit*

cuprofrio® plus

Pre-insulated refrigeration tube - twin version

This tube consists of two seamless drawn Wieland cuprofrio refrigeration tubes with a heat-insulating coating. Cuprofrio.plus in twin version is mainly used for the transportation of technical gases and refriegrants. The special joint of the insulations of the cuprofrio.plus in twin version allows a simple and tool-free cutting and joining for a particularly efficient and aesthetic installation.

The cuprofrio.plus in twin version meets and exceeds the requirements of EN 12735-1 for copper tubes for air conditioning and refrigeration and also EN 378. Furthermore, the tubes meet the requirements of the Pressure Equipment Directive PED 2014/68/EU.

The highly tear-resistant material proves its worth on building sites, for example when tubes are being fed through wall apertures.

Additional advantages of this material are low thermal conductivity and extremely high water vapour diffusion resistance.

An outstanding characteristic of cuprofrio.plus in twin version is its bright, clean and dry inner surface. The tube ends are closed in order to keep the surface clean from storage and transportation through to installation.

Material of core tube:	Cu-DHP, Wieland K20, R220 soft
Tube design:	EN 12735-1
Pressure Equipment Directive:	compliant
Thermal insulation:	elastomer-modified polyethylene HFC/CFC-free
Thermal conductivity (10°C):	0.036 W/(m x K)
Operating temperature range:	max. 105°C
Protective foil:	UV-stabilised polyethylene
Environmental declaration:	according to ISO 14025
Fire resistance:	EN13501-1; C_L-s1-d0

cuprofrio.plus in twin version - Coils

cuprofrio.plus in twin version standard dimensions from stock* (metric)

Tube	Dimension mm	Dimension copper tube mm	Nominal weight kg/m	Insulating layer thickness mm	Coils m/coil
	6 – 10	6 x 1 – 10 x 1	0.392	9 – 9	25
	6 – 12	6 x 1 – 12 x 1	0.448	9 – 9	25
	6 – 16	6 x 1 – 16 x 1	0.559	9 – 9	25
	10 – 16	10 x 1 – 16 x 1	0.671	9 – 9	25
	10 – 18	10 x 1 – 18 x 1	0.727	9 – 9	25

cuprofrio.plus in twin version standard dimensions from stock* (inch)

Tube	Dimension mm	Dimension copper tube mm	Nominal weight kg/m	Insulating layer thickness mm	Coils m/coil
	1/4" x 3/8"	6.35 x 0.8 – 9.52 x 0.8	9 – 9	9 – 9	25
	1/4" x 1/2"	6.35 x 0.8 – 12.7 x 0.8	9 – 9	9 – 9	25
	1/4" x 5/8"	6.35 x 0.8 – 15.88 x 1	9 – 9	9 – 9	25
	3/8" x 5/8"	9.52 x 0.8 – 15.88 x 1	9 – 9	9 – 9	25
	3/8" x 3/4"	9.52 x 0.8 – 19.05 x 1	9 – 9	9 – 9	25

** other dimensions are available on request*

K65®

The tube system for high-pressure applications

The K65 tube system has been developed in response to the use of CO_2 R744 as an environmentally friendly refrigerant in the commercial field, especially that of supermarket refrigeration systems. The use of CO_2 as a refrigerant led to high operating pressures, and therefore variations in the gauge of tube being specified. K65 simplifies the selection process, as the Wieland K65 alloy provides the mechanical strength high enough to withstand the huge pressure ratings required. K65 has already been used with success in electrical engineering and the automotive industry, and is a safe and economical installation in refrigeration systems with operating pressures of up to 130 bar.

Applications:

- High-pressure tube systems, particularly when CO_2 is used as a refrigerant.
- K65 can be used in other fluids applications in consultation with the manufacturer.

Technical properties:

Identification:	Wieland K65
Dimensional tolerances:	EN 12735-1
Material:	Wieland K65
Temper:	R300 (with heat treatment) for diameters ≥ 15.87 mm R420 (drawn) for diameters < 15.87 mm
Maximum operating pressure:	two product ranges available for high and medium pressure, see tables
Certification:	according to VdTÜV material data sheet 567 UL 207- Certification on request
Tube ends:	closed
Packing:	in bundles

Proven joining technique:

- K65 has excellent processing properties that are similar to those of copper.
- Wieland K65 tubes can be brazed to Conex | Bänninger K65 fittings without any need for expensive or special equipment.

Safety ensured by two well-known manufacturers

K65 tubes by Wieland and K65 fittings by IBP Conex | Bänninger fall under a joint system guarantee that includes CO_2 applications for the items listed below.

Easy to identify – even after installation

All K65 system components are marked with the manufacturers own mark, as well as the K65 mark and the pressure rating making them easy to identify at all times. In addition, the material is slightly magnetic and can be easily distinguished from copper by means of a strong magnet – a helpful and practical advantage.

Economical

Having such a high mechanical strength, the K65 tube can be made with comparatively thin walls allowing for an economical utilization of material, while still meeting high technical demands.

Lighter for easy handling

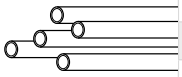
The thinner walls of the tubes not only saves on material, but results in a lighter weight product that is easier to handle, for example, when mounting the pipes on ceilings.

K65®

Wieland K65 - Straight lengths

| Wieland K65 tubes for up to 130 bar (at 150 °C service temperature)*, acc. to EN 12735-1 and RH-1600, ex stock

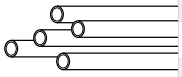
| According to the requirements of the AD2000 Rules and the VdTÜV material data sheet 567, the following dimensions are available:

Tubes	Dimension		Wieland material number	Packaging unit: bundle		Packaging unit: ballot		Minimum bending radius**
	mm	inch		Number of tubes per 5 m	Metres per bundle	Bundles per ballot	Metres per ballot	mm
	9.52	3/8"	433009520	20	100	20	2,000	43
	12.70	1/2"	433012700	20	100	20	2,000	52
	15.87	5/8"	433015870	10	50	20	1,000	63
	19.05	3/4"	433019060	10	50	20	1,000	75
	22.23	7/8"	433022230	10	50	10	500	98
	28.57	1 1/8"	433028570	5	25	20	500	102
	34.92	1 3/8"	433034920	3	15	10	150	140
	41.27	1 5/8"	433041270	3	15	10	150	140
	53.97	2 1/8"	433053970	1	5	10	50	not defined

Wieland K65 - Straight lengths

| Wieland K65 tubes for up to 80 bar (at 150 °C service temperature)*, acc. to EN 12735-1 and RH-1601, available on request

| According to the requirements of the AD2000 Rules and the VdTÜV material data sheet 567, the following dimensions are available:

Tubes	Dimension		Wieland material number	Packaging unit: bundle		Packaging unit: ballot		Minimum bending radius**
	mm	inch		Number of tubes per 5 m	Metres per bundle	Bundles per ballot	Metres per ballot	mm
	15.87	5/8"	available on request	10	50	20	1,000	63
	19.05	3/4"		10	50	20	1,000	75
	22.23	7/8"		10	50	10	500	98
	28.57	1 1/8"		5	25	20	500	102
	34.92	1 3/8"		3	15	10	150	140
	41.27	1 5/8"		3	15	10	150	140
	53.97	2 1/8"		1	5	10	50	not defined

Processing information

The processing instructions for the installation of copper tubes according to EN 378 common for refrigeration are to be followed. Please refer to the K65 installation instructions. The safety precautions for high-pressure systems, particularly for pressure testing and commissioning have to be observed!

** K65 tubes are suitable for temperatures up to 250 °C. If service temperatures exceed the values given above, the pressure rating has to be adopted.*

*** The dimensions mentioned here can be cold bent with suitable bending equipment and bending segments that are precisely tailored to the outside diameter. Hot bending is not recommended. Industrial bending machines also enable tighter bending radii. Bending of hairpins is possible on suitable bending equipment.*

K65®

Wieland K65 - Fittings

- Identification: >B< K65
- Maximum operating pressure: 130 bar / 1885 psi
- The following K65-fitting designs are available:

Fittings	Type designation	Detailed designation	Size	Item No.
	K65 Bend 90° i/a	K5001 i/a	3/8"	K5001003000000
		K5001 i/a	1/2"	K5001004000000
		K5001 i/a	5/8"	K5001005000000
		K5001 i/a	3/4"	K5001006000000
		K5001 i/a	7/8"	K5001007000000
		K5001 i/a	1 1/8"	K5001009000000
		K5001 i/a	1 1/3"	K5001011000000
		K5001 i/a	1 5/8"	K5001013000000
		K5001 i/a	2 1/8"	K5001017000000
	K65 Bend 90° i/i	K5002 i/i	3/8"	K5002003000000
		K5002 i/i	1/2"	K5002004000000
		K5002 i/i	5/8"	K5002005000000
		K5002 i/i	3/4"	K5002006000000
		K5002 i/i	7/8"	K5002007000000
		K5002 i/i	1 1/8"	K5002009000000
		K5002 i/i	1 3/8"	K5002011000000
		K5002 i/i	1 5/8"	K5002013000000
		K5002 i/i	2 1/8"	K5002017000000
	K65 Bend 45° i/a	K5040 i/a	3/4"	K5040006000000
		K5040 i/a	7/8"	K5040007000000
		K5040 i/a	1 1/8"	K5040009000000
		K5040 i/a	1 3/8"	K5040011000000
		K5040 i/a	1 5/8"	K5040013000000
	K65 Bend 45° i/i	K5041 i/i	3/8"	K5041003000000
		K5041 i/i	1/2"	K5041004000000
		K5041 i/i	5/8"	K5041005000000
		K5041 i/i	3/4"	K5041006000000
		K5041 i/i	7/8"	K5041007000000
		K5041 i/i	1 1/8"	K5041009000000
		K5041 i/i	1 3/8"	K5041011000000
		K5041 i/i	1 5/8"	K5041013000000
	K65 Tee	K5130	3/8"	K5130003003003
		K5130	1/2" x 3/8" x 3/8"	K5130004003003
		K5130	1/2" x 1/2" x 3/8"	K5130004004003
		K5130	1/2"	K5130004004004
		K5130	5/8" x 1/2" x 1/2"	K5130005004004
		K5130	5/8" x 5/8" x 3/8"	K5130005005003
		K5130	5/8" x 5/8" x 1/2"	K5130005005004

K65®

Wieland K65 - Fittings

- Identification: >B< K65
- Maximum operating pressure: 130 bar / 1885 psi
- The following K65-fitting designs are available:

Fittings	Type designation	Detailed designation	Size	Item No.
	K65 Tee	K5130	5/8"	K5130005005005
		K5130	3/4" x 3/4" x 1/2"	K5130006006004
		K5130	3/4" x 3/4" x 5/8"	K5130006006005
		K5130	3/4"	K5130006006006
		K5130	7/8" x 7/8" x 1/2"	K5130007007004
		K5130	7/8" x 7/8" x 5/8"	K5130007007005
		K5130	7/8" x 7/8" x 3/4"	K5130007007006
		K5130	7/8"	K5130007007007
		K5130	1 1/8" x 7/8" x 1/2"	K5130009007004
		K5130	1 1/8" x 1 1/8" x 3/4"	K5130009009006
		K5130	1 1/8" x 1 1/8" x 7/8"	K5130009009007
		K5130	1 1/8"	K5130009009009
		K5130	1 3/8" x 1 3/8" x 3/4"	K5130011011006
		K5130	1 3/8" x 1 3/8" x 7/8"	K5130011011007
		K5130	1 3/8" x 1 3/8" x 1 1/8"	K5130011011009
		K5130	1 3/8"	K5130011011011
		K5130	1 5/8" x 1 5/8" x 3/4"	K5130013013006
		K5130	1 5/8" x 1 5/8" x 7/8"	K5130013013007
		K5130	1 5/8" x 1 5/8" x 1 1/8"	K5130013013009
		K5130	1 5/8" x 1 5/8" x 1 3/8"	K5130013013011
		K5130	1 5/8"	K5130013013013
		K5130	2 1/8" x 2 1/8" x 1 5/8"	K5130017017013
		K5130	2 1/8" x 2 1/8" x 2 1/8"	K5130017017017
	K65 Red Coupler	K5240	1/2" x 3/8"	K5240004003000
		K5240	5/8" x 1/2"	K5240005004000
		K5240	3/4" x 5/8"	K5240006005000
		K5240	7/8" x 3/4"	K5240007006000
		K5240	1 1/8" x 1/2"	K5240009004000
		K5240	1 1/8" x 7/8"	K5240009007000
		K5240	1 3/8" x 1/2"	K5240011004000
		K5240	1 3/8" x 5/8"	K5240011005000
		K5240	1 3/8" x 3/4"	K5240011006000
		K5240	1.3/8" x 7/8"	K5240011007000
		K5240	1 3/8" x 1 1/8"	K5240011009000
		K5240	1 5/8" x 3/4"	K5240013006000
		K5240	1 5/8" x 7/8"	K5240013007000
		K5240	1 5/8 x 1 1/8"	K5240013009000
		K5240	1 5/8" x 1 3/8"	K5240013011000
		K5240	2 1/8" x 1 5/8"	K5240017013000

K65®

Wieland K65 - Fittings

- Identification: >B< K65
- Maximum operating pressure: 130 bar / 1885 psi
- The following K65-fitting designs are available:

Fittings	Type designation	Detailed designation	Size	Item No.
	K65 Reducer	K5243 o-i	1/2" x 3/8"	K5243004003000
		K5243 l/M	1/2" x 12 mm	K5243004012000
		K5243 o-i	5/8" x 3/8"	K5243005003000
		K5243 o-i	5/8" x 1/2"	K5243005004000
		K5243 l/M	5/8" x 15 mm	K5243005015000
		K5243 o-i	3/4" x 3/8"	K5243006003000
		K5243 o-i	3/4" x 1/2"	K5243006004000
		K5243 o-i	3/4" x 5/8"	K5243006005000
		K5243 l/M	3/4" x 18 mm	K5243006018000
		K5243 o-i	7/8" x 3/8"	K5243007003000
		K5243 o-i	7/8" x 1/2"	K5243007004000
		K5243 o-i	7/8" x 5/8"	K5243007005000
		K5243 o-i	7/8" x 3/4"	K5243007006000
		K5243 l/M	7/8" x 22 mm	K5243007022000
		K5243 o-i	1 1/8" x 1/2"	K5243009004000
		K5243 o-i	1 1/8" x 5/8"	K5243009005000
		K5243 o-i	1 1/8" x 3/4"	K5243009006000
		K5243 o-i	1 1/8" x 7/8"	K5243009007000
		K5243 l/M	1 1/8" x 28 mm	K5243009028000
		K5243 o-i	1 3/8" x 1 1/8"	K5243011009000
		K5243 l/M	1 3/8" x 35 mm	K5243011035000
		K5243 o-i	1 5/8" x 7/8"	K5243013007000
		K5243 o-i	1 5/8" x 1 3/8"	K5243013011000
		K5243 l/M	1 5/8" x 42 mm	K5243013042000
		K5243 o-i	2 1/8" x 1 5/8"	K5243017013000

K65®

Wieland K65 - Fittings

- Identification: >B< K65
- Maximum operating pressure: 130 bar / 1885 psi
- The following K65-fitting designs are available:

Fittings	Type designation	Detailed designation	Size	Item No.
	K65 Coupler	K5270	3/8"	K5270003000000
		K5270	1/2"	K5270004000000
		K5270	5/8"	K5270005000000
		K5270	3/4"	K5270006000000
		K5270	7/8"	K5270007000000
		K5270	1 1/8"	K5270009000000
		K5270	1 3/8"	K5270011000000
		K5270	1 5/8"	K5270013000000
		K5270	2 1/8"	K5270017000000
	K65 Stop End	K5301	3/8"	K5301003000000
		K5301	1/2"	K5301004000000
		K5301	5/8"	K5301005000000
		K5301	3/4"	K5301006000000
		K5301	7/8"	K5301007000000
		K5301	1 1/8"	K5301009000000
		K5301	1 3/8"	K5301011000000
		K5301	1 5/8"	K5301013000000
		K5301	2 1/8"	K5301017000000

Application of different tubes

Air conditioning and refrigeration	Symbol	Product
Refrigerants		cupromed cuprofrio cuprofrio.plus cuprogeo K65
Halogenated fluorochlorocarbon (no longer permitted)		
Halogenated fluorocarbon, e.g. R134a, R404A, R407C, R410A, R507		
Flammable refrigerants	C_nH_n	
Others		
Carbon dioxide*	CO_2	
Ammonia	NH_3	currently not permitted!

Industrial and laboratory gases***	Symbol	Product
Noble gases		cupromed cuprofrio cuprogeo
Helium	He	
Neon	Ne	
Argon	Ar	
Krypton	Kr	
Xenon	Xe	
Radon	Rn	
Inert gases		
Nitrogen	N_2	
Carbon dioxide*	CO_2	
Sulphur hexafluoride	SF_6	
Fuel gases		
Hydrogen	H_2	cuprofrio, cupromed, cuprogeo
Methane	CH_4	
Liquid gases	C_nH_n	
Coke oven gas		
Acetylene**	C_2H_2	Copper not permitted!

Medical engineering	Symbol	Product
Oxygen	O_2	cupromed
Nitrogen	N_2	
Carbon dioxide*	CO2	
Nitrous oxide	N2O	
Argon	Ar	
Helium	He	
Xenon	Xe	
Compressed air with cleanliness requirements according to ISO 8573-1 and for medical purposes		
Vacuum		

* *The gas must be absolutely dry, as in the case, for example, in compressed air cylinders. Respect the maximum operating pressure of the tubes. For high pressures (e.g. 130 bar), use K65 tubes.*

** *Formation of the highly explosive copper acetylide possible!*

****Applications for domestic fuel supply (natural gas, fuel oil, etc.) do not fall under the application "industrial and laboratory gases".*

The Wieland Group

The Wieland Group, with headquarters in Ulm, is one of the world's leading manufacturers of semi-finished and special products in copper and copper alloys, such as strip, sheet, tubes, rods, wires and sections. Special products include slide bearings, finned tubes and heat exchangers.

As an international company, Wieland has manufacturing companies, slitting centres and trading companies in many European countries as well as in the USA, in South Africa, Singapore, China and India. The global workforce of the Wieland Group is approx. 6,700 strong of which 4,300 are employed in Germany. The domestic plants (Wieland-Werke AG) are located in Ulm, Velbert-Langenberg, Villingen-Schwenningen and Vöhringen/Iller.

Wieland supplies customers in numerous markets with over 100 different copper alloys which are primarily used in the electrical and electronic industry. Other important sectors are the construction, automotive as well as the air conditioning and refrigeration industries. Wieland materials are used in a variety of everyday products such as contacts in electrical sockets, drinking water and heating pipes, door locks, slide bearings for engines, refrigeration units for cold stores and air conditioning units. Our materials also prove to be indispensable for high-tech applications in computer and telecommunications technologies.

Vöhringen plant – production location for copper plumbing tubes

wieland

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