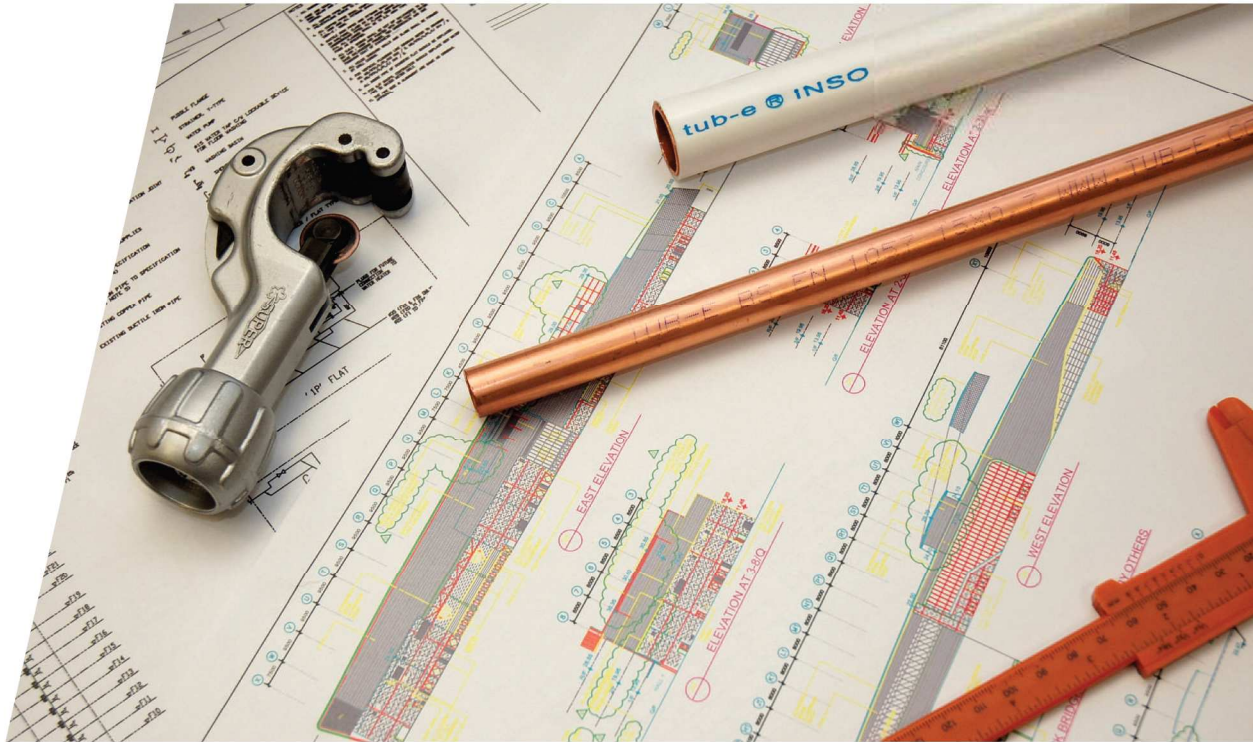


tub-e[®]
for sure



PLUMBING

Professional copper installation tubing for all applications to EN 1057



Rely on copper...

*Trust in **tub-e**® !*

tub-e[®] for Europe

We are one of the leading suppliers of installation tubes in Europe. All our products are combined under the umbrella brand name *tub-e*; but distinguished in three applications: Plumbing installations, Special installations (e.g. refrigeration, medical gases) and Industrial applications.

Our mission:

- We are part of the chain which provides comfort and quality of life to society by means of fresh drinking water, hot water, food, comfortable indoor climate, safety and health.
- Our products are copper tubes and systems for indoor installations, refrigeration, domestic and medical gases as well as various industry applications.
- Our technical assets, technology, knowledge, innovation and service level is leading in the industry, bringing competitive benefit and added value for our customers, shareholders and employees.
- We are an environmentally responsible company, which takes global responsibility seriously, making a good corporate citizen and reliable business partner.

Our vision:

- We lay the broad outline of the industry - we are the benchmark.
- Customers recognise us as service oriented, value added and as an innovative partner in the industry. We are the preferred choice.
- We attract and retain the best people in our industry.
- We generate above average industry profits over the business cycle.

Our philosophy:

The new **tub-e[®]** brand meets our traditional commitment for the material copper to provide improved benefits for customers, shareholders, employees and society.

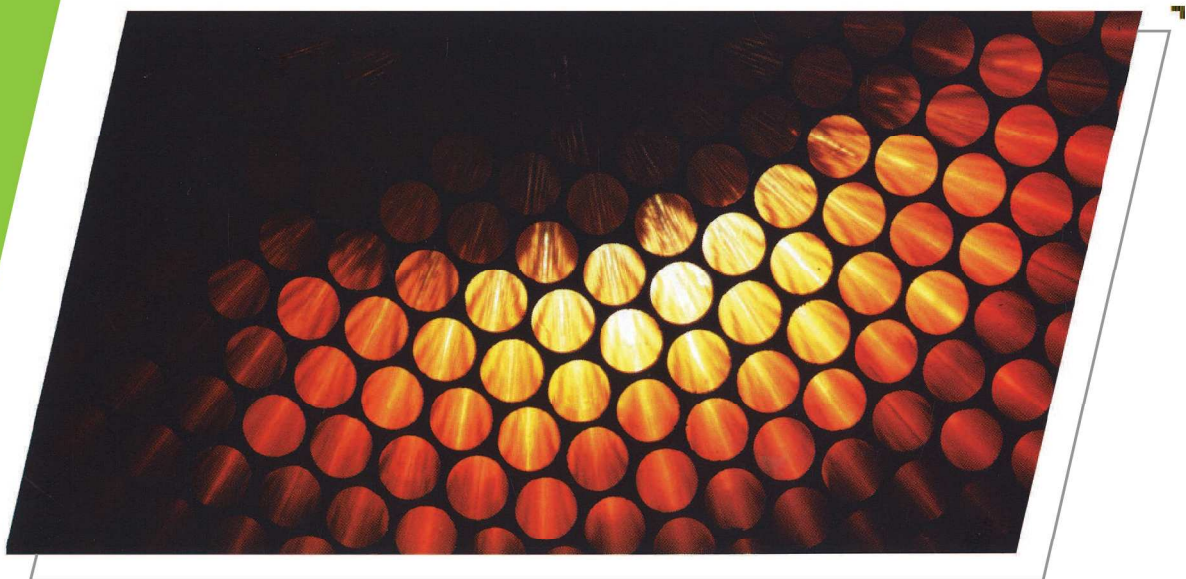
tub-e[®]
for sure

Leading for more than 4000 years

There is hardly material that brings to bear its advantages as impressively and permanently as copper. Durability and modern installation techniques make copper a safe and economical choice. Additional properties, such as copper's ecological compatibility, its essential importance as a trace element and biostatic properties are advantages that are more important than ever today.

Rely on copper-Trust in tub-e[®]

This product brochure gives you an overview of the complete **tub-e**[®] product range and shows its suitability for all plumbing installations.



Proven quality

tub-e[®] is the ideal solution for drinking water, oil, gas, heating or rain water. **tub-e**[®] equals high quality. **tub-e**[®] is made of 99.9% pure copper by proven manufacturing techniques. Efficient logistic systems, pre- and after sales service and **tub-e**[®] promotion, ensure customer satisfaction.

tub-e[®] is manufactured to a strict quality-management system certified according to ISO 9001. Process controls guarantee sustained high quality. Also environmental concerns have been high on our agenda and therefore we have operated certified environmental management systems for many years. Both the quality and the environmental management systems are audited by independent auditing bodies according to the ISO 9001-2000 and ISO 14001 requirements respectively.

tub-e[®] is the preferred choice across Europe. **tub-e**[®] easily meets and surpasses the European norm for copper installation tubes, EN 1057.

tub-e[®] proven quality:

SITAC - Sweden

Byggforsk - Norway

ETA - Denmark

NSAI - Ireland

BSI - United Kingdom

KIWA - The Netherlands

DVGW-RAL - Germany

NIH-IGNIG -Poland

ETI - The Czech Republic

T/S/U - Slovakia

AFNOR - France

SVGW-SSIGE - Switzerland

ÖVGW W 1.370 - Austria

EMI - Hungary

AENOR - Spain

CERTIF - Portugal

PUB Singapore - Singapore

NSF - USA

Sanitary epidemiologic - Russia



	<i>Features</i>	<i>Use</i>
 <p>tub-e[®] PREMIUM</p>	Corrosion-protected tube made of high-quality 99.9% pure copper.	Drinking water, oil, gas liquid gas, heating, rain water
 <p>tub-e[®] I N S O</p>	Copper tube coated with white PE material.	All plumbing installations.
 <p>tub-e[®] I N S O PLUS</p>	Copper tube coated with profiled white PE material.	All plumbing installations.
 <p>tub-e[®] W H I T E</p>	White pre-painted (powder coated) copper tube	For visible installations, especially for radiator and tap connections.
 <p>tub-e[®] C H R O M E</p>	Chrome-plated copper tube.	For visible installations, especially for radiator and tap connections.
 <p>tub-e[®] T H E R M</p>	Copper tube with a light-grey, profiled coating.	Special tube for under-floor heating.
 <p>tub-e[®] T W I N T U B E</p>	Twin tube of copper with light-grey thermal insulation and a vapour barrier.	Time-saving solution particularly for heating.
 <p>tub-e[®] R A D I S O L</p>	Thin-walled copper tube with a coloured PE-coating.	Economical solution for heating.
 <p>tub-e[®] C U B O S P E C I A L</p>	Copper tube with a light-grey profiled coating.	All plumbing installations.
 <p>tub-e[®] P L U S P R I S O L</p>	Copper tube with light-grey thermal insulation and a vapour barrier.	Reduces noise transmission, condensation and heat loss in all plumbing installations.



tub-e[®] PREMIUM is the brand for installation tube made of at least 99.9% pure copper. **tub-e**[®] PREMIUM installation tubes are high quality and versatile. They can be used in all plumbing applications and the advantages of **tub-e**[®] PREMIUM never ceases to surprise - especially in comparison with other materials. **tub-e**[®] PREMIUM copper installation tubes are corrosion - protected by a special manufacturing process. The process has been internationally tried and proven for decades.

tub-e[®] PREMIUM can be used for all plumbing applications : for cold and hot potable water, for heating and rainwater, for oil, gas and liquid gas. The dimensional range meets every requirement. **tub-e**[®] PREMIUM installation tubes comply to EN 1057 and carry all major European quality marks e.g. RAL, Kitemark, Aenor. Where application, Joints can be made with all common connection methods.

tub-e[®] PREMIUM copper tube range - Class X

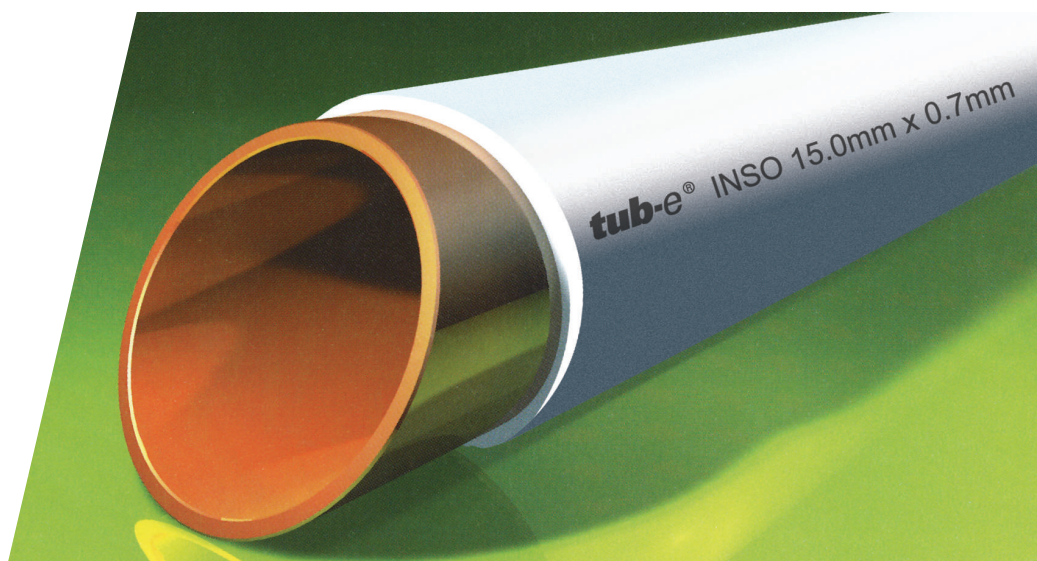
Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
					Temper	Minimum Tensile strength MPa	Minimum Elongation %
15.0 x 0.7 mm	± 0.09	0.280	58	0.145	R250 half hard	250	30
22.0 x 0.9 mm	± 0.10	0.531	51	0.321	R250 half hard	250	30
28.0 x 0.9 mm	± 0.10	0.628	40	0.539	R250 half hard	250	30
35.0 x 1.2 mm	± 0.07	1.134	42	0.835	R290 hard	290	3
42.0 x 1.2 mm	± 0.07	1.369	35	1.232	R290 hard	290	3
54.0 x 1.2 mm	± 0.07	1.772	27	2.091	R290 hard	290	3
66.7 x 1.2 mm	± 0.10	2.198	26	3.248	R290 hard	290	3
76.1 x 1.5 mm	± 0.10	3.129	29	4.197	R290 hard	290	3
108.0 x 1.5 mm	± 0.20	4.467	20	8.660	R290 hard	290	3
133.0 x 1.5 mm	± 0.20	5.543	17	13.273	R290 hard	290	3
159.0 x 2.0 mm	± 0.70	8.723	18	18.870	R290 hard	290	3

tub-e[®] PREMIUM copper tube range - Class Y

Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
					Temper	Minimum Tensile strength MPa	Minimum Elongation %
15.0 x 1.0 mm	± 0.04	0.391	87	0.133	R250 half hard	250	30
22.0 x 1.2 mm	± 0.05	0.698	69	0.302	R250 half hard	250	30
28.0 x 1.2 mm	± 0.05	0.910	55	0.514	R250 half hard	250	30
35.0 x 1.5 mm	± 0.06	1.412	65	0.835	R290 hard	290	3
42.0 x 1.5 mm	± 0.06	1.700	54	1.195	R290 hard	290	3
54.0 x 2.0 mm	± 0.06	2.910	56	1.963	R290 hard	290	3
66.7 x 2.0 mm	± 0.07	3.663	45	3.086	R290 hard	290	3
76.1 x 2.0 mm	± 0.07	4.144	39	4.083	R290 hard	290	3
108.0 x 2.5 mm	± 0.2	7.374	34	8.332	R290 hard	290	3

* The maximum permitted working pressures have been calculated for tube in the supplied hardness with working temperatures not exceeding 65 degrees centigrade.

All nominal outside diameters and thickness of **tub-e**[®] Class X and Class Y copper tube comply to EN 1057 Table 3.



"**tub-e**[®] INSO" is a polyethylene coated copper tube, produced to comply to standard BS EN1057. The polyethylene coating is seamless, and it is most suitable **cold water services**. It also protects the tube during transport, installation and in the final application. The PE coating is manufactured in accordance with BS 3412, a specification for covered copper tube.

tub-e[®] INSO copper tube range - Class X

Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
					Temper	Minimum Tensile strength MPa	Minimum Elongation %
15.0 x 0.7 mm	± 0.09	0.280	58	0.145	R250 half hard	250	30
22.0 x 0.9 mm	± 0.10	0.531	51	0.321	R250 half hard	250	30
28.0 x 0.9 mm	± 0.10	0.628	40	0.539	R250 half hard	250	30
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108.0 x 1.5 mm	± 0.20	4.467	20	8.660	R290 hard	290	3

tub-e[®] INSO copper tube range - Class Y

Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
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15.0 x 1.0 mm	± 0.04	0.391	87	0.133	R250 half hard	250	30
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* The maximum permitted working pressures have been calculated for tube in the supplied hardness with working temperatures not exceeding 65 degrees centigrade.

All nominal outside diameters and thickness of **tub-e**[®] Class X and Class Y copper tube comply to EN 1057 Table 3.



"**tub-e**[®] INSO Plus" is a polyethylene coated copper tube, produced to comply to standard BS EN1057. The polyethylene coating is internally profiled with air channels to create a thermal barrier, and it is most suitable for **hot water service**. It reduces heat loss and minimizes the surface temperatures. It also protects the tube during transport, installation and in the final application. The PE coating is manufactured in accordance with BS 3412 a specification for covered copper tube.

tub-e[®] INSO Plus copper tube range - Class X

Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
					Temper	Minimum Tensile strength MPa	Minimum Elongation %
15.0 x 0.7 mm	± 0.09	0.280	58	0.145	R250 half hard	250	30
22.0 x 0.9 mm	± 0.10	0.531	51	0.321	R250 half hard	250	30
28.0 x 0.9 mm	± 0.10	0.628	40	0.539	R250 half hard	250	30
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42.0 x 1.2 mm	± 0.07	1.369	35	1.232	R290 hard	290	3
54.0 x 1.2 mm	± 0.07	1.772	27	2.091	R290 hard	290	3

tub-e[®] INSO Plus copper tube range - Class Y

Dimension	Tolerances on outside diameter	Theoretical Weight kg/m	Max. Working Pressure *bar	Volume VI / m	Mechanical properties and applicable		
					Temper	Minimum Tensile strength MPa	Minimum Elongation %
15.0 x 1.0 mm	± 0.04	0.391	87	0.133	R250 half hard	250	30
22.0 x 1.2 mm	± 0.05	0.698	69	0.302	R250 half hard	250	30
28.0 x 1.2 mm	± 0.05	0.910	55	0.514	R250 half hard	250	30
35.0 x 1.5 mm	± 0.06	1.412	65	0.835	R290 hard	290	3
42.0 x 1.5 mm	± 0.06	1.700	54	1.195	R290 hard	290	3
54.0 x 2.0 mm	± 0.06	2.910	56	1.963	R290 hard	290	3

* The maximum permitted working pressures have been calculated for tube in the supplied hardness with working temperatures not exceeding 65 degrees centigrade. All nominal outside diameters and thickness of tub-e Class X and Class Y copper tube comply to EN 1057 Table 3.

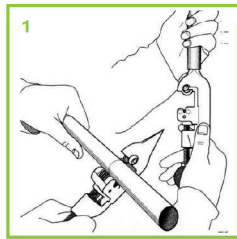
How to use Tub-e Fittings

How to make perfect End Feed and Solder Ring joints using Tub-e Fittings

1. Cut the pipe to the required length using a pipe cutter or hacksaw. Use a padded vice to hold the pipe if using a hacksaw to help ensure a square cut.

Remove any burrs or swarf with a file or reamer.

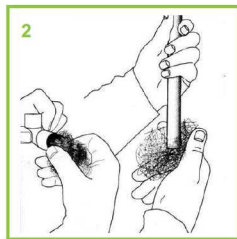
As a precaution always wear protective gloves to avoid cuts from any sharp edges that may be left on the tube.



2. CLOSELY INSPECT ALL FITTINGS FOR ANY DEFECTS OR DAMAGE BEFORE INSTALLATION.

Clean the pipe ends and fittings with wire wool or fine emery paper to create a clean surface for the solder to adhere to.

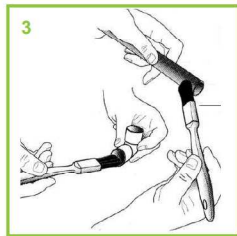
Make sure that no remnants of the wire wool remain in the tube or fitting sockets.



3. Apply a light coating of flux to the outer surface of the pipe and inside of the fitting with a clean brush.

Wipe any excess with a clean rag to avoid solder spreading along the pipe away from the joint.

Prepare both sides of the fitting and assemble the joint prior to soldering making sure the pipe ends are pushed fully home.



4. Fix the assembly securely in place with pipe clips at least 8 inches away from the joint to prevent heat damage. Apply heat with a blow torch to the body of the fitting and pipe.

As a precaution always protect exposed combustible materials from the blow torch with a proprietary solder mat and have a fire extinguisher or water on hand in case of emergencies.

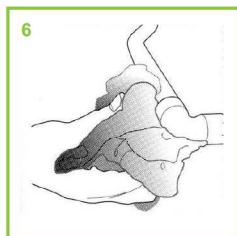


5. As the copper reaches the correct temperature the flux will begin to vapourise and a small amount of solder wire can now be applied to the pipe where it enters the fitting. The solder will be drawn inside the joint by capillary action.

* Solder Ring fittings do not require external application of solder. The integral solder ring will melt and show at the edge of the joint when the required temperature has been attained.

6. Finally wipe away any flux residue and excess solder with a damp cloth.

BEWARE! Copper tube becomes extremely hot during this process - take care to avoid burns. As a precaution wear protective gloves whilst carrying out his process.

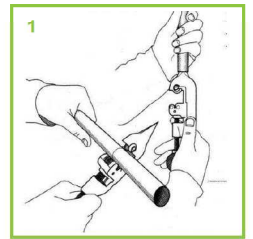


How to make joints using Tub-e Compression Fittings

1. Cut the pipe to the required length using a pipe cutter or hacksaw. Use a padded vice to hold the pipe if using a hacksaw to help ensure a square cut.

Remove any burrs or swarf with a file or reamer.

As a precaution always wear protective gloves to avoid cuts from any sharp edges that may be left on the tube.

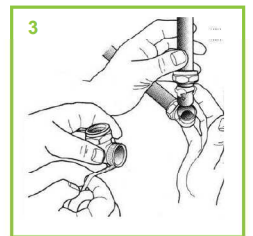


2. CLOSELY INSPECT ALL FITTINGS FOR ANY DEFECTS OR DAMAGE BEFORE INSTALLATION.

Unscrew and remove the retaining nut from the fitting. Slip the nut and then the olive over the open end of the pipe prior to assembly.



3. Apply a small amount of jointing compound around the pipe end and the outside of the olive or wind PTF tape three times around the thread of the fitting in an anti clockwise direction to ensure a water tight fit.



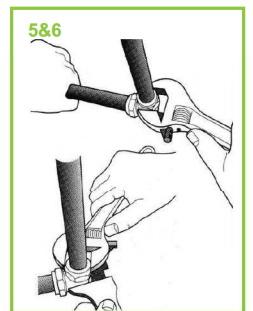
4. Push the pipe fully home into the fittings, slide the olive and nut up to the threaded part of the fitting and hand tighten the cap nut.



5. Tighten the nut with a spanner until resistance is felt against the olive.

6. Turn the cap nut a further one and a quarter turns whilst holding the fitting securely in place with another spanner to complete the joint.

DO NOT COVER TIGHTEN.



Tub-e Metal Supplies and their agents accept no responsibility whatsoever for damage or injury to property or persons sustained through poor workmanship or use of substandard third party materials. Personnel carrying out plumbing and heating installations should be trained and competent. All installations should be pressure tested before commissioning to ensure joints are fully watertight under working conditions.

All products are manufactured to relevant British Standard european Norms



Application

- *Drinking water - cold or hot*
- *Gas and liquid gas*
- *Heating*
- *Fuel oil*
- *Rainwater*
- *Refrigeration and air conditioning technology*
- *Medical and technical gases*
- *Shipbuilding*
- *Machine and apparatus engineering*
- *Air pressure*
- *Solar*

tub-e[®] for sure

tub-e[®] products are also available for refrigeration and air-conditioning, solar technology, medical technology and fire protection installations.

tub-e[®] also offers a wide range of dimensions of copper tubes for industrial applications.

Further information on request.

