



**mkm**  
we live copper

Tubes  
HETCU®

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## OUR ASPIRATION

# Outliving and outlasting us. HETCU<sup>®</sup> by MKM.

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The longevity of a material is a relative thing. For building contractors and property owners, nothing under twenty years is considered particularly durable. Thirty years is slowly getting interesting. Forty to fifty sounds really good. So how about a material that promises to last over a hundred years, or even a thousand? The oldest surviving copper water pipes were installed in Ancient Egypt in the year 2750 BC. A piece from Suharé Mortuary Temple is kept by Berlin State Museums – and it still works. Copper doesn't leak. It is an extremely resilient and corrosion-resistant material. It is non-toxic – in fact it's antibacterial. Copper is easy to process and always looks great. No wonder the latest trend in interior architecture uses non-ferrous metals.

But there are also many good reasons to opt for copper and its traditional application in every field of building installation. Aside from its outstanding durability, the coloured metal boasts exceptional ecological qualities, being 100% recyclable. And finally, copper complies easily with standards: seamless copper tubes are standard-compliant regardless of manufacturer. This means fittings and other shaped parts can be obtained

from any source. Customers, tradesmen and builders aren't tied to one producer, instead they can choose the most attractive offer on the market.

Our HETCU<sup>®</sup> quality copper tubes have made us a long-standing partner to industry and construction. MKM has the ability, knowledge and materials to fulfil your specifications.

From our own alloy foundry – with its range of over fifty alloys – all the way to the semi-finished product, we do everything in-house. That allows us to keep our material cycle closed (including single-variety recycling), and to offer our customers everything from a single source – including quick coordination because of the short distances involved.

More than a century of experience in manufacturing and processing copper allows us to offer many ways of advising and supporting you when you design your products.

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## TUBES

# Perfection in the pipeline.

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Our HETCU® tubes can be used in every area of building installation. Within the scope of applicable law we offer tubes protected against pitting for drinking water (hot/cold), heating, sanitary facilities, rainwater usage, mains/natural gas, fuel oil, liquid gas and solar technology.



The value of a demonstrably residue-free material like copper cannot be overstated, especially in the sensitive field of drinking water supply. Certificates issued by DVGW CERT GMBH – an accredited testing institution for products in the water and power supply industry – and by Lloyd's Register Quality Assurance GmbH confirm our production procedures as well as our first-rate product quality.

## Delivery

All of our products come in specially made, standard-compliant, secure packaging. Our packaging guarantees retention of shape, ensuring that a product's properties are preserved to the utmost after leaving the factory. Plastic sealing plugs or caps at either end ensure that the inside of the tube remains clean and sterile. Sea-freight packaging is something else we offer as standard. We can gladly advise you on any particular requirements you may have.



HETCU® lengths with end-plugs



HETCU® rings for every eventuality

**By opting for MKM tubes you are choosing:**

- technically grease-free, clean surfaces
- a corrosion-resistant material
- diffusion resistance
- products that react neutrally to the media flowing through them
- easy handling / connection / installation
- long service life and a high degree of operational safety
- maximum diversity of products and dimensions
- a product manufactured and tested using tolerances based on general industrial standards or customer standards
- a high level of support and advice during the selection process
- decades of experience involving standard and specialised requirements
- a durable, vibrant, versatile and maintenance-free material
- a material that is light and flexible to process
- a recyclable, ecologically and economically competitive material
- integrated production – from the bolt to the finished tube – all from a single source
- more than a century of experience across the entire spectrum of copper production and processing
- a highly qualified workforce
- flexible machinery that is constantly being upgraded
- comprehensive advice and support for:
  - product development
  - surface qualities
  - new material qualities and alloys
  - optimising the use of materials (diameters and cross-sections)
  - developing new applications
  - improving business and technological processes
- product- and order-specific packaging

Technical specifications	
Material	Cu-DHP
Standard	DIN EN 1057
Properties	Protected against pitting
Strengths	R220, R250, R290
External diameter	6 – 108 mm
Wall thicknesses	1,0 – 2,5 mm
Delivery formats	Rings, 25 m and 50 m (R220), bars, 5 m (R250, R290)
Inscription on tube (embossed)	Compliant with DIN EN 1057 and RAL-RG 641/1 HETCU® MKM GmbH Hettstedt Deutschland EN 1057 HH (on R250) CE Size DVGW A02014 © Production period
Ink	HETCU half-hard



## TECHNICAL SPECIFICATIONS

# Facts and figures

HETCU® tube in straight lengths							
External diameter x wall thickness	Length	Weight per metre	Water content	Tube length per litre	Permitted positive operating pressure <sup>1)</sup>	Bend radius bent using tool	Bundling
mm	m	kg/m	l/m	m/l	bar	mm	m/large bundle
6 x 1,0 <sup>2)</sup> h	5	0,140	0,013	79,62	229	30	1000
8 x 1,0 <sup>3)</sup> h	5	0,196	0,028	35,39	163	35	1000
10 x 1,0 <sup>3)</sup> h	5	0,252	0,050	19,90	127	40	1000
12 x 1,0 hh	5	0,308	0,079	12,76	104	45	1000
15 x 1,0 hh	5	0,391	0,133	7,53	82	55	1200
18 x 1,0 hh	5	0,475	0,201	5,00	67	70	1000
22 x 1,0 hh	5	0,587	0,314	3,18	54	77	800
28 x 1,0 hh	5	0,755	0,531	1,88	42	114	600
35 x 1,2 h	5	1,134	0,834	1,20	41	-	350
42 x 1,2 h	5	1,369	1,230	0,81	34	-	300
54 x 1,5 h	5	2,202	2,040	0,49	33	-	150
64 x 2,0 h	5	3,450	2,826	0,35	37	-	unpackaged
76,1 x 2,0 h	5	4,144	4,081	0,25	31	-	unpackaged
88,9 x 2,0 h	5	4,859	5,658	0,18	26	-	unpackaged
108 x 2,5 h	5	7,374	8,328	0,12	27	-	unpackaged

### Special dimensions

HETCU® tube in straight lengths							
15 x 1,5 <sup>2)</sup> h	5	0,566	0,113	8,85	127	55	1000
18 x 1,5 <sup>2)</sup> h	5	0,692	0,177	5,66	104	70	1000
22 x 1,5 <sup>2)</sup> h	5	0,859	0,283	3,53	84	77	600
28 x 1,5 hh	5	1,110	0,491	2,04	65	114	450
35 x 1,5 h	5	1,410	0,804	1,24	51	-	350
42 x 1,5 h	5	1,710	1,194	0,84	42	-	300
54 x 2,0 h	5	2,920	1,963	0,51	44	-	150

HETCU® tube in rings							
External diameter x wall thickness	Ring length	Weight per metre	Water content	Tube length per litre	Permitted positive operating pressure <sup>1)</sup>	Bend radius bent using tool	Bundling
mm	m	kg/m	l/m	m/l	bar	mm	m/pallet
6 x 1,0 <sup>2)</sup> w	50	0,140	0,013	79,62	229	50	1500
8 x 1,0 <sup>3)</sup> w	50	0,196	0,023	35,39	163	65	1500
10 x 1,0 <sup>3)</sup> w	50	0,252	0,050	19,90	127	80	1500
12 x 1,0 w	50	0,307	0,079	12,74	104	100	1500
15 x 1,0 w	50	0,391	0,133	7,54	82	120	1000
18 x 1,0 w	25	0,475	0,201	4,98	67	150	750
22 x 1,0 w	25	0,587	0,314	3,18	54	180	500

<sup>1)</sup> Calculated using tensile strength of soft, annealed material (Rm = 200 MPa) and for temperatures up to 100 °C with a factor of safety S = 3.5.

<sup>2)</sup> These dimensions are not included in DVGW worksheet GW 392, which is why the product does not carry the DVGW mark.

<sup>3)</sup> These dimensions are included in GW 392 specially for use in liquid gas systems, but the product is not inscribed with the DVGW mark.

h = hard; hh = half-hard; w = soft







## Product areas



### STRIP

MKM supplies preliminary strip, industrial strip, transformer strip, cable and HF cable strip and roofing strip. We manufacture all of our strip products using our Conti-M® technology which we developed inhouse, using continuous casting technology to achieve a uninterrupted 24/7 process.



### SHEETS, PLATES AND DISCS

MKM offers sheets, plates and discs in a wide range of dimensions. Our rolling mill is supplied by our own foundries. Our strengths lie in a rich range of more than fifty alloys. We can also produce plates and discs to customer specific drawings on request.



### WIRE

MKM supplies the entire spectrum of wire rod, from thick, medium and fine wire to stranded wire and wire rope. Our fully integrated Contirod® technology allows us to offer copper wire products and alloy wire products (plain and tinned) with a wide range of finishes.



### TUBES

MKM supplies tubes of different lengths, diameters and thicknesses. Our HETCU® (installation tubing) and HETCOOL® (refrigeration, air conditioning and medical technology) product families are extremely well established in the market. Consistent quality management from our own continuous casting plant, right through to the tube drawing process guarantees seamless tubing with outstanding quality.



### BARS

MKM is one of Europe's leading producers of copper bars and profiles. Our production range encompasses a wide range of sizes in various grades of copper. We also produce customised profiles based on technical drawings.



### CUSTOM SOLUTIONS

MKM develops solutions tailored entirely to its customers' requirements. With the technical means and many years of experience, we regularly find unconventional solutions.

We can manufacture any of our products in compliance with the relevant DIN standards, internationally established standards and custom requirements. All of our packaging is appropriate to the products it contains.

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