

# MATERIALS

ROLLED COPPER  
FOR INDUSTRIAL  
APPLICATIONS

KME Germany GmbH  
COPPER DIVISION  
[EN]



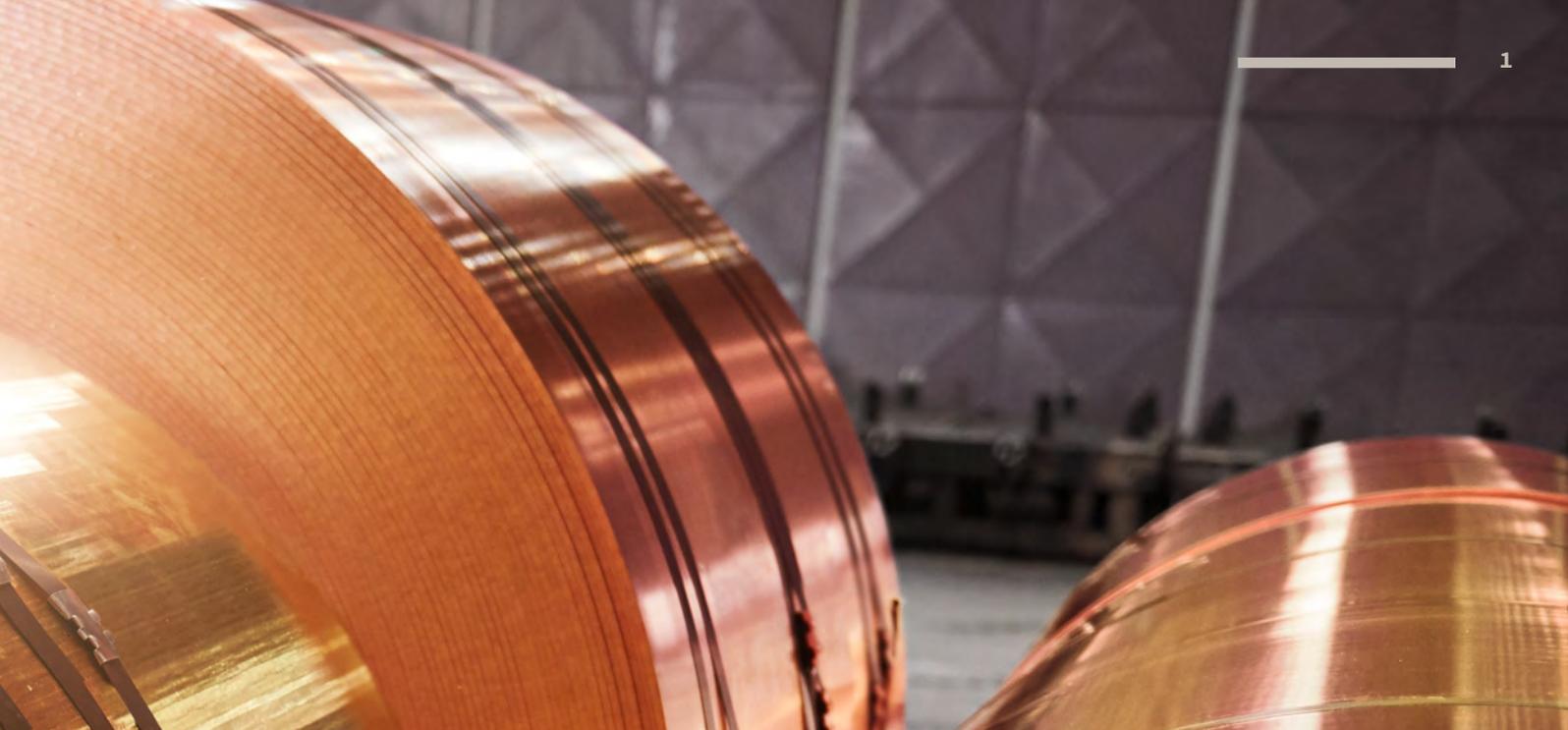
## OVERVIEW OF MATERIALS

### ROLLED COPPER FOR INDUSTRIAL APPLICATIONS

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STRIPS PLATES SHEETS

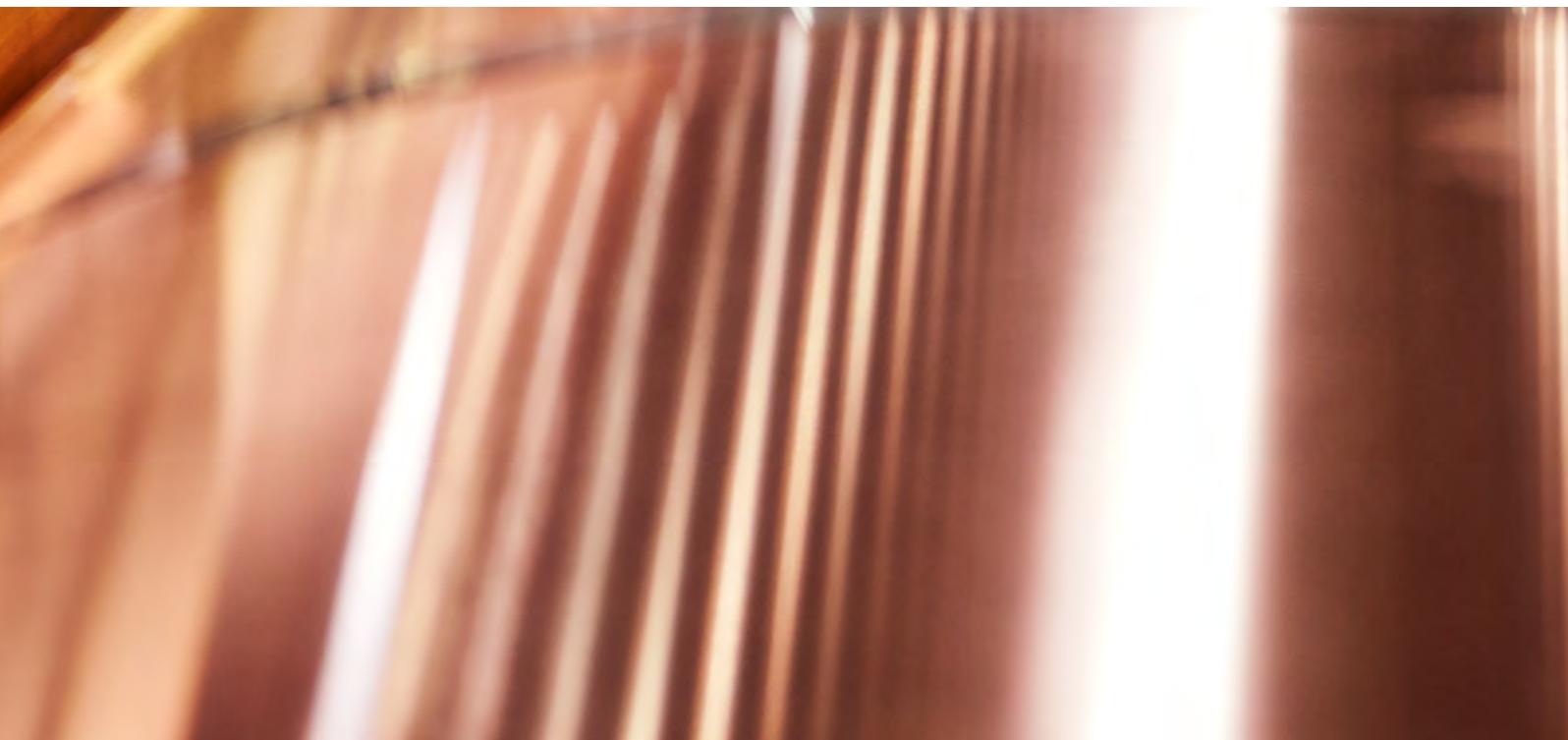




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**KME** supplies preliminary strip, industrial strip, cable and HF cable strip and roofing strip as well as heets, plates and discs in a wide range of dimensions. We manufacture all of our strip products using advanced production facilities in Germany, Italy and France, in a huge range of different copper and copper-alloy materials. Our rolling mills are supplied by our own foundries. Our strengths lie in a rich range of high performance alloys, for demanding applications like, automotive, e-mobility or smart home applications. We can also produce plates and discs to customer specific drawings on request.



# HIGH PERFORMANCE ALLOYS

	KME Alloy	CEN	ASTM	Applications
KME Rolled STRIPS	<b>STOL® 75</b>	-	C18070	CuCrSiTi alloy for high temperature applications. The electrical conductivity and the resistance against relaxation is good.
	<b>STOL® 76</b>	-	C19010	CuNiSi alloy for automotive and electrical connectors for high currents and high temperature. Excellent conductivity combined with high strength and good resistance to relaxation; strengthening by age hardening.
	<b>STOL® 76M</b>	-	C19005	CuNiSi alloy with high tensile strength and best bendability and electrical conductivity. Good resistance against relaxation; strengthening by age hardening.
	<b>STOL® 78</b>	-	C18665	CuMg alloy for automotive, electrical and electronic connectors and relays; current carrying springs and junction boxes; excellent formability at medium strength.
	<b>STOL® 80</b>	-	C14410	CuSn0.2 alloy with a slightly higher tin content compared to CuSn0.15. This results in higher strength with good electrical conductivity. The total cost of finished products is often equal to the cost of brass due to the excellent ratings of tin-plated stamping scrap. Preferred for e.g. male connectors and fuse boxes.
	<b>STOL® 81</b>	-	C14415*	CuSn0.15 is a low Tin (Sn) special alloy that combines low cost with highest conductivity. The total cost for finish products are often equal to brass due to excellent conditions for stamping scrap. Typical applications are male connectors and fuse boxes.
	<b>STOL® 94</b>	-	C70315	CuNiSi alloy with maximum strength, combined with good bendability and good electrical conductivity, resistance against relaxation and electro-chemical migration. As strip (0,2 – 5 mm) and round wire (up to 165 mm) available.“
	<b>STOL® 95</b>	-	C18160	CuCrZr alloy for high current applications e.g. hybrid-cars or photovoltaic. The electrical and thermal conductivity is excellent. Due to the CrZr-precipitations the relaxation properties, even at temperatures up to 200 °C are excellent. As strip (0,2 – 5 mm) and round wire (up to 165 mm) available.
	<b>STOL® 194</b>	CW 107 C	C19400	CuFe2 alloy with medium strength and good electrical conductivity, the oldest worldwide available special alloy.
	<b>CuNi3Si</b>	-	C70250	CuNi3Si is an optimized CuNiSi alloy that can be hardened by cold forming and by precipitation of NiSi-phases during a heat treatment. It has excellent bendability, excellent hot and cold forming properties, a high strength and a good corrosion resistance.

\* slight variation in chemical composition



# LOW ALLOYED COPPER ALLOYS

	KME Alloy	CEN	ASTM	Applications
KME Rolled STRIPS	<b>CuMgAgP</b>	-	C15500	C15500 is alloyed with low Silver (Ag) and Magnesium (Mg) to achieve a high strength combined with very good conductivity. It has good relaxation properties, high softening resistance and oxidation stability.
	<b>CuSn3Zn9 / CuSn2Zn10</b>	CW454K / -	- / C42500	C42500 has excellent cold forming properties, good conductivity combined with high strength and hardness. Corrosion resistance, especially against seawater and industrial atmosphere is good and stress corrosion cracking susceptibility is low. Spring properties are good, so it is used for applications like spring, connectors, contacts.
	<b>CuNi10Fe1Mn</b>	-	C70600	Attractive characteristics of this alloy combine excellent resistance to uniform corrosion, remarkable resistance to localised corrosion in chlorinated seawater, and higher erosion resistance than other copper alloys and steel. Furthermore, CuNi 90/10 is resistant to biofouling providing various economic benefit.

# SPECIAL ALLOYS

	KME Alloy	CEN	ASTM	Applications
KME Rolled PLATES / SHEETS	<b>CuAsP</b>	-	-	Higher corrosion-resistance and less tendency to scale than pure copper. Application: fireboxes.
	<b>CuSi3Mn</b>	-	C66500	Apparatus engineering, heat exchangers, chemical industry, construction industry, crafts.
	<b>CuMn2</b>	-	-	Chemical apparatus engineering.
	<b>C67000</b>	CW704R	C67000	High strength, high static and dynamic loading capacity.
	<b>CuCrZr</b>	CW106C	C18150	Mould plates, welding equipment, furnace and mould engineering, heavy current engineering.
	<b>CuNi2SiCr</b>	CW111C	C18000	Mould engineering, machine parts, die casting equipment.

# COPPER

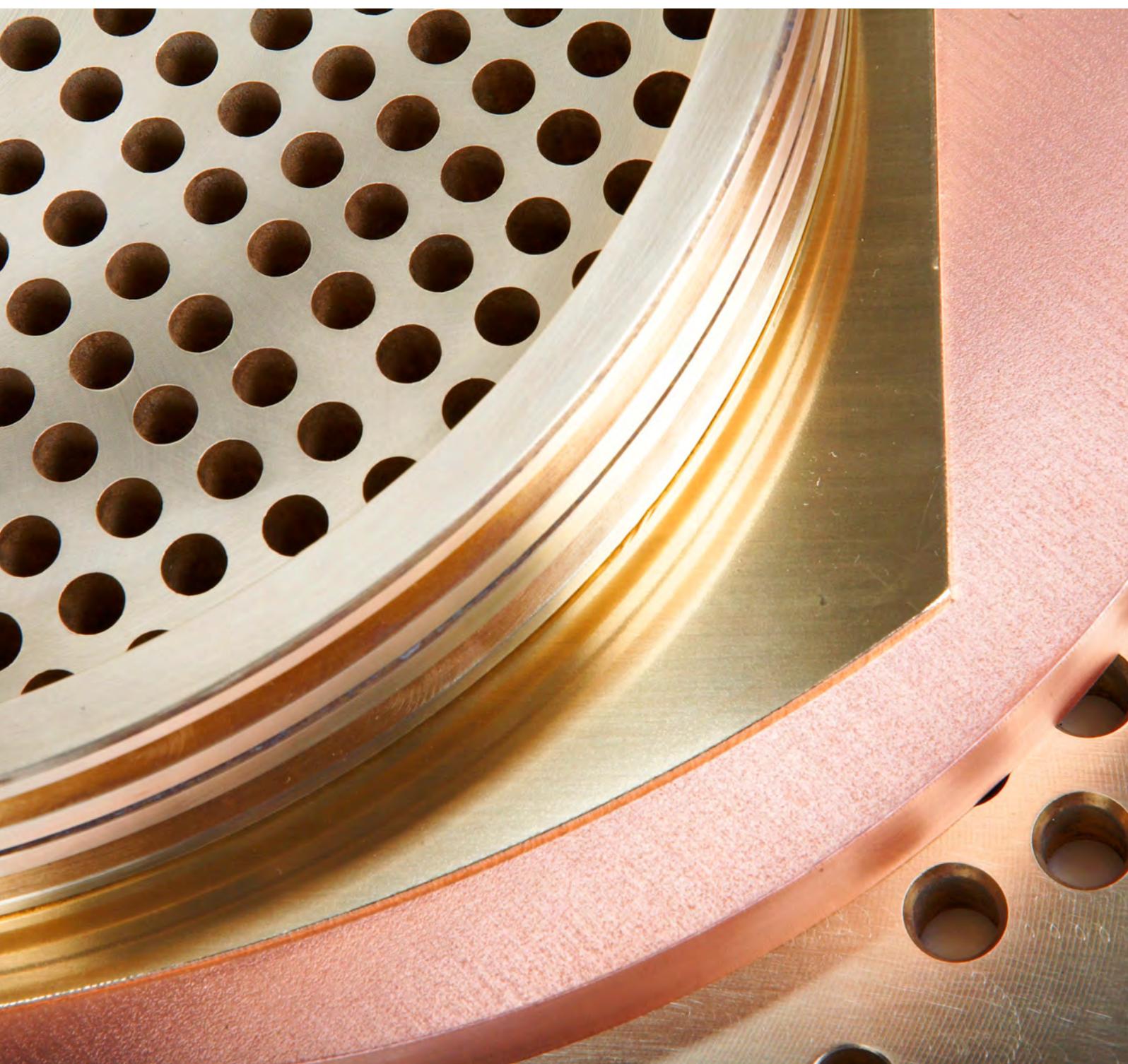


KME Rolled STRIPS / PLATES / SHEETS

KME Alloy	CEN	ASTM	Applications
<b>Cu-ETP</b>	CW004A	C11000	Oxygen-containing copper with high electrical conductivity (> 58.0 MS/m), no resistance to hydrogen, no requirements for weldability and solderability. Application: cable tape for heavy current, deep-sea, special cables, electrical engineering, electronics.
<b>Cu-HCP</b>	CW021A	C10300	Deoxidized copper with low residual phosphorus content and limited electrical conductivity (> 57 MS/m), with good weldability, brazing and hydrogen resistance. Application: Cable tape for power, deep-sea, special cables, electrical engineering, electronics.
<b>Cu-PHC</b>	CW020A	C10300	Deoxidized copper with low residual phosphorus content and high electrical conductivity (> 58.0 MS/m), good formability, good weldability and solderability as well as hydrogen resistance. Application: Cable tape for power, deep-sea, special cables, electrical engineering, electronics.
<b>Cu-DLP</b>	CW023A	C12000	Deoxidized copper with reduced residual phosphorus content (P 0.005 to 0.013 %), without electrical requirements Conductivity, hydrogen resistant, good weldability and solderability. Application: Foundry technology.
<b>CuAg0,1P</b>	CW016A	C12100	Low-silver alloyed copper with high electrical conductivity (> 58.0 MS/m) and improved tempering resistance and improved creep behaviour compared to highly conductive copper. Application: Accumulator production and electronic components.
<b>Cu-DHP</b>	CW024A	C12200	Deoxidized copper with limited residual phosphorus content, very good weldability and brazing properties, hydrogen resistance and without requirements for electrical conductivity. Application: Roofing, solar technology, heat exchangers.
<b>Cu-OF</b>	CW008A	C10200	Oxygen-free copper with high purity and high electrical conductivity (> 58.0 MS/m), high demands on the hydrogen resistance, good weldability and solderability. Application: Cable tapes.
<b>Cu-OFE</b>	CW009A	C10100	Oxygen-free copper with very high purity, very high electrical conductivity (> 58.58 MS/m) and very good resistance to hydrogen. Application: Electrical engineering, electronics, vacuum technology.

# COPPER-NICKEL ALLOYS

	KME Alloy	CEN	ASTM	Applications
KME Rolled PLATES / SHEETS	<b>CuNi5Fe1Mn</b>	-	-	Alloy with good resistance against seawater, erosion and corrosion, and good weldability. Application: offshore, maritime applications.
	<b>CuNi10Fe1Mn</b>	CW352H	C70600	Alloy with good resistance against seawater, erosion and corrosion, and good weldability. Application: apparatus engineering, tube sheet plates, seawater processing, welded tubes, maritime applications, cladding.
	<b>CuNi30Mn1Fe</b>	CW354H	C71500	Alloy with outstanding resilience against seawater, erosion and corrosion (because it contains more nickel) and good weldability. Application: apparatus engineering, tube sheet plates, seawater processing, maritime applications, cladding.

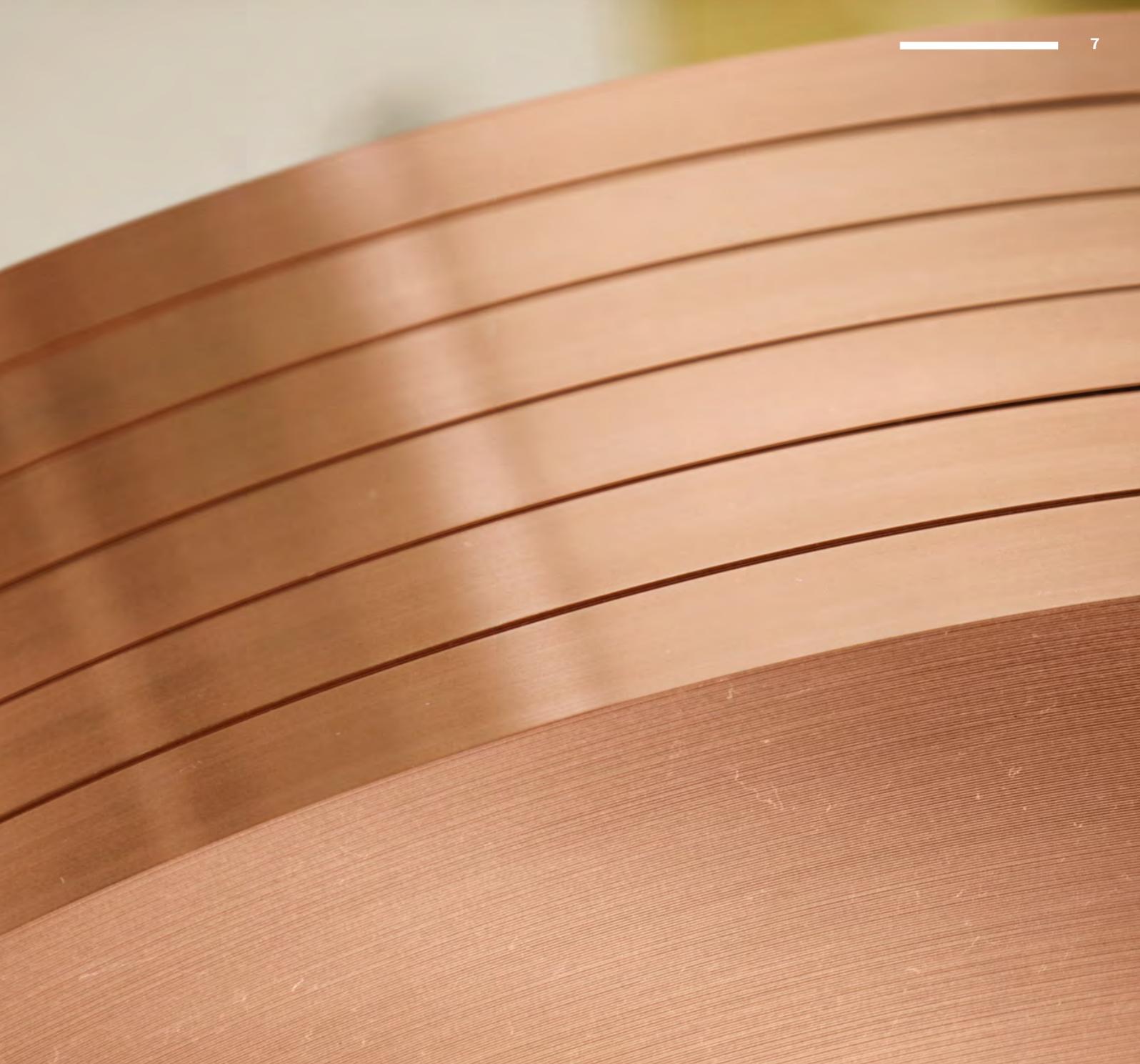


# COPPER-ALUMINIUM ALLOYS

	KME Alloy	CEN	ASTM	Applications
KME Rolled PLATES / SHEETS	<b>CuAl8Fe3Sn</b>	-	C61300	Main properties: alloys with high strengths compared with copper materials (including at higher temperatures) combined with outstanding corrosion resistance against neutrals and acids, watery media and seawater; good resilience against scaling as well as erosion and cavitation; we can gladly advise on special requirements and help you select the right alloy
	<b>CuAl8Fe3</b>	CW303G	C61400	
	<b>CuAl11Fe3</b>	-	C62400	
	<b>CuAl9Mn2</b>	-	-	Application: highly stressed bearing components, sliding strips.
	<b>CuAl10Fe3Mn2</b>	CW306G	-	Application: chemical apparatus engineering, scaling-resistant parts.
	<b>CuAl10Ni5Fe4</b>	CW307G	C63000	Application: maximum-strength parts, highly stressed bearing components, wearing parts, ship propellers, chemical apparatus engineering, tube sheet plates, maritime applications, potash industry.

# BRONZE

	KME Alloy	CEN	ASTM	Applications
KME Rolled STRIPS / PLATES / SHEETS	<b>CuSn4</b>	CW450K	C51100	CuSn4 provides an excellent combination of strength, excellent formability and hardness. It has a good electrical conductivity and corrosion resistance. Soldering and brazing properties are excellent.
	<b>CuSn5</b>	CW451K	C51000	CuSn5 provides an excellent combination of strength, excellent formability and hardness. It has a good electrical conductivity and corrosion resistance. Soldering and brazing properties are excellent.
	<b>CuSn6</b>	CW452K	C51900	CuSn6 offers an excellent combination of strength, cold formability and hardness. It is wear resistant, has good corrosion resistance and good soldering properties. Due to its high strength and good spring properties combined with good machining properties, it is used for all types of metallic contacts.
	<b>CuSn8</b>	CW453K	C52100	Compared to bronzes with a lower tin content, CuSn8 offer better corrosion resistance, combined with higher strength and good sliding properties. It is wear resistant, has excellent spring properties, good cold forming and soldering properties.



# BRASS



KME Rolled STRIPS / PLATES / SHEETS

KME Alloy	CEN	ASTM	Applications
<b>CuZn5</b>	CW500L	C21000	CuZn5 has very good cold forming properties and is well suited for e.g. coinage, beating, embossing. This alloy has a higher strength as pure copper. CuZn5 has good welding and brazing properties as well as a good corrosion resistant and is not fragile to stress corrosion and dezincification. It is principally used in jewellery, metal goods, watch industry and in electronic industry for installation parts.
<b>CuZn10</b>	CW501L	C22000	CuZn10 has very good cold forming properties and is well suited for e.g. coinage, beating, embossing. This alloy has a higher strength as pure copper. It has good welding and brazing properties as well as a good corrosion resistant and is not fragile to stress corrosion and dezincification. CuZn10 is principally used in jewellery, metal goods, watch industry and in electronic industry for installation parts.
<b>CuZn15</b>	CW502L	C23000	CuZn15 has very good cold forming properties and is well suited for e.g. coinage, beating, embossing. This alloy has a higher strength as pure copper. It has good welding and brazing properties as well as a good corrosion resistant and is not fragile to stress corrosion and dezincification. CuZn15 is principally used in jewellery, metal goods, watch industry and in electronic industry for installation parts.
<b>CuZn20</b>	CW503L	C24000	CuZn20 has excellent cold forming, good hot forming properties and is well suited for e.g. coinage, beating, embossing. This alloy has a higher strength than pure copper. CuZn20 has good welding and brazing properties as well as a good corrosion resistant and is not fragile to stress corrosion and dezincification. It is principally used in jewellery, metal goods, watch industry and in electronic industry for installation parts.
<b>CuZn28</b>	CW504L	C25600	CuZn30, as well as CuZn28 and CuZn33 is combining excellent cold forming properties with good mechanical strength. CuZn30 has good hot forming properties and excellent soldering and brazing properties. Due to the outstanding deep drawing properties CuZn30 and the other two mentioned alloys are called "deep-draw" or "cartridge" brass.
<b>CuZn30</b>	CW505L	C26000	CuZn30, as well as CuZn28 and CuZn33 is combining excellent cold forming properties with good mechanical strength. CuZn30 has good hot forming properties and excellent soldering and brazing properties. Due to the outstanding deep drawing properties CuZn30 and the other two mentioned alloys are called "deep-draw" or "cartridge" brass.
<b>CuZn33</b>	CW506L	C26800	CuZn33, as well as CuZn28 and CuZn30 is combining excellent cold forming properties with good mechanical strength. CuZn30 has good hot forming properties and excellent soldering and brazing properties. Due to the outstanding deep drawing properties CuZn33 and the other two mentioned alloys are called "deep-draw" or "cartridge" brass.
<b>CuZn36</b>	CW507L	C27000	CuZn36 is the major brass alloy for the cold forming process. Even though brasses with lower Zinc content have better cold forming properties, CuZn36 is the most used alloy. Reasons for this are on the one hand economical due to lower price of Zinc compared to Copper, on the other hand the forming properties of this alloy meet the demand of many applications.
<b>CuZn37</b>	CW508L	C27200	CuZn37 is the major brass alloy for the cold forming process. Even though brasses with lower Zinc content have better cold forming properties, CuZn37 is the most used alloy. Reasons for this are on the one hand economical due to lower price of Zinc compared to Copper, on the other hand the forming properties of this alloy meet the demand of many applications.
<b>CuZn40</b>	CW509L	C28000	CuZn40 is an economical brass alloy with high Zinc content, good forming properties and medium strength.

# COPPER-ZINC ALLOYS leaded (brass)

	KME Alloy	CEN	ASTM	Applications
KME Rolled PLATES / SHEETS	<b>CuZn39Pb0,5</b>	CW610N	C36600	Alloy with good cold and hot formability combined with adequate machinability. Application: bending, riveting, upsetting, crimping, tube sheet plates
	<b>CuZn39Pb2</b>	CW612N	C37700	CuZn39Pb2 is a alfa + beta phase alloy with a low percentage of lead in form of particles dispersed in the matrix. Due to these features, this alloy has good hot working performances and high machinability. It has limited cold formability by means of bending, riveting, crimping; good for punching. Application: Turning, drilling and milling quality, tool making, fixtures, engraved plates. It is suitable for pressing of all kinds and for all those application where high machinability precision is requested (such as watch making, fashion accessories, jewelery etc..)

## SPECIAL BRASS

	KME Alloy	CEN	ASTM	Applications
KME Rolled PLATES / SHEETS	<b>CuZn20Al2As</b>	CW702R	C68700	Alloy with arsenic to improve dezincification resistance. Application: capacitors, seawater applications, welded tubes
	<b>CuZn28Sn1</b>	-	C44300	Alloy with improved dezincification resistance and conditional seawater resistance. Application: capacitors, heat exchangers, apparatus engineering
	<b>CuZn38AlFe-NiPbSn</b>	CW715R	C47000	Alloy with higher strength combined with good machinability. Application: apparatus engineering, capacitors, heat exchangers
	<b>CuZn38Sn1As</b>	CW717R	C46400	Alloy with good corrosion-resistance. Application: capacitors, heat exchangers, apparatus engineering, cladding

Other alloys are available on request, for which we are excellently equipped with our modern alloy foundry. We can cast blocks of up to 15 tons, and finished plates can weigh up to around 10 tons depending on alloy.

[Find out more](#)

# WWW.KME.COM

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INDUSTRIAL ROLLED

