

# COPPER MOULDS

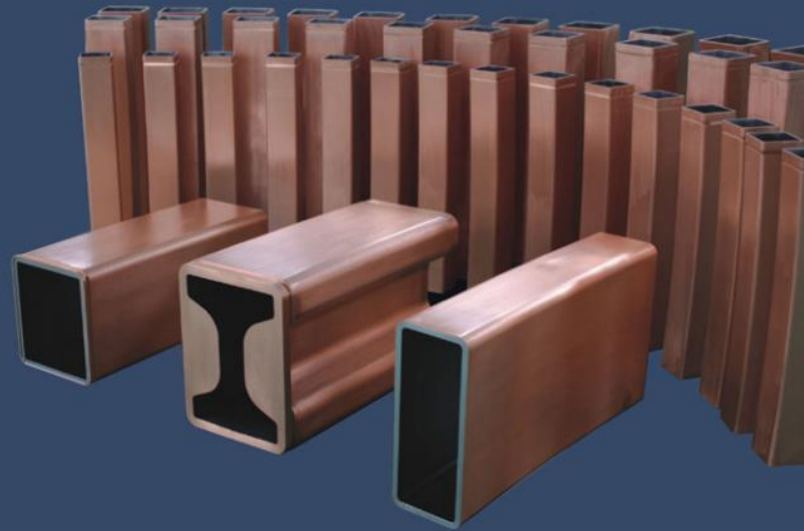
*For Better Continuous Casting Quality*



Proven Technology  
Cost Effective  
Excellent Service



赛诺钢冶金



## About Us

SMMC is the leading professional designer and manufacturer for copper mould tubes & plates. The copper moulds supplied by SMMC adopt advanced European technology. Nowadays, SMMC is the largest copper moulds supplier and exporter with more than 30% market share in domestic market and 5% in the world market. We commit to supply products with world-class quality, competitive price, flexible payment terms, speedy delivery and excellent service, and we can also give technical guidance to help our customers to reduce the cost and increase the productivity. We have got high reputation from various customers all over the world.

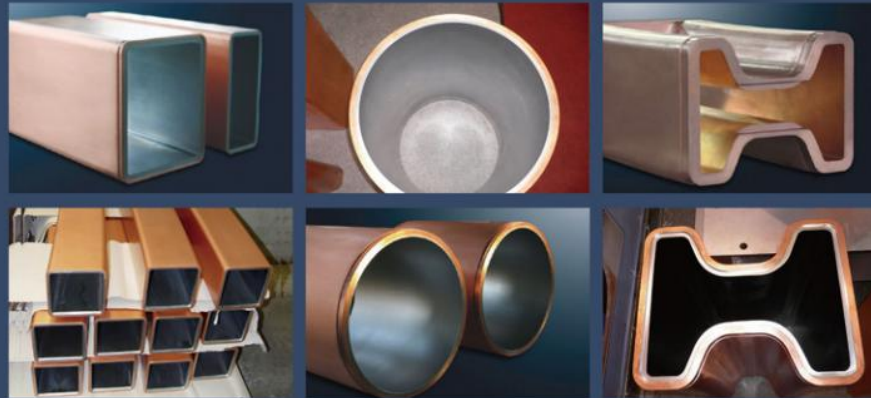
# Contents

<i>Main Products.....</i>	<i>3</i>
<i>Manufacture &amp; Supply Capacity.....</i>	<i>5</i>
<i>Quality Assurance System.....</i>	<i>7</i>
<i>Global Sales &amp; Service Network.....</i>	<i>9</i>
<i>Global Reference .....</i>	<i>10</i>
<i>Technology Advantages.....</i>	<i>11</i>
<i>Other Products Gallery.....</i>	<i>12</i>
<i>Micro-EPC for CCM.....</i>	<i>13</i>



# Main Products

## Copper Mould Tubes



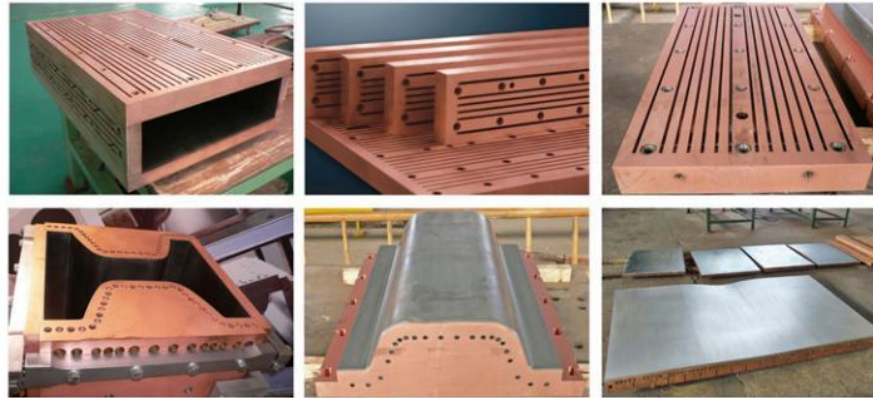
### Specification of copper mould tubes

Unit: mm

Shape items \ Section	Square	Rectangular	Round	Beam Blank
Size range	50x50~500x500	100x650~500x650	φ90-φ1200	
Length	700-1000			
Radius	R2500-R16000			
Internal geometries	parallel, single tapered, double tapered, multi-tapered, parabolic tapered			
Material	Cu-DHP (SF-Cu DIN1787), CuAg0.1, Cu-Cr-Zr			
Coating	Cr, Ni-Co-Cr			

\* We can design as per the customer's specific requirements.

## Copper Mould Plates



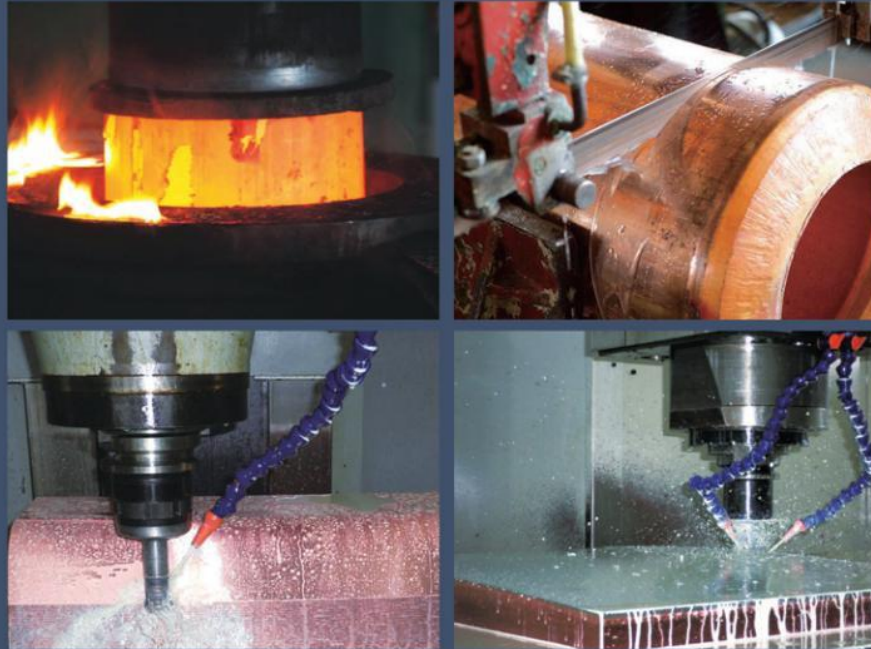
Specification of copper mould plates

Unit: mm

Copper plate type	Specifications			Material	Coating
	Length	Width	Thickness		
Beam Blank	700~1016	280~480	80~140	CuCrZr,CuAg	Ni-Co,Ni-Fe
Rectangular	700~1000	300~3800	30~65	CuCrZr,CuAg	Ni-Co,Ni-Fe



## Manufacture & Supply Capacity



**SMMC** copper moulds manufacturing plant is a completely integrated plant with capacity more than 35,000 pcs per year including copper melting and casting units, hot extrusion, hot and cold drawing machines, machining equipments, electric plating units and various inspection equipments. The fact of with the entire manufacturing process under our direct control can ensure our product quality also the delivery time.



1. 3000T vertical hydraulic press
2. 1250T horizontal hydraulic extrusion machine
3. DEG3+2 CNC machine center
4. 3T Vacuum copper melting furnace
5. Electric plating bath

	2
1	3
5	4

# Quality Assurance System

## Production Process Control

- The physical and chemical index of raw material, accessories and process product is inspected by quality inspection department.
- Inspection of product appearance and dimension is composed of self-checking, next process cross-checking and quality inspection department supervising and checking.
- The production process index proceeds strictly as per production regulation and is controlled by PLC, meantime, PLC will feedback the process index situation to technical and quality inspection department for supervising, to guarantee the product quality.

## Quality System Control

- Management delegates and quality inspection department organize internal examine every year to supervise and check system running status.
- Second party inspection is carried out by end user.
- Third party inspection is carried out by certification authority.
- Packing and logistic is farmed out to other companies, and strictly execute as per contract items.
- We have specific after-sale people to check our product performance and feedback the problems to us for improving.





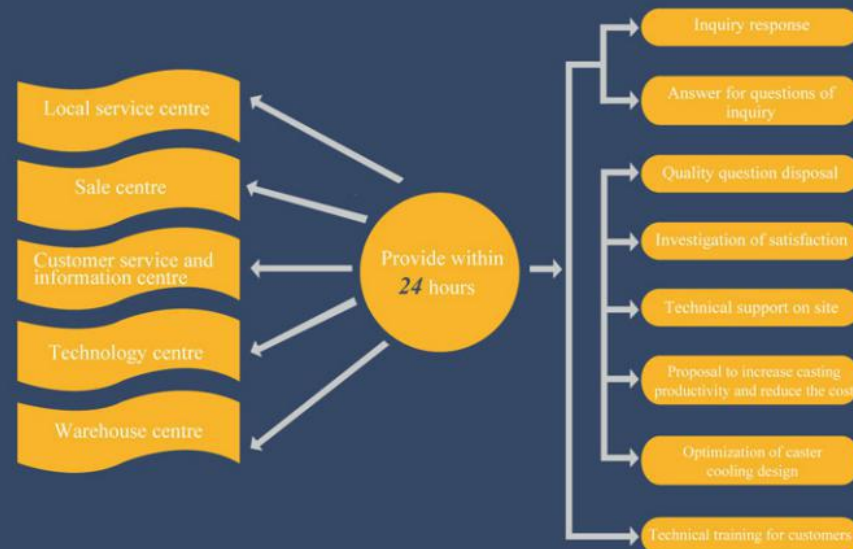
## Production Process Control

Material	Unit	Cu-DHP	Cu-Ag	CuCrZr
Chemical analysis	%	P 0.015~0.040	Ag 0.08~0.12 P 0.004~0.012	Cr 0.30~1.20 Zr 0.03~0.30
<b>Physical properties</b>				
Conductivity	%IACS	83	93	80
Thermal conductivity	w/mk	340	377	330
Coefficient of thermal expansion 20-300 °C	10-6/k	17.7	17.7	18
Temperature for recrystallization	°C	350	370	700
Soften temperature	°C	-	-	500
Flexible modulus	103N/mm2	120	125	128
<b>Mechanical properties</b>				
RP 0.2	N/mm2 AT20 °C 200 °C 350 °C 500 °C	285 250 195 30	275 245 190 30	350 335 295 185
Tensile strength	N/mm2 AT20 °C 200 °C 350 °C 500 °C	295 255 200 90	285 245 195 90	425 420 340 210
Prolongation rate A5	% AT20 °C 200 °C 350 °C 500 °C	20 9 10 40	17 13 10 40	20 18 19 20
Hardness	HB 20 °C	90-105	85-100	130



# Global Sales & Service Network

We have set up 30 branch companies and offices in 25 countries, granted nearly 100 authorized agents around the world, established service network composed of more than 100 websites, formed global marketing and service system.





## Global reference

We had exported copper mould tubes/plates to various countries last decades such as Germany, Italy, Greece, Poland, Russia, Turkey, Brazil, Venezuela, Colombia, India, Thailand, Philippine, Egypt, Saudi Arabia, Syria, Pakistan, South Africa, etc.

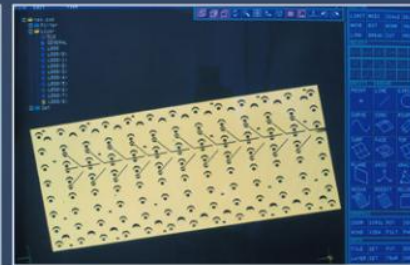


## Technology Advantage

- ◆ We have established strategic relationship with the renowned CCM R&D institutes in China for technical collaboration.
- ◆ We have an excellent design team which consists of more than 50 core engineers and designers. We have strong ability to develop products of various materials and sizes.



- ◆ We adopt Advanced Mould Machining Software TEBIS for programming to realize complete automatic machining for guaranteeing the process accuracy.





## Others we can supply

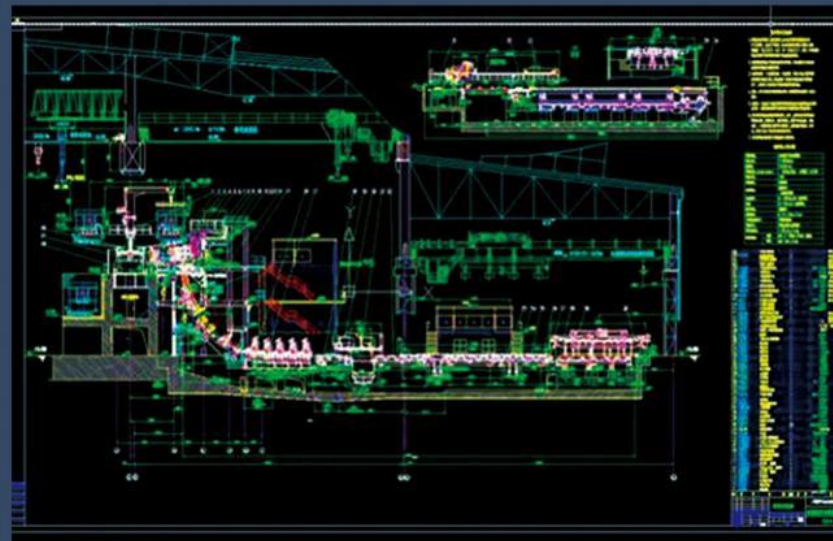


1. Ladle and ladle car	7. Slab mould assembly
2. EMS	8. Segment
3. Tundish	9. Mould assembly
4. Water jacket	10. Withdrawal straightening machine
5. Oscillator	11. Ladle turret
6. Dummy bar and storage device	12. Torch cutting machine

## Micro-EPC for CCM

**SMMC** is the leading professional continuous caster designer and manufacturer with technology know-how. We are professional in providing the best solutions to satisfy all the requirements of our customers. We are dedicated to help our customers all over the world get the best performance with the lowest cost.

Micro-EPC for entire continuous casting production line



## Technical specification of continuous caster

Description	Parameter
Machine type	whole arc continuous caster
Arc radius	4.5-16.5m continuously straightening
Strands	1-10 (depend on the continuous casting process)
Billet section	100X100mm-240X240mm, Φ110mm-Φ330mm, rectangular with any size
Length of billet cut-to-length	3-12m
Steel type	carbon steel, low alloy steel, high quality carbon steel, high alloy steel, stainless steel, bearing steel etc.
Strand distance	1200-1500mm (depend on the continuous casting process)
Casting speed	0.5-3.6 m/min (depend on the continuous casting process)
Dummy bar	rigid, flexible
Cooling type	whole water cooling, air and water atomization cooling
Oscillation type	mechanical oscillation (semi board spring, whole board spring), hydraulic oscillation, sinusoidal oscillation, non-sinusoidal oscillation
Billet cut-to-length type	infrared camera+torch cutting machine
Straightening type	whole water cooling continuously straightening machine
Cutting type	pneumatic synchro fastening, pneumatic return motorless automatic torch cutting machine, double transmission automatic torch cutting machine
Roller bed	whole water cooling transporting roller bed