

SOFIA MED



EXTRUDED COPPER PRODUCTS

EXTRUDED AND DRAWN COPPER PRODUCTS

SOFIA MED

Sofia Med is a producer of a wide range of rolled and extruded copper and copper alloy products such as sheets, strips, plates, circles, disks, bare and plated copper bus bars, rods, profiles, components, fabricated parts and wire that are used in a wide variety of building and industrial applications.

Sofia Med is part of the ElvalHalcor Hellenic Copper and Aluminium industry S.A., a leading global manufacturer of aluminium and copper rolled and extrusion products.

Sofia Med is situated in Sofia, Bulgaria, on a 250 000 m² area and has three production units: Foundry, Rolling and Extrusion.

With more than 80 years of manufacturing experience and significant investments, **Sofia Med** has evolved into a competitive modern European company with customers globally.

Sofia Med operates under strict quality, environmental, as well as health and safety management systems, in compliance with ISO 9001:2015, IATF 16949:2016, ISO 14001:2015, OHSAS 18001:2017, ISO 50001:2011, as well as follows the guidelines of ISO 26000:2010 for social responsibility.

The wide product range of **Sofia Med** meets the requirements of the Unified European standards (EN), as well as BS, DIN, ASTM, JIS standards, or any other specific customer request.

GENERAL APPLICATIONS

The extruded copper products find wide application in electrical engineering equipment, decoration, mechanical engineering equipment and rain gutters.



GENERAL PROPERTIES

PHYSICAL PROPERTIES OF PURE COPPER

Density (g/cc)	8,96
Thermal Conductivity (W/cm °K)	4,01
Specific Heat (J/g °K)	0,38
Coefficient of linear thermal expansion / K ⁻¹	16,5E ⁻⁶
Atomic Mass Average	63,546
Melting Point	1357,75 °K 1084,6 °C 1984,3 °F

MECHANICAL PROPERTIES ACCORDING TO EN 13601

Alloy	Temper	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Hardness (HB)	Conductivity (MS/m)
Cu-ETP	D (Hard as drawn)	-	-	-	-	56 min
	H035	-	-	-	35 - 65	58 min
	R200	200 min	120 max	25 min	-	58 min
	H065	-	-	-	65 - 90	58 min
	R230	230 min	160 min	-	-	58 min
	R250	250 min	200 min	8 min	-	58 min
	H085	-	-	-	85 - 110	57 min
	R300	300 min	260 min	5 min	-	57 min
	H100	-	-	-	100 min	57 min

GENERAL SPECIFICATIONS

Extruded and subsequently drawn rod sections or flats are manufactured from controlled raw materials, applying state-of-the-art production methods, which guarantee top quality products.

Their chemical, physical and mechanical properties, tolerances and/or limitations comply to variety of standards, as for example EN 13601, JIS H 3250/JIS H 3140, ASTM B 187. Their production is monitored throughout all stages with the application of management system certified by Lloyds Register as complying with the requirements of standards ISO 9001:2015.



GENERAL PROPERTIES

ACCORDING TO ASTM B 187						
Alloy	Temper	Rod & Bar (mm)	Rm, Mpa	Elongation (%)	Hardness (HV)	Conductivity (MS/m)
Cu-ETP	O60	All sizes	195 - 255	25 min	57 max	58 min
		For rod: Up to 10 incl.	310 - 410	12 min	-	56 min
		Over 10 to 25 incl.	275 - 380	12 min	89 min	56 min
		Over 25 to 50 incl.	240 - 345	15 min	83 min	56 min
	H04	Over 50 to 75 incl.	230 - 330	15 min	71 min	57 min
		Over 75	205 - 330	15 min	-	-
		For bar: Up to 10 incl. thickness and up to 110 incl. in width	260 - 345	10 min	89 min	56 min
		All other sizes	230 - 345	15 min	71 min	57 min

ACCORDING TO JIS H 3250					
Alloy	Temper	Rod & Bar Strength (mm)	Tensile Strength (MPa)	Elongation (%)	Conductivity (%IACS)
Cu-ETP	O	6 or over up to and incl. 110	195 min	30 min	100 min
		6 or over up to and incl. 25	245 min	15 min	
	½ H	over 25 up to and incl. 50	225 min	20 min	98 min
		over 50 up to and incl. 75	215 min	25 min	
	H	25 or over up to and incl. 50	245 min	-	97 min

ACCORDING TO JIS H 3140					
Alloy	Temper	Rod & Bar Strength (mm)	Tensile Strength (MPa)	Elongation (%)	Conductivity (%IACS)
Cu-ETP	O	2.0 or over up to and incl. 30	195 min	35 min	100 min
	¼ H	2.0 or over up to and incl. 30	215 - 275	25 min	98 min
	½ H	2.0 or over up to and incl. 20	245 - 315	15 min	98 min
	H	2.0 or over up to and incl. 10	275 min	-	97 min

COPPER FLATS

IN STRAIGHT LENGTHS

Bus bars, with sharp, round or full radius edges, in standard straight lengths from 3000 to 5000 mm and tempers from R230 to R300, including all intermediate tempers.

Thickness (mm)**	from 1,5 to 60 mm
Width (mm)	from 10 to 250 mm
Packing	On pallets and or wooden cases of about 500 kg or 1000 kg

Available in imperial sizes and other lengths upon agreement.
** Maximum thickness could be 60 mm with restrictions with respect to width.

IN COILS

Bus bars, with sharp, round or full radius edges; from R200 to R300, including all intermediate tempers.

Temper	Thickness (mm)	Width (mm)	Packing
Soft/Half hard/Hard R200 - R300 incl. all intermediate tempers	1,5 - 8 COD: max. 1400 mm CID: 500 mm	15 - 100	In coils on wooden pallets



COPPER BARS/RODS

EXTRUDED		
	Dimensions (mm)	Length (mm)
Round	30 ÷ 160	1500 - 5000*
Square	30 ÷ 115	1500 - 5000*
Hexagone	40 ÷ 100	1500 - 5000*
Packing	On pallets and wooden cases of about 500 kg.	
<i>*not available for all dimensions</i>		

DRAWN IN STRAIGHT LENGTHS		
	Dimensions (mm)	Length (mm)
Round (mm)	3 ÷ 80	3000 - 5000
Square (mm)	5 ÷ 60	3000 - 5000
Packing	On pallets and wooden cases of about 500 kg.	
Available in imperial sizes and other lengths upon agreement.		

COPPER WIRES

APPLICATIONS

Copper wire is used for the production of wires used in telecommunications and electric power transmission, as well as for magnet wires.

SPECIFICATIONS

The Cu-ETP wire is produced in compliance to specification EN 13601.

PHYSICAL PROPERTIES	
	Cu-ETP
Density	8,94 g/cm³
Melting point	1.083 °C
40 - 100Linear expansion coefficient	0,0165 mm/°C m.
Thermal conductivity	3,9 W/cm °K
Electrical resistivity	17,241 mΩ mm²/m or lower
Conductivity	58,0 Siemens (m/Ωmm²) ≥ 101% IACS

Mechanical Properties

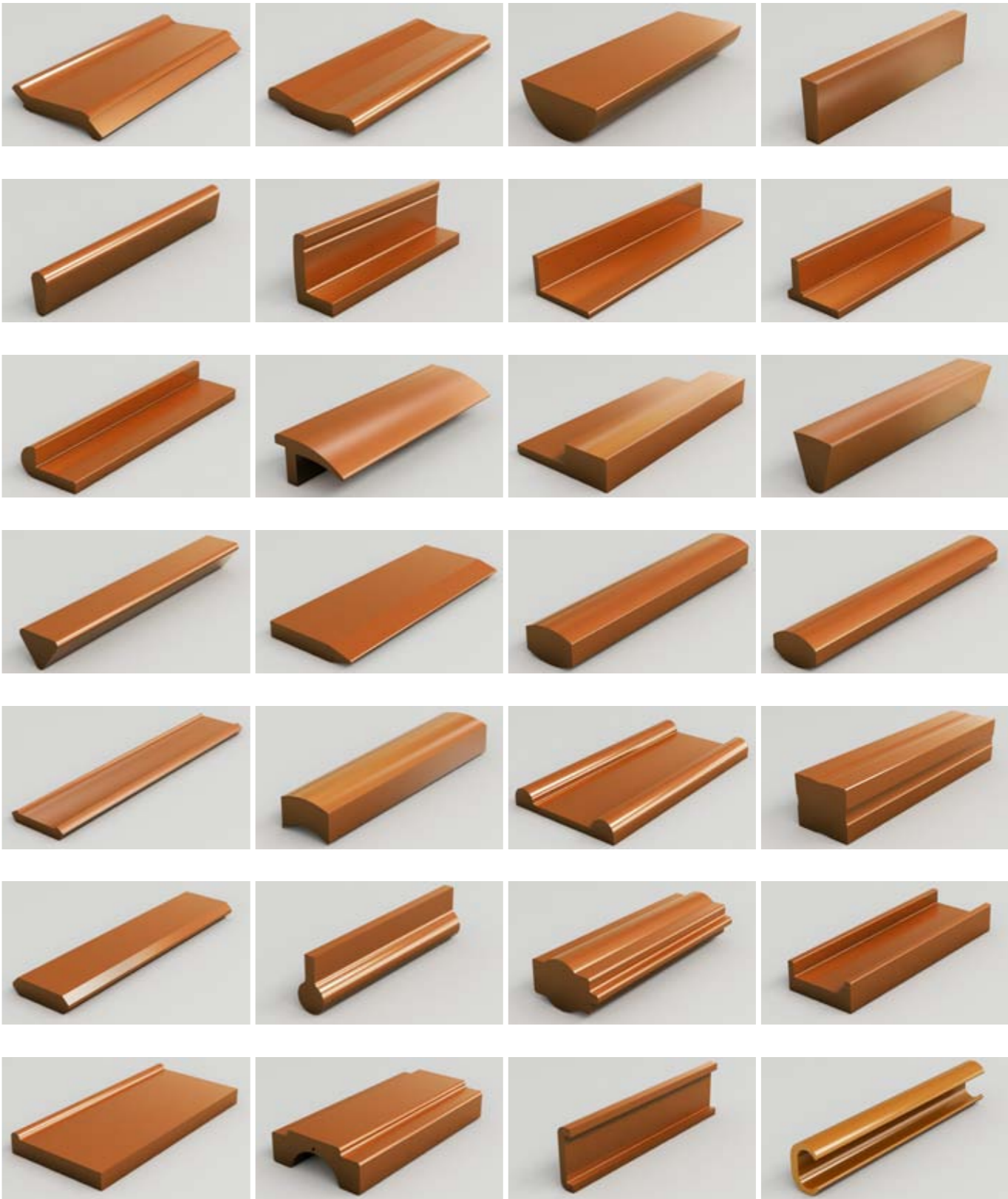
Modulus of elasticity	120 GPa
Tensile strength	> 240 N/mm²
Elongation	min 35%

Dimensions

Diameter (mm)	2,0 +/- 8,0 mm
Packing	Free coiled coils

COPPER PROFILES

Cooper profiles are tailor-made and are produced as per specificattions and requirements, provided by the customers.



TIN AND SILVER PLATED COPPER BUS BARS

Tin-plated, electrolytic silver plated and silver flash plated copper bus bars are extensively used in the production of electrical panels, switchboards, switchgears, power transformers and bus ducts. **Sofia Med** produces high quality plated copper bus bars via tin and silver electrolytic processes as per International Standards such as EN, JIS, BS and ASTM, or as per other customer requirements.

TIN ELECTROLYTIC PROCESS

In-house tin-plating to produce bright tin deposit with:

- Excellent solderability characteristics
- Constant deposit properties
- Uniform, bright appearance

Coating material: tin anode with 99,9% purity and above
Coating thickness: 3-30 microns and as per customer requirement
Quality test certificate: adhesion test, tin thickness test

SILVER ELECTROLYTIC PROCESS

In-house silver electrolytic process designed to produce bright silver deposits, white and levelled.

Coating material: silver anode with 99,9% purity and above
Coating thickness: 0,5-30 microns and as per customer requirement
Quality test certificate: adhesion test, Ag thickness test

SILVER FLASH PROCESS

In-house silver flash process with the following deposit properties:

- Smooth, fine grained
- Low porosity
- Consistent solderability

Silver deposit purity: 99,8 - 99,9%
Coating thickness: from 0,00001" and as per customer requirement
Quality test certificate: adhesion test, Ag thickness test

Anti-tarnish treatment is available upon request.

COPPER COMPONENTS

Components	Thickness: 2 - 15 mm Width: 10 - 160 mm
CNC Bending	Width of bus bars: 10 - 160 mm Thickness of bus bars: 3 - 15 mm Max. bending radius: 15 mm
CNC Punching	Width of bus bars: 10 - 160 mm Thickness of bus bars: 3 - 15 mm
CNC milling machine	Working area: 600 x 1200 mm 24 tool holder
Tin and silver surface plating of bus bars and components	upon request

Sofia Med offers components from copper bus bars and profiles according to customer drawings. The realization of the customers' requirements is ensured by technical know-how and an adapted machine park. With sophisticated logistics we ensure the consistent quality of the products. The components can also be coated in silver or tin upon request.

- COMPONENTS ALLOYS:**
Cu-ETP - SM1100
Cu-PHC - SM1030
Cu-DHP - SM1220
Cu-OF - SM1010



BARE COPPER

PLATED COPPER



OUR SALES CONTACTS:

BULGARIA: SOFIA MED SA

4 Dimitar Peshev str., Gara Iskar
1528 Sofia
Iliana Nikolova
Tel.: +359 2 9606 209
Mob.: +359 894 752287
inikolova@sofiamed.bg

UK/IRELAND: METAL AGENCIES Ltd.

Suite 4, Cobb House
2-4 Oyster lane, Byfleet
Surrey KT14 7DU
Mark O'Rorke
Tel.: +44 1932 33 1111
Mob.: +44 7775 927968
mororke@metalagencies.vionet.gr
Damian Monk
Tel.: +44 (7767) 475 815
Mob.: +44 7775 927968
dmonk@metalagencies.vionet.gr

FRANCE: REYNOLDS CUIVRE S.A.s

1 rue Francois Jacob
92500 Rueil-Malmaison
Thomas Potier
Tel.: +33 155 472468
Mob.: +33 30 423495
thomas.potier@reynolds-cuivre.fr
Vincent Lebreton
Tel.: +33 155 472461
Mob.: +33 633 790846
vincent.lebreton@reynolds-cuivre.fr

ITALY: ALURAME

Via A.Stradivari, Milano
Marco Avanzi
Tel.: +39 02 971 78140
Mob.: +393 440 881 119
mavanzi@alurame.vionet.gr

GERMANY, BELGIUM, NETHERLANDS:

TEPRO METAL AG

Ursulastraße 33-41, 50354 Hürth
Ilona Krause
Tel.: +49 7457 948 343
Mob.: +49 172 2507123
ikrause@teprometal.vionet.gr
Frank Mostert
Mob.: +49 162-6243591
fmostert@teprometal.vionet.gr

MKC Metall KundenCenter GmbH

Ursulastraße 33-41, 50354 Hürth
www.metallkc.de
Rolled/Roofing products:
i.V. Jörg Reichelt-Quadt
Tel.: +49 / (0) 2233 / 3962 - 330
joerg.reichelt-quadt@metallkc.de
Extruded products:
i.V. Volker Nickel
Tel.: +49 2233 3962 - 310
Fax.: +49 2233 3962 - 319
volker.nickel@metallkc.de

SOUTH KOREA:

STAR MECHATRONIX CORP.

RM 822, U-Tong Ctr, 109
YeongDeungPo-Ro, Y.D.Po-Ku
07264 Seoul
Woowon Kim
Tel.: +82 2 2671 4311
Mob.: +82 10 4275 9191
starmec@naver.com

HONG KONG/CHINA/TAIWAN:

TEPRO METAL AG

(Asia representative office)
HSE 1 Jade View Villa, No.20 Tsing Tai Road
Tuen Muen, New Territories
HONG KONG
Ederson Chen
Tel.: +852 26188572
Mob.: +852 63487695, +8618666418197
echen@sofiamed.bg

SINGAPORE/THAILAND/MALAYSIA

Eztechnik Pte. Ltd.
3791 jalan Bukit Merah #07-04
E-Centre @ Redhill
Singapore 159471
Remy Choo
Tel.: +6562721221
Mob.: +65 93836825
remy.choo@eztechnik.com

RUSSIA:

TEPRO METALL AKTIENGESELLSCHAFT REPRESENTATION OFFICE MOSCOW

Leninskij Prospekt 158, office 306,
119571 Moscow
Viktor Wanzowitsch
Tel.: +7 916 208 32 19
vwanzowitsch@inbox.ru

ROMANIA: STEELMET ROMANIA S.A.

42 Drumul intre Tarlale street
3rd district, 032982 Bucharest
Tel.: + 40 21 2090570
Fax: + 40 21 256 1464
office@steelmet.ro
www.steelmet.ro

TURKEY: BASE METAL

Barbaros Mah. Sarkac Sok. No:1 D:46
My Prestige Atasehir Istanbul
Can Savaş
Tel.: +90 216 688 76 40-44
Fax: +90 216 688 76 18
info@base-metal.com.tr
csavas@base-metal.vionet.gr
www.base-metal.com.tr

USA: CPW AMERICA CO

10497 Town & Country Way, Suit,
77024 Houston
Dimitar Dimitrov
Tel.: +35929606235
Mob.: +359894752235
dmdimitrov@sofiamed.bg



SOFIA MED

4 Dimitar Peshev str.
Gara Iskar, 1528 Sofia
BULGARIA
Tel.: +359 2 960 6209
Fax: +359 2 960 6393
e-mail: info@sofiamed.bg
www.sofiamed.bg