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# 4

/ Our company

## Ural Mining and Metallurgical Company

Ural Mining and Metallurgical Company was established on 20th of October 1999. Key assets of the UMMC-Holding are accumulated in mining industry, non-ferrous metallurgy and machinery. The framework of the Company is an integrated copper production process flow from ore mining to ready copper products such as copper wire rod, rolled products, cables and conductors, radiators, etc. UMMC holds strong position at the markets of zinc, lead, precious and rare-earth metals. UMMC-Holding Corp. manages UMMC Group's key assets.

The mission of the UMMC is to improve competitiveness of domestic industry due to the effective business

operation, and to promote the maximum realization of human potential and improve life of our citizens thanks to responsible attitude to our own staff and society in whole.

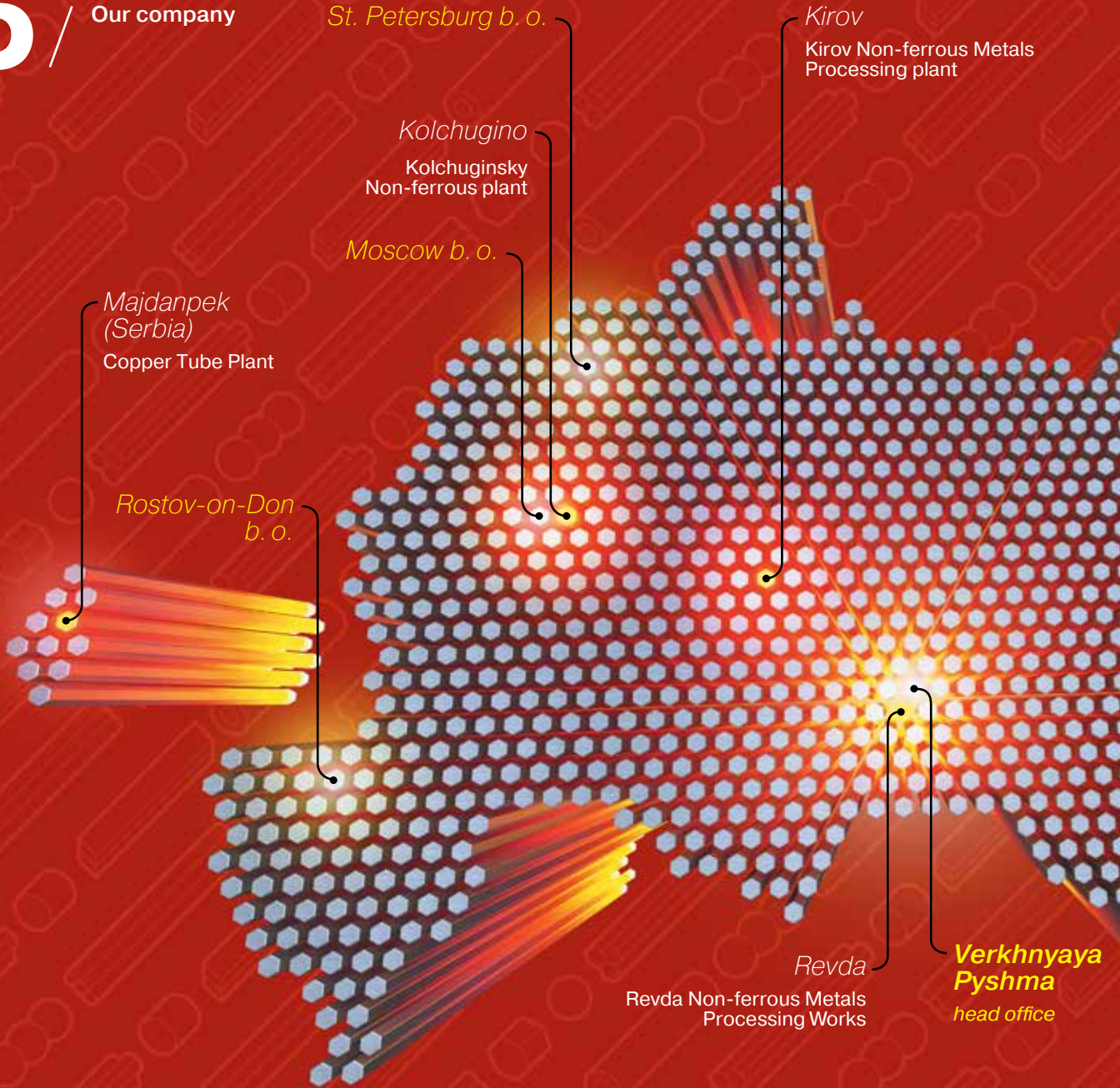
Annually the company invests dozens of billion rubles in technical re-equipment, extension of raw material stock base, raising of production rate of final commodities and development of new start-up businesses. All these are achieved through corporate management, quality control systems, environmental regulations and international accounting standards opening a gate to world capital markets.



  
**УГМК**  
UNION

# 6

## Our company



# UMMC-Non-ferrous Metals Processing

On May, 4 2007 UMMC-Non-ferrous Metals Processing was set up as a division, which incorporated assets of semi-fabricating enterprises, currently managing the following plants: JSC "Kirov Non-ferrous Metals Processing plant" and JSC "Kolchuginsky Non-ferrous plant" (JSC "Kolchugsvetmet"). In addition to the products of the above mentioned plants UMMC-Non-ferrous Metals Processing supplies rolled products of JSC "Revda Non-ferrous Metals Processing Works"

and "Copper Tube Plant" Majdanpek (Fabrika Bakarnih Cevi Majdanpek, Serbia) including copper tubes for water supply, heating, air conditioning and cooling equipment.

Our plants manufacture almost whole range of copper, brass, bronze, copper sulfuric, nickel rolled products: plates, sheets, strips, bands, rods, tubes, buses and conductors.

# 8

/ Our plants

## Kirov Non-ferrous Metals Processing plant

JSC “Kirov Non-ferrous Metals Processing plant” was established on January 12, 1965. It produces plates, sheets, strips, rods, pipes and wire made of copper and its alloys.

Under the plan of technical reinforcement, the enterprise carries out large-scale work on reconstruction, upgrading, purchasing and installation of new equipment, actively masters new technologies and applies new kinds of products. Production modernization 5-year program, the total cost of which exceeds €30 million, has been finished. Within its framework the advanced equipment of international standard was set up and put into operation: vertical continuous casting line of copper, brass and bronze strip by “SMS Meer”, universal reversing mill of cold-rolled mill products “Kvarto-160” by “Danieli Fröhling”, length cutting line and line of extra fine strips packing by «Burghardt+Schmidt», the line of horizontal high convective annealing of extra fine strips by «Otto Junker». Implementation of the up-to-date equipment gives to the UMMC-Non-ferrous Metals Processing company the possibility to produce high quality nonferrous mill products with advanced requirements to the accuracy of geometrical dimension

and mechanical properties in the form of sheets and strips with thickness to 25 microns from copper and copper alloys, and in a range of the most demanded thickness in the market.

Quality management system is certified in compliance with ISO 9001:2008.





# Copper Tube Plant

“Copper Tube Plant” Majdanpek (Fabrika Bakarnih Cevi Majdanpek, Serbia) is the main European partner of UMMC NFMP, was started up in 1979. It specializes on production of copper tubes for water supply, heating, air-conditioning and cooling systems.

The products of the company are widely recognized all over the Europe due to its high quality ensured by modern equipment and the up-to-date technologies.

Perfect technical features of Majdanpek copper

tubes were approved by such worldwide renowned certification authorities as KITEMARK, KIWA, ITS, BSI, DVGW. Quality management system ISO 9001:2000 is certified by British Standards Institution (Certificate No. 86683).

Manufacturing, marking and packaging of the products are performed in accordance with world and national standards EN, ASTM and GOST.



# 10 / Our plants

## Kolchuginsky Non-ferrous plant

JSC “Kolchuginsky Non-ferrous plant” (JSC “Kolchugsvetmet”) was established on May, the 6th, 1871.

Today, the plant applies the equipment allowing to produce over 80 000 types and dimensions of products, such as pipes, rods and wire of 95 grades of brass, copper, bronze and nickel alloys in accordance with Russian and international standards.

Quality management system certified in compliance with DIN EN ISO 9001:2008 (GOST R ISO 9001-2008) is successfully implemented at JSC “Kolchuginsky Non-ferrous plant”.

The production applied in automotive, electrical power engineering, shipbuilding and construction industries.

The plant is provided with all types of industrial utilities, environmental facilities, transport and storing facilities with extended infrastructure.



# Revda Non-ferrous Metals Processing Works

JSC “Revda Non-ferrous Metals Processing Works” was established in 1941.

UMMC-Non-ferrous Metals Processing company and JSC “Revda Non-ferrous Metals Processing Works” are connected by the old relations of partnership. UMMC-Non-ferrous Metals Processing company is the main consumer of JSC “Revda Non-ferrous Metals Processing Works” products.

Nowadays plant’s facilities allow to produce tubes, rods, wire, structural copper, brass, bronze, copper-nickel and nickel alloys of various wall thickness and diameters, length and shape (round, rectangular, square, hexagonal, flat oval, etc.) of high production precision and quality of machined surface.

In 1996, the plant was one of the first to certify quality management system and received a certificate of English company “Lloyd’s Register Quality Assurance”. Today, quality management system MS ISO 9001:2000, environmental management system MS ISO 14001:2004 and labor protection and safety management system OHSAS 18001:1999 are effectively operated at the plant.



# 12

Flat  
rolled  
products

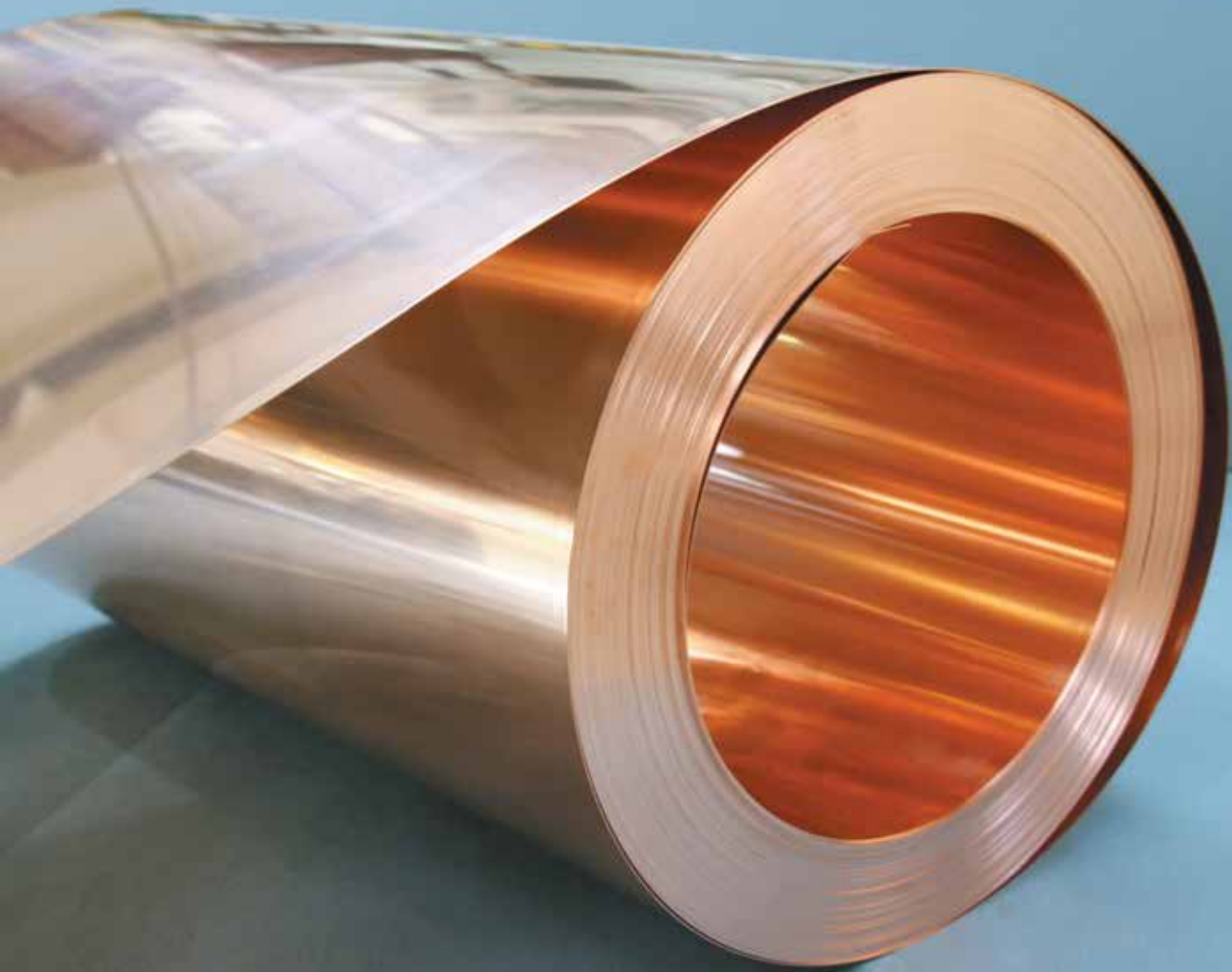
## Strip / Sheethot-rolled / Platehot-rolled

|                        | Thickness<br>mm | Width<br>mm              | Length<br>mm      | Alloy           |
|------------------------|-----------------|--------------------------|-------------------|-----------------|
| <b>Strip</b>           | 0.5–0.8         | 250<br>280<br>300<br>330 | 600<br>660<br>670 | Copper          |
| <b>Sheethot-rolled</b> | 0.5–25.0        | 60–1000                  | 500–3000          | Copper<br>Brass |
| <b>Strip</b>           | 0.19–2.0        | 12–600                   |                   | Copper<br>Brass |
| <b>Platehot-rolled</b> | 26–150          | 150–1200                 | 600–2500          | Copper<br>Brass |

### Applications

- electronics industry
- machinery, automotive industry, radio engineering and electronic industries, construction
- heat exchangers
- roof decks
- various types of applications

! All products are made in accordance with Standard. Dimensions to customer specification possible



# 14

Extruded  
and drawn  
products

## Rod

### Rod

OD  
mm

3.0–160.0

Alloy

Copper  
Copper-nickel  
Brass

## Applications

- machinery, automotive industry
- electrical motors and generators

- automotive components
- various types of applications

! All products are made in accordance with Standard. Dimensions to customer specification possible



# 16

Extruded  
and drawn  
products

## Tube

### Tube

OD  
mm

1.2–180.0

Wall thickness  
mm

0.25–60.0

Alloy

Copper  
Copper-nickel  
Brass  
Bronze

## Applications

- power industry, chemical industry, petrochemical industry, general machinery, automotive industry, radio engineering and electronic industries, construction
- capillary tubes
- air conditioning and refrigeration
- thermal units, radiators
- waveguide tube (waveguides)
- plumbing systems
- water heaters, boilers and district heating systems
- manufacturing tube fittings
- high frequency cables
- electrical conductors and cable shoes
- various types of applications

! All products are made in accordance with Standard. Dimensions to customer specification possible





# 18

Extruded  
and drawn  
products

## Wire / Busbar

**Wire**

Width  
mm

0.54–1.9

Thickness  
mm

10.0

Alloy

Copper

**Busbar**

40–120

Copper

### Applications

- electrical industry, instrumentation
- switchboards

- power distribution panels
- various types of applications

! All products are made in accordance with Standard. Dimensions to customer specification possible



# 20

## Warehousing

Technical equipment of our warehouse allows carrying out loading operation in the shortest possible time.

Each type of product has its own appropriate package, anticipating customers' wishes. Packing shall comply with national standard GOST and TOR, as well as high demands of foreign customers, in accordance

with international requirements and standards. Upon the request of the client, a special packaging may be agreed, providing enhanced protection against external adverse effects.

*! All products are made in accordance with Standard. Dimensions to customer specification possible*



# 22

## Specification Flat rolled products

| Product name | Alloy | Width<br>mm | Thickness<br>mm | Length<br>mm | Standard | Temper |
|--------------|-------|-------------|-----------------|--------------|----------|--------|
|--------------|-------|-------------|-----------------|--------------|----------|--------|

### Strip

|                                      |  |   |                               |                           |                    |                           |
|--------------------------------------|--|---|-------------------------------|---------------------------|--------------------|---------------------------|
| Copper,<br>brass strip               | Cu-ETP<br>Cu-DHP   | 12–600  | 0.19–0.40                     | –                         | EN 1652            | Soft<br>Half hard<br>Hard |
|                                      | Cu-ETP<br>Cu-DHP<br>Cu-DLP<br>CuZn37<br>CuZn33<br>CuZn30 | 12–600<br><br><br><br>20–600                  | 0.30–0.45<br><br><br>0.50–2.0 |                           |                    |                           |
| Copper strip                         | Cu-DHP<br>CuZn0.5  | 250    280<br>300    330<br>600    660<br>670 | 0.50–0.80                     | –                         | EN 1652<br>EN 1172 | Half hard                 |
|                                      | Cu-ETP<br>Cu-DHP<br>CuZn37                               | 60–600<br><br>100–1000                        | 0.5–10.0<br><br>7.0–25.0      | 500–2000<br><br>1000–3000 | EN 1652            |                           |
| Copper,<br>brass hot-rolled<br>sheet | Cu-ETP<br>Cu-DHP<br>CuZn37                               | 60–600<br><br>100–1000                        | 0.5–10.0<br><br>7.0–25.0      | 500–2000<br><br>1000–3000 | EN 1652            | Soft<br>Half hard<br>Hard |
| Copper,<br>brass hot-rolled<br>plate | Cu-ETP<br>Cu-DHP<br>CuZn37                               | 150–1200                                      | 26–150                        | 600–2500                  | EN 1652            |                           |

| Product name | Alloy | OD<br>mm | Wall thickness<br>mm | Standard | Temper |
|--------------|-------|----------|----------------------|----------|--------|
|--------------|-------|----------|----------------------|----------|--------|

## Tube

|                     |                 |        |          |          |                         |
|---------------------|-----------------|--------|----------|----------|-------------------------|
| Copper drawn tube   | C12000          | 6–16   | 0.75–2.0 | ASTM B68 | O50, O60                |
|                     | C12200          | 17–24  | 0.8–2.0  | ASTM B75 | H58, H80, O50           |
|                     |                 | 25–30  | 1.0–2.0  |          |                         |
|                     | C12200          | 25–30  | 2.1–3.5  | ASTM B88 | H58, O50, O60           |
|                     |                 | 31–55  | 1.0–2.0  |          |                         |
|                     |                 | 31–55  | 2.1–3.5  |          |                         |
|                     | SF-Cu<br>E-Cu57 | Cu-DHP |          |          | ASTM B111<br>ASME SB111 |
| ASTM B280           |                 |        |          |          | O60                     |
| DIN 17671           |                 |        |          |          | F22, F30                |
| ACRthin-walled tube | C12200          | 6–16   | 0.5–0.7  | EN 12451 | R200, R290              |
|                     |                 |        |          | EN 12449 | R200, R290              |
|                     | Cu-DHP          |        |          | EN 12735 | Y040                    |

# 24

## Specification Extruded and drawn tubes

| Product name  | Alloy                      | OD mm     | Wall thickness mm | Standard                                  | Temper |
|---|----------------------------|-----------|-------------------|---|--------|
| ACR tube<br>in coils LWC  | C12000                     | 6–10      | 0.75–1.5          | ASTM B68                                  | O60    |
|   | C12200                     | 12–19     | 0.75–1.65         | ASTM B280                                 | O60    |
|   |                            |           |                   | ASTM B88                                  | O60    |
| ACR tube  | Cu-DHP<br>C12000<br>C12200 | 4.5–22.23 | 0.35 –2           | ASTM B-280.<br>ASTM B-359M                |        |
| Copper tube<br>in coils<br>pancakes   | C12200                     | 6–10      | 0.75–1.5          | ASTM B280                                 | O60    |
|   | C12200                     | 12–19     | 0.75–1.5          | ASTM B88                                  | O60    |
| Copper<br>capillary tube,<br>for refrigeration<br>and instrument<br>engineering | Cu-DHP<br>C12000<br>C12200 | 1.2–2.75  | 0.35–1.6          | ASTM B-360                                | –      |
| Copper general<br>purpose drawn<br>tube, pancakes                               | Cu-DHP                     | 3–105     | 5–30              | EN 12449                                  | –      |
|   | C12000<br>C12200           |           |                   | DIN 59750                                 |        |
| Copper<br>plumbing tube   | Cu-DHP<br>C12000<br>C12200 | 6–108     | 0.8–3.0           | DIN1786<br>BS 2871<br>EN1057<br>ASTM B-88 | –      |



| Product name                               | Alloy        | OD mm  | Wall thickness mm       | Standard   | Temper                  |
|--|--------------|--------|-------------------------|------------|-------------------------|
| Brass tube for general purpose             | CuZn37       | 16–42  | 1.0–3.5                 | ASTM B68   | O60                     |
|  |              |        |                         | ASTM B280  | O60                     |
| Brass condenser tube                       | CuZn20Al2As  | 10–18  | 1.0–2.0                 | EN 12451   | R340, R390              |
|  |              | 19–30  | 1.0–2.0                 |            |                         |
|  | CuZn20Al2    | 19–30  | 2.1–3.5                 | DIN 1785   | F34, F39                |
|  |              | C44300 |                         |            | ASTM B111<br>ASME SB111 |
|  | CuZn28Sn1As  |        |                         | EN 12451   | R340, R390              |
|  | CuZn28Sn1    |        |                         | DIN 1785   | F32, F36                |
| C68700                                     |              |        | ASTM B111<br>ASME SB111 | O61        |                         |
| Brass general purpose drawn tube, extruded | CuZn37       | 3–80   | 0.8–10                  | EN 12449   | –                       |
|  | CuZn32       | 21–180 | 2–40                    |            |                         |
| Brass tube for heat exchangers             | CuZn32       | 10–40  | 0.8–3.0                 | EN 12451   | –                       |
|  | CuZn29Sn     |        |                         | ASTM B-111 |                         |
|  | CuZn32As     |        |                         |            |                         |
|  | CuZn30Sn1As  |        |                         |            |                         |
|  | CuZn21Al2As  |        |                         |            |                         |
|  | CuZn28Si     |        |                         |            |                         |
| Bronze extruded tube                       | CuAl10Fe3Mn2 | 42–180 | 5–60                    | DIN 1755   | –                       |
|  | CuAl10Fe4Ni4 |        |                         |            |                         |

# 26

## Specification Extruded and drawn products

| Product name                | Alloy        | OD<br>mm | Wall thickness<br>mm | Standard                | Temper     |
|-----------------------------|--------------|----------|----------------------|-------------------------|------------|
| Copper-nickel<br>drawn tube | CuNi10Fe1Mn  | 6-9.9    | 0.5-1.5              | EN 12451                | R340       |
|                             |              | 10-20    | 0.8-2.5              | EN 12449                | R290, R310 |
|                             | C70600       | 21-25    | 0.8-1.5              |                         |            |
|                             |              | 21-32    | 1.0-3.6              | ASTM B111<br>ASME SB111 | O61        |
|                             | C71500       | 33-55    | 1.0-3.0              |                         |            |
|                             |              | 56-108   | 1.5-3.0              | EN 12451                | R370       |
|                             | CuNi30Mn1Fe1 | 10-18    | 0.8-2.5              | EN 12449                | R340       |
|                             |              | 19-32    | 1.0-3.5              | DIN 1785                | F37        |
|                             | CuNi5Fe      | 33-55    | 2.5-3.5              |                         |            |
|                             |              |          |                      |                         |            |

## Busbar

|               |        |        |    |          |           |
|---------------|--------|--------|----|----------|-----------|
| Copper busbar | Cu-ETP | 40-120 | 10 | EN 13601 | Half hard |
|---------------|--------|--------|----|----------|-----------|

Product name

Alloy

OD  
mm

Standard

Temper

## Rod

|                                      |                        |             |   |               |
|--------------------------------------|------------------------|-------------|---|---------------|
| Copper-nickel rod                    | CuNi10Fe1Mn            | 16–120      | EN 12163<br>EN 12165                                    | –             |
| Rectangular cross section copper rod | E-Cu57<br>E-Cu58       | 5–12x30–120 | DIN 40500.3/1759<br>DIN 40500.3/46433<br>DIN 17672/1759 | F20, F25      |
|                                      |                        |             | EN 13601  | R200, R250    |
|                                      |                        |             | ASTM B187   | O60, H58      |
| Drawn round copper rod               | E-Cu57<br>E-Cu58       | 6–100       | DIN 40500.3/1756<br>DIN 17672/1756                      | F22, F25, F30 |
|                                      |                        |             | Cu-DHP  | EN 12163      |
| Drawn round brass rod                | CuZn39Pb3<br>CuZn40Pb2 | 6–12        | DIN 17672/1756  | F43, F50      |
|                                      |                        | 13–45       |   | F43           |
|                                      |                        | 6–12        | EN 12164  | R430, R500, M |
|                                      |                        | 13–45       |   | R430, M       |
| Drawn, extruded round brass rod      | CuZn39Pb3<br>CuZn40Pb2 | 18–160      | DIN 17672/1782  | P             |
|                                      |                        |             | EN 12165  | M             |
| Drawn rectangular brass rod          | CuZn39Pb3<br>CuZn40Pb2 | 6–10x8–20   | DIN 17672/1759  | F43           |
|                                      |                        |             | EN 12167  | R430          |

# 28

## Specification Extruded and drawn products

| Product name                                     | Alloy                  | OD<br>mm | Standard       | Temper        |
|--|------------------------|----------|----------------|---------------|
| Drawn square<br>brass rod                        | CuZn39Pb3<br>CuZn40Pb2 | 6–12     | DIN 17672/1761 | F43, F50      |
|  |                        | 13–40    |                | F43           |
|  | CuZn39Pb3<br>CuZn40Pb2 | 6–12     | EN 12164       | R430, R500, M |
|  |                        | 13–40    |                | R430, M       |
| Drawn<br>hexagonal<br>cross section<br>brass rod | CuZn39Pb3<br>CuZn40Pb2 | 6–12     | DIN 17672/1763 | F43, F50      |
|  |                        | 13–40    |                | F43           |
|  | CuZn39Pb3<br>CuZn40Pb2 | 6–12     | EN 12164       | R430, R500, M |
|  |                        | 13–40    |                | R430, M       |
| Drawn round<br>brass rod                         | CuZn37                 | 6–12     | DIN 17672/1756 | F43, F50      |
|  |                        | 13–45    |                | F43           |
|  | CuZn37                 | 6–12     | EN 12163       | R370, R440, M |
|  |                        | 13–45    |                | R370, M       |
| Drawn<br>hexagonal<br>cross section<br>brass rod | CuZn37                 | 6–36     | DIN 17672/1763 | F37           |
|  |                        | 6–36     |                | EN 12163      |

| Product name  | Alloy              | OD mm    | Standard             | Temper    |
|---|--------------------|----------|----------------------|-----------|
| Drawn square brass rod                                  | CuZn37             | 6-36     | DIN 17672/1761       | F37       |
|   |                    | 6-36     | EN 12163             | R370, M   |
| Extruded round brass rod                                | CuZn37             | 25-160   | DIN 17672/1782       | P         |
|   |                    |          | EN 12165             | M         |
| Round, square, hexagonal cross section brass rod        | CuZn37             | 3 - 105  | DIN 1782             |           |
|   | CuZn40Pb           |          |                      |           |
|   | CuZn40Pb2          |          |                      |           |
|   | CuZn34Pb3          |          |                      |           |
| Hexagonal cross section drawn, extruded brass rod round | CuZn39Pb3          | 6-40     | EN 12163             | Half hard |
|   | CuZn40Pb2          | 20-120   | EN 12164<br>EN 12165 |           |
| Drawn, extruded bronze rod                              | CuAl9Fe3           | 9-40     | DIN 1782             |           |
|   | CuAl9Fe2           | 16-150   |                      |           |
|   | CuAl10Fe3Mn2       |          |                      |           |
|   | New: Vessel bronze |          |                      |           |
|   | Wire               |          |                      |           |
| Copper wire   | Cu-DHP             | 0.54-1.9 | EN 1653              | Soft      |

# 30

Certificates of conformity  
of management system

## DIN EN ISO 9001 : 2008

JSC "Kirov Non-ferrous Metals Processing plant"

## BS EN ISO 9001 : 2008

"Copper Tube Plant" Majdanpek (Fabrika Bakarnih Cevi Majdanpek, Serbia)

## ISO 9001 : 2008

JSC "Kolchuginsky Non-ferrous plant" (JSC "Kolchugstvetmet")

## ISO 9001 : 2008

JSC "Revda Non-ferrous Metals Processing Works"



# Ural Mining and Metallurgical Company

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