Copper-Nickel Tubes C71500 C70600

CuNi30Mn1Fe CuNi10Fe1Mn

Copper Nickel tubes Standard have ASTM B111 BS2871 AND DIN1785

Copper-Nickel tubes C71500, C70600, CuNi30Mn1Fe, CuNi10Fe1Mn

**Copper-Nickel tubes C71500, C70600 Standard** establishes the requirements for seamless tube and ferrule stock of copper and various copper alloys up to 3 Vs in. [80 mm] inclusive, in diameter, for use in surface condensers, evaporators, and heat exchangers. The following coppers and copper alloys are specified:

<table>
<thead>
<tr>
<th>Copper or Copper Alloy UNS NO.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C70600</td>
<td>90-10 Copper-Nickel</td>
</tr>
<tr>
<td>C71500</td>
<td>70-30 Copper-Nickel</td>
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</tbody>
</table>
Standard: ASTM B 111/B 111M; BS2871, JIS H3300, DIN1785

Description Name: ASTM B111 copper tubes, C70600 Copper tubes, C70600 brass pipes, C70400 copper tubes, C70400 Brass tubes and pipes, C70400 Copper-Nickel tubes and pipes. C71500 copper tubes, C71500 Brass tubes and pipes, C71500 Copper-Nickel tubes and pipes, C71640 copper tubes, C71640 Brass tubes and pipes, C71640 Copper-Nickel tubes and pipes.

Size: 6mm to 80 mm

Wall Thickness: 0.5 to 6mm

Shape: Round

Length: Single random length/ Double random length or as customer's actual request

Grade: C70400, C70600, C71500, C71640, CuNi30Mn1Fe, CuNi10Fe1Mn

Referenced Documents:

ASTM Standards:

- B 153 Test Method for Expansion (Pin Test) of Copper and Copper Alloy Pipe and Tubing
- B 154 Test Method for Mercurous Nitrate Test for Copper and Copper Alloys
- B 170 Specification for Oxygen-Free Electrolytic Copper Refinery Shapes
- B 224 Classification of Coppers
- B 846 Terminology for Copper and Copper Alloys
- B 858 Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys
- E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- E 53 Test Methods for Determination of Copper in Unalloyed Coppers by Gravimetry
- E 54 Test Methods for Chemical Analysis of Special Brasses and BronzesS
- E 62 Test Methods for Chemical Analysis of Copper and Copper Alloys (Photometric Methods
- E 75 Test Methods for Chemical Analysis of Copper-Nickel and Copper-Nickel-Zinc Alloys
- E 76 Test Methods for Chemical Analysis of Nickel-Copper Alloys
- E 112 Test Methods for Determining Average Grain Size E 243 Practice for Electromagnetic (Eddy Current) Examination of Copper and Copper-Alloy Tubes
- E 255 Practice for Sampling Copper and Copper Alloys for the Determination of Chemical Composition
- E 478 Test Methods for Chemical Analysis of Copper Alloys
- E 527 Practice for Numbering Metals and Alloys (UNS)
Chemical Composition:

<table>
<thead>
<tr>
<th>Designation</th>
<th>Cu</th>
<th>Sn</th>
<th>Al</th>
<th>As</th>
<th>Ni</th>
<th>Fe</th>
<th>Mn</th>
<th>Pb Max.</th>
<th>Zn</th>
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<tbody>
<tr>
<td>C70400</td>
<td>Rem</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.8-6.2</td>
<td>1.3-1.7</td>
<td>0.3-0.8</td>
<td>0.05</td>
<td>1.0max</td>
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<tr>
<td>C70600</td>
<td>Rem</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>9.0-11.0</td>
<td>1.0-1.8</td>
<td>1.0max</td>
<td>0.05</td>
<td>1.0max</td>
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<tr>
<td>C71500</td>
<td>Rem</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.0-33.0</td>
<td>0.4-1.0</td>
<td>1.0max</td>
<td>0.05</td>
<td>1.0max</td>
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<tr>
<td>C71640</td>
<td>Rem</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.0-32.0</td>
<td>1.7-2.3</td>
<td>1.5-2.5</td>
<td>0.05</td>
<td>1.0max</td>
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</tbody>
</table>

The Standards for Copper-Nickel tubes

<table>
<thead>
<tr>
<th>Material Designation</th>
<th>GB/T8890</th>
<th>ASTM B111</th>
<th>BS2871</th>
<th>JIS H3300</th>
<th>DIN1785</th>
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<tbody>
<tr>
<td>Copper-Nickel BFe10-1-1</td>
<td>C70600</td>
<td>CN102</td>
<td>C7060</td>
<td>CuNi10Fe1Mn</td>
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<tr>
<td>BFe30-1-1</td>
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<td>CN107</td>
<td>C7150</td>
<td>CuNi30Mn1Fe</td>
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<td>BFe30-2-2</td>
<td>C71640</td>
<td>CN108</td>
<td>C7164</td>
<td>CuNi30Fe2Mn2</td>
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<td>BFe5-1.5-0.5</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>B7</td>
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Tensile Requirements

<table>
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<tr>
<th>Copper or Copper Alloy UNS NO.</th>
<th>Temper Designation</th>
<th>Tensile Strength, min ksi</th>
<th>Yield Strength, min ksi</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Former</td>
<td></td>
</tr>
<tr>
<td>C70400</td>
<td>H55</td>
<td>light-drawn</td>
<td>38</td>
</tr>
<tr>
<td>C70600</td>
<td>H55</td>
<td>light-drawn</td>
<td>45</td>
</tr>
<tr>
<td>C71500</td>
<td>O61</td>
<td>annealed</td>
<td>52</td>
</tr>
<tr>
<td>C71640</td>
<td>O61</td>
<td>annealed</td>
<td>63</td>
</tr>
</tbody>
</table>
Expansion Test

- Copper-Nickel tubes specimens selected for test shall withstand the expansion shown in standard when expanded in accordance with Test Method B 153. The expanded tube shall show no cracking or rupture visible to the unaided eye.
- Hard-drawn tubes not end annealed are not subject to this test. When tubes are specified end annealed, this test is required and shall be performed on the annealed ends of the sampled tubes.
- Tubes for ferrule stock are not subject to the expansion test.

Flattening Test

- Test Method—Each test specimen shall be flattened in a press at three (3) places along the length, each new place to be rotated on its axis approximately one third turn from the last flattened area. Each flattened area shall be at least 2 in. in length. A flattened test-specimen shall allow a micrometer caliper set at three (3) times the wall thickness to pass freely over the flattened area. The flattened areas of the test specimen shall be inspected for surface defects.
- During inspection, the flattened areas of the test-specimen shall be free of defects, but blemishes of a nature that do not interfere with the intended application are acceptable.
- Tubes for ferrule stock are not subject to flattening test.

Residual Stress Test

- Unless otherwise specified, the producer shall have the option of testing the product to either the mercurous nitrate test, Test Method B 154, or the ammonia vapor test, Test Method B 858, as prescribed below.

Nondestructive Testing

Eddy-Current Test—Each Copper-nickel tube shall be passed through an eddy-current testing unit adjusted to provide information on the suitability of the tube for the intended application. Testing shall follow the procedures of Practice E 243.

Hydrostatic Test

Each Copper-nickel tube shall stand, without showing evidence of leakage, an internal hydrostatic pressure sufficient to subject the material to a fiber stress of 7000 psi [48 MPa] as determined by the following equation for thin hollow cylinders under tension. The tube need not be tested at a hydrostatic pressure of over 1000 psi [7.0 MPa] unless so specified.
where:

\[ P = \text{hydrostatic pressure, psig [MPa]}; \]
\[ t = \text{thickness of tube wall, in. [mm]}; \]
\[ D = \text{outside diameter of the tube, in. [mm]; and } S = \text{allowable stress of the material, psi [MPa]}. \]

**Materials and Manufacture:**

- When specified in the purchase order or contract, the purchaser shall be furnished certification that samples representing each lot have been either tested or inspected as directed in this specification and requirements have been met.
- When identified in the ordering information that product is purchased for ASME Boiler and Pressure Vessel Code applications, certification to this specification is mandatory.

**Note:**

- Mill test certificates will be issued
- All tubes shall be supplied as per applicable standard Specification.

Copper-Nickel Tubes C70600 71500

**Packing and Marking**
Packed in bundles or ply wooden box wrapped in plastic, and suitably protected for sea-worthily delivery or as requested.

Packing photos:

Copper-Nickel Wooden Box Package

Read more information of this products

- Copper-Nickel Tubes C71500 C70600

Related products

Cold Drawn precision tubes

- JIS G3445 STKM11A, STKM12C, STKM12A Steel Tubes
- EN10305-1 Seamless Cold Drawn Tubes
- DIN2391 Seamless Precision Steel tubes

Carbon steel

- ASTM A519 ASME SA519 SAE1010 Seamless tubes and pipes
- ASTM A519 ASME SA519 SAE1020 seamless tubes and pipes
- ASTM A519 ASME SA519 SAE1026 seamless tubes and pipes
- ASTM A519 ASME SA519 SAE1035 seamless tubes and pipes
CTS TUBES
Professional Pipeline Supplier

- ASTM A519 ASME SA519 SAE1045 seamless tubes and pipes
- ASTM A519 ASME SA519 SAE4130 seamless tubes and pipes
- ASTM A179 / ASME SA179 Seamless tubes
- ASTM A192 / ASME SA192 Seamless boiler tubes
- ASTM A210 / ASME SA210 GRADE A1 Seamless tubes
- ASTM A210 / ASME SA210 GRADE C Seamless tubes

Alloy steel
- ASTM A213 T11 T12 T22 Seamless alloy tubes
- ASTM A 213/A 213M T2, T5, T5b, T9, T91 Seamless Alloy Steel tubes
- ASTM A335 P1, P2, P5, P9 Seamless alloy pipes
- ASTM A335 P11, P12, P22, P91 seamless alloy pipes
- ASTM A209 ASME SA209 T1 tubes

Stainless steel and Duplex
- ASTM A269 Stainless Steel Tubes
- ASTM A213 Stainless Steel Tubes
- ASTM A249 Stainless Steel Tubes
- ASTM A270 Sanitary Stainless Tubing
- ASTM A312 Stainless Steel Pipes
- ASTM A789 Duplex Stainless Tubing

Copper and Brass
- ASTM B111 Copper and Brass Tubes

Titanium Alloy Tubes
- ASTM B338 GR.1 GR.2 GR.3 Titanium Alloy Tubes

Read more information of CTS TUBES main products
- Seamless carbon steel tubes
- Cold drawn precision steel tubes
- Seamless alloy steel tubes
- Copper alloy seamless tubes
- Titanium and titanium alloy tubes
- Stainless steel tubes
- U bent heat exchanger tubes
- Fin tubes
- Bearing steel tubes
About CTS TUBES

**CTS TUBES** provide a wide range of steel products as Steel Pipes, Seamless Tube and Seamless Pipes, Alloy Pipes, Pipe Fittings, Stainless Steel Pipe, Copper Tube and Titanium Alloy Tube used in the industry, construction etc. We are looking forward to getting in contact by phone or email and we hope that you enjoy our website. More than ten years of profound knowledge turn CTS TUBES to your partner as trading house for tubes, fittings and stainless steel. The name CTS TUBES stands for certified quality, because of that, all products of our wide range consist to demanding norms and the highest standards. CTS TUBES also stands for know-how, effective service, and best solutions for your profit. Our qualified team in our export department in China is always at your disposal and ready to help you. Get in touch if you are interested in our products or cooperation.

Get in Touch

If you are interested in our products or cooperation with us, even having a comment or a suggestion, please contact us now for more detailed information.

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