I/ We Claim:

1. A hot-forged copper alloy part which has a tubular shape,

characterized in that the hot-forged copper alloy part has an alloy composition contains containing:

59.0 mass% to 84.0 mass% of Cu,

0.003 mass% to 0.3 mass% of Pb,

optionally 0.05 mass% to 4.5 mass% of Si, and

optionally at least one of 0.01 mass% to 0.3 mass% of As, 0.01 mass% to 0.3 mass% of Sb, 0.01 mass% to 0.3 mass% of P, 0.01 mass% to 0.3 mass% of Mg, 0.01 mass% to 1.5 mass% of Sn, 0.01 mass% to 1.0 mass% of Al, 0.01 mass% to 4.0 mass% of Mn, 0.01 mass% to 4.0 mass% of Ni, 0.0005 mass% to 0.05 mass% of Zr, 0.0005 mass% to 0.05 mass% of B and 0.003 mass% to 0.3 mass% of Bi,

with a remainder of Zn and inevitable impurities,

a content of Cu [Cu] mass% and a content of Pb [Pb] mass%, a content of Si [Si] mass%, a content of Ni [Ni] mass%, a content of Mn [Mn] mass%, a content of As [As] mass%, a content of Zr [Zr] mass%, a content of B [B] mass%, a content of Bi [Bi] mass%, a content of Sb [Sb] mass%, a content of Sn [Sn] mass%, a content of Mg [Mg] mass%, a content of Al [Al] mass% and a content of P [P] mass% have a relationship of $59 \leq ([Cu]+0.5\times[Pb]-4.5\times[Si]+2.2\times[Ni]+1.4\times[Mn]+0.5\times([As]+[Zr]+[B]+[Bi])-1.2\times([Sb]+[Sn]+[Mg])-2.2\times[Al]-3\times[P]) \leq 64$,

a shape of the forged part satisfies a formula of $0.4 \leq$(average inner diameter)/(average outer diameter)≤ 0.92, $0.04 \leq$(average thickness)/(average outer diameter)≤ 0.3, and $1 \leq$(tube axis direction length)/(average thickness))≤ 10, and

a forging material which is to be hot-forged has a tubular shape and satisfies $0.3 \leq$(average inner diameter/average outer diameter)≤ 0.88, $0.06 \leq$(average thickness)/(average outer diameter)≤0.35, and 0.8≤(tube axis direction length)/(average thickness))≤12, and 0%≤(degree of uneven thickness)≤30%, 0≤(degree of uneven thickness)≤75×1/((tube axis direction length)/(average thickness))$^{1/2}$ in any location in a tube axis direction, and

the degree of uneven thickness is defined as ((1-(minimum thickness)/(maximum thickness)×100)% using the minimum thickness and the maximum thickness in a cross-section perpendicular to the tube axis direction of the forging material.

2. The hot-forged copper alloy part according to claim 1,

wherein an alloy composition contains 73.0 mass% to 84.0 mass% of Cu, and 2.5 mass% to 4.5 mass% of Si , a shape of the forged part satisfies a formula of 0.4≤(average inner diameter)/(average outer diameter)≤0.92, 0.04≤(average thickness)/(average outer diameter)≤0.3, and 1≤(tube axis direction length)/(average thickness))≤10, and

a forging material which is to be hot-forged has a tubular shape and satisfies 0.3≤(average inner diameter/average outer diameter)≤0.88, 0.06≤(average thickness)/(average outer diameter)≤0.35, and 0.8≤(tube axis direction length)/(average thickness))≤12, and 0%≤(degree of uneven thickness)≤30%, 0≤(degree of uneven thickness)≤75×1/((tube axis direction length)/(average thickness))$^{1/2}$ in any location in a tube axis direction.

3. The hot-forged copper alloy part according to claims 1or 2,

wherein, in a metal structure at room temperature after the hot forging, an area ratio of α phase is in a range of 30% to 100%, and a sum of an area ratio of β phase, an area ratio of γ phase and an area ratio of μ phase is in a range of 0% to 25%,

the area ratio of each of the phases refers to an area ratio at a location in the metal structure which is 5 mm or more inside from an end surface in the tube axis direction and 1/4 or more of a thickness inside from both an outer circumferential surface and an inner circumferential surface.

4. The hot-forged copper alloy part according to claims 1or 2, wherein the forging material is a continuous cast tube.

5. The hot-forged copper alloy part according to claims 1 or 2, wherein the hot-forged copper alloy part is used for valves, ball valves, joints, joints or connection tools for crosslinked polyethylene tubes, tube joints or connection tools for crosslinked polybutene tubes, connection tools for water supply or drainage, hose nipples, connection tools for gardening hoses, connection tools for gas hoses, lids for water meters, water faucets, hydraulic containers, nozzles, sprinklers, flare nuts, nuts, water supply or hot-water supply facilities, air-conditioning facilities, containers, connection tools or devices for fire protection facilities or gas facilities, containers or devices through which water, warm water, coolants, air, city gas or propane gas pass.

6. A method for manufacturing the hot-forged copper alloy part according to claim 1 or 2, comprising the steps of:

heating the forging material to a hot forging temperature so as to be hot-forged, the hot forging temperature is in a range of 650°C to 800°C, and the area ratio of the α phase in the metal structure of the forging material at the hot forging temperature is in a range of 3% to 60%, and

the area ratio of each of the phases refers to an area ratio at a location in the metal structure which is 5 mm or more inside from an end surface in the tube axis direction and 1/4 or more of a thickness inside from both an outer circumferential surface and an inner circumferential surface.

7. The method for manufacturing the hot-forged copper alloy part according to claim 6,

when the forging material is heated at 720°C, the area ratio of the α phase in the metal structure is in a range of 3% to 60%.

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