Permanent Mold: HIGH CONDUCTIVITY COPPER ALLOY (CU)

SPECIFICATION	CHEMICAL COMPOSITION	CDA STANDARD EQUIVALENT	BRITISH STANDARD EQUIVALENT	DIN STANDARD EQUIVALENT	YIELD STRENGTH PSI x 10^3 (MIN)	TENSILE STRENGTH PSI x 10^3 (MIN)	ELONGATION % 2"	BRINELL HARDNESS (MIN)	MODULUS OF ELASTICITY PSI x 10^6	ELECTRICAL CONDUCTIVITY % IACS	ELECTRICAL CONDUCTIVITY m/mm$^2\Omega$	CHARACTERISTICS
BC-CU-110	CU – 99.9%	811	B5 1400 HCC1	17655 GK-CUL50	5.1 – 6.0	27 – 30	28 – 35	10MM/500KG 40 – 46	17.6	97 MIN	56 MIN	Pure electrolytic copper, excellent electrical and thermal conductivity. Alloy can be hard and soft soldered, limited weldability.
BC-CU-100	CU – 99.9%	811	B5 1400 HCC1	17655 GK-SCUL50	3.5 – 5.1	26 – 29	44 – 48	10MM/500KG 33 – 38	17.6	93 MIN	52 MIN	Pure electrolytic copper with oxygen contents, excellent electrical and thermal conductivity. Material can be processed in hydrogen atmosphere.
BC-CU-210	CU-CR	815	B5 1400 CC1-TF	17655 GK-CUCRF35	39.5 – 44	54 – 59	20 – 25	10MM/500KG 100 – 140	17.5	77 MIN	44.5 MIN	Heat treated chromium copper with excellent strength and conductivity. Good hard and soft solderability.
BC-CU-300	CU-NI-SI	SIMILAR 821	B5 1400	SIMILAR 17666 CUN1251	50 – 55	63 – 66	8 – 15	10MM/3000KG 135-160	17.5	35 – 44 MIN	22.6 – 25.5	Heat treated copper alloy with good thermal and electrical conductivity. Alloy is resistant to stress corrosion.
BC-CU-310	CU-NI-SI	SIMILAR 822	B5 1400	SIMILAR 17666 CUN1351	74 – 79	77 – 83	3 – 4	10MM/3000KG 190 – 205	17.3	26 – 35	15.6 – 20.2	Heat treated copper alloy (Same as BC-CU-300), but has higher mechanical properties, and lower conductivity readings. Alloy is resistant to stress corrosion.

Permanent Mold: BRASS & SPECIAL BRASS ALLOYS (B & SB)

BC-B-100	CU-ZN	855	B5 1400 HTB1	1709 GK-CUZN38AL	20 – 24	57 – 64	40 – 56	10MM/500KG 70 – 90	13.5	23 – 25.5	13.3 – 14.8	Excellent alloy for thin wall, complex and complicated casting requirements. Alloy resists stress and atmospheric corrosion.
BC-B-300	CU-ZN-PB	857	B5 1400 HTB1	1709 GK-CUZN37PB	19 – 24	41 – 45	16 – 20	10MM/500KG 70 – 90	13.6	20 – 23.5	11.6 – 13.6	Brass alloy with good machinability. Alloy is not recommended for complicated casting design.
BC-SB-100	CU-ZN-AL	864	B5 1400 HTB1	1709 GK-CUZN37AL1	23 – 30	61 – 71	30 – 49	10MM/500KG 100 – 120	13.6	17 – 20	9.8 – 11.6	Excellent alloy with outstanding mechanical properties. Alloy has good resistance to stress corrosion in industrial atmosphere.
BC-SB-120	CU-ZN	NONE	NONE	NONE	12 – 13	66 – 69	31 – 34	10MM/500KG 90 – 95	11.5	35 – 38	20.3 – 22	Alloy with high electrical conductivity suitable for use in electrical equipment. Alloy cannot be tin plated. Alloy does not resist stress corrosion. Part surfaces need protection from atmospheric corrosion.
BC-SB-120-1	CU-ZN	NONE	NONE	NONE	19 – 24	60 – 78	28 – 36	10MM/500KG 88 – 95	11.8	29 – 32	17.4 – 18.5	Same as alloy BC-SCB-120 except alloy can be soldered and tin plated.
BC-SB-200	CU-ZN-PB-MN	NONE	NONE	NONE	22 – 25	40 – 44	8 – 10	10MM/500KG 70 – 76	14.7	7.5 – 9	4.3 – 4.3	Alloy with excellent sliding properties. Good bearing material with high mechanical loads.
BC-SB-300	CU-ZN-FE-NI-AL	867	B5 1400 HTB1	1709 GK-CUZN34AL2	34 – 42	79 – 87	16 – 20	10MM/3000KG 130 – 150	15.8	18 – 20	10.4 – 11.6	High-strength yellow brass, good bearing material for large loads. Material suitable for high pressure valve parts. Limited castability.
BC-SB-310	CU-ZN-FE-AL	865	B5 1400 HTB1	1709 GK-CUZN37AL1	22 – 30	65 – 74	28 – 36	10MM/500KG 100 – 125	13.5	23 – 25	13.3 – 14.5	Same as alloy BC-SB-300 except with lesser hardness and strength, but greater conductivity.
BC-SB-340	CU-ZN-FE-AL-MN	865	B5 1400 HTB1	1709 GK-CUZN35AL1	21 – 35	63 – 76	25 – 45	10MM/500KG 110 – 130	13.8	17 – 19	9.8 – 11	High-strength yellow brass with good corrosion resistance in marine atmosphere.

Permanent Mold: ALUMINUM BRONZE ALLOYS (AB)

BC-AB-100	CU-AL	953	B5 1400 AB1	1714 GK-CUAL10	20 – 23	63 – 72	52 – 65	10MM/500KG 75 – 95	15.0	15 – 18	8.7 – 10.4	Alloy has good corrosion resistance. Little property change in –200°C temperature. Good alloy for chemical industry and food handling equipment.
BC-AB-110	CU-AL-FE	952	B5 1400 AB1	1714 GK-CUAL10FE	27 – 30	76 – 85	30 – 35	10MM/500KG 95 – 110	16.0	10 – 12	5.8 – 6.9	Excellent resistance to chemical agents such as H_2SO_4 and H_3PO_4. Good resistance to cold salt water, weldable, and suitable for non-magnetic application.
BC-AB-120	CU-AL-FE	952	B5 1400 AB1	1714 GK-CUAL10FE	32 – 42	80 – 95	23 – 35	10MM/3000KG 135 – 155	16.5	10 – 12	5.8 – 6.9	Good corrosion resistance in salt water and other water applications. Alloy can be welded and heat treated.
BC-AB-200	CU-AL-FE-NI	955	B5 1400 AB2	1714 GK-CUAL11NI	58 – 68	95 – 108	6 – 10	10MM/3000KG 190 – 210	17.5	8.0 MAX	4.6 MAX	High-strength nickel-aluminum bronze with excellent corrosion resistance. Excellent in hot and cold salt applications. Alloy with high mechanical loading capacity and very good erosion and wear resistance properties.
BC-AB-210	CU-AL-FE-NI	955	B5 1400 AB2	1714 GK-CUAL10NI	45 – 50	88 – 98	14 – 20	10MM/3000KG 160 – 185	17.2	8.0 MAX	4.6 MAX	Good mechanical properties, excellent resistance against hot and cold salt water, good corrosive resistance. Alloy performs excellently in O_2 and H_2S environment. Alloy used in electrical, machine, mining and marine industry.
BC-AB-220	CU-AL-FE-NI	954	B5 1400 AB2	1714 GK-CUAL9NI	35 – 42	82 – 92	20 – 30	10MM/3000KG 125 – 160	16.9	8.0 MAX	4.6 MAX	Alloy similar to BC-AB-110 except better mechanical properties. Alloy can be welded and heat treated.
BC-AB-230	CU-AL-FE-NI	955	B5 1400 AB2	1714 GK-CUAL11NI	64 – 78	98 – 113	5 – 7	10MM/3000KG 210 – 230	18.0	8.0 MAX	4.6 MAX	Extreme high wear and corrosion resistance. Properties similar to BC-AB-200. Alloy can be heat treated and welded.
BC-AB-240	CU-AL-FE-NI	955	B5 1400 AB2	1714 GK-CUAL10NI	45 – 52	88 – 98	12 – 18	10MM/3000KG 150 – 195	17.1	8.0 MAX	4.6 MAX	Alloy similar to BC-AB-210. Alloy specially tailored for disc and valve applications.
BC-AB-300	CU-AL-MN-NI	NONE	B5 1400 CMA1	1714 GK-CUAL8MN	28 – 32	70 – 75	33 – 40	10MM/500KG 100 – 110	16.8	8.0 MAX	4.6 MAX	Aluminum-nickel-manganese bronze with very good corrosion resistance. Good application where low magnetic properties are required.

NOTE: Where there are ranges indicated, the higher number can be exceeded but will not go below the lower number.