Nap Engineering Works

Leaded Tin Bronze Casting Chemical Composition

We use the following Leaded Tin Bronze Chemical Composition in our casting process.

Copper Alloy Standards	CU	SN	PB	ZN	FE	NI	P	AL	SI	SB	Impurities
BS: 1400, Grade LG – 1	Rem.	2 - 3.5	3 - 6	7 - 9.5	-	2.0	0.05	-	-	-	-
BS: 1400, Grade LG – 2	Rem.	4 - 6	4 - 6	4 - 6	-	2.0	0.1	-	-	-	-
BS: 1400, Grade LG – 4	Rem.	6 - 8	2.5 - 3.5	1.5 - 3.5	-	2.0	0.1	-	-	-	-
BS: 1400, Grade LB – 1	Rem.	6 - 8	13 - 17	2.0	-	0.5 - 2	0.10	-	-	-	-
BS: 1400, Grade LB – 2	Rem.	9 - 11	8 - 11	2.0	-	2.0	0.10	-	-	-	-
BS: 1400, Grade LB – 4	Rem.	4 - 6	8 - 10	2.0	-	2.0	0.10	-	-	-	-
BS: 1400, Grade LB – 5	Rem.	4 - 6	18 - 23	2.0	-	0.5 - 2	0.10	-	-	-	-
IS: 318-1981, Grade LTB – 1	Rem.	6 - 8	2.5 - 3.5	1.5 - 3	0.30	2.0	-	0.01	0.01	0.30	0.70
IS: 318-1981, Grade LTB – 2	Rem.	4 - 6	4 - 6	4 - 6	0.35	2.0	-	0.01	0.02	0.40	0.80
IS: 318-1981, Grade LTB – 3	Rem.	6 - 8	9 - 11	0.75	0.35	2.0	-	0.01	0.02	0.50	0.80
IS: 318-1981, Grade LTB – 4	Rem.	6 - 8	14 - 16	0.75	0.35	2.0	-	-	0.02	0.50	0.80
IS: 318-1981, Grade LTB – 5	Rem.	9 - 11	8.5 - 11	1.0	0.35	2.0	-	0.01	0.02	0.50	0.80
IS: 318-1981, Grade LTB – 6	Rem.	4 - 6	18 - 23	1.0	0.35	2.0	-	-	0.01	0.50	0.80

Leaded Tin Bronze Casting Mechanical Properties

The mechanical properties of leaded tin bronze are given in the following table.

Copper Alloy Standards	Tensile Strength (Min.)	Elongation % (Min.)	Brinell Hardness (Min.)
BS: 1400, Grade LG – 1	220 Mpa.	12%	70 BHN.
BS: 1400, Grade LG – 2	230 Mpa.	10%	65 BHN.
BS: 1400, Grade LG – 4	240 Mpa.	12%	70 BHN.
BS: 1400, Grade LB – 1	200 Mpa.	8%	65 BHN.
BS: 1400, Grade LB – 2	220 Mpa.	5%	65 BHN.
BS: 1400, Grade LB – 4	200 Mpa.	6%	60 BHN.
BS: 1400, Grade LB – 5	175 Mpa.	6%	50 BHN.
IS: 318-1981, Grade LTB – 1	250 Mpa.	16%	70 BHN.
IS: 318-1981, Grade LTB – 2	190 Mpa.	13%	65 BHN.
IS: 318-1981, Grade LTB – 3	175 Mpa.	4%	60 BHN.
IS: 318-1981, Grade LTB – 4	160 Mpa.	4%	65 BHN.
IS: 318-1981, Grade LTB – 5	190 Mpa.	5%	65 BHN.
IS: 318-1981, Grade LTB – 6	140 Mpa.	5%	40 BHN.

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