

MATERIAL PROPERTIES GUIDE

MECHANICAL PROPERTIES		TENSILE STRENGTH		YIELD STRENGTH (0.2% offset)		IMPACT STRENGTH		SHEAR STRENGTH		BRINELL HARDNESS	ELONGATION % in 50mm
		MPa	psi	MPa	psi	J	ft. lb	MPa	psi		
ZINC	Zamak 2	359	52000	283	41000	47	35	317	46000	100	7
	Zamak 3	248-283	36-41000	221	32000	58	43	214	31000	82	10
	Zamak 5	289-331	42-48000	228	33000	65	48	262	38000	91	7
	Zamak 7	283	41000	221	32000	58	43	214	31000	80	13
	ZA8	365-386	53-56000	290	42000	32-48	24-35	275	40000	103	8
	ZA27	425	61000	376	55000	12	9	325	47000	119	1-3
	ACuZinc5	407	59000	338	49000			280	40600	115	5
MAGNESIUM	AZ91D	230	34000	160	23000	3	2	140	20000	63	0.5-3
	AM60Bt	220	32000	130	19000					62	8
ALUMINUM	A380	325	47000	160	23000	4	3	185	29000	80	3.5
	383	310	45000	150	22000	4	3	190	28000	65-90	3.5
	B390	283	41000	242	35000	6	5	200	29000	120	1
BRASS	C38500	430-530	62-77000	228	33000	17	12			143	15-25
	C38000	420-460	61-67000	228	33000	16	12			133	20-25
STEEL	SAE1008	305	44000	170	25000					125	30

PHYSICAL PROPERTIES		DENSITY		MELTING RANGE		THERMAL CONDUCTIVITY		THERMAL EXPANSION		ELECTRICAL CONDUCTIVITY % IACS
		g/cm	Lb/cu	°C	°F	W/m °C	Btu-ft/h-ft 2°F	10-°C	X10-°F	
ZINC	Zamak 2	6.6	0.24	379-390	715-734	105	60.5	27.7	15.4	25
	Zamak 3	6.6	0.24	381-387	719-728	113	65.3	27.4	15.2	27
	Zamak 5	6.6	0.24	380-386	717-727	109	62.9	27.4	15.2	26
	Zamak 7	6.6	0.24	381-387	718-728	113	65.3	27.4	15.2	27
	ZA8	6.3	0.23	375-404	707-759	115	66.3	23.3	12.9	27.7
	ZA27	5	0.181	376-484	708-903	125	72.5	26	14.4	29.7
	ACuZinc5	6.85	0.25	402-502	755-936	106	61.2	24	13.3	26.9
MAGNESIUM	AZ91D	1.81	0.066	468-596	875-1105	72	41.8	25.2	14	12.2
	AM60Bt	1.8	0.065	540-615	1005-1140	61	36	25.6	14.2	12.4
ALUMINUM	A380	2.7	0.097	537-593	1000-1100	96	55.6	21.2	11.8	27
	383	2.7	0.097	525-570	977-1058	100	55.6	21.1	11.7	23
	B390	2.75	0.099	507-649	945-1200	134	77.5	17.9	10	27
BRASS	C38500	8.4	0.3	880-900	1616-1652	113	65.3	26	14.4	26
	C38000	8.4	0.3	900-920	1652-1688	109	62.9	21	11.7	25
STEEL	SAE1008	7.8	0.28	1426	2600	60	34.7			12

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