

Material Properties Guide

Mechanical Properties

		Tensile Strength MPa	Tensile Strength psi	Yield Strength MPa (0.2% offset)	Yield Strength psi (0.2% offset)	Impact Strength J	Impact Strength ft. lb	Shear Strength MPa	Shear Strength psi	Hardness Brinell	Elongation % in 50mm
ZINC	Zamak 2	359	52000	283	41000	47	35	317	46000	100	7
ZINC	Zamak 3	248-283	36-41000	221	32000	58	43	214	31000	82	10
ZINC	Zamak 5	289-331	42-48000	228	33000	65	48	262	38000	91	7
ZINC	Zamak 7	283	41000	221	32000	58	43	214	31000	80	13
ZINC	ZA8	365-386	53-56000	290	42000	32-48	24-35	275	40000	103	8
ZINC	ZA27	425	61000	376	55000	12	9	325	47000	119	1-3
ZINC	ACuZinc5	407	59000	338	49000	-	-	280	40600	115	5
MAGNESIUM	AZ91D	230	34000	160	23000	3	2	140	20000	63	0.5-3
MAGNESIUM	AM60B t	220	32000	130	19000	-	-	-	-	62	8
ALUMINUM	A380	325	47000	160	23000	4	3	185	29000	80	3.5
ALUMINUM	383	310	45000	150	22000	4	3	190	28000	65-90	3.5
ALUMINUM	B390	283	41000	242	35000	6	5	200	29000	120	1
BRASS	C38500	430-530	62-77000	228	33000	17	12	-	-	143	15-25
BRASS	C38000	420-460	61-67000	228	33000	16	12	-	-	133	20-25
STEEL	SAE1008	305	44000	170	25000	-	-	-	-	125	30

Physical Properties

		Density g/cm	Density Lb/cu in	Melting Range °C	Melting Range °F	Thermal Conductivity W/m °C	Thermal Conductivity Btu-ft/h-ft 2°F	Thermal Expansion 10-°C	Thermal Expansion X10-°F	Electrical Conductivity % IACS
ZINC	Zamak 2	6.6	0.24	379-390	715-734	105	60.5	27.7	15.4	25
ZINC	Zamak 3	6.6	0.24	381-387	719-728	113	65.3	27.4	15.2	27
ZINC	Zamak 5	6.6	0.24	380-386	717-727	109	62.9	27.4	15.2	26
ZINC	Zamak 7	6.6	0.24	381-387	718-728	113	65.3	27.4	15.2	27
ZINC	ZA8	6.3	0.23	375-404	707-759	115	66.3	23.3	12.9	27.7
ZINC	ZA27	5	0.181	376-484	708-903	125	72.5	26	14.4	29.7
ZINC	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
MAGNESIUM	AM60B t	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
ALUMINUM	383	2.7	0.097	525-570	977-1058	100	55.6	21.1	11.7	23
ALUMINUM	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
BRASS	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

While the technical information and suggestions for use contained herein are believed to be accurate and reliable, nothing stated in this bulletin is to be taken as a warranty either expressed or implied. It is the user's responsibility to determine suitability and fitness of application, preferably through independent prototype testing and field evaluation programs by users. There is no warranty of merchantability or fitness for use, nor any other warranty either expressed or implied.

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