

# Die Casting

	Units	Zinc alloys			Aluminium alloys		Magnesium	Brass	Plastics	
Fusion Technology		ZAMAK 3	ZAMAK 5	ZA2	AlSi9Cu3	AlSi12	AZ91		ABS	PA66
Mechanical Properties										
Elastic Limit	MPa	268	295	361	159	165	111-170	120	25-65	55-90
Tensile strength	MPa	308	331	397	317	330	200-260	280	25-65	80
Young's modulus	GPa	96	96	96	71	71	44	110	1,79-3,2	0,7-1,8
Torsion Modulus	MPa	33+	33+	33+	26.9	26.9	16.5		1,606-5,903	
Elongation with Fmax	%	3	2	3					1,7-6	
Elongation at break	%	6.3	3.6	6	1-3	0,5-3	7	4	2-110	9-50
Shear Strength	MPa	214	262	317	195	186	138			
Compressive yield strength elasticity limit	MPa	414	600	641			108-159		53-86	
Impact resistance	Joules	46	52	38	3.4	4	3.7-6		0,4-6,4	no break
Fatigue resistance (5x10to8)	MPa	48	57	59	70-100	60-90	50-70	110	7	
Hardness	Brinell	97	114	130	75	85	63-85	75	too soft	too soft
Specifications Damping capacity @35Mpa	%	18	19	19	1	1	25			
Specifications Damping capacity@100Mpa	%	40	41	42	4	4	53			
Physical Properties										
Density										
Coefficient of Thermal Expansion	x10-6/°C	27.4	27.4	27.8	21	21.1	25.2-26.0	20.3	50-150	60-90
Thermal conductivity	W/m/hr/m2	113	109	105	109	96	51-72.7	30-100	0,128-0,19	
Electrical conductivity	% IACS	27	26	25	24	27	11.5-12.1		n/a	
Electrical conductivity	SM/mm²	15-16	15-16	15-16	12-28	12-28	6-10	4-15		
Electrical Resistivity	µhm - cm	6.37	6.54	6.85	6.4	7.5		6.6	10E15	10E12
Melting Temperature Range	°C	381-387	380-386	379-390	538-533	516-582	468-598	885-925		260
Specific heat	J/kg/°C	419	419	419	963	960	1020	380	1960-2130	
Coeficiente de Fricción		0.07	0.08	0.08					0.45	