



Za-12 : Zinc Die Casting Alloy

Physical Properties

Melting Range (°F)	710-810
Melting Range (°C)	377-432
Density: lb/cu in (g/cc)	0.218 (6.0)
Specific Heat: BTU/lb/deg F	0.107
Electrical Conductivity: %IACS	28.3
Thermal Conductivity: BTU/ft/hr/deg F	67.1
Coefficient of Thermal Expansion	13.4
Pattern or Die Shrinkage: in/in	0.0075

Mechanical Properties

Ultimate Tensile Strength: ksi (MPa)	58 (400)
Yield Strength: ksi (MPa)	46 (317)
Elongation: % in 2"	4-7
Hardness: Brinell	95-115
Modulus of Elasticity: psi x 10 ⁶	12.0

Features

- ZA-12 is more readily recognized as a gravity casting alloy, but can also be die cast when a higher strength is required.
- Has the best combination of strength and castability of all the ZA alloys.
- Cold chamber die casting process is required for this alloy due to the higher attack rate on the shot end components.

Chemical Specifications

ELEMENT	Ingot (ASTM B240) (%)	Die Cast (ASTM B86) (%)
Zinc (Zn)	BALANCE	BALANCE
Magnesium (Mg)	0.02 - 0.03	0.01 - 0.03
Cadmium (Cd)	0.0050	0.006
Lead (Pb)	0.0050	0.006
Aluminum (Al)	10.8 - 11.5	10.5 - 11.5
Copper (Cu)	0.5 - 1.2	0.5 - 1.2
Iron (Fe)	0.05	0.075
Tin (Sn)	0.002	0.003
Nickel (Ni)	--	--

Bar Sizes

Margash Bar	For automatic feeder systems
Fisher Bar	For automatic feeder systems
Notch Bar	7 lb/15 lb/25 lb

Packaging - Wrapped and banded on a wooden pallet

Additional zinc alloys
offered by Nathan Trotter

Zamak 2
Zamak 3
Zamak 5
Zamak 7
ZA-8
ZA-27
EZAC

Limits are % max unless otherwise shown as range or stated otherwise. The above properties are "typical" values. The information found in these tables should be used for initial reference and for comparative purposes only. This data should not be used to establish design limits or as a reason for quality acceptance or rejection.