Zinc Die Casting Alloys

ZA-27

ZA Alloys were originally a family of Zinc-based gravity casting alloys, but introduced as die casting alloys in the 1970's. Research showed these alloys to have improved mechanical performance and lower density over most of the Zamak alloys. ZA-27 being the strongest, hardest and lightest alloy in the ZA family of zinc alloys.

Summary of Benefits:

- Can be die cast and gravity cast.
- ZA-27 is one of the strongest and hardest Zinc die castings alloys but must be cast in a cold chamber die casting machine.
- Lightest of all Zinc Die Casting Alloys.
- Due to higher aluminum content, this alloy must be cold-chamber cast.
- Improved performance as a die cast alloy.

Properties:

Mechanical Properties:	**Die Casting**	**Sand Cast**
Ultimate Tensile Strength: ksi (MPa)	61 (421)	58-64 (400-441)
Yield Strength: ksi (MPa)	55 (379)	54 (372)
Elongation: % in 2"	1-3	3-6
Hardness: Brinell	105-125	110-120
Modulus of Elasticity: psi x 10^6	11.3	11.3

Physical Properties:	
Density: lb/cu in (g/cc)	0.181 (5.0)
Melting Range: deg F (deg C)	708-903 (376-484)
Electrical Conductivity: %IACS	29.7
Thermal Conductivity: BTU/ft/hr/deg F	72.5
Coefficient of Thermal Expansion: µin/in/F – 68-212 deg F	14.4
Specific Heat: BTU/lb/deg F	.125
Pattern or Die Shrinkage: in/in	0.008

Note: The above properties are published "typical" values tested on net shaped die cast test bars. 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.

Chemical Analysis of ZA-27:

	Al	**Mg**	**Cu**	**Fe**	**Pb**	**Cd**	**Sn**	**Ni**	**Zn**
Ingot (ASTM B240)	25.5-28.0	.012-.02	2.0-2.5	.07 max	.005 max	.005 max	.002 max	-	Bal
Die Cast (ASTM B86)	25.0-28.0	.01-.02	2.0-2.5	.075 max	.006 max	.006 max	.003 max	-	Bal

Bundle Color Code: ***Purple***