

Forging Alloys



Magnesium Forging Billet

Magnesium has been used over the years in many structural applications for its unique alloy properties including high specific strength, excellent hot formability and high damping capacity.

Mag Specialties produces high quality forging grade DC Cast Billet in a variety of magnesium alloys including:

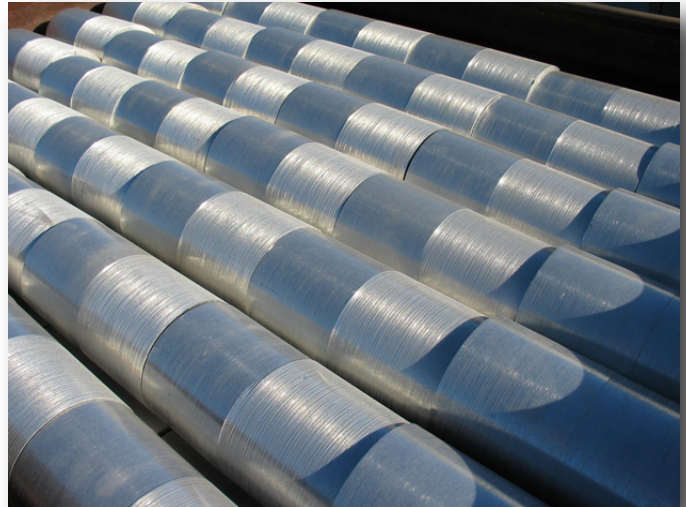
- AZ31B Good Forgeability, Medium Strength
- AZ61A Higher Strength than AZ31B
- AZ80A Higher Strength than AZ61B
- ZK31 High Strength, Medium Weldability
- ZK60A Highest guaranteed minimum strength and higher ductility

Our forging alloys are uniquely produced to exceedingly tight chemistry and cleanliness tolerances and result in uniformly fine grain sizes across the entire billet.

Billet sizes range from 4.0 to 13.0 inch diameters (101.6 to 330.2 mm) with available downstream Pre-ex processing and solution heat treatment options to meet our customers specific demand.

Our billet chemistry is traceable to each cast with product soundness insured by 100% ultrasonic testing upon request

Give us a call today to discuss your magnesium forging requirements, obtain a quotation or sample quantities for testing.



Available Sizes

Sizes		
Diameter		Length
Inches	Millimeters	
4.0	101.6	
7.0	177.8	
8.0	203.2	Custom Sizes Available
9.0	228.6	
13.0	330.2	

Available Grades

Chemical Composition (% Max)												
Element	Magnesium	Aluminum	Manganese	Zinc	Thorium	Zirconium	Silicon	Copper	Nickel	Iron	Calcium	Others
ASTM	% Mg	% Al	% Mn	% Zn	% Th	% Zr	% Si	% Cu	% Ni	% Fe	% Ca	Each
AZ31B	Balance	2.5-3.5	0.20-1.0	0.60-1.4	-	-	0.10	0.05	0.005	0.005	0.04	0.30
AZ61A	Balance	5.8-7.2	0.15-0.5	0.40-1.5	-	-	0.10	0.05	0.005	0.005	-	0.30
AZ80A	Balance	7.8-9.2	0.12-0.5	0.20-0.8	-	-	0.10	0.05	0.005	0.005	-	0.30
ZK31	Balance	-	-	3.0	-	0.60	-	-	-	-	-	0.30
ZK60A	Balance	-	-	4.8-6.2	-	0.45	-	-	-	-	-	0.30

Mechanical Properties

Tensile Properties (Typical)					
Alloy	Tensile Strength		Yield Strength		Elongation
	ksi	Mpa	ksi	Mpa	%
AZ31B-F	34.0	234	19.0	131	6
AZ61A-F	38.0	262	22.0	152	6
AZ80A-F	42.0	290	26.0	179	5
AZ80A-T5	42.0	290	28.0	193	2
ZK31-T5	43.0	295	30.0	210	7
ZK60A-T5	42.0	290	26.0	179	7

Quality

- All analysis to conform to ASTM B91-12
- Quality certificates provided with each shipment.
- Ultrasonic testing certified to SME-AMS-STD-2154

Contact Us

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