Technical Brief: Solid Zinc Alloys

ALLOY 190

DESCRIPTION:

Copper hardened zinc; good strength and excellent ductility; general purpose alloy.

TYPICAL USES:

Plumbing hardware, bright automotive trim, cable wrap, EMI-RFI shielding, coinage, expanded metal, terrazzo stripping, window cames

COMPOSITION: (% by Wt.)

Copper	0.7 to 0.9
Zinc (99.995% pure)	balance

MECHANICAL PROPERTIES:

	English	***Metric***
Ultimate Tensile Strength	22 to 29 ksi	152 to 200 MPa
Hardness (Rockwell 15T)	59 to 69	59 to 69
% Elongation (in 2")	35-70	35-70

ALLOY 500

DESCRIPTION:

max. Commercially pure zinc; the softest of all 0.004 zinc alloys.

TYPICAL USES:

Lens finning pads; galvanic protection where the specification dictates high purity; die striking of ornamental parts where die filling is difficult.

COMPOSITION: (% by Wt.)

Copper	0.003
Titanium	0.001 to
Zinc (99.995% pure)	balance

MECHANICAL PROPERTIES:

	English	***Metric***
Ultimate Tensile Strength	10 to 22 ksi	69 to 152 MPa
Hardness (Rockwell 15T)	20 to 45	20 to 45
% Elongation (in 2")	15-75	15-75

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ALLOY 710

DESCRIPTION:

Copper hardened and titanium refined zinc; good strength and ductility with better creep resistance than most zinc alloys.

TYPICAL USES:

Architectural applications, painted or powder coated hardware parts, low amperage electrical conductor.

COMPOSITION: (% by Wt.)

Copper	0.10 to 0.25
Titanium	0.06 to 0.10
Zinc (99.995% pure)	balance

MECHANICAL PROPERTIES:

	English	***Metric***
Ultimate Tensile Strength	21 to 28 ksi	145 to 193 MPa
Hardness (Rockwell 15T)	50 to 68	50 to 68
% Elongation (in 2")	30-45	30-45

ALLOY 750

DESCRIPTION:

Copper hardened and titanium refined zinc; good strength and moderate ductility; best creep resistance of zinc alloys.

TYPICAL USES:

Automotive fuses, leaf spring interliners, low voltage electrical terminals, bussbar.

COMPOSITION: (% by Wt.)

Copper	0.50 to 0.70
Titanium	0.12 to 0.18
Zinc (99.995% pure)	balance

MECHANICAL PROPERTIES:

	English	***Metric***
Ultimate Tensile Strength	21 to 32 ksi	145 to 220 MPa
Hardness (Rockwell 15T)	58 to 72	58 to 72
% Elongation (in 2")	30-50	30-50

Special Mechanical Test Parameters: Ref. ASTM B69-98a, Section 7.1.1: for Tensile Properties testing, the recommended rate of separation of the heads should be 0.125 in./in./min., which is equivalent to a cross head speed of 0.250 in./min.; and Section 7.1.2: for Hardness testing, the dwell time of the major load should be 15 seconds.

Alloys not listed may be available for various applications. Please contact us for more information

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