

ECO BRASS® Ingot

Delivers Performance

ECO BRASS® Ingot provides the best alternative for lead free* casting applications requiring high strength and corrosion resistance while maintaining good machinability.



Minimum Mechanical Properties (ASTM B505, B584, B806)

Casting Method	Tensile Strength (ksi)	Yield Strength (ksi)	Elong. %	Brinell Hardness 500 lb Load
Sand	59	22	16	
Permanent Mold	64	32	16	
Continuous Cast	65	25	8	103

ECO BRASS® Ingot (C87850) offers casting manufacturers several advantages compared to both leaded and lead free* casting product alternatives.

- ECO BRASS® has a lower pouring temperature compared to other copper based alloys.
- A shortened solidification range makes it less prone to dispersed microporosity.
- The silicon content in the alloy and the low melting temperature result in reduced dross formation and fuming.
- The silicon addition gives ECO BRASS® excellent fluidity for replication of details.
- Phosphorus additions to the melt are not required.



ECO BRASS® INGOT (C87850) Advantages:

- Lead free*
- Lower melting temperature 1616°F Liquidus
- Fluidity - High
- Drossing - Low
- Gassing - Low
- Leaves furnace lining, skimming tools and ladles dross free

Chemistry Specification (ASTM B30)

Cu (%)	Si (%)	P (%)	Pb (%)	Fe (%)	Sn (%)	Ni (%)	Mn (%)	Sb (%)
75-78	2.7-3.4	0.05-0.20	0.09 max	0.10 max	0.30 max	0.20 max	0.10 max	0.10 max

C87850 Copper Silicon Alloy Properties

Physical Properties

Melting Point - Liquidus (°F)	1616
Melting Point - Solidus (°F)	1571
Density (lb/cu in.)	0.3
Electrical Conductivity (%IACS at 68°F)	8
Thermal Conductivity (Btu/sq ft/ft hr/°F at 68°F)	21.8
Coefficient of Thermal Expansion (x10 ⁻⁶ /°F, 68-212°F)	10.3
Coefficient of Thermal Expansion (x10 ⁻⁶ /°F, 68-392°F)	10.3
Coefficient of Thermal Expansion (x10 ⁻⁶ /°F, 68-572°F)	10.4
Specific Heat Capacity (Btu/lb/°F at 68°F)	0.09



Suitability

Fabrication Properties

TECHNIQUE



Soldering	EXCELLENT
Brazing	EXCELLENT
Oxyacetylene Welding	GOOD
Spot Weld	GOOD
Seam Weld	GOOD
Butt Weld	GOOD
Capacity for Being Cold Worked	POOR
Capacity for Being Hot Formed	EXCELLENT
Machinability Rating (85% MULTI-SPINDLE / 100% CNC)	GOOD

Thermal Treatments

TREATMENT	MINIMUM	MAXIMUM
Stress Relief	Not Required	
Annealing	930°	1110°F
Hot Working	1200°F	1400°F



For further information please contact:

800-537-4291 | ecobrass@wieland.com

To learn more or obtain a list of ECO BRASS® plumbing manufacturers visit

www.ECOBRASS-USA.COM

