

Courtesy of Busby Metals, Inc. - www.busbymetals.com

Brush Engineered Bronze



Wrought and Cast Alloys

State of the Art Facility and Laboratory

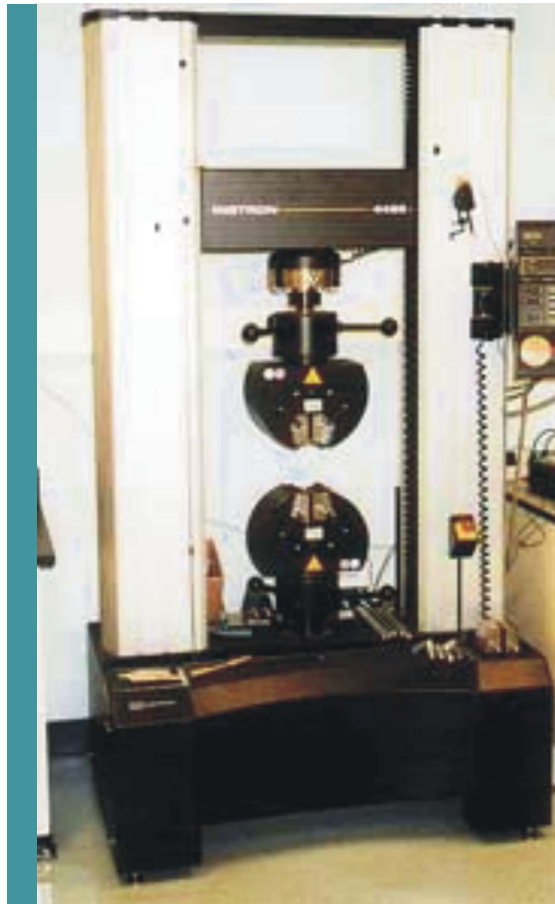
Brush Engineered Bronze's 50,000 square foot copper-based mill includes a state-of-the-art laboratory to ensure our customers receive the highest quality specialty alloys in rod, bar and tube form.

Modern facilities and state-of-the-art labs alone do not ensure high quality, competitively priced products for our customers. Brush Engineered Bronze has also developed integrated quality, environmental, and health and safety systems. These systems will prepare us for the certification process to ISO 9002 and ISO 14001 worldwide standards in 1999.

These world-class systems and facilities were developed in the pursuit of our goal to provide the best quality products and services to our customers at competitive prices.



Our research and quality control laboratory ensures the alloys you receive meet the specifications you requested.



All of our alloys are shipped with chemical and mechanical properties certified to your requested ASTM, AMS, SAE, or federal specifications.





Cast Products

BrushBronze™ Cast Alloys

Brush Engineered Bronze is the only copper-base alloy foundry in North America that offers vertical continuous casting, horizontal continuous casting, and direct chill semi-continuous casting all in one location. This diversity allows us to offer cast products from 1/4" through 30" diameter rounds and cast plate to 27" wide. With on-site die making, straightening, heat treating, and sawing capabilities, we offer quick turn around on standard and custom shapes and sizes.

| | TUBE | BILLET | DESCRIPTION | CDA # |
|------------------|------|--------|------------------------|-----------------|
| BrushBronze™ 955 | ■ | | Nickel-aluminum Bronze | AMS 4880 C95510 |
| BrushBronze™ 375 | | ■ | Die Bronze | |
| BrushBronze™ 625 | | ■ | Die Bronze | C62500 |



ToughMet™ Alloys

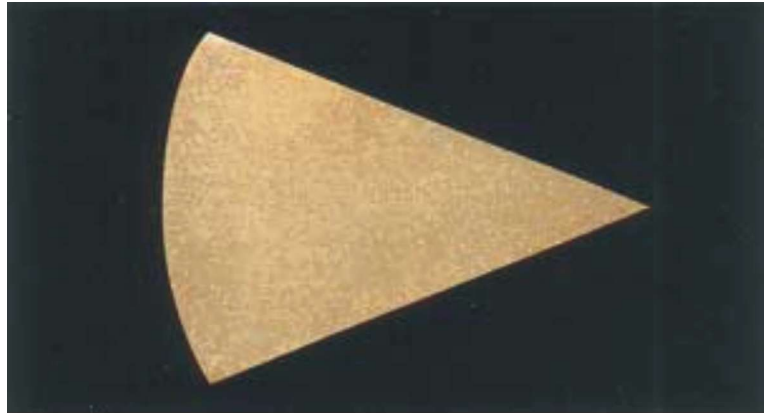
The Tough Met™ alloys are copper-nickel-tin spinodal alloys that combine high strength and resistance to wear under severe loading conditions. Able to withstand ten times (10x) the loading of C95400 aluminum bronze, we recommend the ToughMet™ alloys for all your severe service applications or where long bearing/wear life is desired.

| TYPICAL PROPERTIES | TENSILE STRENGTH | YIELD STRENGTH | ELONGATION % | HARDNESS RC | TUBE | ROD |
|--------------------|------------------|----------------|--------------|-------------|------|-----|
| ToughMet™ 2 | 105 (KSI) | 90 (KSI) | 6 | 28 | ■ | ■ |
| ToughMet™ 3 | 120 (KSI) | 110 (KSI) | 2 | 32 | ■ | ■ |

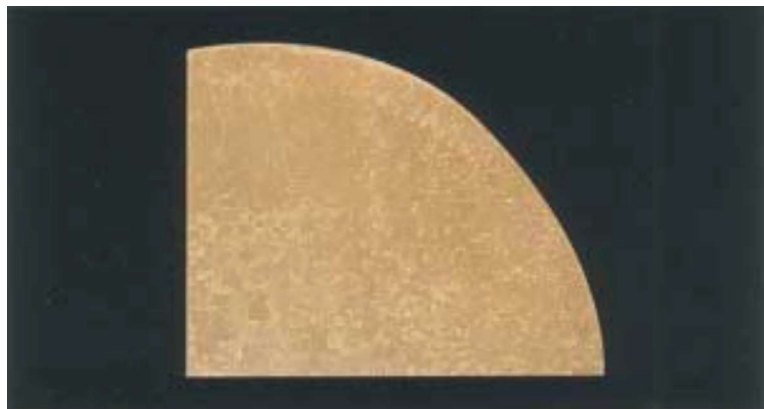
EquaCast™ Process...For Unmatched Consistency

Brush Wellman employs the EquaCast™ process to cast a fine grain alloy structure with fine equiaxed crystals. The EquaCast™ process offers many advantages over conventional cast products:

- Enhanced mechanical properties
- Product consistency
- Easier to machine
- Consistent dispersion of alloying elements
- Enhanced corrosion resistance
- Better response to heat treatment



Superior fine grain structure of EquaCast™ (Transverse view).



Conventional continuous casting grain structure (Transverse view).

EquaCast™ billets processed into wrought alloys offer the following benefits

- Better dispersion of alloying elements
- Enhanced mechanical properties
- Product consistency
- Requires less hot working
- Better response to heat treatment



EquaCast™ Structure (Longitudinal view)



Conventional casting (Longitudinal view)