

AM 388™ ALLOY STRIP (C72650)

TECHNICAL DATASHEET

PROPERTIES & BENEFITS

- Combination of high strength and formability
- High conductivity
- Available in mill hardened or age-hardenable tempers
- Low distortion during aging, no fixturing required
- Excellent solderability and resistance to stress relaxation during high temperature (over 400° F, 200° C) soldering
- Fine grain size
- Excellent corrosion resistance bare and easy to plate when required
- Low initial cost and additional savings during processing

DESCRIPTION

Copper based Spinodal alloy with high conductivity and high strength. Outstanding performance for contacts in connectors, sockets and switches. (C72650 is CDA designation for AM 388™ Alloy)

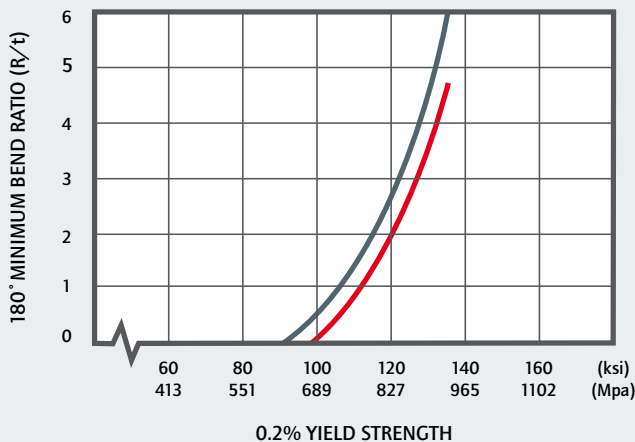
SPECIFICATIONS

| CHEMICAL COMPOSITION (WEIGHT %) | |
|---------------------------------|--------------|
| Nickel | 7.0 - 8.0% |
| Tin | 4.5 - 5.5% |
| Other elements | 0.5% maximum |
| Copper | Balance |

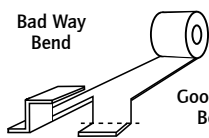
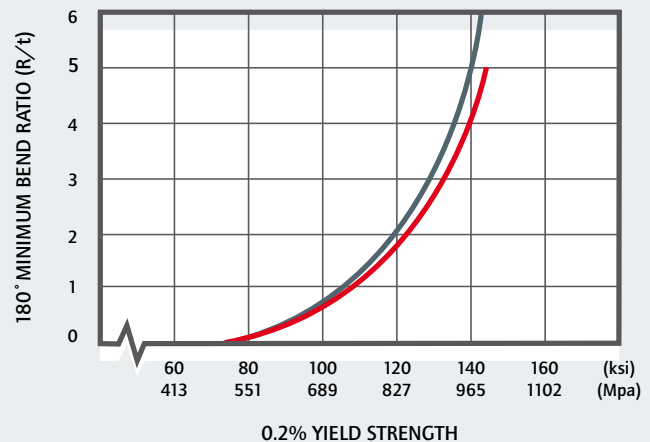
| PHYSICAL PROPERTIES | |
|--|--|
| Electrical Conductivity at 68°F (20°C) | 14 to 15% IACS |
| Modulus of Elasticity | 18 x 10 ⁶ psi (12 x 10 ³ MPa) |
| Density | 0.32 lb/in ³ (8.87 gm/cc) |

FORMABILITY

90° C MINIMUM BEND RATIO vs. 0.2% YIELD STRENGTH FOR MILL HARDENED AM 388



180° C MINIMUM BEND RATIO vs. 0.2% YIELD STRENGTH FOR MILL HARDENED AM 388



TEST THICKNESSES:
0.008 to 0.005 in.
(0.203 to 0.127 mm)

— GOOD WAY
— BAD WAY

AM 388™ ALLOY STRIP (C72650) - TECHNICAL DATA SHEET

PROPERTIES OF AM 388™ AGE HARDENABLE TEMPER BEFORE AGE HARDENING

| STANDARD TEMPER DESIGNATION | TEMPER NAME | 0.2% YS ksi (MPa) | UTS ksi (MPa) | ELONGATION (%) | HARDNESS (VHN) | MINIMUM BEND RATIO | |
|-----------------------------|-------------|------------------------|------------------------|-------------------|-------------------|--------------------|--------------|
| | | | | | | 90° BAD WAY | 180° BAD WAY |
| TB00 | Solution HT | 25 - 35 (172 - 241) | 55 - 70 (379 - 482) | 32 - 40 | 100 - 130 | 0 | 0 |
| TD01 | 1/4 Hard | 55 - 65 (379 - 448) | 60 - 75 (413 - 517) | 18 - 25 | 150 - 200 | 0 | 0 |
| TD02 | 1/2 Hard | 70 - 80 (482 - 551) | 75 - 85 (517 - 586) | 5 - 11 | 175 - 225 | 0 | 0 |
| TD03 | 3/4 Hard | 75 - 85 (517 - 586) | 80 - 90 (551 - 620) | 4 - 7 | 190 - 230 | 0 | 0 |
| TD04 | Hard | 80 - 90 (551 - 620) | 85 - 95 (586 - 655) | 2 - 5 | 200 - 240 | 0 | 0 - 1T |

HEAT TREATING PARAMETERS TO AGE SPINODALLY HARDENED AM 388™ PARTS

| TEMPER | AGING TEMPERATURE/TIME |
|------------------------|---|
| TB00 | 725 - 750° F (385 - 400° C) / 1.5 - 3 HRS |
| TD01, TD02, TD03, TD04 | 700 - 725° F (370 - 385° C) / 1.5 - 3 HRS |

Any inert or reducing atmosphere will keep AM 388™ clean and free of oxide during aging.

AFTER AGE HARDENING

| STANDARD TEMPER DESIGNATION | SPINODAL AGE HARDENING TREATMENT | 0.2% YS ksi (MPa) | UTS ksi (MPa) | ELONGATION (%) | HARDNESS (VHN) |
|-----------------------------|----------------------------------|--------------------------|---------------------------|-------------------|-------------------|
| TX00 | 750° F (400° C) / 2 HR | 110 - 120 (758 - 827) | 120 - 140 (827 - 965) | 6 - 8 | 275 - 325 |
| TS01 | 725° F (385° C) / 2 HR | 115 - 125 (792 - 861) | 130 - 140 (896 - 965) | 8 - 10 | 290 - 340 |
| TS02 | 725° F (385° C) / 2 HR | 120 - 135 (827 - 930) | 135 - 145 (930 - 999) | 6 - 9 | 300 - 360 |
| TS03 | 725° F (385° C) / 2 HR | 130 - 140 (896 - 965) | 140 - 150 (965 - 1034) | 6 - 8 | 310 - 360 |
| TS04 | 725° F (385° C) / 2 HR | 130 - 145 (896 - 999) | 140 - 155 (965 - 1068) | 4 - 6 | 320 - 380 |

MILL HARDENED PROPERTIES

| MILL HARD | 0.1% YS ksi (MPa) | 0.2% YS ksi (MPa) | UTS ksi (MPa) | ELONGATION (%) | HARDNESS (VHN) | MINIMUM BEND RATIO | |
|-----------|--------------------------|--------------------------|--------------------------|-------------------|-------------------|--------------------|--------------|
| | | | | | | 90° BAD WAY | 180° BAD WAY |
| TM00 | 65 - 86 (448 - 586) | 70 - 90 (482 - 620) | 100 - 120 (689 - 827) | 18 - 25 | 210 - 300 | 0 - 1T | 0 - 1.3T |
| TM02 | 85 - 105 (586 - 723) | 90 - 110 (620 - 758) | 115 - 135 (792 - 930) | 10 - 18 | 270 - 340 | 0 - 2.5T | 0 - 2.8T |
| TM04 | 90 - 110 (620 - 758) | 100 - 120 (689 - 827) | 115 - 135 (792 - 930) | 10 - 16 | 300 - 350 | 0 - 3.7T | 0 - 4T |
| TM06 | 95 - 115 (655 - 792) | 105 - 125 (723 - 861) | 120 - 140 (827 - 965) | 10 - 14 | 300 - 360 | 1 - 5T | 1.5 - 5.5T |
| TM08 | 100 - 120 (689 - 827) | 115 - 135 (792 - 930) | 130 - 145 (896 - 999) | 6 - 10 | 310 - 370 | 2 - 5.5T | 2.5 - 6T |

* Minimum Bend radius measured in 3 point bending in an unsupported die.

WALLINGFORD / AMETEK®
SPECIALTY METAL PRODUCTS

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