


lebronze alloys
Lebronze alloys - Sulppes

INSPECTION CERTIFICATE

RCF-17111

Number : 3840-1

Lot n° : 30039231-0

Printed : 11/01/2022

Supplier address

Lebronze alloys - Sulppes

 Z.I. Vole de Châlons
R.D 977
51600 SUIPPES

Purchaser

FARMERS COPPER LTD

 9900 EMMETT F LOWRY EXPY
77591 TEXAS CITY - TX

Delivery address

FARMERS COPPER LTD

 9900 EMMETT F LOWRY EXPY
77591 TEXAS CITY - TX

 Reference R464035000CDHH / 103045RONP000002
3-1/2" ROUND BAR C46400 COLD DRAWN HALF HARD
CUZn40SN - H02 - C46400 ASTM B21 AMS4611 QQ-B-637

| Information | | Order | | Delivery | |
|-------------|--|---------|--------------|----------|-------------|
| Y/Order | | Y/Order | 772327-FC | N° | 40005035 |
| | | N° | 20002354 / 7 | Date | 22/11/2021 |
| | | Date | 13/07/2021 | Qty | 6 549,93 LB |
| | | Qty | 6 318,00 LB | Weight | 2 971,00 KG |

Chemical analysis - If Cu not indicated: Balance

| Elements | Unit | N° CAS | Minimum | Maximum | Records | | | |
|--------------|------------|-----------|---------|---------|---------|---|---|---|
| | | | | | 1 | 2 | 3 | 4 |
| Heat | Sans unité | | | | | | | |
| Cu | % | 7440-50-8 | 59,0 | 62,0 | 60,3 | | | |
| Sn | % | 7440-31-5 | 0,5 | 1,0 | 0,7 | | | |
| Pb | % | 7439-92-1 | 0,00 | 0,20 | 0,01 | | | |
| Fe | % | 7439-89-6 | 0,00 | 0,10 | 0,02 | | | |
| Impurity | % | | 0,00 | 0,10 | 0,05 | | | |
| Zinc balance | % | 7440-66-6 | | | 38,90 | | | |

Mechanical tests

| Elements | Unit | Minimum | Maximum | Records | | | |
|------------------------|------|---------|---------|---------|------|---|---|
| | | | | 1 | 2 | 3 | 4 |
| Rp0.2 (Yield strength) | ksi | 25,0 | | 26,0 | 30,4 | | |
| 0.5% EUL | ksi | 22,0 | | 26,5 | 31,3 | | |
| Tensile Strength | ksi | 54,0 | | 58,0 | 62,6 | | |
| Elongation 4D | % | 27,0 | | 48,0 | 40,5 | | |
| Rockwell hardness B | HR | 55,0 | 80,0 | 68,0 | | | |

Other tests

- Visual
- Dimensional
- Mercurous Nitrate Test
- Ultrasonic

References

- AMS4611 / Revision H / C 46400 / H02
- ASTM B 21 / 2014 / C 46400 / H02
- QQ-B-637 / Indice A / C 46400 / H02

This material did not come in direct contact with mercury or any of its compounds during its manufacturing, inspection or storage

This product is melted and manufactured in France

No weld repair was performed on this material

This material is ROHS compliant

Validated by :



Cust. HART INDUSTRIAL UNIONS LLC (PD) Item R464035000CDHH-- Line 1251352-1 Qty 385 Req 1
 Desc. 3-1/2" ROUND 464 CDHH Carr. Unassigned Carrier Doc. 30039231 P.O.# 47235



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Additional text

Heat N° 60048560.

Material law: -ASTM B21 / C46400 / H02 / (01)(03)(06)(12)(14)(20).

Mercurous nitrate test in accordance with ASTM B154 : Ok

The results of the other tests and frequency are conformable with the norm in reference. This material has been manufactured and tested in accordance with the listed specifications and results conform to the specification and order requirements

LEBRONZE ALLOYS

SIEGE SOCIAL - ZI VOIE DE CHALONS - RD 977 - 51600 SUIPPES - FRANCE

TEL : +33(0) 3 26 69 28 28 - www.lebronze-alloys.com

RCS Chalons En Champagne 572 196 129 - TVA UE FR60 572 196



FARMERS COPPER LTD.

MILL TEST REPORT APPROVED

BY Q.A. DEPT.: *[Signature]*

REVIEWED BY: *[Signature]*

Validated by :