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|---------------------------------|--------------------------|-------------------------------------|----------------------|----------------------------|--|---------------------------------|--------------|-----------------------------|---------------|
| REPORT N. Rapporto N. | TC-010356-13-0012 | Issued on Emesso il | 22/06/2013 | Customer Cliente | PROVEEDORA DE MATERIALES ANKER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO | Job n. Commessa n. | 10356 | Page n. Pagina n. | 1 of 6 |
| Revision Revisione | 0 | According to In accordo a | EN 10204:2005 | Type Tipo | 3.1 | Purchase order Ordine | 301 | | |

DESCRIPTION / DESCRIZIONE

| Test Prova | Item Pos. | Qty Q.tà | Customer code Codice cliente | Material Materiale | Heat Colata | Product Prodotto |
|---------------|--------------|-------------|---------------------------------|-----------------------|----------------|--|
| VRNC | 12 | 1041 | * | ASTM A105/11 | 212552 | 45 DEG. ELBOW S. 3000 NPT A/SA105N 3/8 |
| UJXR | 16 | 125 | * | ASTM A105/11 | P3111135730 | 45 DEG. ELBOW S. 3000 NPT A/SA105N 1.1/4 |
| UKSB | 37 | 4000 | | ASTM A105/10 | 05/77421 | UNION S. 3000 NPT A/SA105N 1.1/2 male |
| UKSC | 37 | 4000 | | ASTM A105/10 | 05/77421 | UNION S. 3000 NPT A/SA105N 1.1/2 female |
| UKSA | 37 | 4000 | | ASTM A105/10 | 05/77421 | UNION S. 3000 NPT A/SA105N 1.1/2 nut |

| Test Prova | HEAT TREATMENT DATA AND REFERENCES TO OTHER CERTIFICATES / Dettagli di trattamento termico e riferimenti ad altri certificati |
|---------------|---|
| VRNC | MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR. /CERT.380.EVASI*589778MEGA |
| UJXR | MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 900 C COOLED IN STILL AIR. /CERT.12134.MEGA/I*586015MEGA |
| UKSB | MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR. /CERT.2012/0040031.FEAT*584276MEGA* |
| UKSC | MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR. /CERT.2012/0040034.FEAT*584276MEGA* |
| UKSA | MATERIAL PRODUCED BY ELECT.FURNACE-NORMALIZED AT 910 C COOLED IN STILL AIR. /CERT.2012/0040030.FEAT*584276MEGA* |

| Test Prova | Test loc. Preso a | Orient. Direz. | TENSILE TEST / Trazione | | | | | | | CVN (KV) / Prova di resilienza | | | | | Bend Piega | Flatten. Schiacc. | Hardness Durezza [HBN] |
|---------------|----------------------|-------------------|-------------------------|---------------------------------|------------------|--|---|-----------------------------------|--------------------------------------|--------------------------------|--------------------|------------------------------------|--------------------------|------------------------------|---------------|----------------------|---------------------------|
| | | | Specimen / Provino | | | Yield strength Snerv. [Mpa] Min: | Tensile strength Rottura [Mpa] Min: | Elongation Allung. [%] Min: | Red. Of Area Contraz. [%] Min: | Dimens. Dimens. [mm] | T Temp. [°C] | Abs. Energy Energia ass. [J] | Shear A Area d [%] | Lat Exp Esp. Lat. [mm] | | | |
| | | | Shape Forma | A [mm ²] Sezione | L [mm] Lungh. | | | | | | | | | | | | |
| VRNC | T/2 | LONG | Round | 30,600 | 25,000 | 313,000 | 534,000 | 29,300 | 66,600 | 10x10x55 | 0 | 56-66-68 | -- | -- | | 152-156 | |
| UJXR | T/2 | LONG | Round | 30,500 | 25,000 | 281,400 | 502,000 | 35,700 | 72,100 | 10x10x55 | 0 | 158-139-131 | -- | -- | | 145-147 | |
| UKSB | T/2 | LONG | Round | 30,500 | 25,000 | 332,900 | 529,900 | 30,200 | 63,200 | 10x10x55 | 0 | 80-90-98 | -- | -- | | 145-149 | |
| UKSC | T/2 | LONG | Round | 30,500 | 25,000 | 342,600 | 514,600 | 30,100 | 62,400 | 10x10x55 | 0 | 72-78-80 | -- | -- | | 149-152 | |
| UKSA | T/2 | LONG | Round | 30,500 | 25,000 | 328,200 | 521,200 | 30,300 | 65,200 | 10x10x55 | 0 | 78-78-92 | -- | -- | | 145-152 | |

| Test Prova | C [%] | Si [%] | Mn [%] | S [%] | P [%] | Cr [%] | Ni [%] | Mo [%] | Ti [%] | Cu [%] | V [%] | Al [%] | Co [%] | Nb [%] | N [%] | Sn [%] | W [%] | B [%] | Fe [%] | Zr [%] | CE ^A [%] | PREN ^B [%] | X fact. ^C [%] | J fact. ^D [%] | |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|--------|--------|--------|---------------------|-----------------------|--------------------------|--------------------------|--|
| VRNC | 0,1640 | 0,1660 | 1,0250 | 0,0080 | 0,0060 | 0,0760 | 0,1300 | 0,0300 | | 0,1760 | 0,0020 | 0,0250 | | 0,0010 | | 0,0090 | | | | | | 0,3768 | | | |
| UJXR | 0,2000 | 0,1950 | 1,0700 | 0,0030 | 0,0150 | 0,1200 | 0,0160 | 0,0050 | | 0,0520 | 0,0040 | 0,0290 | | 0,0040 | | | | 0,0001 | | | | 0,4086 | | | |
| UKSB | 0,1800 | 0,2400 | 1,1300 | 0,0050 | 0,0160 | 0,0900 | 0,0400 | 0,0100 | | 0,1200 | 0,0250 | | | 0,0010 | | | | | | | | 0,4039 | | | |
| UKSC | 0,1800 | 0,2400 | 1,1300 | 0,0050 | 0,0160 | 0,0900 | 0,0400 | 0,0100 | | 0,1200 | 0,0250 | | | 0,0010 | | | | | | | | 0,4039 | | | |
| UKSA | 0,1800 | 0,2400 | 1,1300 | 0,0050 | 0,0160 | 0,0900 | 0,0400 | 0,0100 | | 0,1200 | 0,0250 | | | 0,0010 | | | | | | | | 0,4039 | | | |

REMARKS / Note

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|--|--|
| 1: MATERIAL ACCORDING TO NACE MR0175/ISO 15156-1-2-3 Ed.2009 | <p>A: CE = C + Mn/6 + (Cr+Mo+V)/5 + (Cu+Ni)/15 B: PREN = Cr + 3.3Mo + 16N C: X factor = (10P + 5Sb+4Sn+As)/100 - elements expressed in ppm D: J factor = ((Mn + Si)(P + Sn)) x 104</p> |
| Quality control laboratory Laboratorio controllo qualità | Emmanuel Centemeri |

This certificate is issued by a computerized system and it is valid with electronic signature. On the original certificate the trademark M.E.G.A. is printed in green color.

Form QC-01-01 Rev. 0 2013-03-15

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|--------------------------|-------------------|------------------------------|---------------|---------------------|--|--------------------------|-------|----------------------|--------|
| REPORT N. Rapporto N. | TC-010356-13-0013 | Issued on Emesso il | 26/06/2013 | Customer Cliente | PROVEEDORA DE MATERIALES ANCER SA DE CV, AV ADOLFO LOPEZ MATEOS 150, COL LAGRANGE, SAN NICOLAS DE LOS GARZA, N.L. - 66490, MEXICO | Job n. Commessa n. | 10356 | Page n. Pagina n. | 6 of 6 |
| Revision Revisione | 0 | According to In accordo a | EN 10204:2005 | Type Tipo | 3.1 | Purchase order Ordine | 301 | | |

We hereby certify that all items supplied for the above purchase orders meet all the requirements of the applicable specification of manufacture, the purchase item descriptions, purchase specifications and purchase order requirements. Visual, dimensional and marking check of items supplied has been carried out by our internal inspectors with satisfactory results.

The chemical and mechanical values shown on the EN 10204 certificate are true copy of the mill test certificate issued by the steel mill, or by the laboratory that determined it. All material is certified to be mercury free. No weld repair was performed. Marking was performed by low stress stamps in accordance with MSS SP25.

Manufacturing standards:

- 45° and 90° elbows, tees, crosses, full and half couplings, caps, square, hexagonal and round plugs, hexagonal and flush bushings are manufactured in accordance with ASMEB.16.11; threads in accordance with ANSI/ASME B1.20.1.
- Outlet branches are manufactured in accordance with: ASME B.31.1, B.31.3 and MSS-SP-97
- Seamless swage nipples are manufactured in accordance with: BS3799-74 or MSS SP95-86
- Seamless pipe nipples are manufactured in accordance with: B36.10-95 or B36.19-85
- Flanged outlet branches are manufactured in accordance with: ASME B.31.1, B.31.3 and B.16.5
- Unions are manufactured in accordance with: BS 3799 or MSS SP-83

When the length of flanged nipolet is not specified in the description, it is 150 mm.

The material is according to ASTM and ASME Boiler and Pressure Vessel Code Section II.

When the Edition/Revision of the listed standards is not mentioned, it is assumed to be the latest.

M.E.G.A. is approved with certificate 75/2002/MUC by T.U.V. (certification Body N.0036) to issue certificate of specific product control in accordance with the Pressure Equipment Directive 97/23/EC (PED) Annex 1, Paragraph 4.3.

Testing equipment used:

- Tensile test machine Galdabini Quasar 250 serial No. VAOG – Procedure QC-03 Rev. 1
- Impact test Cermac JB-W500 serial No. 04031 – Procedure QC-02 Rev. 1
- Hardness test Wolpert Dia Testor 2RC serial No. 8900298/0001 – Procedure QC-04 Rev. 0
- Chemical analysis spectrometer Baird DV4 serial No. P017 (ASTM E415 and E1086) – Procedure QC-07 Rev. 0

The product are manufactured in Italy.

Quality control laboratory

Laboratorio controllo qualità

Riccardo Scorsetti

