**MUSSARI S.r.l.**
Trafileria tubi inox di alta precisione
Via Repubblica 11/B - Tel 031/390677 - 031/492476
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22075 LURATE CACCIVIO/COMO (ITALY)
web-site: www.mussari.com

# TEST CERTIFICATE ACCORDING TO EN 10204 / 3.1

ABNAHMEPRUFZEUGNIS
CERTIFICAT D'ESSAIS
CERTIFICATO DI COLLAUDO

N. 818 - 2015

DATE - Datum/Data: 10 marzo 2015

Comm. Nr.: 1877/14 - 640/15**

DELIVERY BILL - Lieferschein/Bulletin de Livraison/Bolla di consegna: 574

CUSTOMER ORDER N° - Bestellung/Commande Client/Ordine Cliente: 2015038

SPECIFICATIONS Anforderugen/Specifiations/Normative: ASTM A 213/269 - MSR-HP Tubes

## MECHANICAL TEST
Mechanische Prufungen/Essai Mécaniques/Caratteristiche meccaniche

| STEEL GRADE | DIMENSIONS | QUANTITY | | | YIELD POINT | | TENSILE STRENGHT | | ELONGATION | | HARDNESS | | TECHNOLOGICAL TEST | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Menge/Quantité/Quantità | | | Streck-Dehngrenze / Limite d'élasticité / Limite di snervamento | | Zugfestigkeit / Résistance à traction / Limite di Rottura | | Bruchdehnung / Allongament / Allungamento | | Haerte / Dureté / Durezza | | Technologische Prufung / Examen Technologique / Prove tecnologiche | |
| Werkstoff/Nuance / Materiale | Abmessungen / Dimensions/Dimensioni | MT / Mt | PC. / pz. | LGTH / mm | RP0.2% req. | N/mm² result | N/mm² req. | N/mm² result | % LO2" req. | % LO2" result | HRB req. | HRB result | FLARING TEST: Erweiteunversuch/Evasement/Allargamento | = |
| TP 316 - 316L | 3/8" x 0.125" 9.52 x 3.10 | 301,87 | | | ≥ 689 | 700,0<br>715,0 | ≥ 758 | 899,0<br>902,0 | ≥ 18% | 19,0<br>18,0 | ≥ 95 | 95,0<br>97,0 | FLANGE TEST: Krempeversuch/Bordage/Bordatura | = |
| | | | | | RP1.0%N/mm2 req. | RP1.0%N/mm2 result | | | | | | | FLATTENING TEST: Abflashungversuch/Aplatissement/Schiacciamento | = |
| | | | | | | | | | | | | | BENDING REV.TEST: Faltversuch/Pliange/Piegamento | = |
| | | | | | | | | | | | | | RING FLATTENING TEST: Ring Faltversuch/Ecrasement anneau/Prova di Schiacciamento | = |
| | | | | | | | | | | | | | DRIFT EXPANDING TEST : Aulweitversuch/Mandrin.ann./Mandrinatura Anello | = |

| STEEL GRADE / Werkstoff/Nuance / Materiale | DIMENSIONS / Abmessungen / Dimensions/Dimensioni | HEAT N° / Schmelze / Coulée/Colata | %C MAX 0.035 | %Mn MAX 02.00 | %Si MAX 0.75 | %P MAX 0.045 | %S MAX 00.03 | %Ni MIN 10.00 MAX 14.00 | %Cr MIN 16.00 MAX 18.00 | %Mo MIN 2.00 MAX 3.00 | %Ti |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TP 316 - 316L | 3/8" x 0.125" 9.52 x 3.10 | 13/1037 | 0,029 | 1,800 | 0,430 | 0,037 | 0,004 | 11,050 | 16,820 | 2,080 | 0,058 |
| | PRODUCT ANALYSIS: | | | | | | | | | | |
| | PRODUCT ANALYSIS: | | | | | | | | | | |

**REMARKS**
Bemerkungen/Notes/Note

smls tubes cold drawn HARD pickled

nahtloses rohr kalt gezogen HART gebeizt - Tubes sans soudure étirés à froid

Ecrui décapés - Tubi senza saldatura trafilati a freddo CRUDI decapati

**Suitable for 60.000 Psi**

HEAT TREATMENT : Warmebehandlung/Traitement Termique/trattamento termico — N.A.

PMI TEST on each tube: Verwechlungsprufung/Essai P.M.I./Prova anti mescolanze — =

Intergranular corrosion test acc. To A262/pract. E Korrosionsforderncle Ruckstanden/Essai residues corrosif/Prova residui corrosivi — =

*100% hydrostatic pressure tested at* ========== *During 5 sec :*
Wasserdruckversuch/Essai Hydraulique/Prova idraulica

*100% eddy current test acc.to A1016-NFA 49872-SEP 1914-ASTM A450/E426-EN 10893-1-EN 10893-2-EN10246-2 :GOOD*
Eddy current/Courant de Foucault/Eddy Current

*Visual and Dimensional control :* Besichtigung und Ausmessung/Controle Visuel et Dimensionel/Controllo Visivo e Dimensionale — OK

*Straightness control* Geradheit Kontrolle/Contrôle de rectitude/Controllo rettilineità — =

**MARKING-Kennzeichnung/Marquage/Marcatura**

MSR - ASTM A213/269 - AISI 316-316L Heat Nr.... SMLS MSR-HP Tubes Size 3/8"x0.125" O.D....x....mm I.D. C.D. tubes Suit. For 60.000 PSI

**We certify that the material described has been manifactured acc. With above standards and specifications and satisfies the order's requirements.**
Wir bestaegen, dass die gelieferte Ware den Bestelleverschriften entspricht/Nous attestons que les produits livres sont conformes aux réferences de la commande/Noi attestiamo che il materiale spedito e' conforme ai requisiti dell'ordine

MUSSARI
trafileria tubi di alta precisione

INSPECTION DEPARTMENT SIGNATURE
Unters. Des Wersuchs ervanalungen
Visa de l'Inspecteur
Visa controllo materiale
MUSSARI S.r.l

F12611
3/8" High Pressure Nipple x 3" Long 60K