# INSPECTION CERTIFICATE 3.1

## ABNAHMEPRUFZEUGNIS 3.1

To EN 10204

COLUMBUS STAINLESS

CE

Corrosion Resistant Steel for building construction or civil engineering

| No. / Nr. | 2612598 - 1 1 / 1 |
|---|---|
| Date / Datum | 2013/12/31 |

MANUFACTURERS MARK

E/AOD

CUSTOMER (Besteller): BE GROUP OY
LOTILA KIRKKAATOVET 5-7/
VANHANRADANKATU 42
15522 LAHTI
Finland

| | |
|---|---|
| Order No. | EP16409 |
| Item No. | 004 |
| Customer Order No. | P014707 |

REQUIREMENTS:
AD 2000 W2
AD 2000 W10
Certified by TUV Rheinland/Berlin-Brandenburg to European Directive 97/23/EC for Pressure Equipment Certificate no. 01 202 ZA/Q-[illegible]

INSPECTOR'S STAMP: 157

PRODUCT (Erzeugnis): Warmgeformt, wärmebehandelt, gebeizt
ID: Hot rolled, heat treated, pickled

| HEAT No. | APO No. * |
|---|---|
| 393936 | 3939367/3 |

* The first six numbers are the heat number. The seventh character is the slab indicator and any further characters represent a part of the slab with common mechanical properties.

| SPECIFICATION (Norm) | MATERIAL CODE (Werkstoff) |
|---|---|
| EN 10088-2 2005 HOT ROLLED PLATE | 1.4404 1.4401 |
| EN 10028-7 2007 HOT ROLLED PLATE | 1.4404 1.4401 |
| ASME 2013 SECTION II PART A SA240 | 316L 316 |
| ASTM A240/A240M-13 | 316L 316 |
| EN 10088-4 2009 HOT ROLLED PLATE | 1.4404 |

CAST (Schmelze):
HGSH27543
HGSH27544

| TOLERANCE | Delivery Note Number |
|---|---|
| ISO 18286-08 H/R Plate-ASTMA480/A480M-ASMESA480/SA480M | 37606 |

| DIMENSIONS (Abmessung) | EURONORM | QUANTITY (Stückzahl) | MASS (Gewicht) |
|---|---|---|---|
| 10.000 mm x 1500 mm x 3000 mm | X5CRNIMO 17-12-2 | 6 | 2170 kg |

CHEMICAL ANALYSIS (Chemische Zusammensetzung)

| % | REQUIREMENT MIN | REQUIREMENT MAX | CAST |
|---|---|---|---|
| C | | 0.030 | 0.025 |
| S | | 0.015 | 0.002 |
| P | | 0.045 | 0.027 |
| Mn | | 2.00 | 1.48 |
| Si | | 1.00 | 0.43 |
| Ni | 10.0 | 13.0 | 10.1 |
| Cr | 16.5 | 18.5 | 16.8 |
| Mo | 2.00 | 2.50 | 2.02 |
| Ti | | | |
| N | | 0.11 | 0.04 |
| V | | | |
| Co | | | |
| Cu | | | |
| Nb | | | |
| Sn | | | |
| Al | | | |
| B | | | |

MECHANICAL PROPERTIES (Mechanische Werte)

| Test Direction | Test Pos. | Rp0.2 (MPa) | Rp1.0 (MPa) | Rm (MPa) | A 5 (% Elongation) | A 50 (% Elongation) | Hardness HRB | Bend Test | Impact Test | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ambient Temperature | Head | 270 | 320 | 587 | 52 | 56 | 80 | | | |
| | Tail | 263 | 305 | 579 | 53 | 56 | | | | |
| Rp0.2 °C | | | | | | | | | | |
| Rp0.2 °C | | | | | | | | | | |

HEAT TREATMENT

| Anneal °C | Quench |
|---|---|
| 1050 - 1100 | AIR/SPRAY |

ADDITIONAL TEST

| TEST NAME | RESULT | TEST NAME | RESULT |
|---|---|---|---|
| | | | |

INTERGRANULAR CORROSION

| SPECIFICATION | RESULT |
|---|---|
| ASTM A262-10 E | Pass |
| EN ISO 3651-2 | Pass |

This material is free from mercury contamination. The radiation level exhibited by this material is not greater than the normal background level.
This document is issued without alteration or erasure and may only be reproduced in full.
Tests to verify batch and quality have been made. Verwechslungsprüfung wurde durchgeführt.
Visual and dimensional control: no exceptions. Besichtigungen und Abmessung, ohne Beanstandung.
The delivery is in accordance with the order. Die Lieferung entspricht den Bestellbedingungen.
Made and melted in South Africa. Material has been PMI Tested.
This material meets the Hardness requirement of Nace MR-0175/ISO 15156-3 2003 & MR-0103-2012

Columbus Stainless is ISO 9001 2008 & ISO 14001 2004 Certified

Permeability 1.1 Max
Columbus Stainless (Pty) ltd. certifies that the analysis and material on this certification is correct and meets the specifications stated

COLUMBUS STAINLESS (Pty) Ltd
Hendrina Road, Middelburg
Mpumalanga, South Africa

PH de Vos
DER WERKS SACHVERSTANDIGE