



**CERTIFICATE**

**No. A/10-981109 Rev 00**  
**Date 2010-07-13 Page 1/2**

INSPECTION CERTIFICATE acc to  
EN 10 204 3.1

Processkontroll Items AB  
Box 2088  
444 02 STORA HÖGA  
SWEDEN

INSPECTION STAMP  
QA-TUBE

<b>Customer References</b>		<b>Sandvik References</b>	
708902/Melin	Customer order 2010-07-13	Order No. 205226	Subs No. 179545
003-00991 ITEMS		ABSMT No. 300-25670	ABSMT Dispatch note 11527/54 C.Code 15

<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING	<b>Steel/material Designations</b> Sandvik SS 3R60 2353 AISI AFNOR TP316/TP316L Z2CND17-13 W.nr DIN 1.4435 X 2 CRNIMO 18 14 3 EN no <b>1.4436/1.4435</b>
<b>Steel making process</b> Electric furnace	

**Technical requirements**  
 PED/23/EC, EN 10216-5 TC1  
 SS 219711, DIN 17458 TC1, NFA 49-117-09/85  
 ASTM A-213-09A AW, ASME SA-213-ED-07 AD-09B AW, ASTM A-269-08  
 NACE MR0175/ISO 15156-3:2003, HRB Max 80

**EXTENT OF DELIVERY**

It	Product designation	Heat	Lot	Pieces	Kg	M
01	THT-3R60-12-1.5 12.00 X 1.50	047429	94145	20	47.0	120.00
				Total	20	47.0 120.00

  

<b>KEY TO HEAT</b>		<b>KEY TO LOT</b>	
Heat Code	Heat No.	Lot Code	Lot No.
047429	524358	94145	4845894/1-1

  

**TEST RESULTS**

**Chemical composition (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047429	0.017	0.42	1.65	0.028	0.008	17.20	13.11	2.52
	<b>N</b>							
047429	0.037							

  

**Chemical composition, product (weight%)**

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
047429	0.018	0.42	1.65	0.029	0.010	17.12	13.16	2.52
	<b>N</b>							
047429	0.036							

**Quality assurance - Per Eriksson/ QA-manager Tube & Pipe**  
**MTC Service / Certificates**

**Tensile test at room temperature**

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
94145	248	274	575	55	54
	248	273	572	55	53
	247	275	570	53	54

**Hardness test**

Lot	Min	Max
	HRB	HRB
94145	73	73

**Following controls/tests have been satisfactorily performed:**

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Leak test: Eddy current test acc to EN 10246-2, ASME SA-1016.
- Visual inspection and dimensional control.

**Heat Treatment:**

Solution annealed and quenched.

**Marking:**

SANDVIK 3R60 ASTM/ASME A/SA-213AW/A-269 NFA 49-117 EN 10216-5 TC1 SS 2353-22 W NR 1.4435 TP 316/TP 316L Z2CND17-13 EN 1.4435 M S PK1 NDE 12.00 X 1.50 MM HT 5 24358 SZ LOT 4845894/1-1 DIN 2391/EN 10305-1 \*QA-TUBE\*

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (97/23/EC) by TUEV NORD GmbH; notified body, reg.no. 0045.

The number of tests are based on the size of the manufacturing lot before cutting to finished lengths.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001.

The certificate is produced with EDP and valid without signature.

TEST RESULTS TRANSFERRED FROM CERTIFICATE NO A100668