



CERTIFICATE

A03/Z02
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A02/Z03

INSPECTION CERTIFICATE acc to
EN 10204 3.1

A06

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDENINSPECTION STAMP
QA-TUBE

Customer References 754857/Holmgren	Sandvik References <table><tr><td>Order No.</td><td>Subs No.</td><td>Dispatch note</td></tr><tr><td>476874</td><td>156357</td><td>171305</td></tr><tr><td>Suppl. No</td><td>C.Code</td><td></td></tr><tr><td>156357</td><td>15</td><td></td></tr></table>	Order No.	Subs No.	Dispatch note	476874	156357	171305	Suppl. No	C.Code		156357	15																																	
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Material description SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING Steel making process Electric furnace	Steel/material Designations <table><tr><td>Sandvik</td><td>AISI</td></tr><tr><td>3R60</td><td>TP316/TP316L</td></tr><tr><td>EN no</td><td></td></tr><tr><td>1.4435</td><td></td></tr></table>	Sandvik	AISI	3R60	TP316/TP316L	EN no		1.4435																																					
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Technical requirements ASTM A-213-15C AW, ASME SA-213-ED-15 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:2015, NACE MR0103/ISO 17945:2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80																																													
EXTENT OF DELIVERY <table><thead><tr><th>It</th><th>Product designation</th><th>Heat</th><th>Lot</th><th>Kg</th><th>M</th></tr></thead><tbody><tr><td>01</td><td>THT-3R60-12-1 12.00 X 1.00</td><td>048316</td><td>23309</td><td>165.2</td><td>600.00</td></tr><tr><td colspan="4">Total</td><td>165.2</td><td>600.00</td></tr></tbody></table> KEY TO HEAT <table><tr><td>Heat Code</td><td>Heat No.</td></tr><tr><td>048316</td><td>546369</td></tr></table> TEST RESULTS Chemical composition (weight%) <table><thead><tr><th>Heat</th><th>C</th><th>Si</th><th>Mn</th><th>P</th><th>S</th><th>Cr</th><th>Ni</th><th>Mo</th></tr></thead><tbody><tr><td>048316</td><td>0.018</td><td>0.39</td><td>1.64</td><td>0.032</td><td>0.0090</td><td>17.26</td><td>13.15</td><td>2.63</td></tr></tbody></table> <table><tr><td>N</td><td></td></tr><tr><td>048316</td><td>0.033</td></tr></table>		It	Product designation	Heat	Lot	Kg	M	01	THT-3R60-12-1 12.00 X 1.00	048316	23309	165.2	600.00	Total				165.2	600.00	Heat Code	Heat No.	048316	546369	Heat	C	Si	Mn	P	S	Cr	Ni	Mo	048316	0.018	0.39	1.64	0.032	0.0090	17.26	13.15	2.63	N		048316	0.033
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Quality assurance - Lars-Åke Bergqvist / QA-manager MTC Service / Certificates																																													



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Chemical composition, product (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048316	0.016	0.39	1.65	0.030	0.0100	17.18	13.24	2.59
	N							
048316	0.030							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm	A	2"
23309	308	351	592	45	42

Hardness test

Lot	Min	Max
	HRB	HRB
23309	76	77

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Leak test: Eddy current test acc to EN ISO 10893-1, ASME SA-1016.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed at a temperature of Min 1040° C and quenched.

Marking:

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 EN10305-1 AW EN 1.44 35 TP316/316L CFA SML NDE 12.00 X 1.00 MM HT 546369 SS LOT 23309 MADE IN SWEDE N *QA-TUBE*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU, Annex 1 para 4.3) by TUEV NORD; 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 9001:2008.



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The certificate is produced with EDP and valid without signature.