



INSPECTION CERTIFICATE acc to
EN 10204 3.1

Processkontroll Items AB
Box 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

<p>Customer References</p> <p>757026</p> <p>003-00991 ITEMS</p>	<p>Sandvik References</p> <p>Order No. Subs No. ABSMT Dispatch note 524565 660595 31322/54</p> <p>ABSMT No. C.Code 300-87724 15</p>
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<p>Material description</p> <p>SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING</p> <p>Steel making process Electric furnace</p>	<p>Steel/material Designations</p> <p>Sandvik AISI 3R60 TP316/TP316L</p> <p>EN no 1.4435</p>
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<p>Technical requirements</p> <p>ASTM A-213-18 AW, ASME SA-213-ED-17 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</p>
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EXTENT OF DELIVERY								
It	Product designation	Heat	Lot	Pieces	Kg	M		
03	THT-3R60-12-1	553276	46336	64	109.0	384.00		
	12.00 X 1.00	553587	46944	16	27.0	96.00		
				Total	80	136.0 480.00		
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
553276	0.017	0.38	1.68	0.028	0.009	17.26	13.09	2.62
553587	0.018	0.42	1.73	0.032	0.007	17.39	13.35	2.63
	N							
553276	0.040							
553587	0.036							
Chemical composition, product (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
553276	0.019	0.38	1.67	0.030	0.008	17.25	13.04	2.63
	N							
553276	0.041							

Quality assurance - Sofia Åkesson / Q-Manager
MTC Service / Certificates



Lot	C	Si	Mn	P	S	Cr	Ni	Mo
46944	0.020	0.41	1.69	0.031	0.007	17.28	13.33	2.63
	N							
46944	0.039							

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
46336	320	360	587	45	41
46944	305	348	578	47	43

Hardness test

Lot	Min	Max
	HRB	HRB
46336	76	79
46944	73	75

Following controls/tests have been satisfactorily performed:

- Flattening test.
- Flaring test
- 100% 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 AW EN 1.4435 TP316/3 16L CFA SML NDE 12.00 X 1.00 MM HT 553276 SS LOT 46336 MADE IN SWEDEN *QA-TUBE *

SANDVIK 3R60 ASTM A213/A269 ASME SA213 COLD EN10216-5 TC1 AW EN 1.4435 TP316/3 16L CFA SML NDE 12.00 X 1.00 MM HT 553587 SS LOT 46944 MADE IN SWEDEN *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 9001:2015.



No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.