



CERTIFICATE

A03/Z02
No. A/19-850184 Rev 00
Date 2019-10-14 Page 1/3

A02/Z03
INSPECTION CERTIFICATE acc to
EN 10204 3.1

A06
PROCESSKONTROLL ITEMS AB
BOX 2088
444 02 STORA HÖGA
SWEDEN

INSPECTION STAMP
QA-TUBE

Customer References	A07	Sandvik References	A08
758585	Customer order 2019-10-14	Order No. 543770 ABSMT No. 300-12405	Subs No. 676064 C.Code 15
003-00991	ITEMS	ABSMT Dispatch note 05667/54	

Material description	B01/B04	Steel/material Designations	B02
SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING		Sandvik 3R60 EN no 1.4435	AISI TP316/TP316L
Steel making process Electric furnace	C70		

Technical requirements	B03
ASTM A-213-18B AW, ASME SA-213-ED-17 AW, ASTM A-269-15A NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015 PED 2014/68/EU EN 10216-5 TC1 HRB MAX 80	

EXTENT OF DELIVERY							B07-B13	
It	Product designation	Heat	Lot	Pieces	Kg	M		
01	THT-3R60-12-1	556768	16247	40	70.0	240.00		
	12.00 X 1.00	556274	58915	30	50.0	180.00		
				Total	70	120.0	420.00	
TEST RESULTS								
Chemical composition (weight%)								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556274	0.019	0.40	1.64	0.034	0.008	17.48	13.08	2.64
556768	0.020	0.37	1.64	0.031	0.013	17.19	13.11	2.63
	N							
556274	0.037							
556768	0.034							

Quality assurance - Sofia Åkesson / Q-Manager	A05/Z02
MTC Service / Certificates	



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

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
556274	0.022	0.41	1.65	0.035	0.008	17.54	13.15	2.66
556768	0.020	0.38	1.64	0.031	0.013	17.27	13.16	2.65
	N							
556274	0.042							
556768	0.033							

Tensile test at room temperature

Lot	Yield strength		Tensile strength MPa	Elongation	
	MPa	MPa		%	%
	Rp0.2	Rp1.0	Rm	A	2"
16247	281	320	573	54	49
58915	307	340	580	44	42

Hardness test

Lot	Min	Max
	HRB	HRB
16247	71	74
58915	75	77

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 556768 SS LOT 16247 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 556274 SS LOT 58915 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.

