

**CERTIFICATE****No. A/16-551126 Rev 00**  
**Date 2016-01-20 Page 1/2**INSPECTION CERTIFICATE acc to  
EN 10204 3.1Processkontroll Items AB  
Box 2088  
444 02 STORA HÖGA  
SWEDENINSPECTION STAMP  
QA-TUBE

<b>Customer References</b>		<b>Sandvik References</b>						
752859	Customer order 2016-01-14	Order No. 428580	Subs No. 603076 ABSMT No. C.Code 300-40640 15					
003-00991 ITEMS		ABSMT Dispatch note 13093/54						
<b>Material description</b> SEAMLESS STAINLESS COLD FINISHED HYDRAULIC TUBING		<b>Steel/material Designations</b> Sandvik AISI 3R60 TP316/TP316L EN no 1.4435						
<b>Steel making process</b> Electric furnace								
<b>Technical requirements</b> ASTM A-213-15A AW, ASME SA-213-ED-15 AW, ASTM A-269-14 NACE MR0175/ISO 15156-3:2009 PED 97/23/EC EN 10216-5 TC1 HRB MAX 80								
<b>EXTENT OF DELIVERY</b>								
It	Product designation	Heat	Lot	Pieces	Kg	M		
02	THT-3R60-12-2	048197	50871	6	18.0	36.00		
	12.00 X 2.00							
			Total	6	18.0	36.00		
<b>KEY TO HEAT</b>								
Heat Code	Heat No.							
048197	543089							
<b>TEST RESULTS</b>								
<b>Chemical composition (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048197	0.021	0.40	1.75	0.032	0.0090	17.29	13.14	2.54
	N							
048197	0.036							
<b>Chemical composition, product (weight%)</b>								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
048197	0.017	0.40	1.76	0.033	0.0050	17.40	13.18	2.57
	N							
048197	0.032							
<b>Quality assurance - Lars-Åke Bergqvist / QA-manager</b>								
<b>MTC Service / Certificates</b>								

**Tensile test at room temperature**

	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
50871	273	310	560	53	52

**Hardness test**

Lot	Min	Max
	HRB	HRB
50871	72	74

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

- Flattening test.
- Flaring test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Leak test: Eddy current test acc to EN 10246-2, 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/ASME A/SA-213 A-269 EN 10216-5 TC1 EN 10305-1 COLD AW EN 1.4  
435 TP316/316L CFA SMLS NDE 12.00 X 2.00 MM HT 543089 SS LOT 50871 MADE BY SANDVIK IN SWEDEN \*QA-TUBE\*

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to  
Pressure Equipment Directive (97/23/EC) 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.

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.