

INSPECTION CERTIFICATE acc to
EN 10 204 3.1SANDVIK DE MEXICO S.A. DE C.V.
VIA GUSTAVO BAZ 352
COL.LA LOMA
TLALNEPANTLA EDO.DE MEXICO
CP 54060 MEXICOINSPECTION STAMP
QA-TUBE

Customer References	Customer order	Sandvik References	Order No.	Subs No.	ABSMT Dispatch note
560-00991	2005-06-29	ABSMT No.	300-89446	80826	64068/54
		C.Code		68	

Material description	Steel/material Designations
SEAMLESS STAINLESS HOT FINISHED PIPE	Sandvik 3R65
	AISI TP316/TP316L
Steel making process Electric furnace	

Technical requirements
ASTM A-312-04B, ASME SA-312-ED-04
NACE MR0175/ISO 15156-3:2003

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg	M
18	TST-E-316L-2-SCH40	034728	20210	2	68.0	12.00
	60.33 X 3.91	034732	21676	7	240.0	42.00
		034733	21878	8	288.0	51.71
		Total		17	596.0	105.71

KEY TO HEAT

Heat Code	Heat No.
034728	510900
034732	511230
034733	511240

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
034728	0.020	0.34	1.87	0.028	0.013	16.94	11.23	2.10
034732	0.018	0.36	1.86	0.031	0.009	16.77	11.18	2.03
034733	0.015	0.31	1.91	0.028	0.008	16.69	11.31	2.04
	Co	Cu	N					
034728	0.059	0.20	0.067					
034732	0.065	0.21	0.062					
034733	0.068	0.22	0.062					

Tensile test at room temperature

Lot	Yield strength	Tensile strength	Elongation
	N/mm ²	N/mm ²	%
20210	Rp0.2 330	Rm 617	2" 49
21676	330	603	51
21878	292	615	47

Leak test: Eddy current test acc to Practice E426 with drilled hole as reference standard on all tubes, with the exception of those lots which have been hydrostatically tested.

Hardness test

Lot	Min	Max
	HRB	HRB
20210	79.0	85.0
21676	77.0	84.0
21878	81.0	86.0

Following controls/tests have been satisfactorily performed:

- Flattening test
- PMI-test.
- Intergranular corrosion test acc to ASTM A-262 PR.E
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

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 816619-657535
815680/657671
815217/658194