

MATERIAL TEST & INSPECTION CERTIFICATE



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CUSTOMER: SOUTHWEST STAINLESS, INC.

PROJECT NAME: N/A

According to

DIN 50049 3.1 / EN 10204 3.1 / ISO 10474 3.1

PURCHASE ORDER NO.		173882		SPEC. FOR MATERIAL		ASTM/ASME A/SA403WP316/316L-W 04/04ED				CERTIFICATE NO.		QCLJ2007103441	
PJT JOB NO.		N/A		SPEC. FOR INSPECTION		ASME B16.9				DATE OF ISSUE		2007.10.25	
STARTING MATERIAL		E.F.W PIPE		SKB JOB NO.		2007051119				VISUAL & DIMENSION		SATISFACTORY	
http://www.skabend.com													
NO.		SEQ/LINE/ITEM NO		DESCRIPTION				QTY	HEAT NO.	MFG ID NO.	MILL MAKER	POR/CODE/TAG NO	
288				90D ELBOW LONG S40S 2" B.W WELDED SUS				80	R12738	R12738	SEAH STEEL		
295				90D ELBOW LONG S40S 10" B.W WELDED SUS				7	D1201801	D1201801	SUNGWON PIPE		

CHEMICAL COMPOSITION(%) (L : LADLE, P : PRODUCT)

HEAT NO.		STD.	SPEC.	CHEMICAL COMPOSITION(%) (L : LADLE P : PRODUCT)																	TENSILE TEST					
				C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	N	Al	B	W	Sn	Ti	C.E	SPEC.	Y.S	T.S	EL	RA
				MIN					18.00	16.00	2.00													KSI	KSI	%
			MAX	0.030	1.00	2.00	0.045	0.030	14.00	18.00	3.00											MIN	30.0	75.0	28.0	
D1201801		L	0.019	0.54	0.99	0.027	0.001	10.10	16.97	2.04												MAX				
		P																								
R12738		L	0.024	0.61	1.09	0.026	0.001	10.49	16.73	2.13												L	40.9	84.2	60.0	
		P																					P			
IMPACT TEST		L																				L	44.3	82.4	54.0	
		P																					P			
IMPACT TEST		TEST	SIZE OF		ABSORBED ENERGY			LATERAL EXPANSION			RESORPTION			HARDNESS			OTHER									

HEAT NO.	IMPACT TEST	TEST TEMP.	SIZE OF SPECIMEN(mm)	ABSORBED ENERGY		LATERAL EXPANSION		PERCENT SHEAR		HARDNESS		HEAT TREATMENT		SOLUTION TREATED. 1060°C, 20Min., "Water"	
				STD. /	VALUE	AVE.	STD. /	VALUE	AVE.	MIN	HRC	N.D.E	N/A	PMI	N/A
D1201801			B/M							MAX	22.0		N/A	**MEMO	
			H.A.Z							HB	160	FLATTENING TEST	N/A		
			W/M									BENDING TEST	N/A		
			B/M									HYDROSTATIC TEST	N/A		
			H.A.Z							HB	157	CORROSION TEST	N/A		
R12738			W/M									GRAIN SIZE TEST	N/A		
												HIC TEST	N/A		

MATERIAL MEETS THE REQUIREMENTS OF NACE MR-01-75.

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE SPECIFICATION AND THE RESULTS OF ALL EXAMINATION ARE ACCEPTABLE.

□ REVIEWED BY :

□ WITNESSED BY :

LR40SD2
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[Signature]

QM DIV. SENIOR MANAGING DIRECTOR