

MATERIAL TEST & INSPECTION CERTIFICATE

SUNGWANG BEND CO., LTD.(SKB)

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CUSTOMER: ALLIED FITTINGS

PROJECT NAME: N/A

According to

DIN 50049 3.1 / EN 10204 3.1 / ISO 10474 3.1

PURCHASE ORDER NO.	092208ASB	SPEC. FOR MATERIAL	ASTM A234WPB-W 06a, ASME SA234WPB-W 04ED	CERTIFICATE NO.	QCLJ2009021735
PJT JOB NO.	N/A	SPEC. FOR INSPECTION	ASME B16.9	DATE OF ISSUE	2009.02.09
STARTING MATERIAL	STEEL PLATE	SKB JOB NO.	2008092616	VISUAL & DIMENSION	SATISFACTORY

NO.	SEQ/LINE/ITEM NO	DESCRIPTION	QTY	HEAT NO.	MFG ID NO.	MILL MAKER	POR/CODE/TAG NO
183		90D ELBOW LONG X-S 36" B.W WELDED Black	5	SA06418	SA06418	POSCO	

CHEMICAL COMPOSITION(%) (L : LADLE, P : PRODUCT)																				TENSILE TEST					
STANDARD	SPEC.	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	
																					KSI	KSI	%	%	
HEAT NO.	MIN		0.10	0.29																	MIN	35.0	60.0	30.0	
	MAX	0.35		1.06	0.050	0.058	0.40	0.40	0.15	0.40	0.08									0.40	MAX		85.0		
SA06418	L	0.15	0.23	0.82	0.013	0.003	0.01	0.03	<0.01	0.01	<0.001									0.29		46.3	71.9	40.0	
	P																								
	L																								
	P																								

IMPACT TEST HEAT NO.	TEST TEMP.	SIZE OF SPECIMEN(mm)	ABSORBED ENERGY STD. /		LATERAL EXPANSION STD. /		PERCENT SHEAR STD. /		HARDNESS HB		HEAT TREATMENT	HOT FORMED. 870 °C, N/A., "Air"			
			VALUE	AVE.	VALUE	AVE.	VALUE	AVE.	MIN	MAX		N.D.E	R.T:GOOD	PMI	N/A
									MAX	197					
SA06418		B/M								HB	144	FLATTENING TEST	N/A	**MEMO	
		H.A.Z										BENDING TEST	N/A		
		W/M										HYDROSTATIC TEST	N/A		
		B/M										CORROSION TEST	N/A		
		H.A.Z										GRAIN SIZE TEST	N/A		
		W/M										HIC TEST	N/A		

- MANUFACTURED IN ACCOR. TO DIN 50049-3.1 & MEET NACE MR0103-2003 STANDARD SPEC.
 - R.T REPORT NO. : HIE-BS-SKALL-RT-09-02-007

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.

ALLIED FITTINGS
 TRUE COPY OF
 ORIGINAL MTR
 SIGN

[Signature]

QM DIV. SENIOR MANAGING DIRECTOR

REVIEWED BY : _____
 WITNESSED BY : _____