

FL 001284

MATERIAL TEST & INSPECTION CERTIFICATE

 **SUNGKWANG BEND CO., LTD.(SKB)**

CUSTOMER: FORGINGS FLANGES & FITTINGS INC.
PROJECT NAME: N/A

According to
DIN 50049 3.1 / EN 10204 3.1 / ISO 10474 3.1

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PURCHASE ORDER NO.	171267	SPEC. FOR MATERIAL	ASTM/ASME A/SAZ34WPB-S 07/07ED	CERTIFICATE NO.	QCLP2010061817
PJT NO.	N/A	SPEC. FOR INSPECTION	ASME B16.9	DATE OF ISSUE	2010.06.07
STARTING MATERIAL	STEEL PLATE	SKB NO.	2010032408	VISUAL & DIMENSION	SATISFACTORY

NO.	SEQ/LINE/ITEM NO	DESCRIPTION	QTY	HEAT NO.	MFG ID NO.	POR/CODE/TAG NO
103	CAP	S80 16" B.W.S.M.L.S Black	10	SB35388	SB35388	

CHEMICAL COMPOSITION(%) (L : LADLE, P : PRODUCT)																				TENSILE TEST							
HEAT NO.	STD.	SPEC.	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	N	Al	B	W	Se	Ti	Ce	SPEC.	Y.S	T.S	EL.	RA		
			MIN	0.10	0.29																		MIN	35.0	60.0	22.0	%
			MAX	0.30	1.06	0.050	0.058	0.40	0.40	0.15	0.40	0.08											MAX		85.0		%
SB35388	L		0.17	0.25	1.07	0.014	0.005	0.01	0.02	Tr	0.01	0.002										48.5	74.3	41.0			
	P																										
	L																										
	P																										

HEAT NO.	IMPACT TEST	TEST TEMP.	SIZE OF SPECIMEN(mm)	ABSORBED ENERGY		LATERAL EXPANSION		PERCENT SHEAR		HARDNESS HB		HEAT TREATMENT	NORMALIZED, 900°C, 1hr., 'A/C'			
				STD./		STD./		STD./		MIN	197		N/A			
				VALUE	AVE.	VALUE	AVE.	VALUE	AVE.	MAX	147		N/D.E	N/A	P/M	N/A
SB35388			B/M							HB	147	FLATTENING TEST	N/A	MEMO Mn is Permitted up to 1.35% in AISA234 Table 1.		
			H/AZ									BENDING TEST	N/A			
			W/M									HYDROSTATIC TEST	N/A			
			B/M									CORROSION TEST	N/A			
			H/AZ									GRAIN SIZE TEST	N/A			
			W/M									HIC TEST	N/A			

- MATERIAL MEETS THE REQUIREMENTS OF NACE MR0175 & 0103.
- PED(97/23/EC)

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 : _____


Q&M DIV. SENIOR MANAGING DIRECTOR

Inv# 175539; PO# 11988; H# SB35388; 16 S80 CAP WPB