

57852

MATERIAL TEST & INSPECTION CERTIFICATE



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CUSTOMER: FORGINGS FLANGES & FITTINGS INC.

PROJECT NAME: N/A

According to

DIN 50049 3.1 / EN 10204 3.1 / ISO 10474 3.1

PURCHASE ORDER NO.	174537	SPEC. FOR MATERIAL	ASTM/ASME A/SA234WPB-S 11/10ED WITH 11ADD	CERTIFICATE NO.	QCLH2013110312
PJT NO.	N/A	SPEC. FOR INSPECTION	ASME B16.9	DATE OF ISSUE	2013.10.07
STARTING MATERIAL	STEEL PLATE	SKB NO.	2013062720	VISUAL & DIMENSION	SATISFACTORY

NO.	SEQ/LINE/ITEM NO	DESCRIPTION					QTY	HEAT NO.	MFG ID NO.	POR/CODE/TAG NO
10		CAP	STD	12"	B.W SMLS	Black	280	SF32238	SF32238	
11		CAP	STD	14"	B.W SMLS	Black	100	SF32238	SF32238	
14		CAP	STD	24"	B.W SMLS	Black	80	SB48833	SB48833	
18		CAP	X-S	6"	B.W SMLS	Black	100	SB48833	SB48833	

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	Zr	Fe	Ti	C.E	SPEC.	Y.S 0.2% offset KSI	T.S KSI	EL %	RA %
SB48833	L	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										MAX	45.3	95.0	36.0	
SF32238	L	MIN	0.11	0.25	0.90	0.014	0.004	0.01	0.02	0	0.01	0									MIN	47.9	65.1	35.0	
		MAX	0.14	0.25	1.09	0.015	0.004	0.01	0.02	0	0.02	0									MAX	45.3	69.5	36.0	

HEAT NO.	IMPACT TEST	TEST TEMP.	SIZE OF SPECIMEN(mm)	ABSORBED ENERGY STD. /		LATERAL EXPANSION STD. /		PERCENT SHEAR STD. /		HARDNESS HB		HEAT TREATMENT	NORMALIZED. 900°C, 30Min., "Air"			
				VALUE	AVE.	VALUE	AVE.	VALUE	AVE.	MIN	197		PMI	N/A	N.D.E	N/A
SB48833				B/M							HB	146	FLATTENING TEST	N/A	**MEMO	
				H.A.Z										BENDING TEST		N/A
				W/M												HYDROSTATIC TEST
SF32238				B/M							HB	143	CORROSION TEST	N/A	Mn is Permitted up to 1.35% in A/SA234 Table 1	
				H.A.Z										GRAIN SIZE TEST		N/A
				W/M												HIC TEST

MATERIAL MEETS THE REQUIREMENTS OF NACE MR0175-2009 & 0103-2012
 PED 97/23/EC / MATERIAL ALL MANUFACTURED IN KOREA.
 FREE OF MURCURY & FREE OF RADIATION

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 : _____

[Signature]

QM DIV. SENIOR MANAGING DIRECTOR

SKE-8903

* 본 검사증명서에 명기된 규격용외 사용시 안전상 문제가 발생할 수 있으며, 검사증명서 위 변조시 사문서 위조(형법231조)로 불이익을 당하실 수 있습니다.