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MATERIAL TEST & INSPECTION CERTIFICATE

Customer

According to

DIN 50049 3.1.B / EN 10204 3.1.B / ISO 10474 3.1.B

Date of issue: 2004/05/12

Job No.	Spec. for Material	Spec. for Inspection	Visual & Dimension	P.O. No.	Certificate No.																
	ASTM A234WPB-S	ASME B16.9	SATISFACTORY	440350	OCL-200405Y0617																
Manufacture No.	Description		Size	Quantity	Heat Treatment																
3-23-27	MADE FROM SEAMLESS PIPE 90D ELBOW(L) S/160 B.W		8" . 12"	40EA	HOT FORMED																
Raw Material Maker	Raw Material Heat No.	Mfg. Heat ID No.	Test Piece size	N.D.B.	C. Heat (N/A)																
KAWASAKI STEEL	8" 1-20242	8" 1-20242																			
KAWASAKI STEEL	12" 3-21733	12" 3-21733	0.5" 2"	M/A	"AIR"																
STD	Chemical Composition (%)																				
	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Cb	C.B	Y.S	T.S	E.L.	H.A.	Beading Test (%)	Flatten Test (%)	Hardness Test (HRC)	Impact Test	Hydrostatic Test
Min	0.10	0.29											35.0	60.0	22.0			197			
Max	0.30	1.06	0.050	0.058	0.40	0.40	0.15	0.40	0.08	0.02			44.9	74.6	40.0			145			
8"	0.20	0.84	0.020	0.006	0.01	0.03	<0.01	<0.01	<0.01	<0.01			44.3	75.2	39.0			146			
12"	0.20	0.23	0.86	0.023	0.005	0.02	0.04	0.01	0.01	<0.01	<0.01										
										--- B L A N K ---											

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.

8" . 30EA
 12" . 10EA

QUALITY MANAGEMENT DIVISION
 KUI SUH / ON LIA
 MANAGING DIRECTOR

Reviewed By
 Witnessed By