

# MILL TEST AND INSPECTION CERTIFICATE

## ORIGINAL

Certificate No. BC-12-Y03-05

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Customer:		Inv No: OC1201044		Shipment date: 120828	
Order No. OC1201044	Dated 2012.11.05	Works No 2012-Y03	Material A234 WPB		
Article: PIPE FITTINGS					
State of Delivery: hot pushing					
Marking: ASTM A234 WPB LR size S40 heat no. NACE MRO175					
State of Manufacturer:			Inspector's stamp		

NO.	Pieces	Description	Heat No.	Test No.
67	30	CONCENTRIC REDUCTION / A234-WPB SCH80 4X1"	O18	TN1203
68	25	CONCENTRIC REDUCTION / A234-WPB SCH80 4 x 1 1/2"	O18	TN1203
69	25	CONCENTRIC REDUCTION / A234-WPB SCH80 4 x 2"	O18	TN1203
70	50	CONCENTRIC REDUCTION / A234-WPB SCH80 4 x 3"	O18	TN1203
71	30	CONCENTRIC REDUCTION / A234-WPB SCH80 6 x 3"	B29	TN1203
72	50	CONCENTRIC REDUCTION A23-WPB SCH80 6 X 4"	B29	TN1203
73	20	CONCENTRIC REDUCTION / A234-WPB SCH80 8 X 6"	926	TN1203
74	10	CONCENTRIC REDUCTION / A234-WPB SCH80 12 X 10"	926	TN1203
75	5	CONCENTRIC REDUCTION / A234-WPB SCH80 10 X 8"	O49	TN1203
76	3	CONCENTRIC REDUCTION / A234-WPB SCH80 14 X 8"	O49	TN1203
77	5	CONCENTRIC REDUCTION / A234-WPB SCH80 16 X 10"	852	TN1203
78	3	CONCENTRIC REDUCTION / A234-WPB SCH80 18 X 10"	357	TN1203

Chemical analysis																
NO.	Heat No.	%C	%Si	%Mn	%P	%S	%Cr	%Mo	%Ni	%Cu	%V	%N	%Co	%Al	%Nb	
67-70	O18	0.20	0.23	0.50	0.011	0.008	0.05	0.01	0.01	0.07	0.003					
71	B29	0.18	0.22	0.49	0.013	0.006	0.02	0.01	0.01	0.07	0.003					
72	B29	0.22	0.20	0.51	0.013	0.011	0.05	0.01	0.01	0.09	0.003					
73-74	926	0.21	0.24	0.52	0.016	0.007	0.02	0.007	0.01	0.07	0.003					
75-76	O49	0.18	0.22	0.49	0.013	0.006	0.05	0.008	0.01	0.09	0.003					
77	852	0.22	0.20	0.51	0.013	0.011	0.05	0.008	0.01	0.07	0.003					
78	357	0.22	0.20	0.51	0.013	0.011	0.05	0.007	0.01	0.09	0.003					

Mechanical test								
NO.	Test No.	Yield Strength Mpa	Tensile Strength Mpa	Elong %	Red of Area	Charpy-Impact Test		Hardness HB
						Temp	Specimen	
67-70	TN1203	315	470	32				140
71	TN1203	325	475	31				145
72	TN1203	310	485	33				145
73-74	TN1203	320	465	32				145
75-76	TN1203	325	475	31				145
77	TN1203	310	470	32				145
78	TN1203	310	465	32				145

Visual and dimensional inspection