

ORIGINAL

MATERIAL TEST & INSPECTION CERTIFICATE



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Purchaser _____
 Project Name _____
 Project No _____
 Po No ETS-812-120418EA

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

SPEC. FOR MATERIAL	ASTM A234 WPB-15 & ASME SA234 WPB(ASME BPVC.II.A-2017)	HEAT TREATMENT	A : HOT FORMED WITH FINAL	CERTIFICATE NO.	PM190320 - 01
SPEC. FOR INSPECTION	ASME B16.9 (Wrought Butt Welding Fittings)-2012			DATE FOR ISSUE	2019.03.20
STARTING MATERIAL	CARBON STEEL SEAMLESS PIPE			VISUAL & DIMENSION	GOOD

2" STD LR 90 WELD ELL

No	SEQ/LINE/ITEM NO	ITEM	SCH.	NPS	Qty	HCN	H/T	NDE : PMI	Remark
1		90D ELBOW LR	STD	2	500	A1016	A		
2		90D ELBOW LR	STD	2-1/2	250	A1048	A		
3		90D ELBOW LR	STD	3	500	A1034	A		
4		90D ELBOW LR	STD	4	500	A1009	A		
5		90D ELBOW LR	STD	5	100	A1095	A		
6		90D ELBOW LR	STD	6	150	A1026	A		
7		90D ELBOW LR	STD	12	18	A1050	A		
8		45D ELBOW LR	STD	2	100	A1016	A		
9		45D ELBOW LR	STD	2-1/2	100	A1048	A		
10		45D ELBOW LR	STD	3	300	A1034	A		

No	HCN	CHEMICAL COMPOSITION (wt. %)											TENSILE TEST					IMPACT TEST (ft-lb)		Hydro Test		
		SPEC.	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	SPEC.	Y.S	T.S	E.L	R.A	Hardness	Temp.(°C)	Size(2mm-v)	(MPa)	
			×100	×100	×100	×1000	×1000	×100	×100	×100	×100	×100	×100	MIN	Mpa	Mpa	%	%	HBW	Min()	Ave()	Pressure / result
		MAX	25		106	50	58	40	40	15	40	8	MAX		655			197	Act.	Ave.		
1	A1016	L	19	20	105	9	2	12	6	4	15	0	L	342	523	26.5		146/149				
2	A1048	L	21	24	56	23	9	1	2	0	0	0	L	297	446	56.0		132/135				
3	A1034	L	21	17	74	12	1	1	5	2	1	0	L	303	469	53.8		144/146				
4	A1009	L	20	19	69	19	1	2	5	1	2	0	L	310	483	56.1		133/134				
5	A1095	L	21	19	53	20	5	1	1	0	1	0	L	282	461	32.0		130/132				
6	A1026	L	19	18	48	16	2	3	4	1	1	0	L	299	466	40.0		140/136				
7	A1050	L	16	23	110	13	2	2	6	3	7	3	L	366	523	37.7		145/150				
8	A1016	L	19	20	105	9	2	12	6	4	15	0	L	342	523	26.5		146/149				
9	A1048	L	21	24	56	23	9	1	2	0	0	0	L	297	446	56.0		132/135				
10	A1034	L	21	17	74	12	1	1	5	2	1	0	L	303	469	53.8		144/146				

Heat #: A1016

Note:
 1) C : TABLE ANALYSIS , P : PRODUCT ANALYSIS , HCN : Heat Control Number
 2) MA : FOR EACH REDUCTION OF 0.01% BELOW THE SPECIFIED CARBON MAXIMUM, AN INCREASE OF 0.06% MANGANESE ABOVE THE SPECIFIED MAXIMUM WILL BE PERMITTED, UP TO A MAXIMUM OF 1.35%
 ASME SA234-5A234M(ASME BPVC.II.A-2017) TABLE 1

WE CERTIFY THIS MATERIAL HAS BEEN MANUFACTURED AND EXAMINED IN ACCORDANCE WITH REQUIREMENTS OF THE SPECIFICATION AND THE RESULTS OF ALL EXAMINATION ARE ACCEPTABLE

REVIEWED BY : _____ WITNESSED BY : _____

Steehan
 MANAGER OF QUALITY

PFC-QP-515-04(Rev.3)-20160406

Stock 4709897 07/01/2019

 MATCONOR MN90LR08 2IN LR 90
 BW A234 ELBOW