

57E00003

3" 45 DEG. WPB ELBOW

P.O. 134728

Purchaser: CE FRANKLIN LTD. A DIVISION OF NOV WILSON CANADA ULC

INSPECTION CERTIFICATE



Thai Benkan Co., Ltd.
58 Soi Watkrunai, Bangkru, Prapadaeng,
Samutprakarn, 10130 Thailand.

E-No. Purchase Order No. Job No.

TO EN10204 3.1/ISO 10474 3.1B

D M Y Certificate No.

MD-449

25233154

05/09/2014 T- 2014200668

No.	Hardness Actual data	MFG. No.	Specification for Material Made from Seamless Pipe	Specification for Inspection	Visual Examination	Dimensional Inspection
			ASTM A234-13/ASME SA234-13 Gr.WPB CSA Z45-11-13 Gr.241 CAT1 SS INCE MR0175 ISO 15155-2 P3-093 MR0103-12	ASME B16.9-2012, B16.25-2012	Good	Good
			Product & Size (T*1)	Quantity	Heat/Treatment (Note 1)	Boron(%)
1	HB:125-144	57E00014	90 EL WPB 8 STD	8/200	A	0.0002
2	HB:129-136	57E00003	45 EL WPB 3 STD	300	A	0.0001
3	HB:134-142	57E00004	45 EL WPB 4 STD	200	A	0.0000
4	HB:137-152	57E00016	90 EL WPB 12 STD	5/75	A	0.0001
5	HB:145-154	57E00008	90 EL WPB 2 1/2 STD	45	A	0.0001

Specification		Chemical Composition %												Tension Test *2		
Min.	Max.	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	C.E.	YS	TS	E
		x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 1000	x 1000	x 100	MPa.		%
			10	29										240	415	30
Base Material Heat No.		30		106	50	58	40	40	40	15	80	20	42		655	
1	62900	15	22	82	12	4	9	3	7	1	2	1	31	282	456	39
2	J3L1253	19	20	81	14	5	1	2	6	2	TR	TR	34	317	491	58
3	J3K5206	19	20	81	18	5	1	2	5	1	TR	1	34	318	497	36
4	J3KA489	19	18	80	15	5	2	2	4	1	TR	TR	34	321	484	42
5	113689	17	23	70	7	8	18	8	11	2	TR	1	33	319	502	36

(Note 1) A : Hot formed with final temperature between 620 °C-980°C. Air Cooling N : Normalizing 910°Cx0.5 HR. Air Cooling
The fittings was manufactured, sampled tested, and inspected in accordance with the specification, and was found to meet the requirements.
C.E. = C+P(Mn/6+Si/24+Cw/15+Ni/20+(Cr+Mo+V+Nb)/3+5B) (CSA Spec.) TR : Trace to TR<0.0001

XXXXXXXXXXXXXXXXXXXXX15

MAGNETIC PARTICLE EXAMINATION FOR TEE ONLY:
* 1 : "T" symbolized wall thickness in mm. * 2 : YS Yield strength TS = Tensile strength E = Elongation

We hereby certify that the product described herein has been manufactured in accordance with the specifications concerned and also with the purchaser's requirements and that the test results shown herein are correct.

Note for WPB: 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%
Form TZ-6A/5

Rungrapa Kampranon
Quality Assurance Manager
Thai Benkan Co., Ltd.